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Presenting Mobile Wireless Technology Acceptance Model with Fuzzy Approach in active companies in information technology sector

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ABSTRACT

Nowadays, mobile devices have come up as the most famous tools for increasing productiveness of management, accessibility and also functional efficacy. As laptops, smart phones, tablets, ultra books and so on are being widely used by people, the population of wireless internet users is also enlarging. Pervasiveness of such tools helps managers to reach required information and process it at any time and location. This way, communication of information and elimination of mistakes and delay occurs less. The goal of this research is to present a mobile wireless technology acceptance model in companies activated in information technology sector. The research methodology is done with fuzzy approach through consulting with information technology experts and the elements of the model are defined. The results analyzed by SPSS demonstrate that perceived usefulness, perceived ease of use, perceived quality and security are vital factors that impact model of mobile wireless technology acceptance.

KEYWORDS: Technology Acceptance Model, mobile technology, fuzzy approach, linguistic variables, triangular fuzzy average.

1. INTRODUCTION

Mobile softwareenable companies to transmit data through wireless communication in the digital age, so they offer and maintain a competitive advantage. These devices can create tangible and intangible advantages for companies. Wireless devices allow organizations to control and manage business in more efficacious way; therefore, they offer benefits and drawbacks for individual and companies like empowering workforce, exceling remote services, capturing new markets and suchlike [10]. Delays in on time companionship with market trends cause threats for competitive advantages in today's competitive market [1]. Kumar states (2012) that: enterprise mobility (EM) is defined as a system that allows and facilitates communication within the company, regardless of the physical location. The importance of mobility for companies involve maximizing opportunities to effectively communicate its objectives and goals. Mobility by internal interaction may occur between employees, for example, by sharing data or reports without having to wait to get to the office. Mobility by external interaction may occur with current customers, prospects and suppliers, sending promotions, and purchase orders of products can be made anytime and anywhere without the need to be connected to a desktop computer. It has the effect of increasing the speed of business. Mobile communication supports most of the business activities through its value chain [2].

Nevertheless, not all personnel aim to pick up wireless technology in the workplace even if they have such mobile devices. Horrigan states that there is an interval between those who possess mobile devices that can access the internet and those who actually utilize their internet access. Wu, et al state that %92 of all American at least has a wireless gadget, but %80 of this population are online users of the internet [10].

2. LITERATURE REVIEW

2.1. Technology acceptance model

Acceptance applies to the step that which for example a mobile device is chosen to be used by a staff or a company [5]. TAM deviated from the Theory of Reasoned Action (TRA), was originally developed by Davis. Users of a special application system perceive the system practical and applicable only when the system helps them to perfect and excel their job performance within the organization. Moreover, the user considers the system to be easy to use if its application sans additional attempt and trouble.

Davis in Technology Acceptance Model states two special beliefs determine user attitude toward an information system/technology which are perceived Usefulness (PU) and Perceived Ease of Use (PEOU). Attitude results in behavioral intention (BI) which in turn leads to actual behavior. The direct belief-intention relationship demonstrates how an information technology will improve users' performance and forms intention to use. Users' beliefs of usefulness have direct impact on intention to toward information technology adoption and have indirect influence on intention through attitude. Ultimately, perceived ease of use influences on perceived usefulness (fig. 1)[10]..

TAM has been widely used to explain users' acceptance and use of mobile technology (Kim & Garrison, 2009; Kim, Park & Morrison, 2008; Negahban, 2012; Son, Park, Kim & Chon, 2012), mobile games (Lin & Li, 2011), financial mobile services (Chen, 2008; Hsu, Wang & Lin, 2011), mobile health care services (Lin, 2011), etc. [8]. TAM is being

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universally used for examining technology acceptance of users in different aspects such as electronic commerce, World Wide Web, email, games, etc. However, little attention is paid to wireless technology acceptance by users in an organizational field. Unless personnel employed in an industry do not adopt and use these devices, benefits cannot be understood despite being apparent [9]. Success of a mobile device depends on tendency of intention of users for utilizing it in doing their daily responsibilities. Absence of user acceptance of an information technology is a significant limitation in prosperous implementing of an information technology in a company. Consequently, user acceptance is considered as an acute factor in successful implementation of an information technology. Identifying factors which effect on mobile wireless device acceptance is necessary for ensuring that investment on such tools is successful. Recognizing such factors is the goal of this research.

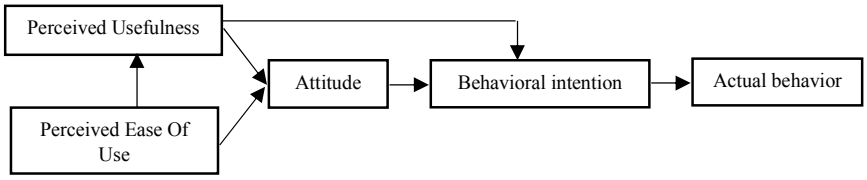

Fig. 1- TAM of Davis

We continue by explaining some of the definitions in most of the Technology Acceptance Models in various articles.

- Perceived Usefulness: is the degree to which an individual believes that using a specific Information Technology would enhance his or her job performance.
- Perceive Ease Of Use: is the degree to which a user believes that using a specific Information Technology would be free of effort.
- User Satisfaction: is user's perception of richness, collectiveness, and quality of information that he or she would receive from an Information Technology.
- Perceived Performance: is performance compatibility of information with user's expectations. Perceived performance is also relevant to user's perception of risks and benefits of receiving information.

As security and Perceived Quality (PQ) are cited in the current research's technology acceptance model, it has to be stated that security is taking care of information and information systems of illegal activities; these activities contain accessibility, usage, disclosure, read, duplication or record, destruction, change, and manipulation. Gijon quotes from Hardie and Walsh about quality that:satisfaction achieving is related to the quality, so it should be defined before studying consumer satisfaction. Quality has many different definitions and not one is universally accepted. He also quotes from Parasuraman, Zeithaml, and Berry (1985) that: service quality can be defined as the discrepancy between a customer's expectation of a service and the customer's perception of the service offerings [4].

2.2. Mobile devices

The access to mobile technologies creates new opportunities for business managers. Mobile technologies help users to modify when, where and how to do their job tasks [5]. Today, mobile phone is an essential device in our daily lives. The propagation of mobile devices along with omnipresent internet access has significantly changed our lives by changing the essence of mobile phones from simple voice and messaging devices to highly flexible and multifunctional devices that can be used almost anytime and anywhere for a wide range of purposes. Mobile technology has dramatically changed not only the way many businesses worked, but also the way we live, communicate with others, our social habits, behavior and relationships with others [9], as fuska stated in his research that "The global mobile industry is the most vibrant, fastest growing, and that over 2.7 billion people in 2013 are using the internet, which corresponds to 39% of the world's population" [3].

2.3. Fuzzy logic

The "fuzzy theory" was first presented by Professor LotfiAsgarzadeh in 1965. The fuzzy theory is a theory for measurements in uncertainty conditions. Human being has always mentioned words such as «good», «bad», «pretty», «hot», «young» that do not have especial boundaries, but in most sciences such as mathematics and logics it is hypothesized that there exist exactly defined boundaries and a topic may set in its limitation or not. Issues like "everything" or "nothing", "man" or "woman", "black" or "white", "alive" or "dead" "nil" or "one", "A" or "anti A", etc. have become abundant. In such sciences a term can be right or wrong. The real phenomena are "black" or "white". The reflection based on the two-valued system of black and white tracks back to Aristotle's era [7:188]. Fuzzy logic can be named as grey logic. The two-valued logic denies the grey logic and considers it as completely black or completely white. The fuzzy logic states that the whole fact is a grey fact, but the two-valued logic states the whole fact is black or white [7:22].

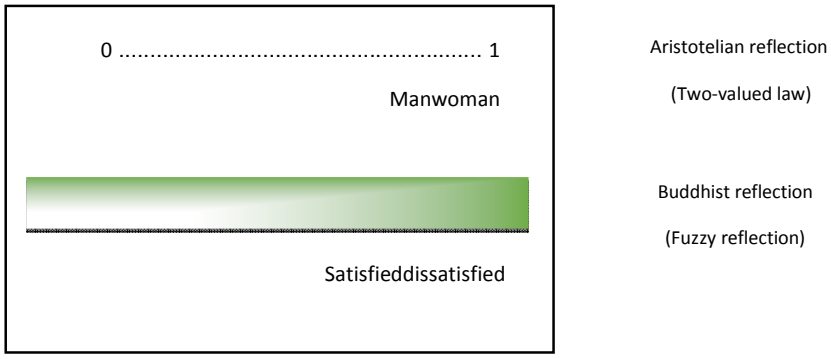

Fig. 2- Two-valued law and fuzzy reflection

The literature review and experts' opinions lead us to the following research questions:

1. Does PU has a significant effect on customer satisfaction?
2. Does PEOU has a significant effect on customer satisfaction?
3. Does PQ has a significant effect on customer satisfaction?
4. Does security has a significant effect on customer satisfaction?
5. Does PEOU has a significant effect on PU?
6. Does security has a significant effect on PQ?
7. Does customer satisfaction has a significant effect on Perceived Performance?

3. Research model

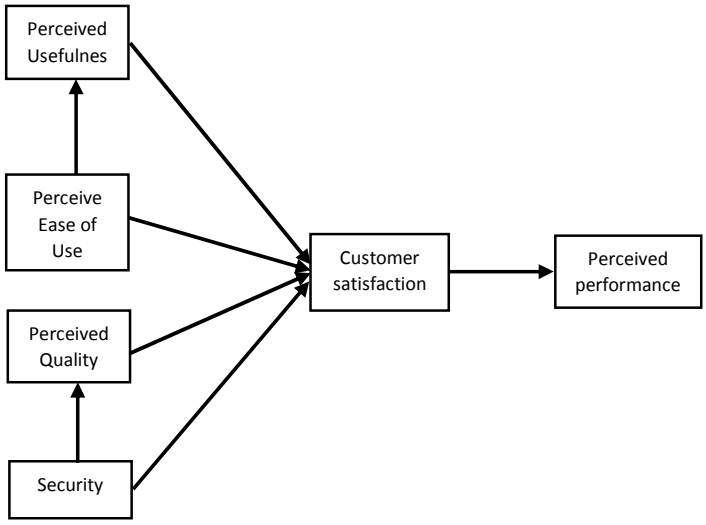

Fig. 3- Conceptual research model

4. RESEARCH METHODOLOGY

Constructions of the proposed technology acceptance model were presented in a questionnaire containing 14 measures to be evaluated by IT experts. In order to avoid complexities, the alternatives of each question were modified as a 5 alternative Lickert scale as table 1. At the end of the questionnaire, a couple of other questions were asked from the experts to check if there are any other variables relative to IT sector from the respondents' point of view. Most of the experts mentioned two items "security and quality", and counted them as of very high importance in information technology sector. Therefore, a second questionnaire was designed in order to measure the new constructions, security and Perceived Quality. The questionnaires were sent to 55 experts including IT programmers, staff, managers and supervisors that 50 IT experts responded to them. Before presenting the statistical and analytical consequences of the questionnaires, it is necessary to proceed to the method of analyzing the results. As the Lickert scale presents some limitations in responding to the questions for the respondents and leads to inexact results, so it was decided to use the fuzzy approach in analyzing the responses in order to reach more accurate results. Fuzzy numbers are extensions of deterministic numbers [7:215]. As the responses to the questions were specified by qualitative numbers (from very much

to very low), to convert these numbers to deterministic ones, a triangular fuzzy number was assigned to each alternative as fig. 4 [6] and Table 2.

Table 1- Applied Lickert scale in the questionnaire

Very low	low	medium	much	Very much
1	2	3	4	5

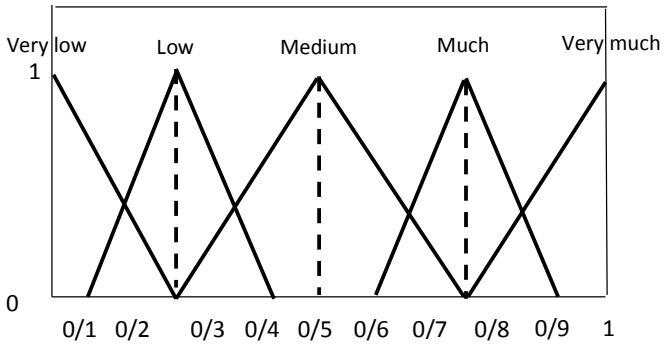

Fig. 4. Defining linguistic variables

Afterwards, in order to be able to use SPSS and the necessity of allocating deterministic numbers to the alternatives, the fuzzy alternatives were changed to deterministic numbers with fuzzy logic concepts and the formula of transferring fuzzy numbers to deterministic Minkowsky numbers (Table 2).

Formula (1): Minkowsky Formula $x = \frac{\beta-\alpha}{4}$

Table 2- Triangular fuzzy numbers

Qualitative number	Triangular fuzzy number (m, α, β)	(x)Definite number
Very much	(1,0/25,0)	0/9375
much	(0/75,0/15,0/15)	0/75
medium	(0/5,0/25,0/25)	0/5
low	(0/25,0/15,0/15)	0/25
Very low	(0,0,0/25)	0/0625

Reliability is one of the technical qualifications of the measurement mean. The mentioned concept deals with the idea that how much the measurement mean achieves the same results in the same conditions. In order to measure the reliability of this research, Cronbach alpha coefficient is used. The 0/71 α demonstrates the high correlation of the research's questions. In other words, the reliability of the test is high (Table 3).

Table 3- Cronbach Alpha

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.71	.715	23

5. Research findings

In the first phase, the conceptual model and the explanations of the constructions and measures were sent to the expert group. The results of counting the responses are presented in Table 4. The fuzzy averages of each measure is calculated according to the results of this table.

Table 4- Results of counting responses of the first phase poll

Type of measure	measures	Degree of agreement				
		Very much	much	medium	low	Very low
Perceived Usefulness	accomplishing job tasks more quickly	4	5	0	1	0
	Improve quality of performing job tasks	2	5	1	2	0
	Accomplish more work	3	3	1	3	0
	Do job tasks easier	3	4	1	2	0
	Enhance effectiveness	3	3	3	1	0
	Job usefulness	4	4	2	0	0
Perceived Ease Of Use	Easiness of learning to work with mobile devices	7	2	1	0	0
	Easiness of working with mobile devices	7	2	1	0	0
	Clearness and understandability of interaction with mobile devices	4	6	0	0	0
	Easiness of use	5	3	2	0	0
Customer Satisfaction	Fulfil requirements	3	3	3	1	0
	Satisfaction	5	2	3	0	0
Perceived Performance	Decreased consumed time	5	1	2	2	0
	Decreased agony to do job tasks	6	0	3	1	0

Formula (2): $$A^{(i)} = \left(a_1^i, a_2^i, a_3^i, a_4^i\right), \quad i = 1,2,3,\ldots,n$$

Formula (3): $$A_m = \left(a_{m1}^i, a_{m2}^i, a_{m3}^i, a_{m4}^i\right) = \left(1/n \sum a_1^{(i)}, 1/n \sum a_2^{(i)}, 1/n \sum a_3^{(i)}, 1/n \sum a_4^{(i)}\right)$$

Table 5- average of experts' opinions in the first questionnaire

Type of measure	measures	Degree of agreement			
		Triangular fuzzy number			Defuzzied average
		α	β	m	x
Perceived Usefulness	accomplishing job tasks more quickly	0/09	0/19	0/20	0/23
	Improve quality of performing job tasks	0/13	0/18	0/33	0/34
	Accomplish more work	0/12	0/19	0/35	0/37
	Do job tasks easier	0/12	0/19	0/30	0/32
	Enhance effectiveness	0/14	0/21	0/30	0/32
	Job usefulness	0/11	0/21	0/20	0/23
Perceived Ease Of Use	Easiness of learning to work with mobile devices	0/06	0/23	0/10	0/14
	Easiness of working with mobile devices	0/06	0/23	0/10	0/14
	Clearness and understandability of interaction with mobile devices	0/09	0/19	0/15	0/18
	Easiness of use	0/10	0/22	0/18	0/19
Customer Satisfaction	Fulfil requirements	0/14	0/21	0/30	0/32
	Satisfaction	0/11	0/23	0/20	0/23
Perceived Performance	Decreased consumed time	0/10	0/22	0/28	0/31
	Decreased agony to do job tasks	0/09	0/24	0/23	0/26

In the above relations, $A^{(i)}$shows the opinion of the expert i and A_m shows the average of the experts' opinions. The results are shown in Table 5.

As some of the experts expressed new constructions and measures according to the identity of information technology field, the complementary questionnaire was distributed among themwhich the results are demonstrated in table 6.

Table 6- results of counting responses of the second phase poll

Type of measure	measures	Degree of agreement				
		Very much	much	medium	low	Very low
Perceived Quality	Attractiveness of services and equipment of mobile devices	2	5	3	0	0
	Satisfaction of mobile device quality in compare with expended costs	1	4	3	2	0
	Resolving problems and deficits of mobile device by the company	1	4	4	1	0
	Receiving up to date job information	2	3	5	0	0
	Exploiting job information when needed	0	4	6	0	0
Security	Allocating sufficient credit to maintain security	1	3	3	3	0
	Top management's awareness of necessity of maintaining security	2	2	5	1	0
	Existing hardware and security department to maintain security and protect company information	2	1	5	2	0
	Safety in using wireless mobile devices	1	3	5	1	0

Results of counting responses of the second phase were analyzed by formulas 1, 2, and 3 with fuzzy approach and are presented in table 7.

Table 7- average of experts' opinions in the second questionnaire

Type of measure	measures	Degree of agreement			
		Triangular fuzzy number			Defuzzied average
		α	β	m	x
Perceived Quality	Attractiveness of services and equipment of mobile devices	0/15	0/20	0/28	0/29
	Satisfaction of mobile device quality in compare with expended costs	0/17	0/19	0/40	0/41
	Resolving problems and deficits of mobile device by the company	0/18	0/20	0/38	0/38
	Receiving up to date job information	0/17	0/22	0/33	0/34
	Exploiting job information when needed	0/21	0/21	0/40	0/40
Security	Allocating sufficient credit to maintain	0/17	0/19	0/45	0/46

	security				
	Top management's awareness of necessity of maintaining security	0/17	0/22	0/38	0/39
	Existing hardware and security department to maintain security and protect company information	0/17	0/22	0/43	0/44
	Safety in using wireless mobile devices	0/21	0/21	0/40	0/41

In this section the data resulted from the research are analyzed and this process contains two parts; in descriptive statistics part, the research's data are described through statistics such as frequency and frequency percentage and in inferential statistics part, the research's questions are tested by the appropriate statistic. Regression analysis is used to answer the research's questions.

5.1. Descriptive statistics

Table 8- frequency and frequency percentage of experts' job position

experts' job position	frequency	frequency percentage
Manager	14	28
Supervisor	8	16
Programmer	16	32
staff	12	24

According to table 8, job position of 28% of the experts is manager, 16% is supervisor, 32% is programmer and 24% is staff.

Table 9- frequency and frequency percentage of experts using mobile devices according to job position

	Smart phone		Ultra-book		IPad		Tablet		Lap top	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
manager	12	32/43	5	31/25	3	20	6	22/22	3	21/42
supervisor	7	18/91	4	21/05	1	6/6	5	18/51	2	14/28
programmer	11	29/72	6	31/57	7	46/6	9	33/3	5	35/71
staff	7	18/91	4	21/05	4	26/6	7	25/92	4	28/57
Total	**37**	**100**	**19**	**100**	**15**	**100**	**27**	**100**	**14**	**100**

According to table 9:

- 37 of the experts use smart phones that 32/43% of them are managers, 18/91% are supervisors, 29/72% are programmers and 18/91% are staff.
- 19 of the experts use ultra-book that 31/25% of them are managers, 21/05% of them are supervisors and 21/05 of them are staff.
- 15 of the experts use IPad that 20% of them are managers, 6/6% are supervisors, 46/6% are programmers and 26/6% are staff.
- 27 of the experts use tablet that 22/22% of them are managers, 18/51% are supervisors, 33/3% are programmers and 25/92% are staff.
- 14 of the experts use lap top that 21/42% are managers, 14/28% are supervisors, 35/71% are programmers and 28/57% are staff.

5.2. Inferential statistics

In this section, we answer the project questions by the appropriate statistic.

First question: Does Perceived Usefulness has a significant effect on customer satisfaction?

Table 10- summary of regression model fitness statistics

Model	R.	R^2
1	0/87	75/69

According to table 10 and R square between perceived usefulness and customer satisfaction it can be said that 75/69 % of the criterion variable changes (customer satisfaction) are predicted byindependentvariable(perceived usefulness).

Table 11- summary of variance regression model analysis

Model		Mean square	Degree of freedom	f	sig
1	Source regression	1/17	1	25/67	0/001
	The remaining source	0/36	48		
	Total		49		

The resulted f (25/67) that is significant in the error level of less than 0/05 shows that the independent variable(perceived usefulness)has a high capacity of clarification and is able to explain rate of changeand variance of criterion variable (customer satisfaction).

Table 12- Standardized coefficients of independent variable (Perceived Usefulness) on criterion variable(Customer Satisfaction)

Model	Non Standardized coefficients		Standardized coefficients	t	sig
1	B	Standard deviation error	Beta		
Fixed regression	0/534	0/26		2/5	0/04
Perceived usefulness	0/319	0/06	0/873	5/06	0/001

Standardized coefficient for the variable perceived usefulness (0/87) is significant in the error level of less than 0/05, so it can be said that experts' perceived usefulness effects their satisfaction. This means with one standard deviation increase in the perceived usefulness, the customer satisfaction increases to 87%.

Second question: Does Perceived Ease of Usehas a significant effect on customer satisfaction?

Table 13- summary of regression model fitness statistics

Model	R.	R^2
1	0/73	23/29

According to table 13 and R square between perceived ease of use and customer satisfaction it can be said that 23/29 % of the criterion variable changes (customer satisfaction) are predicted byindependent variable (perceived ease of use).

Table 14- summary of variance regression model analysis

Model		Mean square	Degree of freedom	f	sig
1	Source regression	1/03	1	20/66	0/001
	The remaining source	0/46	48		
	Total		49		

The resulted f (20/66) that is significant in the error level of less than 0/05 shows that independent variable(perceived ease of use) has a high capacity of clarification and is able to explain rate of changeand variance ofcriterion variable (customer satisfaction).

Table 15- Standardized coefficients of independent variable (Perceived Ease of Use) on criterion variable (Customer Satisfaction)

Model	Non Standardized coefficients		Standardized coefficients	t	sig
1	B	Standard deviation error	Beta		
Fixed regression	1/54	0/26		5/8	0/001
Perceived Ease of Use	0/201	0/08	0/73	4/25	0/001

Standardized coefficient for the variable perceived ease of use (0/73) is significant in the error level of less than 0/05, so it can be said that experts' perceived ease of use effects their satisfaction. This means with one standard deviation increase in the perceived ease of use, the customer satisfaction increases to 73%.

Third question: Does PQ has a significant effect on customer satisfaction?

Table 16- summary of regression model fitness statistics

Model	R.	R^2
1	0/35	12/25

According to table 16 and R square between perceived quality and customer satisfaction it can be said that 12/25 % of the criterion variable changes (customer satisfaction) are predicted byindependent variable (perceived quality).

Table 17- summary of variance regression model analysis

Model		Mean square	Degree of freedom	f	sig
1	Source regression	1/48	1	33/41	0/001
	The remaining source	0/43	48		
	Total		49		

The resulted f (33/41) that is significant in the error level of less than 0/05 shows that independent variable (perceived quality) has a high capacity of clarification and is able to explain rate of change and variance of criterion variable (customer satisfaction).

Table 18- Standardized coefficients of independent variable (Perceived Quality) on criterion variable (Customer Satisfaction)

Model	Non Standardized coefficients		Standardized coefficients	t	sig
1	B	Standard deviation error	Beta		
Fixed regression	1/26	0/19		6/47	0/001
Perceived Quality	0/108	0/05	0/35	4/71	0/001

Standardized coefficient for the variable perceived quality (0/35) is significant in the error level of less than 0/05, so it can be said that experts' perceived quality effects their satisfaction. This means with one standard deviation increase in the perceived quality, the customer satisfaction increases to 35%.

Forth question: Does security has a significant effect on customer satisfaction?

Table 19- summary of regression model fitness statistics

Model	R.	R^2
1	0/59	34/81

According to table 19 and R square between Security and customer satisfaction, it can be said that 34/81 % of the criterion variable changes (customer satisfaction) is predicted byindependent variable (security).

Table 20- summary of variance regression model analysis

Model		Mean square	Degree of freedom	f	sig
1	Source regression	1/02	1	23/39	0/001
	The remaining source	0/47	48		
	Total		49		

The resulted f (23/39) that is significant in the error level of less than 0/05 shows that independent variable (security) has a high capacity of clarification and is able to explain rate of change and variance of criterion variable (customer satisfaction).

Table 21- Standardized coefficients of independent variable (Security) on criterion variable (Customer Satisfaction)

Model	Non Standardized coefficients		Standardized coefficients	t	sig
1	B	Standard deviation error	Beta		
Fixed regression	1/67	0/29		5/65	0/001
Security	0/401	0/07	0/59	4/19	0/001

Standardized coefficient for the variable security (0/59) is significant in the error level of less than 0/05, so it can be said that experts' security effects their satisfaction. This means with one standard deviation increase in the security, the customer satisfaction increases to 59%.

Fifth question: Does PEOU has a significant effect on PU?

Table 22- summary of regression model fitness statistics

Model	R.	R^2
1	0/45	20/25

According to table 22 and R square between perceived ease of use and perceived usefulness it can be said that 20/25 % of the criterion variable changes (perceived usefulness) is predicted byindependent variable (perceived ease of use).

Table 23- summary of variance regression model analysis

Model		Mean square	Degree of freedom	f	sig
1	Source regression	1/31	1	21/90	0/001
	The remaining source	0/67	48		
	Total		49		

The resulted f (21/90) that is significant in the error level of less than 0/05 shows that independent variable (perceived ease of use) has a high capacity of clarification and is able to explain rate of change and variance of criterion variable (perceived usefulness).

Table 24- Standardized coefficients of independent variable (Perceived Ease of Use) on criterion variable (Perceived Usefulness)

Model	Non Standardized coefficients		Standardized coefficients	t	sig
1	B	Standard deviation error	Beta		
Fixed regression	5/67	0/50		8/40	0/001
Perceived Ease of Use	0/218	0/15	0/45	5/38	0/001

Standardized coefficient for the variable perceived ease of use (0/45) is significant in the error level of less than 0/05, so it can be said that experts' perceived ease of use effects their perceived usefulness. This means with one standard deviation increase in the perceived ease of use, the Perceived Usefulness increases to 45%.

Sixth question: Does security has a significant effect on PQ?

Table 25- summary of regression model fitness statistics

Model	R.	R^2
1	0/30	9

According to table 25 and R Square between security and perceived quality it can be said that 9 % of the criterion variable changes (perceived quality) is predicted byindependent variable (security).

Table 26- summary of variance regression model analysis

Model		Mean square	Degree of freedom	f	sig
1	Source regression	0/89	1	4/95	0/03
	The remaining source	0/18	48		
	Total		49		

The resulted f (4/95) that is significant in the error level of less than 0/05 shows that independent variable (security) has a high capacity of clarification and is able to explain rate of change and variance of criterion variable (perceived quality).

Table 27- Standardized coefficients of independent variable (Security) on criterion variable (Perceived Quality)

Model	Non Standardized coefficients		Standardized coefficients	t	sig
1	B	Standard deviation error	Beta		
Fixed regression	5/09	0/39		9/83	0/001
Security	0/26	0/12	0/30	2/22	0/03

Standardized coefficient for the variable security (0/45) is significant in the error level of less than 0/05, so it can be said that experts' security effects their perceived Quality. This means with one standard deviation increase in the Security, the Perceived Quality increases to 30%.

Eighth question: Does customer satisfaction has a significant effect on Perceived Performance?

Table 28- summary of regression model fitness statistics

Model	R.	R^2
1	0/52	27/04

According to table 28 and R Square between customer satisfaction and perceived performance it can be said that 27/04 % of the criterion variable changes (perceived performance) is predicted byindependent variable (customer satisfaction).

Table 29- summary of variance regression model analysis

Model		Mean square	Degree of freedom	f	sig
1	Source regression	0/57	1	18/52	0/001
	The remaining source	0/03	48		
	Total		49		

The resulted f (18/52) that is significant in the error level of less than 0/05 shows that independent variable (customer satisfaction) has a high capacity of clarification and is able to explain rate of change and variance ofcriterion variable (perceived performance).

Table 30- Standardized coefficients of independent variable (Customer Satisfaction) on criterion variable (Perceived Performance)

Model	Non Standardized coefficients		Standardized coefficients	t	sig
1	B	Standard deviation error	Beta		
Fixed regression	0/93	0/19		4/85	0/001
Customer Satisfaction	0/50	0/11	0/52	4/3	0/001

Standardized coefficient for the variable customer satisfaction (0/52) is significant in the error level of less than 0/05, so it can be said that experts' customer satisfaction effects their perceived performance. This means with one standard deviation increase in the customer satisfaction, the perceived performance increases to 52%.

Conclusion

According to the resulted statistics, the variables perceived usefulness (Beta= 0/87), perceived ease of use (Beta= 0/73), perceived quality (Beta= 0/35) and security (Beta= 0/59) are predictors of user satisfaction. With regard to the mentioned Betas it can be said that the variable perceived usefulness, and then the variables perceived ease of use, security and finally perceived quality have the most prediction power of user satisfaction. Also, the variable security effect perceived quality and perceived ease of use effects perceived usefulness.

The result of Son et al. research (2012) is as we previously described in the present research is that Satisfaction is more a case about usefulness in using mobile devices, not about ease of use. In order to increase professionals' satisfaction, ensuring that the devices are useful is an important factor. A way to refine employee's insight about satisfaction can be a close cooperation with mobile device suppliers who can supply and develop devices that can be useful for experts of the organization. As it is shown in the study of Son, et al, perceived ease of use has a positive effect on perceived usefulness[11].

According toCoursaris and Kim (2006, 2011), three constructs of effectiveness, efficiency and satisfaction are essential dimensions of usability. In this research, user expectation has been examined on usability and behavioral intention to use mobile services [12] that is similar with our findings in satisfaction.

Refer to the results of study done by Ljungberg et al; distractions have a meaningful influence on perceived efficiency and effectiveness of mobile device usage, a finding that inconsistent with research findings regarding the negative effect ofdistractions on driving performance (Ljungberg et al., 2004).

Reference to Wu, Et al.(2012) Examining direct and indirect effects of criteria of behavioral intention is very essential. In the earliest model, perceived usefulness has major direct impact on behavioral intention and indirect effect on forecasting intention. Similarly, employees' belief about this matter that use of wireless technology will cause improvement oftheir performance effects their acceptance and attitude toward using wireless technologies [10].These findingsare similar with the results ofour research.

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