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A Study for Determining The Variables Having Impact on Health Manager's Acceptance and Use of Technology: Example of Ankara Province

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Abstract: The object of this study is to determine the variables which predict the intended use of Information and Communication Technologies (ICT) of health managers. The health managers working in public, private and university hospitals in Ankara compose the population of the study. The survey named "Information and Communication Technologies Acceptance and Use Intention" was applied by Koca and Kocak Usluel (2007) with the purpose of obtaining the data for study. 303 managers participated into the survey. One way analysis of variance (ANOVA) is applied for the analysis of the collected data within the scope of study, where multiple regression analysis is applied for unrelated (independent) samples. According to the findings of the study, the age, educational background, study area, foreign language level, institution where they are on duty, the use purpose of technology, used technologies, the duration of the use of technology, the acceptance and the use intention in compliance with the use of technology on daily basis differ between the managers. In addition, the variables, which represent the 61% of the variance belonging to the acceptance and the use intentions of the health managers, are perceived usefulness, perceived ease of use, social factor, anxiety and voluntariness, in order of related priorities.

Keywords: Health Managers, Information and Communication Technologies, The Acceptance and The Use of The Technology

Introduction

Health sector is one of the leading area on which the technological developments show the progress and change in the quickest way. Health sector has been changing and developing continuously depending upon the development of the technology. Although there are several information systems and information and communication technologies, it is clearly seen that office automation systems, hospital information management systems is the most used technologies in the management of the health institutions. Instructing the managers of the health institutions and foundations about these technologies and the use of them (Bal, 2010, p.149), and the management of systems by professional health managers are needed to increase the use percentage of the information and communication technologies. The management of the application software of these hospital management systems, which are used in the health institutions, by non- professional health managers, affect the level of achievement adversely. Levels of achievement are limited with the information and experience level of the users and managers regardless of efficiency of the software. When viewed from this aspect, the efficient use of the information and communication technologies by the health managers is one of the field that must be improved (Ak, 2009). In the study of Özcelik Sirin (2014) which was conducted with the purpose of the effect of information and communication technologies on health sector, it is stated that the health managers which are incompetent about the use of the information system affect the process negatively. The use of the aforementioned technology consciously by managers and executives becomes obligatory in order to follow the rapid and sustained development for health technologies and use these technologies. It is seen that the health managers have difficulties on skills and competencies they need, also following the technology, providing the construction of technology-based new operating models, pioneering the changes and adapting to the environment which is mainly changing the technological developments like innovativeness in the international studies which is conducted for determining the encountered difficulties. (Prybil, 2003; Liang et. al, 2006; White et. al, 2006; Rekhter and Togunov,2006).

Using the technology in an effective way and the getting benefit from the facilities that it gives depends on the voluntariness of the users, ie the physicians and the health managers, on the acceptance and the use of these technologies. It is stated that the technology cannot be defined as successful as long as a technology is not adopted and used by targeted users (Lin and Bhattacharjee, 2010, p. 163). One of the basic problems on the application of the

information and communication technology is the inadequacy of the users on the acceptance of the system. (Süral-Özer et. al, 2012, p. 93).

Great deals of theorems have been presented with the purpose of clarifying the individuals' acceptance and the use of technology. The purpose of these theorems is to determine the factors affecting the acceptance and the use of technology. The first theorem was the "Diffusion of Innovations Theory", which was presented by Rogers in 1959. Then, "Reasoned Action Theory", which was developed by Fishbein and Ajzen (1975), followed this first theorem. Afterwards, these theorems were followed by Technology Acceptance Model (TAM), which is developed by Davis (1989), and "Planned Behaviour Theory", which were developed by Ajzen in 1991. Later, new theorems oriented to acceptance of technology have been presented with the development and expansion of these theorems. "Unified Theory of Acceptance and Use of Technology" (UTAUT) is a model developed with the combining of variables of 8 previous basic theorem and models which were oriented to clarify the acceptance and the use of technology. In the study, any structure is considered in itself with the use of the model proposed by Koca and Kocak-Usluel (2007), and the effects of perceived usefulness, ease of use, anxiety, social factor, self- efficacy, facilitating condition and voluntariness on the acceptance intentions of technology has been investigated.

Perceived usefulness, which took place in the previous models, is the perception of individuals' doing the tasks quicker and easier depending upon the use of information and communication technologies and the increase of their performance and efficiency.

Perceived ease of use, expresses the individuals' perceptions as learning how to use information and communication technologies, finding what is needed to be done in a clearly way and with ease of use when they want to use, and finding the use as clear and understandable.

Anxiety, expresses the concern, fear of anxiety of individual due to timid behaviours of them when using the information and communication technologies, losing the data due to wrong keystrokes, making unrecoverable errors or unknown reasons.

Social factor, is approached in terms of two issues. First is the opinions of individual concerning what technology brings when he/she uses them, as it can exemplified as the promotion in job, getting academically success, increase in his/her own prestige, getting of reward. Second is the opinion of the people whom the individual respects or takes notice of them, when he/she uses technology. For instance, it expresses the use of technology by the

individual as being influenced by the individual having higher profile than him in job or social environment, or whom he respects or gives an importance, or inversely as affecting them.

Self- efficacy, is belief of individual on executing the determined behaviour. It expresses the own- belief of individual on the use of information and communication technologies in the condition that he has enough time, people to help him when he is in trouble, or he is just introduced once about the subject.

Facilitating condition, is the case that individual has enough source material, the people whom he can get help and guidance, or instructions or manuals for the use of information and communication technologies

Voluntariness, expresses that the use of information and communication technologies depend upon completely the willingness of individual and there is no obligatory for the use.

Intention, states the tendency of individual for the use of information and communication technologies and plans of them. This is the planning of use of information and communication technologies, intention of continuing the use information and communication technologies, sureness about the case that he will continue using it.

Determining of problems oriented to the use of the information and communication technologies, and basic variables which affect the acceptance of the users and direct them to use the technology, i.e. revealing the acceptance and the use intentions on technology, is important in terms of the determinacy of existing problems and bringing proposal for solutions of them. The acceptance and the use intentions on technology does not only reveal the acceptance intention of technology, but also reveal the necessity of technological point of view, utility of technology, social factor affecting the use of technology, technological facilities, anxieties, requests and the technological education.

The Objective of the Study

The objective of the study is to try determining the variables which predict the acceptance and the use intentions of health managers about technology. The hypothesis of the study, which are conducted within the scope, are:

H₁: The acceptance and the use intention of health managers about technology show significant difference according to demographic properties.

H₂: Perceived ease of use is a significant predictor about health managers' use of information and communication technology.

H₃: Perceived usefulness is a significant predictor about health managers' use of information and communication technology.

H₄: Social factor is a significant predictor about health managers' use of information and communication technology.

H₅: Voluntariness is a significant predictor about health managers' use of information and communication technology.

H₆: Facilitating conditions is a significant predictor about health managers' use of information and communication technology.

H₇: Anxiety is a significant predictor about health managers' use of information and communication technology.

H₈: Self-efficacy is a significant predictor about health managers' use of information and communication technology.

Method of Study

Review (scanning) method is used in the study to determine the variables which predict the health managers' acceptance and the use intentions about technology.

Population and Sample

The health managers working in public, private and university hospitals in Ankara compose the population of the study. The number of health managers in Ankara is determined as 733 according to official figures. The number of individuals in population (N) is determined as 733, where standard normal distribution value for 95% reliability is determined as 1,96 and lower limit of sample number is determined as 254 for sample error $d=0,05$. Acceptable survey number is 303 and 303 health managers compose the sample of study.

Data Collection Tools

The survey named "Instructors' Acceptance and Use Intentions of Information and Communication Technology", which is developed by Koca and Kocak-Usluel (2007), was

conducted to determine the acceptance and use intentions of managers. In the interpretation part of the findings of the survey which is prepared for instructors, it is highlighted that findings, predictor variables and sort of the variables may differ according to the area and culture. In this regard, the application the survey to the managers using technology in the health field is found suitable to reveal the predictor variables and the difference between the sorts of them. Construct validity was tested by Koca and Kocak-Usluel (2007) and it is decided that 34 subjects is classified under 8 factors. The reliability factor of scale is found as 0.85.

Data Analysis

One way analysis of variance (ANOVA) is applied to determine whether the acceptance and use intention of the manager differs according to demographic properties. Multiple comparison (post-hoc) tests were utilized to reveal which groups cause difference in ANOVA test. Multiple regression analysis was applied to determine the prediction level of dimensions which affects the acceptance and use intentions of managers on technology.

Findings

When the demographic properties of managers is analysed as considering the survey, which was conducted to determine the variable which affects the health managers' acceptance and use intentions about technology, it is determined that men composes 61.4% of the whole sample, where also it is determined that 78.2% married and 84.5% of the population is in the age between 31- 50. 51.5% of the managers were graduated from undergraduate school where 33.3% have Master of Science diploma and 15.2% took the Ph.D. education. 37.6% of the managers took the health management education where 24.1% took the economics and administrative sciences and 22.8% took the medicine or dentistry education. 18.5% of total stated that they are weak in foreign language level, where 45.9% stated average, 23.8% stated good and 11.9% stated very for themselves about the issue. 29.0 % of participants perform their duty on private hospitals, where 21.5% of them perform in university and 49.5% of them perform in public hospitals. 69.6% of managers are in the position of general or assistant manager.

When the data related with the use of information and communication technologies are analysed, it is seen that 74.6% of managers use technology for communication for official correspondence. 7.6 % of total use only desktop computer as a technology where the others

use more than one device for a technology. 72.3 % of total use the defined technology more than 11 years. 49.5 % of total use technology more than 5 hours in a day where 36.6 % of them use between 3 and 4 hours.

The Difference of Managers in Terms of the Acceptance and Use Intention of Technology According to Demographic Properties

In the study, data are tested with ANOVA to find whether the acceptance and the use intention of health managers about technology shows difference according to demographic properties (H_1).

As a result of analysis:

- A statistically significant difference in terms of perceived ease of use ($F=5,438$), intention ($F=5,694$), voluntariness ($F=4,839$), anxiety ($F=5,055$) is determined according to the ages of the managers ($p<0.05$). It can be stated that young managers perceive the technology as utilizable easier and they are more volunteer and intended for using the technology, moreover, their anxiety levels are less than the older managers'. With the aim of determining the difference in the dimensions of technology acceptance and usage intention size result from which group or groups, Scheffe test is used for multiple groups of post-hoc tests. In consequence of Scheffe test, the differences in technology acceptance and usage intention of perceived ease of use, intention and anxiety dimensions appear to be significant in the 31-35 age range managers and 51 years and over managers and 36-40 age range and 51 years and over managers. The differences in technology acceptance and usage intention of voluntariness dimensions appears to be significant in the under 30 years managers and 41-45 age range managers and 51 years and over managers.
- The education level of managers cause significant difference in terms of whole aspects except voluntariness and facilitating conditions ($p<0.05$; perceived ease of use: $F=7.080$; perceived usefulness: $F=5.451$; social factor: $F=7.286$; intention: $F=8.837$; anxiety: $F=10.015$; self-efficacy: $F=4.789$). With the aim of determining the difference in the dimensions of technology acceptance and usage intention size result from which group or groups, LST test is used for multiple groups of post-hoc tests. In consequence of LSD test, the differences in technology acceptance and usage intention of perceived ease of use, perceived usefulness and social factor dimensions appear to be significant in the undergraduate and master of science degree. The differences in technology acceptance and usage intention of intention, anxiety and self-efficacy dimensions appear to be significant

in the undergraduate and master of science and Ph.D. degree. According to these data, it can be stated that managers who have at least M. Sc. Degree regard technology as wieldy, more beneficial, a factor bringing prestige and success, and also they are more influenced from the thought of the other people with low anxiety level and they are intended for using technology more than the others. It is seen that acceptance and use intention of technology increase with the increase of level of education.

- The fields that managers took education show difference in terms of perceived ease of use ($F=2.761$), intention ($F=4.074$) and anxiety ($F=2.975$) ($p<0,05$). With the aim of determining the difference in the dimensions of technology acceptance and usage intention size result from which group or groups, LSD test is used for multiple groups of post-hoc tests. In consequence of LSD test, the differences in technology acceptance and usage intention of perceived ease of use dimension appears to be significant in the health management education and other education. The differences in technology acceptance and usage intention of intention dimension appears to be significant in all groups. The differences in technology acceptance and usage intention of anxiety dimension appears to be significant in the health management education, faculty of economics and administrative sciences and department of nursing. It is seen that the managers who received education in the faculty of economics and administrative sciences have the lowest average on perceived ease of use and the intention of using technology, where they are in second ranking in the anxiety level after managers graduated from department of nursing.
- Foreign language level of managers causes significant statistical difference in terms of perceived ease of use ($F=12.168$), social factor ($F=5.492$), intention ($F=3.716$), facilitating conditions ($F=5.936$) and anxiety ($F=7.378$) ($p<0.05$). With the aim of determining the difference in the dimensions of technology acceptance and usage intention size result from which group or groups, LSD test is used for multiple groups of post-hoc tests. In consequence of LSD test, the differences in technology acceptance and usage intention of perceived ease of use, intention, facilitating conditions and anxiety dimensions appear to be significant in all groups. The differences in social factor dimensions appears to be significant in the weak foreign language level, stated average and stated good. It can be stated that the managers who have good or very good level of foreign language regard technology as wieldy and they have more resources, guides and facilities about the use of technology, moreover, they are influenced from the other people more than the others and they are more intended for using technology

- Institutions where the managers are on duty shows significant differences in terms of perceived ease of use ($F=7.219$), perceived usefulness ($F=6.046$), voluntariness ($F=4.050$), facilitating conditions ($F=7.845$) and self-efficacy ($F=3.963$) ($p<0.05$). With the aim of determining the difference in the dimensions of technology acceptance and usage intention size result from which group or groups, LSD test is used for multiple groups of post-hoc tests. In consequence of LSD test, the differences in technology acceptance and usage intention of perceived ease of use, perceived usefulness, voluntariness, facilitating conditions and self-efficacy dimensions appear to be significant in all groups. As a result, the managers who are performing their duties in university hospitals have more average values than the others in terms of perceived usefulness, facilitating conditions and self-efficacy. The managers performing their duties in private hospitals regard technology as wieldy and their self- efficacy levels are more than the others.
- Managers' intention of using technology show significant differences in terms of perceived ease of use ($F=2.631$), facilitating conditions ($F=3.597$), self- efficacy ($F=2.735$) ($p<0.05$). It is seen that the managers who use technology in versatile way regard technology as wieldy and they have more resources, facility and support about the use of technology, moreover, their self-efficacy level is higher than the others. From a different viewpoint, the managers who have high level of self- efficacy, regard technology as wieldy and have the required supports are using technology in a versatile way.
- The technologies that managers use show significant difference in terms of the perceived ease of use ($F=13.024$), perceived usefulness ($F=3.395$), intention ($F=9.204$), voluntariness ($F=3,345$), facilitating conditions ($F=4.609$) and anxiety ($F=8.151$) ($p<0.05$). It can be stated that the increase of using technology increases the perceived ease of use, perceived usefulness, social factor, and voluntariness, facilitating conditions and the intention of using technology where it decreases anxiety. From a different viewpoint, the managers who regard technology as wieldy and beneficial, use the technology with his voluntariness and have the facility, resources and support are more intended for using technology.
- The duration (years) of using technology shows significant difference in terms of perceived ease of use ($F=12.872$), perceived usefulness ($F=11.095$), intention ($F=9.613$), voluntariness ($F=4.642$), facilitating conditions ($F=7.277$) and anxiety ($F=4.811$) ($p<0.05$).). With the aim of determining the difference in the dimensions of technology acceptance and usage intention size result from which group or groups, LSD test is used for multiple groups of post-hoc tests. In consequence of LSD test, the differences in technology acceptance and

usage intention of perceived ease of use, facilitating conditions and anxiety dimensions appear to be significant in the 1-5 years and more than 11 years. The differences in perceived usefulness, intention and voluntariness dimensions appear to be significant in all groups. It is seen that the managers who use technology for so long regard the technology as wieldy and beneficial and they are more volunteer and intended for using technology, moreover, they have more facility and support where their anxiety level is less than the others.

-The daily use of technology shows significant differences in terms of perceived ease of use ($F=15.355$), perceived usefulness ($F=5.079$), social factor ($F=3.172$), intention ($F=9.816$), facilitating conditions ($F=10.050$), anxiety ($F=7.588$) and self-efficacy ($F= 4.611$) aspects ($p<0.05$). With the aim of determining the difference in the dimensions of technology acceptance and usage intention size result from which group or groups, LSD test is used for multiple groups of post-hoc tests. In consequence of LSD test, the differences in technology acceptance and usage intention of perceived ease of use dimension appears to be significant in all groups. The differences in perceived usefulness, social factor, intention, facilitating conditions, anxiety and self-efficacy dimensions appear to be significant in the 1-2 hours and more than 5 hours.

Variables Predicting the Intention of Managers on Using ICT

The correlation analysis results are given in Table 1. The high correlation coefficient between independent variables and being higher than 1.5-2.5 range of Durbin-Watson value raises the multicollinearity problem. Referring to the following correlation table, it can be seen that, the correlation coefficients between the independent variables are lower than 0.80, and also it can be monitored that the Durbin-Watson value is between 1.5-2.5 ranges. According to this, it can be denoted that there is no multicollinearity problem.

Table 1. The Correlation Analysis Results Related to Variables Affecting Managers' Acceptance and Use Intention of Technology

	<i>Perceived Ease of Use</i>	<i>Perceived Usefulness</i>	<i>Social Factor</i>	<i>Voluntariness</i>	<i>Facilitating Conditions</i>	<i>Anxiety</i>	<i>Self-Efficacy</i>
<i>Perceived Ease of Use</i>	1.000	-.289	-.049	-.139	-.265	.505	-.183
<i>Perceived Usefulness</i>	-.289	1.000	-.183	.076	-.223	.086	-.037
<i>Social Factor</i>	-.049	-.183	1.000	-.199	-.109	.010	-.296
<i>Voluntariness</i>	-.139	.076	-.199	1.000	-.059	-.054	.287

<i>Facilitating Conditions</i>	-.265	-.223	-.109	-.059	1.000	-.113	-.105
<i>Anxiety</i>	.505	.086	.010	-.054	-.113	1.000	-.063
<i>Self- Efficacy</i>	-.183	-.037	-.296	.287	-.105	-.063	1.000
<i>Durbin-Watson:</i>	1.82						

The multiple regression analysis results, which were obtained to determine variables which are predicting the intention of managers on using ICT, are demonstrated at Table 2.

Table 2. The Multiple Regression Analysis Results Related to Variables Affecting Managers' Acceptance and Use Intention of Technology

Variable	B	SH _B	β	t	p	Dual r	Partial r
<i>Intention (Constant)</i>	.768	.283		.2711	.007	-	-
<i>Perceived Ease of Use</i>	.230	.050	.249	.4570	.000	.651	.257
<i>Perceived Usefulness</i>	.404	.056	.334	.7219	.000	.642	.387
<i>Social Factor</i>	.172	.036	.203	.4748	.000	.489	.266
<i>Voluntariness</i>	.051	.022	.088	.2267	.024	.150	.131
<i>Facilitating Conditions</i>	.033	.040	.036	.816	.415	.424	.047
<i>Anxiety</i>	-.131	.031	-.189	4185	.000	-.506	-.237
<i>Self- Efficacy</i>	.028	.038	.032	.748	.455	.318	.044

R=.781; R²=.610

F (7.302) =65.965 ; p=.000

When binary and partial correlations between predictor variable (perceived ease of use, perceived usefulness, social factor, voluntariness, facilitating conditions, anxiety, self-efficacy) and predicted/dependent variable (intention) are examined, it is seen that there is a positive and medium level correlation between perceived ease of use and intention ($r=0.65$); however, when the other variables are controlled correlation between the two variables is calculated as $r=0.26$. Between perceived usefulness and intention it is observed that there is a positive and medium level correlation ($r=0.64$), however, when the other variables are controlled the correlation between the two variables is calculated as $r=0.39$. There is also positive and medium level correlation between social factor and intention ($r=0.49$), but when the other variables are controlled the correlation becomes 0.27 positive and low binary correlation calculated between voluntariness score of the managers and intention ($r=0.15$) becomes $r=0.13$ when the other variables are controlled. There is a positive and medium level correlation between facilitating conditions and intention ($r=0.42$), however when the other

variables are controlled it is seen that the correlation between the two variables becomes positive at low level ($r=0.05$). Negative and medium level correlation between anxiety score of the managers and intention ($r=-0.51$) becomes negative at low level ($r=-0.24$) when the other variables are controlled. Lastly, positive and low level correlation between self-efficacy and intention ($r=0.32$) becomes $r=0.04$ when the other variables are controlled.

All the variables of perceived ease of use, perceived usefulness, social factor, voluntariness, facilitating conditions, anxiety and self-efficacy how a high level and meaningful correlation ($R=0.781$; $R^2=0.610$; $p<0.05$) with the managers' behavioural intention scores for using ICT. All of these seven variables together explain 61% of the total variance in intention.

According to the standardised regression coefficient (β) the predictor variables' relative order of importance on intention is respectively perceived usefulness, perceived ease of use, social factor, anxiety, voluntariness, facilitating conditions and self-efficacy. When the t-test results concerning the meaningfulness of regression coefficient are analysed it is seen that while the variables of perceived ease of use (H_2 have been accepted), perceived usefulness (H_3 have been accepted), social factor (H_4 have been accepted), voluntariness (H_5 have been accepted) and anxiety (H_7 have been accepted) are meaningful predictors on intention, facilitating conditions (H_6 have not been accepted) and self-efficacy (H_8 have not been accepted) do not have a meaningful effect on intention.

According to the regression analysis results, the regression equation (mathematical model) concerning the prediction of behavioural intention can be given in this way:

$$\text{INTENTION OF USING ICT} = 0.768 + 0.230\text{PERCEIVED EASE OF USE} + 0.404\text{PERCEIVED USEFULLNESS} + 0.172\text{SOCIAL FACTOR} - 0.051\text{VOLUNTARINESS} - 0.131\text{ANXIETY}$$

Conclusion

The study, which was conducted to determine the variables affecting managers' intention of acceptance and use on technology, was figured as taking the model proposed by Koca and Kocak-Usluel (2007) as a basis. This study was carried out in 2015 with 303 managers which perform their duties in university, private and public hospitals in Ankara. According to findings, it is concluded that there are differences between the managers, in the issue of the intention of acceptance and the use of technology, related with their age, institutions where they perform, fields where they received education, foreign language levels, level of

education, use purpose of technology, duration of use of technology, daily duration of using technology.

There are also results in the literature which give similar results with the result of this survey. Phillips and Sternthal (1977, cited by Ozkan and Purutcuoglu, 2010, p.38) stated that older individuals behave unwilling to use new products due to their complicated structure, where Morrell and Echt (1997, cited by Ozkan and Purutcuoglu, 2010, p.38) stated that older people get lower benefit than the others due to the missing statements in manual. Moreover, Plude and Hoyer (1986) stated that old ages cause the difficulties in getting focused to process and knowledge of complicated stimulants which are needed for using software systems.

The statistically significant relation was found between frequency of use and the perception of self- efficacy in the study of Kocak Usluel and Seferoglu (2003), where they carried out with the purpose of determining the perception of self-efficacy of instructors about the use of computer as taking the instructors' frequency of using technology as a purpose. Verhoven et al. (2010) investigated whether intention of computer use differs related with the frequency of computer using, having resources and perception of self- efficacy, and they concluded that there is a positive elation between having computer resources and intention of computer use.

According to this result, intention of computer use increases when having the technological resources increases. In addition, it is seen in some studies (Agarwall and Prasad, 1997; Davis et al., 1989) about the determination of effects of experience on the behavioural intention of acceptance and use of ICT that perceived ease of use significantly differs when using ICT as volunteer and obligatory. Benefit provided by system, i.e. perceived usefulness, decrease the effect of ease of use in upcoming levels where perceived ease of use has bigger effect in the first levels of action- based structures (Davis et al., 1989).

Moreover, it is seen that perception of self-efficacy for the use of technology shows significant difference according to the duration of use of technology (years) and the frequency of it (Koçak Usluel and Seferoğlu, 2003; Kutluca and Ekici, 2010). It is stated that the perception of self- efficacy of individuals increase when the duration of use of technology (years) and frequency (hours, time) increase.

The multiple regression analysis was conducted to determine the prediction level of variables which predict the health managers' intention of acceptance and use of ICT. In the lights of results, it is seen that perceived ease of use, perceived usefulness, social factor, voluntariness and anxiety significantly predict the intention. In the model of Koca and Kocak-Usluel (2007)

which is taken as basis in the study, it is concluded that perceived usefulness, ease of use, social factor and self- efficacy have positive effects on the intention of ICT use and they express 65% of the behavioural intention.

When the literature is reviewed, it is seen that perceived usefulness, perceived ease of use (Aksoy and Kara, 2013; Chang and Tung, 2008; Chau and Hu, 2002; Haitham, 2014; Hu et.al, 1999; Kaşmer-Erdem, 2011; Pan and Marsh, 2010; Raaij and Schepers, 2008; Rezai, et. al., 2008; Richardson-Moore, 2012; Süral-Özer et. al., 2012; Svendsen et. al.,2013; Turan and Çolakoğlu, 2008; Verhoeven et.al., 2010; Yuen and Ma, 2002;), social factor (Aksoy and Kara, 2013; Hsieh, 2015; Kaşmer-Erdem, 2011; Lee et. al., 2012; Pan and Marsh, 2010; Raaij and Schepers, 2008; Richardson-Moore, 2012; Svendsen et.al., 2013; Turan and Çolakoğlu, 2008), voluntariness (Venkatesh, 2003) and anxiety (Raaij and Schepers, 2008; Rezaei et al., 2008; Verhoeven et al., 2010) predict the intention of ICT use.

As a result, it is concluded that the intention of health managers about the use and the acceptance of ICT is influenced from the variables named as perceived usefulness, perceived ease of use, social factor, voluntariness and anxiety, and it is specified that these variables clarify 61% of the variance.

The model, including the variables that causes differences in the technology acceptance and usage, is given in Figure 1.

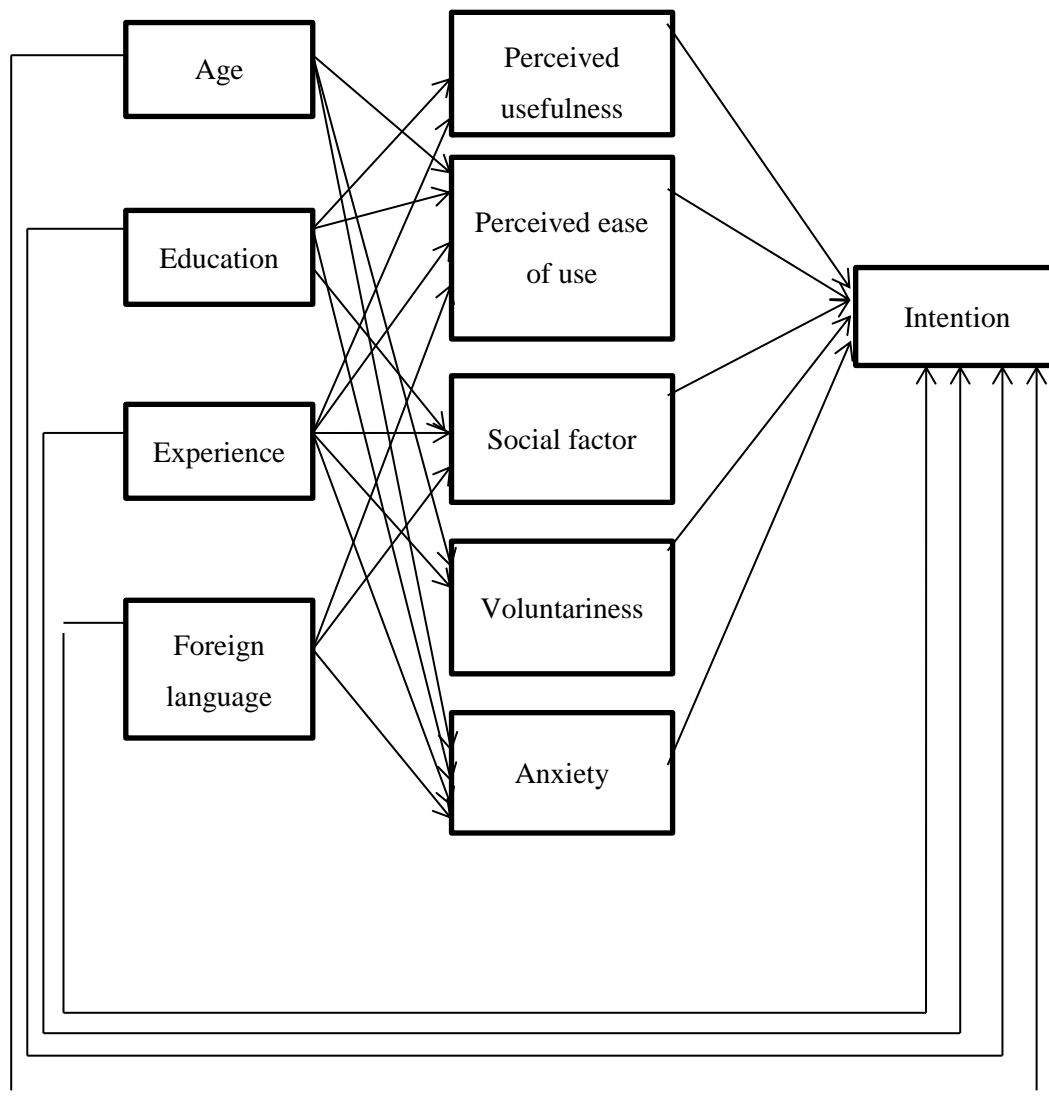


Figure 1. Variables affecting managers' intention of acceptance and use of technology

Suggestions

In the survey, it is seen that perceived ease of use, social factor, voluntariness and anxiety are the variables which predict the intention of use ICT. The ease of use for managers and creating the perception of usefulness will decrease their anxiety and increase their voluntariness. Hence, the efficient communication between managers and technology shall be provided.

Office Automation Systems and Hospital Information Management Systems, which are used in health institutions and foundations, have been continuously renovated. For this reason, it is important and necessary that managers shall be included to in-service training programs

related with these technologies in order to overcome their deficiencies and make them follow the developments.

Moreover, extensive and efficient education about the ICT and Hospital Information Management Systems in the institutions which give health management education will cause the health manager candidates graduate in more equipped way. The managers who use technology in a good way may start their career development from higher level.

Technological experience is one of the importance variables affecting the acceptance and use of technology. The extensive use of technology during the education process shall be provided for potential managers who take the health management education.

The experimental studies about determining the managers' intention of acceptance and use of technology may be done as taking the findings of this study as basis.

The prediction level of variables on the intention in the study may also be evaluated with Structural Equation Modeling.

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