Technology Acceptance in the Use of Social Networks by Teachers and Employees of Education Offices in Ahwaz

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ABSTRACT
Educational systems and stakeholders embark upon changes and adaptation with changes on the basis of social and historical developments. One of the influential factors in current world is emerging technologies like social networks that can affect educational systems and stakeholders. This research deal with studying the acceptance of social networks by those involved in the educational system of Ahwaz. For this purpose, a sample of 523 people was selected by random sampling from among teachers and administrative employees and analyzed by a 53-question questionnaire with Cronbach's alpha coefficient of 0.88 based on the TAM2 model and SEM method. The results showed that teachers did not have high acceptance for using social networks, but administrative employees welcomed this phenomenon.

KEYWORDS: Technology Acceptance, Social Networks, Teachers, Educational employees, Ahwaz

INTRODUCTION
Face-to-face and individual education in real-life education space, home and school, has gradually given way to virtual space. On the other hand, in today's hasty world, many traditional teaching methods are inefficient and lack the power to transfer new concepts to learners. The perspective of education in this decade is dominated by information technology; digital users are the same students who have grown up with digital technologies such as computers, smartphones, iPods, and have gradually lost their relationship with books and newspapers (Sadeghi, 2014; Hjenaabadi, 2017).

One of the things that nowadays is being discussed a lot is the reduction of the amount of physical relations in the interest of online communications. On the other hand, teachers of schools belong at least to one generation ago and are alien partly to these technologies in comparison with students. In addition, administrative regulations in education do not allow teachers and students completely to have access to social networks, while technology not only supports key operations and effective decision-makings in education, but also it has the potential to change and transform different knowledge transfer methods(Fry et al, 2014).

Virtual social networks are formed as the communities resulting from the interactions between like-minded groups of friends and have an openness and decentralization feature; so the damage of a group or a member of a network does not disrupt the entire network. Social networks are constantly rebuilding and repairing. These networks, in addition to the intra-network interconnection, also interact externally. In short, the willingness of individuals to engage with other people on social networks, including the teachers, the staff, consultants, classmates, etc., depends on the network orientation. Two important dimensions of this orientation are the level of trust of individuals to other people, such as the trust of teachers in students, or the trust of students in teachers and headmasters, and the expectation of people from the future is; in fact, its psychological dimension (Forsyth et al, 2011).

In other words, educators with the use of modern and superior technology can provide competitive advantage and benefit from these tools for the sake of creativity and educational innovation (Fry et al, 2014).

The most important social networks used in Iran (with an estimated population of users) are the Club site (2.5 million), WhatsApp (14 million), Telegram (20 million), Instagram (20 million), Hammihan (1 million), and FaceAdam (1.3M), Facenama (1.3 million), facebook (undetermined) and Soroush (10 million).

On the other hand, social networks are becoming increasingly common as new communication technologies. Technology, by itself, has several definitions. The technology is a compound phenomenon consisting of logical processes and systematic and targeted physical communications that are embodied in physical objects (such as machines and tools) (or human creatures) such as the knowledge of engineers or technicians. The used knowledge is associated with the physical processes in technologies of Production, or the process. On the other

hand, technology is the rational process of knowing how to set up a tool. Although the skills and expertise of installing, setting up, repairing and maintaining tools and machines are considered as to be the know-how or advanced skill (Al-Obaidi, 1993).

Technology is a system that combines (revealed and hidden) knowledge, specialties, skills, processes and their inputs; thereby it becomes practical the increasing perceptions, production, operations, marketing management and service delivery, and organizational capabilities (Nazmun, 2000).

Technology is an instrument or skill, product or process, physical equipment, or the method of execution and construction, by which the ability of the human being increases. In the field of operations, the technology is technical knowledge that improves the ability of an organization to create products and services (Stock, 2000). The concept of technology is a concept between science and new products (Asghari & Pakhshanikia, 2013). Khalil (2014) sees technology as commodities, services, systems, and processes that are used to produce higher-quality, less costly products.

EFFECTIVENESS OF TECHNOLOGY IN ORGANIZATIONS

Information technology has a significant impact on all organizations, especially the education organization. This technology brings together the individuals and groups needed, such as virtual teams, virtual communities, virtual knowledge, and shared ideation. Ivanović & Jain (2013) found that easy and extensive access to shared data would make virtual organizations more flexible. Information exchange, easy access to data and telecommunications enable an organization's employees to dynamically create their work units in geographical and temporal contexts. Therefore, an organization can have a better chance of becoming a world class by being flexible and virtual (Mohemed et al, 2006). For this reason, in the education organization, virtual communication space' creation in the form of social networks can create a profound transformation in the tasks and results of the educational organization.

But it is important that technology should not be considered as the ultimate goal (Ashraf al-Oqhalai, 2002). Of course, it is worth considering Rogers's (2010) view, who believes that not all knowledge management tools are computerized (Chitsazan, 2006).

Rogers divides knowledge management tools into three categories:
1 .The first is for the production and regulation of knowledge, including the creation of a new idea, the design of new models, the combination of various disciplines and the development of new processes in the organization.
2. The second is Application of this category of tools and technologies in the regulation of knowledge. These categories of tools allow knowledge to be publicly accessible and transferable between individuals and organizations.
3. The third category is the tools used to share knowledge (Chitsazan, 2006).
Therefore, the use of social networks as a communication technology is applied in the organization of education in its various dimensions, at administrative, managerial and executive levels, namely, classroom education, and so on. In general, different models have been used to establish and use technology by organizations and individuals. Some of these models are theoretical and others are directly derived from studying literature, observations and experiences. Theoretically based models are often based on theories of change or generally constructed behavioral theories; they consider the adoption and establishment of a new information technology to be resulted from an attitude, or a behavioral intention, or, finally, a behavior that leads to acceptance of changes. The instance of a model derived from experiences and observations, a well-known model with a history of application in a variety of domains, is the model of propagating innovation, first introduced in 1983 (Rogers, 2010). It has been used over the years to test the acceptance and application of new and varied technologies, including information technology. In the case of theoretical models, the technology acceptance model (TAM) and its revised version as TAM2 is one of the most popular models.

Based on this theory (the theory of reasonable action), Davis presented the technology adoption model. Based on the initial model of technology acceptance, two beliefs play an essential role in the acceptance of information technology. These two beliefs, which, in turn, can be influenced by exogenous variables, include the perceived usefulness and the perceived ease of use(Anni et al, 2018). These two beliefs, in general, create an attitude to the use of the intended system and in turn affect the intentions and intentions of use and ultimately determine the level of actual use. The Davis model can be displayed as follows.

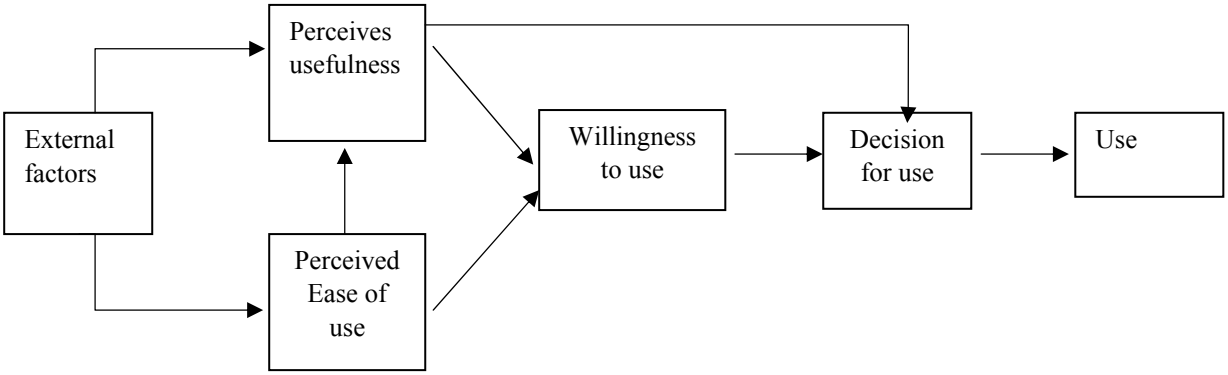

Figure 1: Initial Model of Technology Acceptance (TAM) (Davies, 1989: 320)

The perceived usefulness is defined as "the degree to which a member of the organization believes that the use of a particular system will improve his career performance" (Davis, 1989). The perceived ease of use is defined as the extent to which an organization member believes that using a particular system is without difficulty or great effort.

In 2000, Venkatesh and Davis tried to develop it by adding new structures to the technology acceptance model (Venkatesh and Davis, 2000). These new structures include social impact processes (subjective norm, candidateship and external reflection), and cognitive instrumental processes (job relationship, output quality, explicability of results, and ease of use). First, based on Taylor and Ted's findings who have founded the mental norms of a meaningful effect (Taylor & Todd, 1995), the subjective norms have been modeled in the main form of the theory of reasonable action (TRA); secondly, candidateship versus the compulsory use has been considered, and also, thirdly, the external reflection of the use of the system. In the domain of cognitive tools processes, Venkatesh and Davis also have added the job relationship (the extent to which each person feels that the system in question is applicable to his job), the quality of output (the evaluation of individuals from the way the tasks are performed by the technology) and the explicability of the results. The Technology Acceptance Model (TAM 2) is presented in the following figure.

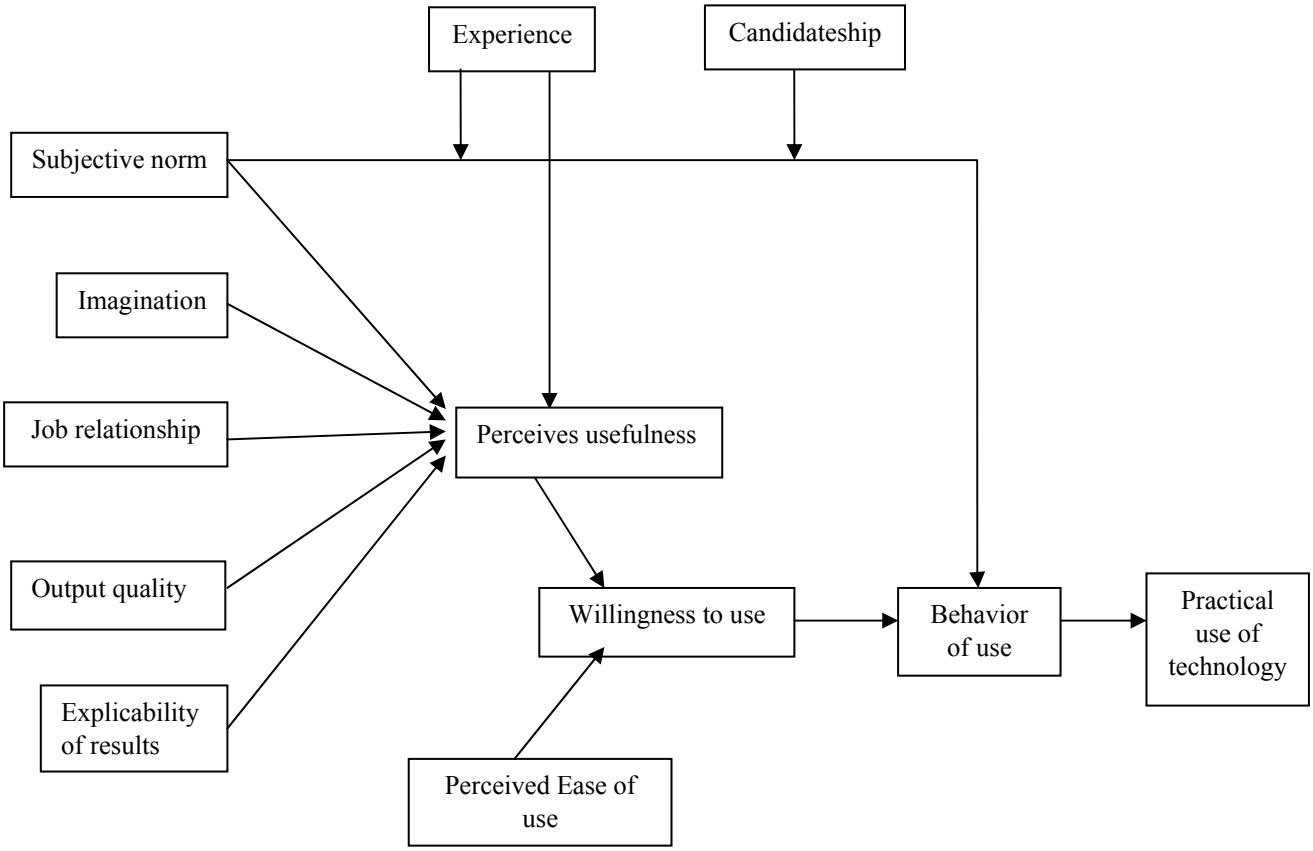

Figure 2: Expanded Technology Acceptance Model TAM2 (Venkatesh and Davis, 2000: 325)

The TAM2 model examines the voluntary and compulsory use of technology, and suggests that over time, when people gain more experience about the system, their perceptions of the usefulness and attitude of using that system will change. Many researchers have shown a significant relationship between individual differences and technology acceptance in their studies (Davis, 1989; Gerhart et al., 2010; Kripanont, 2007).

Some theorists have investigated external variables and concluded that these factors are the final determinants for the use of technology (Dejamasbi et al., 2010; Elbanna, 2010; Legris et al., 2003). Since then, the variables of the original model of TAM have been considered as mediating variables, which are in turn influenced by external factors. In this model, external factors can include any type of factor, organizational factors, social factors, features of computer systems such as hardware and software, teaching methods, training course and other people's assistance in using computer systems which will affect the subjective perceptions of individuals about the usefulness and ease of using information technology (Lazakidou, 2008; Ahmed & kabir, 2018). Therefore, in order to use any new technology in the organization, it is necessary to provide the ground for the acceptance of this technology. Therefore, teaching employees as one of the external and important factors can affect their subjective perceptions about the usefulness and ease of using technology. The importance of training in the empowerment of human resources is such that no transformational organization no longer sees itself needless of being trained. In fact, education is a useful investment and a key factor in knowledge development, improvement of skills and creation or change of employees' attitude (Ju &Albertson, 2018).
So, this research seeks to find out if there is a technology acceptance in using social networks by teachers and educational employees in Ahwaz?

RESEARCH BACKGROUND

In a research entitled "Study of the Relation of Transformational Leadership with the Acceptance of Information Technology by Bam Education Management Staff", Tabakhzadeh and Derakhshan Davari (2017) examined the relationship between transforming leadership and IT adoption. The method of present research is descriptive and correlational and in terms of the purpose it is applied. The statistical population of the research consists of all the employees of education management in Bam (300 people). According to the Cochran formula, 169 people of them were randomly surveyed using simple random sampling. A questionnaire was used to collect data. Pearson regression and correlation tests were used to test the hypotheses. The results showed that there is a positive and

significant relationship between transforming leadership and the acceptance of information technology by the employees.

In the study of the technology acceptance level by the faculty members of the Anadolu University College of Languages, conducted by 44 people, Coral Gumzoglou and Akay (2017) concluded that the teachers' attitude towards the use of technology based on the model (UTAUT) is moderate.

In the study of the perceptions of English-language and foreign language pre-service teachers in using Web-based technology 2, Bing et al. (2018) found that using these technologies in the modeling of structural equations on the data of 295 people are highly capable of predicting the use of technology. The findings were made to help these pre-service teachers, and thus could provide different facets of facilitating the conditions for the effective use of technology from their viewpoint.

In a similar research on the technology acceptance in Technology-Rich Learning Environments by pre-service teachers in UAE, Scott et al. (2018) found that the TAM model supported the cultural and social structure of the United Arab Emirates; meanwhile the pre-service teachers have regarded the most important factor as a predictor of their future behaviors as the perceived profitability of using technology.

Naghi (2018), in his research, evaluated the use of online videos and learning satisfaction based on the TAM model, in which the structure of TAM as the core of learning performance, learner-learner interaction, and learner-teacher interaction was addressed. Data were collected from 89 students through a questionnaire. Structural equation modeling was used to evaluate the research model. The results showed that the usefulness, attitude and self-efficacy of the Internet have a direct impact on the use of the video. Satisfaction with learning was directly influenced by learner-learner interaction, ease of comprehensibility and learning performance. In addition, the results showed that the use of video has a significant impact on learning performance and learning satisfaction.

RESEARCH METHOD

Accordingly, the present research is applied in terms of purpose, and in terms of collecting data and method of studying and analyzing, it is a (non-experimental) descriptive-causal research; the researcher's attempt is to answer a real question in a research process. Since the questionnaire was used to collect data, it is considered as a survey. The number of questions for the variables considered in the research is as follows:

1. Perceptual usefulness, ease of use, willingness to use, behavior of use and practical use of technology 5 questions for each one;
2. Candidateship, experience, subjective norm, imagination, job relationship, output quality, ability to prove the results 4 questions for each one.

Total: 53 questions

The sample size was adopted for about 361 person from 6000 teachers and 162 administrative employees from administrative population that was 280 person.

Table 1: distribution of frequency according to gender

Gender	Teachers		Administrative employees		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Woman	200	55/4	94	58	294	56/2
Man	161	44/6	68	42	229	43/8
Total	361	100	162	100	523	100

According to the findings of Table 1, 55.4% of the teachers were female and the rest were male and among the administrative employees 58% were female and 42% were male.

Table 2: distribution of frequency according to age

Age	Teachers		Administrative employees		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Under 30 years	42	11/6	28	17/3	70	13/4
30-40 years	162	44/9	65	40/1	227	43/4
40-50 years	133	36/8	48	29/6	181	34/6
More than	24	6/6	21	13	45	8/6

50 years						
Total	361	100	162	100	523	100

According to the findings of Table 2, 11.6% of teachers are under 30 years old, 44.9% are 30-40 years old, 36.8% are 40-50 years old and 6.6% are more than 50 years old. Also, 17.3% of the administrative employees are under 30 years old, 40.1% are 30-40 years old, 29.6% are 40-50 years old and 13% are more than 50 years old.

Table 3: distribution of frequency according to education

education	teachers		Administrative employees		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
BA	180	49/9	62	38/3	242	46/3
MSc	162	44/9	95	58/6	257	49/1
Ph.D	19	5/3	5	3/1	24	4/6
Total	361	100	162	100	523	100

According to the results of Table 3, 49.9% of teachers are of BSc education, 44.9% of them are MSc and 5.3% of Ph.D degree. Also, among administrative employees, 38.3% had BSc degree, 58.6% had MSc degree and 3.1% had doctorate.

Table 4: distribution of frequency according to occupational history

history	teachers		Administrative employees		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Under 5 years	32	8/9	22	13/6	54	10/3
5-10 years	85	23/5	42	25/9	127	24/3
10-15 years	108	29/9	48	29/6	156	29/8
15-20 years	99	27/4	37	22/8	136	26
More than 20 years	37	10/2	13	8	50	9/6
Total	361	100	162	100	523	100

According to the results of Table 4, most of the teachers have a history of 10 and 15 years, and among the employees, most of respondents are of 10-15 years of history.

Table 5: descriptive indices of research components

Variable	Mean (from 5 scores)	Standard deviation	Minimum value	Maximum value
Subjective norm	2/74	0/84	1/25	1/25
Imagination	2/83	0/89	1	1
Job relationship	3/07	0/96	1	1
Output quality	2/98	0/98	1	1
Explicability of results	2/73	1/006	1	1
Experience	2/79	1/14	1	1
Candidateship	3/37	0/89	1	1
perceived usefulness	2/78	1/01	1	1
Ease of perceived use	3/005	0/97	1	1
Willingness to use	2/73	1/04	1	1
Behavior of use	2/95	0/89	1	1
Practical use of technology	3/01	0/95	1	1

Regarding the results of Table 5, the mean of the components of the research is moderate and lower than moderate; the component of candidateship has the highest mean and the tendency to use the lowest. In general, the status of the components is undesirable.

DATA ANALYSIS

In order to compare the mean of the components of the technology acceptance model between the two groups of teachers and administrative employees, the t test was used for two independent samples, the results of which have been given in Table 6:

Table 6: Comparison of research components in two groups of teachers and administrative employees

Variable	Teachers		Administrative employees		t-test statistic
	Mean	Deviation	Mean	Deviation	
Subjective norm	2/74	0/84	3/13	0/86	4/901**
Imagination	2/83	0/89	2/94	0/96	1/24
Job relationship	3/07	0/96	3/28	0/94	2/309*
Output quality	2/98	0/98	3/18	0/98	2/178*
Explicability of results	2/73	1/006	2/95	1/03	2/319*
Experience	2/79	1/14	2/86	1/12	0/654
Candidateship	3/37	0/89	3/54	0/78	2/078*
perceived usefulness	2/78	1/01	2/81	0/98	0/313
Ease of perceived use	3/005	0/97	3/20	0/96	2/114*
Willingness to use	2/73	1/04	2/95	1/01	2/315*
Behavior of use	2/95	0/89	3/11	0/87	1/95
Practical use of technology	3/01	0/95	3/14	1/03	1/403

** Significance at level of 0.001

* Significance at level of 0.05

According to the findings of the research, Table 6 shows that there is a significant difference between the mean components of subjective norm, job relationship, output quality, explicability of the results, candidateship, ease of perceived use, and willingness to use in two groups of teachers and administrative employees. On the other hand, according to the average calculated in the two groups, it can be concluded that the average components among administrative employees is higher than teachers.

Also, in order to compare the mean of the components of the technology acceptance model in the two groups of women and men, T-test was used for two independent samples, the results of which have been given in Table 6:

Table 7: Results of t-test for Comparison of research components in both male and female groups

Component	Group	Standard deviation±mean **(Mean±SD)**	T statistic
Subjective norm	Woman	3/12±0/91	8/347**
	Man	2/52±0/66	
Imagination	Woman	3/05±1/006	5/335**
	Man	2/63±0/72	
Job relationship	Woman	3/30±0/94	4/450**
	Man	2/93±0/95	
Output quality	Woman	3/45±0/96	12/07**
	Man	2/52±0/74	
Explicability of results	Woman	3/26±1/04	13/70**
	Man	2/20±0/58	
Experience	Woman	3/04±1/18	5/26**
	Man	2/52±1/01	
Candidateship	Woman	3/62±0/82	6/317**
	Man	3/16±0/84	
Perceived usefulness	Woman	2/94±1/04	4/013**
	Man	2/59±0/93	
Ease of perceived use	Woman	3/42±0/92	10/63**
	Man	2/59±0/83	

Willingness to use	Woman	3/20±0/96	11/28**
	Man	2/28±0/88	
Behavior of use	Woman	3/29±0/87	8/99**
	Man	2/63±0/76	
Practical use of technology	Woman	3/29±0/99	6/387**
	Man	2/75±0/88	

** Significance at level of 0.001
* Significance at level of 0.05

According to the results of Table 7, there is a significant difference between the mean of the components of research in both male and female groups. In general, the mean of the female group is higher than that of men, which indicates that technology acceptance is desirable among women.

In order to compare the mean of the components of research in different age groups, F one-way analysis of variance was used:

Table 8: Results of the test for the comparison of the mean of research components among age groups

Component	Under 30 years	30-40 years	40-50 years	More than 50 years	F test statistic
Subjective norm	3/11	2/86	2/79	2/75	2/509
Imagination	3/08	2/95	2/74	2/58	4/696*
Job relationship	3/08	3/25	3/06	2/96	2/055
Output quality	3/08	3/09	2/99	2/90	0/709
Explicability of results	2/90	2/93	2/72	2/34	4/921*
Experience	2/94	2/89	2/70	2/68	1/348
Candidateship	3/58	3/47	3/38	3/06	3/955*
perceived usefulness	3/03	2/85	2/68	2/58	2/998*
Ease of perceived use	3/20	3/11	2/98	2/95	1/259
Willingness to use	2/90	2/86	2/69	2/77	1/237
Behavior of use	3/11	2/95	3/04	2/94	0/820
Practical use of technology	3/17	3/08	3	2/96	0/708

** Significance at level of 0.001
* Significance at level of 0.05

Regarding the findings of Table 8, it can be seen that, with increasing the age of the respondents, the willingness of respondents to accept technology has relatively decreased. Also, there is a significant difference between the mean components of the imagination, explicability of the results, candidateship and the perceived usefulness of the different groups.

RESEARCH MODELS FIT

a. Group of employees

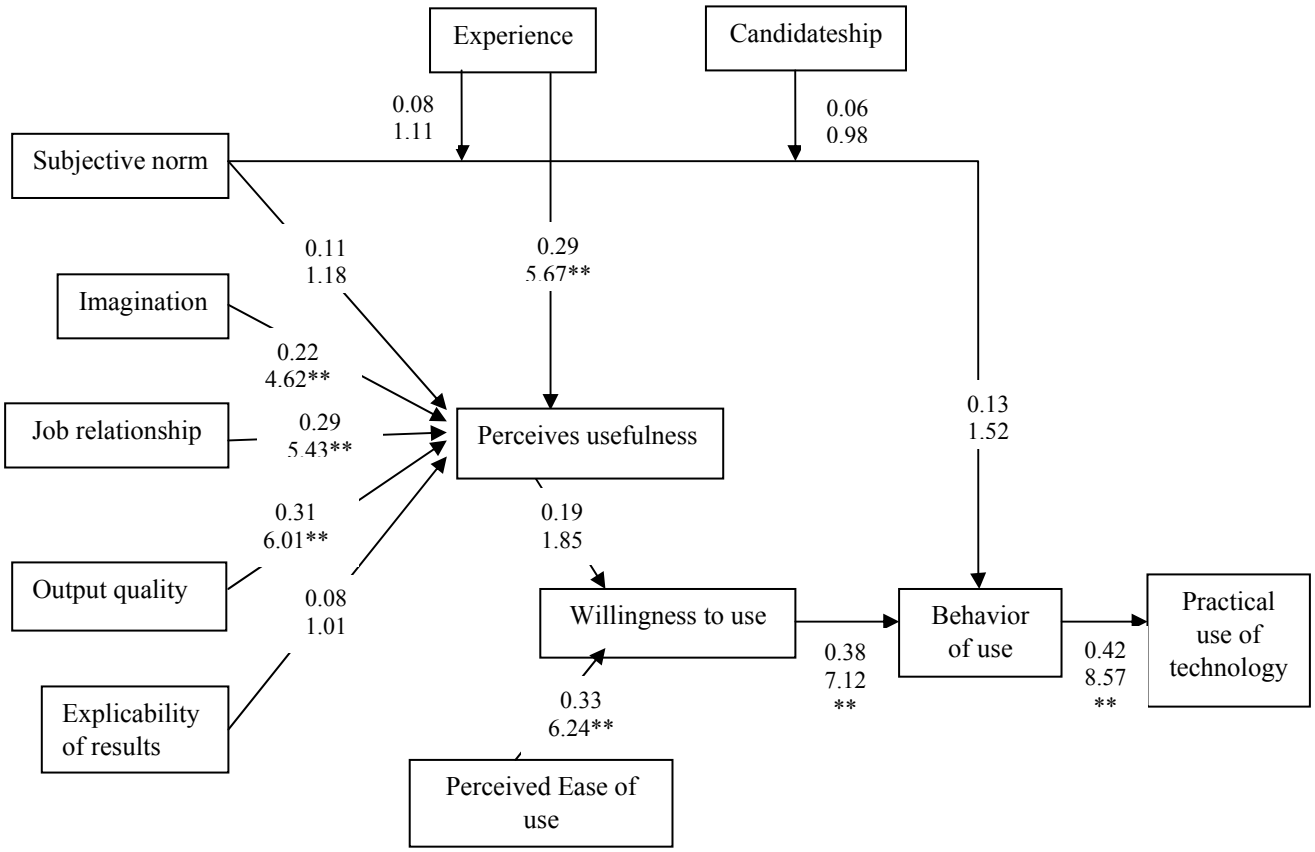

Figure 3: Research model fit in group of employees

b. Group of teachers

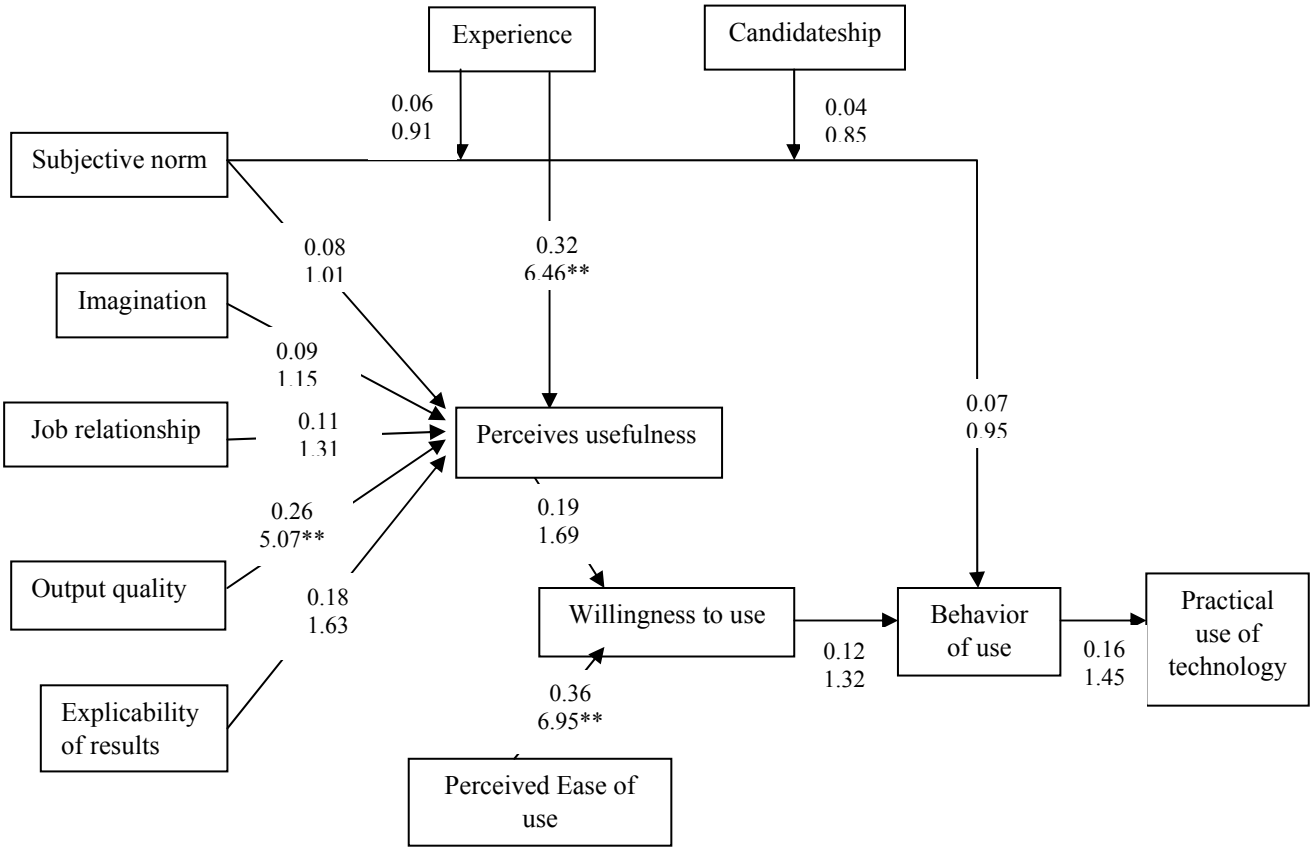

Figure 4: Research model fit in group of teachers

GOODNESS OF FIT TESTS

Table 9: research model fit indices

Index statistical title	Model (of employees)	Model (of teachers)	Accepted range	Test result
χ^2 / df	1/362	1/805	χ^2 / df < 3	confirmed
P-value	0/000	./000	P < 0/05	confirmed
RMSEA	0/037	./048	RMSEA < 0/09	confirmed
RMR	0/042	0/054	RMR < 0/09	confirmed
GFI	0/91	./91	GFI > 0/9	confirmed
AGFI	0/91	./90	AGFI > 0/9	confirmed
CFI	0/94	./92	CFI > 0/9	confirmed
RFI	0/92	./93	RFI > 0/9	confirmed
NFI	0/94	./90	NFI > 0/9	confirmed
NNFI	0/93	./91	NNFI > 0/9	confirmed

As shown in Table (9), according to the fitness indices in both models, the ratio of Chi-square to degree of freedom B, the Goodness-of-Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Incremental Fitness Index (CFI) and The root of the mean square approximation error (RMSEA) are acceptable, indicating that the model has a decent fitness without need to correction. Also, all relations between variables in the model are significant at the level P <0.05.

TESTING RESEARCH HYPOTHESES

Table 10: Studying research hypotheses

	Model of employees		Model of teachers	
Direct path	Impact coefficient (β)	Significance number (t-value)	Impact coefficient (β)	Significance number (t-value)
Subjective norm → perceived usefulness	0/11	1/18	0/08	1/01
Imagination → Perceived usefulness	0/22	4/63**	0/09	1/15
Job relationship → Perceived usefulness	0/29	5/43**	0/11	1/31
Output quality → Perceived usefulness	0/31	6/01**	0/26	5/07**
Explicability of results → Perceived usefulness	0/08	1/01	0/18	1/63
Experience → Perceived usefulness	0/29	5/76**	0/32	6/46**
Perceived usefulness → Willingness to use	0/19	1/85	0/19	1/69
Ease of perceived use → Willingness to use	0/33	6/24**	0/36	6/95**
Subjective norm → Willingness to use	0/13	1/52	0/07	0/95
Willingness to use → behavior of use	0/38	7/12**	0/12	1/32
Behavior of use → practical use of technology	0/42	8/57**	0/16	1/45
Subjective norm * experience → Willingness to use	0/08	1/11	0/06	0/91
Subjective norm * candidateship → Willingness to use	0/06	0/98	0/04	0/85

** Significance at level of 0.001
* Significance at level of 0.05

According to the results of Table 10 and Figures 1 and 2, it can be seen that among teachers, the effect of output quality and experience on perceived usefulness and the effect of ease of perceived use on the willingness to use is significant (the significant number calculated is more than 1.96). other hypotheses have been rejected.

Also, among administrative employees, the significance number related to the effect of the variables of imagination, job relationship, output quality and experience on perceived usefulness and the effect of ease of perceived use on the tendency to use and the effect of the tendency to use on the behavior of the use and behavior of use on the scientific use of technology is greater than 1.96, which indicates the significance of the effect of each of the above variables.

CONCLUSION

Based on the data obtained from the research, it can be stated that the administrative employees of Ahwaz have, generally speaking, accepted the use of social networks as their task and consider the use of social networks

useful and easy. These results are in line with the results of Tabakhzadeh's research (2017). In contrast, based on their and society's subjective norms, what they think of social networks and that they cannot determine the results of using social networks based on their tasks, the teachers are not so inclined to accept social networks; in practice they do not find useful these networks for their work, although they consider them easy to use. This result is in agreement with the results of Koral Gümüsoglu & Akay (2017), but is inconsistent with the results of Bing et al. (2018), Scott et al. (2018) and Naghi (2018).

On the other hand, women both as teachers and as employees have more acceptance in the use of social networks. This suggests that women generally have more time and spend more time on using such networks.
Another notable result that can be obtained from the data is that the lower the age was, greater was the acceptance of technology. This shows that there is a significant relationship between technology and generations; each generation has its tendency to use the technologies of its own age because that generation is more dominant over that particular technology of that age.

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