



THE INVESTIGATION OF AGED PEOPLE'S SELF-COMPETENCE PERCEPTIONS AND THEIR ATTITUDES TOWARDS TECHNOLOGY IN TERMS OF DIFFERENT VARIABLES

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Abstract

The objective of this study is to investigate the relationship between the attitudes of aged people towards technology and their perceived self-competence. The data for the study was collected from 96 elderly people randomly selected among residents between the ages of 50 and 70 in the Bahçelievler District of İstanbul. The data was collected through the "Self-Competence Scale" and the "Scale to Reveal the Level of Technology Use for the Elderly". As a result of the data analysis, it was revealed that the self-competence perceptions of the aged do not differ depending on the variables of gender, educational level or marital status. On the other hand, it was found that their perceived self-competence of the participants differed depending on the variables of age and family members they live with. The difference arising from the age variable was found to be in favor of the group between the ages of 61 and 70 while the difference resulting from the variable of family members was found to be in favor of the group living with their spouses. While the perceived self-competence of the participants differed significantly in terms of the variable of asking for help to use technology, no significant difference was found when it comes to the variable of the knowledge about the technological devices. It was revealed that the aged mostly ask for help while using electrical household appliances and cell phones. As a result, it can be concluded that as people get older, their perceived self-competence scores increase; also, aged people living with their spouses have higher levels of self-competence perception when compared to other group. Finally, it was found that those mostly asking for help to use cell phones have high level of self-competence perception.

Key Words: Self-competence, agedness, technology.



INTRODUCTION

Life starts with birth and continues with infancy, childhood, adolescence, young adulthood, adulthood and agedness (Çevik Sökmen, 2008). Agedness is the last stage of a person's life, and it is a relative concept with complex dimensions (Kurt, 2008). Agedness is mostly defined as the irreversible frazzling of an organism and the deterioration of his/her functions. Normal agedness refers to the social, psychological, anatomic and functional changes arising from the time and the age of the organism without the influence of a disease. On the other hand, pathological agedness covers all the pathological events interacting with the aging process (Oğuz, 2007). World Health Organization defines agedness as the weakening of the inability to adapt to the environmental factors. However, it is undeniable facts that all the individuals and families must somehow live in a constantly changing world and adapt to it (Hazer and Sökmen Kılınc, 2009).

It is common knowledge that in today's world, technology is rapidly improving and changing. Except for what was learned and seen in the past, aged people do not have much knowledge about technology because they cannot trace technical developments and find it hard to learn about technology as new technological products are developed almost every day. The technological devices they use are more commonplace devices like television, radio and telephone (Dönmez, 2012). In fact, aged people are aware of the importance of technology and perceive it as a natural consequence of progress and development. Thus, they know that they have to embrace technological innovations. Still, for aged people who want to use technology, there are some barriers resulting from the age-related issue (e.g. visual flaw, perception problem, e.t.c), the features of technology (e.g. complexity, small letters), attitude (i.e. perceiving technology as dangerous and expensive), training and support issues such as the cost of the technology (Özkan and Puruçuoğlu, 2010).

As the world is rapidly changing and the number of aged people has been increasing, business firms have changed their products, services and the way they market them. With these changes, a new consumer group emerged and new marketing opportunities appeared (Hacettepe University, t.y.). Designing useful products that appeal to aged people and using the technological alternatives more effectively are expected to contribute to the life quality of these people and help them adapt to the social life more easily. For aged people to be psycho-socially healthy, it can be recommended that they establish and maintain healthy relationships with their families and friends, be active in entertaining and social activities, develop a positive attitude towards life, hope to have a long and healthy life and take up hobbies and activities that are meaningful for themselves (Çevik Sökmen, 2008). Therefore, it is necessary to carry out interdisciplinary research with the cooperation of social scientists trying to reveal and understand the real-life needs of the aged people in order to improve their life quality, scientists working in the field of health, engineers developing new technological device and ergonomists (Hazer and Sökmen Kılınc, 2009). Generally, the technological tendency of the women is for household and kitchen appliances. While younger women are interested in appliances that will facilitate their kitchen work, older ones do not want these appliances as they think that they will have difficulty learning how to use them. Rather than technological appliances that are the most effective in facilitating their kitchen work, they prefer the ones that only make their life easier. The reason for this is that they do not want to get involved in the complex world of technology and they feel that they will not be able to learn how to use the technology or even get afraid of learning how to use it (Dönmez, 2012). In short, they feel themselves incompetent with technology. Thus, it would be fair to state that regarding the issue of agedness and technology, the first concept coming to mind is self-competence.

The concept of self-competence encompass planning to perform an action, being aware of the skills necessary to perform the action and being motivated by considering the gains at the end of the action despite the challenges faced in the process of performing it (Yıldırım and İlhan, 2010). Self-competence does not only refer to a skill or ability. Instead, it is the personal opinions of the individuals about what they can achieve in life using their existing potentials. In other words, one of the factors affecting the success of the individuals in a given task is their belief in whether they can do the task (Sali Bilgiç, 2011). Beliefs about self-competence do not necessarily reflect the individual's actual capacity or skills; instead, it only refers to the belief about one's capacity under certain conditions. As a result, there might be differences between the existing skills individuals have and to what extent they feel themselves self-competent (Bolal, 2011). Self-competence expectations



enable people to adapt to the stressful and constantly changing stimuli. It also affects whether the individual will attempt to display certain behaviors, exhibit persistent attitude when encountered with barriers, act by force and attribute failure to themselves or others (Yardımcı and Başbakkal, 2011).

Today, aged people over 60 appear as a group who are open to new experiences, like to tour, keep track of technology, separate time for hobbies and entertainment, and this population creates new and changing opportunities for the market (Hacettepe University, t.y.). Therefore, considering the lack of related research studies and the need to explore technology from the perspective of the elderly people, this study aims to investigate aged people's attitudes towards technology focusing on their self-competence.

The following research questions formulated for the current study aim to explore the self-competence perceptions and the attitudes of aged people towards technology in terms of different variables:

- Do the self-competence perception scores of the aged people vary depending on variables such as gender, age, marital status, educational level and family members they live with?
- Do the self-competence perception scores of the aged people vary depending on variables such as technological devices they use and their knowledge about technological products?

METHOD

Research Design

The current research study is based on the screening model. The screening model is a research approach aiming to describe a past or present situation as it is. The situation, event or object that is the subject of a research study is described within its own conditions. No efforts are made to change or affect these conditions. What is important in this model is to appropriately observe and identify these conditions (Karasar, 2010). In the current study; age, gender, marital status, educational level, family members aged people live with are the independent variables while the level of self-competence is the dependent variable.

Participants

In this study, 96 elderly people between the ages of 50 and 70 took part so that the relationship between attitudes towards technology and the self-competence perceptions of the aged people living in the Bahçelievler District in the Istanbul Province. The sample of the study is based on random sampling through which elderly residents living in the Bahçelievler District were involved in the study. While 58 of the participants were female, the remaining 38 were male. Among these participants, 76% of them were married, only 3 of them were single and 17 of them were widow or widower. 53% of the participants lived with their spouses and children, 24% of them lived only with their spouses, 13.5% of them lived with their children, 8.3% of them lived alone and only 1% of them lived with a relative. It was also revealed that 49% of the participants preferred to ask for help from somebody while using a technological device. It was observed that some participants ask for help while using computers (53.7%), cell phone (33.7%), electrical household appliances (%9,5) and mass media (%3.2).

Data Collection Instruments

The data collection instruments are "The Scale to Reveal the Level of Technology Use for the Elderly" and the "Self-Competence Scale" developed by the researchers as a result of the review of relevant sources.

The Scale to Reveal the Level of Technology Use for the Elderly: The scale consisting of 30 items have been developed to collect data about the participants' socio-demographic characteristics involving age, gender, marital status, educational level, occupation and the level of their income as well as their interest in technology and the effect of technology on their lives.

General Self-competence Scale: Sherer and associates (1982) developed the original scale including 23 items. That scale had a two-factor structure as "General Self-Competence" (variance 26,5%, Cronbach alpha=0,86) and "Social Self-competence" (variance %8,5, Cronbach alpha=0,71). The first factor was called "General Self-competence" as the items under this factor did not refer to a specific behavior while the "Social Self-competence" factors reflected competence expectations from social situations. The original scale with 14 levels was later changed to a 5-point Likert scale. The scale used for the present study the one with the 5-point Likert

format though which responses to the question “How well does this item define you?” could be given on a scale of “never” and “very good”. The score for each question ranges from 1 to 5, and some items (2, 4, 5, 6, 7, 10, 11, 12, 14, 16 and 17) are subjected to reverse scoring. The total score of the scale might vary from 17 to 85, and the increase in this score is interpreted as the increase in self-competence beliefs (Yıldırım and İlhan, 2010).

Data Collection

In the data collection process, the fact that participants voluntarily take part in the study was paid great attention to, and necessary explanations were made to the participants to collect for a more ethical data collection procedure. As it was observed during the data collection that some aged people had difficulty filling out forms, researchers read the questions in the scale and fill out the scales depending on their verbal responses.

Data Analysis

The data was analyzed using the SPSS 16.0 package program. The age variable that was the discontinuous variable was treated as categorical in the data analysis procedure. Independent group t-test, Mann Whitney-U Test and Kruskal Wallis-H test were used to identify whether the data collected through the “General Self-competence Perception Scale” differs significantly depending on the gender, age, marital status, educational level, family members aged people live with, technological devices about which support was needed and the knowledge about technological products in general. When significant differences were found as a result of the Kruskal Wallis test, the Mann Whitney-U Test was applied to reveal the reasons for these differences.

FINDINGS

In this part of the study, results of the statistical calculations of the data collected from aged people by means of the “General Self-Competence Perception Scale” and the interpretations of these results are presented.

The first research question of the study is formulated as “Do the self-competence perception scores of the aged people vary depending on variables such as gender, age, marital status, educational level and family members they live with?”. The presentation of the data analysis regarding this question is below.

As a result of the independent group t-test applied to reveal whether the scores obtained from the “self-competence scale” by the 50-70-aged-people living in the Bahçelievler District in the İstanbul Province vary depending on gender, it was found that there was a significant difference between groups in terms of their arithmetic means ($t=,680;p=,944; p>,05$).

As a result of the Kruskal Wallis-H analysis applied to reveal whether the scores obtained from the “self-competence scale” differ significantly depending on the “marital status” ($\chi^2=,187; p=,911;p>,05$) and on “educational level”, the difference in the listing averages of the groups was not found significant.

Table 1: The Results of the Kruskal Wallis-H Test Applied to Reveal whether the Scores of the Self-competence Scale Vary Depending on the “Age” Variable

Score	Groups	N	$\bar{x}_{sıra}$	χ^2	sd	p
Self-Competence	50-55 Years Old	44	52.31	11,155	3	,011
	56-60 Years Old	27	56.67			
	61-65 Years Old	15	35.20			
	66-70 Years Old	10	29.65			
	Total	96				

As can be realized in Table 1, the Kruskal Wallis-H analysis done to identify whether the scores aged people obtain from the “self-competence scale” differ significantly depending on the “age” variable showed significant difference in the listing averages of the groups ($\chi^2=11,155;p=,011;p<,05$). The groups were compared by means

of Mann Whitney U test applied to reveal from which groups the differences arise and the results of the test are presented below.

As a result of the Mann Whitney U test applied to reveal the groups causing the differences in the self-competence scores of the aged people in terms of the age variable, it was found that the difference was between the 50-55-year-old participants and 61-65-year-old ones. This difference at the level of $p < .05$ was found to be in favor of the 61-65-year-old group ($U=216,000$; $z = -1,986$; $p = .047 < .05$). The difference between the 50-55-year-old and the 66-70-year-old group was found to be in favor of the 66-70-year-old group ($U=114,000$; $z = -2,362$; $p = .018 < .05$) while the difference between the 56-60-year-old and the 61-65-year-old group was found to be in favor of the 61-65-year-old group ($U=114,000$; $z = -2,328$; $p = .020 < .05$). The difference between the 56-60-year-old and the 66-70-year-old group was found to be in favor of the 66-70-year-old group ($U=55,500$; $z = -2,722$; $p = .006 < .05$). However, the difference between the listing averages of 50-55-year-old and 56-60-year-old groups was not found to be significant ($U=541,500$; $z = -.622$; $p = .534 > .05$). Similarly, the difference between the listing averages of the 61-65-year-old group and the 66-70-year-old group was not found to be significant ($U=72,000$; $z = -.167$; $p = .867 > .05$).

As a result of the Kruskal Wallis-H analysis applied to reveal whether the scores of participants in the “self-competence scale” vary significantly depending on their “educational background” yielded the finding that there is no significant differences between the the listing averages of the groups ($\chi^2 = 8,167$; $p = .226$; $p > .05$).

Table 2: The Results of the Kruskal Wallis-H Test Applied to Reveal whether the Scores of the Self-competence Scale Vary Depending on the “Family Members” Variable

Score	Groups	N	\bar{x}_{sira}	χ^2	sd	P
Self-competence	Alone	8	56.00	12,125	4	,016
	With Spouse	23	32.76			
	With Spouse/Children	51	55.51			
	With Children	13	46.23			
	With a Relative	1	22.50			
	Total	96				

As can be seen in Table 2, the Kruskal Wallis-H analysis done in order to identify whether the participants’ scores in the “self-competence scale” vary significantly depending on the variable of “family members they live with” revealed that there is a significant difference between the listing averages of the groups ($\chi^2 = 12,125$; $p = .016$; $p < .05$). The groups were compared by means of Mann Whitney U test applied to reveal from which groups the differences stem and the test results are presented below.

As a result of the Mann Whitney U test used to reveal the groups causing the differences in the self-competence scores of the aged people in terms of the variable of family members they live with, it was found that the difference was between the group living alone and the group living with their spouses. This difference at the level of $p < .05$ was found to be in favor of the group who live with their spouses ($U=44,500$; $z = -2.147$; $p = .039$). The difference between the group living with their spouses and the group living with their spouses and children was found to be in favor of the group living with their spouses ($U=324,500$; $z = -3,062$; $p = .002$). However, no significant differences were found in the listing averages of the group living alone and the group living with their spouses and children ($U=200,000$; $z = -.089$; $p = .929 > .05$). Similarly, the differences in the listing averages of the group living alone and the group living with their children were not found to be significant ($U=38,500$; $z = -.979$; $p = .929 > .05$). Likewise, the differences in the listing averages of the group living alone and the group living with their relatives were not found to be significant ($U=1,000$; $z = -1,162$; $p = .245 > .05$).

The second research question of the study is formulated as “Do the self-competence perception scores of the aged people vary depending on variables such as the technological devices they use and their knowledge about technological products?” The presentation of the data analysis regarding this question is below.

Table 3: The Results of the Kruskal Wallis-H Test Applied to Reveal whether the Scores of the Self-competence Scale Vary Depending on the “Technological Devices about which Support was Needed” Variable

Score	Groups	<i>N</i>	\bar{x}_{sira}	χ^2	<i>sd</i>	<i>p</i>
Self-competence	Electrical Household Appliances	9	26.89	14,643	3	,002
	Cell Phone	32	39.83			
	Computer	51	57.50			
	Mass Media	3	37.00			
	Total	95				

As can be realized in Table 3, the Kruskal Wallis-H analysis applied to reveal whether the scores aged people obtained from the “self-competence scale” differ significantly depending on the “the technological device about which support was needed” variable showed significant difference in the listing averages of the groups ($\chi^2=14,643;p=,002;p<,05$). The groups were compared by means of Mann Whitney U test applied to reveal from which groups the differences arise and the results of the test are illustrated below.

As a result of the Mann Whitney U test used to show in which groups there is difference in the self-competence scores of the aged people depending on the variable of “technological devices about which support was needed”, it was found that there was difference between the group asking for help while using electrical household appliances and the group asking for help while using computers. The difference at the level of $p<,05$ was found to be in favor of the group asking for help while using electrical household appliances ($U=91,000; z= -2,870; p=,004$). The difference between the group asking for help while using cell phones and computers was found to be in favor of the group asking for help while using cell phones ($U=507,000; z= -2,893; p=,004$). The differences in the listing averages of the groups asking for help while using electrical household appliances and the group asking for help while using cell phones were not found to be significant ($U=98,500; z= -1,435; p=,151;p>,05$). Likewise, the differences in the listing averages of the groups asking for help while using electrical household appliances and the group while using mass media were not found to be significant ($U=7,500; z= -1,113; p=,266;p>,05$). Similarly, the differences in the listing averages of the groups asking for help while using cell phone and the group asking for help while using mass media were not found to be significant ($U=946,000; z=-,118; p=,906;p>,05$). Finally, the differences in the listing averages of the group asking for help while using computers and the group asking for help while using mass media were not found to be significant ($U=39,500; z=-1,399; p=,162;p>,05$).

The Kruskal Wallis-H analysis applied to identify whether the participants’ scores in the “self-competence scale” vary significantly depending on the “knowledge about technological products” variable revealed that there is no significant difference between the listing averages of the groups ($\chi^2=,200; p=,655;p>,05$).

RESULTS AND SUGGESTIONS

It is known that human beings have life-long learning skills. In this study, the concept of self-competence perceived by aged people was focused on. Aiming to investigate the attitudes of these people towards technology, the researchers reached a total of 96 aged people between the ages of 50 and 70 so that their attitudes towards technology, their knowledge, their interests and their need for support in terms of technology use could be evaluated. In addition, the relationship between these issues and the perceived self-competence of the aged people was explored.

The study yielded the finding that demographic characteristics, especially the age and the family members are related to the perceived self-competence level of the participants. On the other hand, no significant difference was found in terms of gender, educational level and marital status variables. The findings of the current study both corroborate with and differ from the findings of other related studies in the field. For instance, in Kulakçı, Ayyıldız, Emiroğlu and Koroğlu (2012)’s study, it was found that the self-competence perception is not influenced by the variables of gender and age; however, there are significant differences in the scores of



struggling with obstacles depending on the educational level and the marital status of the aged people. In another study, Morowatisharifabad et al. (2006) found that there is a significantly meaningful relationship between the self-competence perception of the aged people and their age, marital status and educational level; moreover, it was revealed that the self-competence perception level of the men living with their spouses and coming from a good educational background was higher than other groups in their studies (cited by Kulakçı, Ayyıldız, Emiroğlu and Köroğlu, 2012). Similarly, in Yine, Sohng, Sohng and Yeom (2002)'s study, it was found that aged people with a higher level of education had higher mean scores of self-competence than those of other groups with lower level of education. Furthermore, Resnick (1998), Clark and Dodge (1999) concluded that socio-demographic characteristics of the participants in their studies did not considerably affect their self-competence perception (cited by Kulakçı, Ayyıldız, Emiroğlu and Köroğlu, 2012). Finally yet importantly, Loeb, Steffensmeier and Kassab (2010) found that there is no relationship between educational background and self-competence.

One of the reasons why aged people keep away from the technology is that they feel anxious. Their anxiety might stem from various factors. Their successful prior experiences, success stories of other people, positive feedback from others and the positive emotional state are the sources leading to the self-competence belief. When an action ends up with failure, a person with a high level of self-competence tends to think that the reason behind the failure is not him/herself and puts the blame on the method or the strategy used to do the action. To illustrate, the fear of harming the computer or the feeling that they cannot control the computer cause aged people to feel anxious about using computers. Such situations bring about the loss of aged people's self-confidence and result in the belief that they cannot use new technologies (Goodman et al., 2003; cited by Öztürk, Özata and Er, 2012). As also suggested by Öztürk, Özata and Er (2012), aged people feel themselves less self-confident in using new technologies when compared to younger people and they show more resistance to some technologies.

Aged people's perceptions and attitudes become more important in their relation with technology. Therefore, it could be suggested that aged consumers should be enabled to use the technology by changing their perceptions and attitudes. In order to meet this need, mass media should promote informative publications and broadcasts about how elderly people can use technology.

In their study, Öztürk, Özata and Er (2012) emphasize that the lack of outside support considerably affects the motivation to use and adopt the technology and thus aged people are in need of societal support and advise to be able to feel more inclined to technology. In this study, it was also identified that aged people need help from an outsider while using certain technological devices, especially computers and cell phones.

Aged people who have both sufficient knowledge about technological devices and positive attitudes towards them regard technological devices as a fact facilitating life. These people hold the idea that they fall behind all the technological developments. One of the most important reasons for this situation is the lack of self-confidence they feel about using such technological products. To deal with this problem, their anxiety and thus their sense of exclusion should be removed. It can also be recommended that educational programs that will be developed in line with the aged consumers' needs and their physical as well as mental characteristics can be useful to alleviate the anxiety of aged people.

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