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Identifying and Explaining the Affective Factors of IT Innovation Acceptance in Government Agencies by Using Structural Equation Modeling

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Abstract

In the present era, information technology is a new tool that has affected all dimensions of organizations. Therefore, it seems impossible to imagine an organization without information technology (IT) to be able to keep pace with new technologies. The aim of this study is to identify the affective factors in adopting IT innovation in governmental organizations. In order to achieve the paper's objective after investigating, the theoretical foundations of affecting factors on the acceptance of IT innovation have been identified, and five factors have been classified using exploratory factor analysis. In addition, using the confirmatory factor analysis based on modeling, the structural equation relation of factors and indicators were discussed. Results show that factors such as relative advantage and innovation capability, safety and reliability, organizational culture, management support, economic status and social cooperation and coordination among organizations, play an important role in the acceptance of innovation.

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1.Introduction

After World War II, governments and governmental agencies have seen an increase and expansion in their economic and social responsibilities [1] and the demand of citizens had increased to provide economic and social programs by the government. To respond quickly to this need, the government began to increase the number of governmental agencies and development of informational systems, in order to increase the reliability and quality of the services. Thus, in order to face this challenge (citizens demand), public sector organizations were receptive to a set of information technology [2]. Therefore, one of the main issues that governmental agencies faced was acceptance and successful implementation of innovations in information technology, in order to keep pace with the new technologies [2] [3].

Nowadays IT is a new tool that has influenced all aspects of human life including organizations. Therefore, the organizational vision seems impossible without information technology [4]. Using information technology as an approach to development of Governance tools and providing a better service to citizens refer to e-Government [5]. E-Government has become increasingly a means of providing public services in many governmental organizations of the world [6].

During recent decades, governmental organizations have seen notable developments in a rapidly changing technology. Since, IT innovation has become a key factor in creating the competition and as an engine of growth and development that allows organizations to be more efficient in the global economy [7]. Hence, government agencies turned to accept innovations of information technology to benefit from innovation and competitive advantages [8].

Citizens expectations, improvement productivity, reduction of administrative costs, transparency, people's satisfaction, providing quality services to citizens and increase in the speed of to providing services, are all important innovations in information technology for Government agencies. Generally, for organizations to create more value, satisfaction of citizens and improvement of the efficiency should be through the use information technology [4].

The development of information technology in governmental organizations in developing countries, including Iran; with sporadic activities emerging in deploying e-government, from the years of the Internet advent in the late 1991 in the country and TEKFA plan, is of special importance. Therefore, on one hand, application and development of the technology is a national development strategy. On the other hand, the role of the massive public importance in the national economy, will double the theme [4].

Although several studies on the causes of success and failure of innovative technologies were conducted, the focus of this study was on the public sector. Many new technologies in this section have failed for reasons such as the lack of an experienced manager, lack of understanding of the citizen's requirements, lack of sufficient familiarity with innovations, lack of full understanding of IT capacity, relative benefits and management capabilities [2].

Hence, the main objective of this research is to identify and explain the affecting factors on the acceptance or rejection of innovations in information technology within governmental organizations. Thereby, a further step is taken towards facilitating the acceptance and uptake of IT innovations in addition to taking advantages from them.

2.Theoretical Foundations

In this section, the concepts of innovation and information technology are defined. Then the roles of information technology in governmental organizations, as well as the affecting factors on the acceptance of information technology in governmental organizations are described.

2.1 Innovation

Innovation in an organization means creating and accepting original ideas and behaviors. Innovation includes product innovation, process innovation, technological innovation and administrative innovation. Moreover, because of the higher importance of technology in many studies, the focus has been on the technology innovation [9].

Innovation in technology may cause renewing the use of technology in the organization. Also new use of present technology is considered, innovation in technology. A new technical knowl-

edge can be technological innovation as well [7]. Highly stimulating innovation leads to rapid changes in technology and increasing prosperity as well as economic growth [10].

2.2 Information Technology

Information Technology was developed in the late 70s; to refer to the use of computer technology for working with information [11]. Information technology refers to tools and methods that collect Storage, retrieval, process, analyzing and distributing information in different ways [12] [4] [13]. This definition has a close connection with the application of information technology in our research. Information technology helps to create new goods and services, and licensed firms and service. Moreover, it improves the company's operations in different areas of decision-making, partners, as well as suppliers and customers [13]. Since the advent of Information technology, by a profound impact on the most aspects of the business, it has played an undeniable role in the global economy [14]. Therefore, IT development and its ease of use, makes organizations equip their processes and practices with it [15].

Without the development and application of information technology, knowledge-based development objectives of the country cannot be expected to be realized [4].

However, forecasts indicate that this technology will continue to grow rapidly in the future. Nevertheless, evidence showed that successful application of this technology in governmental organizations was not so satisfactory [11].

Due to the advent of the information technology age, circumstances dictate that governmental organizations have to be more flexible and compatible towards their clients. Therefore, the use of information technology in the public sector to provide information services and respond to audiences and beneficiaries have been all emphasized [16].

2.3 The role of the information technology in governmental organizations

Despite the widespread use of information technology in business activity, more governments have activated a lot of research in the field of IT applications to know what the advantages of in-

formation technology are [17].

Information technology, having very important capabilities in the promotion of efficiency and effectiveness in organizational performance areas, will play a dominant role in the new Millennium. Many developing countries are trying to develop and implement e-government projects, to adjust themselves to the new environment and make use of its advantages [18].

Since the 80s, the expansion of the supply of personal computers has led government managers in organizations to equip a tool of information technology. Thus, they began a new phase of information technology in governmental organizations [19].

We now talk a little about IT innovations and applications. At the beginning, we knew that the Internet Revolution and the related technologies, in addition to the rise of electronic business, have raised the proposed transformation of the structure and processes in the field of the government performance. E-government is the reflective of raised perspectives in the modernization and re-organization of public administration that covers formed IT innovation and many innovative initiatives public administration performances, based on the potentials of information technology [17]. Development of new public management ideas and ideals can be considered as one of the potential factors of e-government policies. Because in new public management, a combination of the traditional values of governmental management (performance, saving and effectiveness) along with the values of modern governmental management (such as responding to citizens, and citizens' involvement in Decision-making, equal distribution of public services and providing a range of citizenship choices) are considered [20]. E-government refers to the use of systematic governmental organizations from the Internet, computer networks and information technologies that aim to improve the efficiency, effectiveness, synergies, transparency and customer orientation [21]. Establishment of e-government enables all citizens, businesses, organizations and government employees to enter the network through a website without having the limitations of space and time; and access government information and services [22]. E-government is the easy use of in-

formation technology for the distribution of governmental services boarding to citizens directly [23]. It relies on the Internet and other emerging technologies, in order to receive and distribute information and services simply, quickly, efficiently and at a low cost [24].

Therefore, e-government is a set of all of the electronic communications that occur between government, businesses and citizens [19].

Nowadays, due to the advancement of information technology, the impact of this technology on different aspects of life, and the arrival of digital age, changes in various fields are inevitable. And in the case of inconsistency of organizations with these changes and innovations, inefficient organizations will be evident more than ever [25] [6]. In the recent years, e-government was placed seriously on the agenda of the government, and intelligence States Men have deployed their forces to the realization of such conditions and have sought to reform political, economic and social process with the help of new information technology and thereby to deliver services to their citizens in a more effective way [25].

The aim of such a government is to take advantage of new technologies in order to provide better services to citizens; providing integrated services, offering value-added services, providing services more quickly, and intergovernmental restructuring. One of the opportunities that new information technologies gives us is that it provides the possibility of the use of this technology to re-engineer the state architecture and to become more accessible, efficient and responsive. To rule the society of information and its management, we need to create e-government and keep pace with new technologies, and information society cannot be well managed with traditional information processes and structures [26].

IT innovation, changes in citizens and economic institutions and investment firm's expectations in the IT sector, place in the category of most important factors that need to establish e-government. IT innovations facilitate serving to citizens, downsizing of government, taking information and services by citizens, businesses and government organizations to facilitate business processes and reduce costs through integration and elimination of parallel systems [25].

2.4 Process and models of acceptance of IT innovation

IT innovation acceptance process involves sequential steps that an organization already gets through before starting to implement a new technology. The main decision of acceptance happens between the two steps of starting and performing. In other words, the first stage involves awareness, consideration and intention. In the performing step, the organization decides to develop a new technology and use it. Therefore, acceptance of innovation that precedes the implementation of its decision is very important [27].

The carried out researches in relation to the acceptance and development of information technology innovation, explain attitudes and behaviors related to innovation based on a set of theoretical models [28]. Several basic models can be derived from previous studies in connection with the acceptance of information technology. These models include: the dissemination of innovation [24], theory of reasoned action [29], technology acceptance model [2], acceptance model of IT innovation [30], the process of innovation admission [31], and the acceptance and implementation of innovation model [28] [25].

Although many of the innovation acceptances in organization occur at the individual level, the term acceptance of innovation is used within the organization [32].

However, Fichman, Kemerer and Orlikowski showed in their own research that many of the conventional methods have neglected the fact that a higher acceptance decision occurs in the Organizational level [33] [34].

Accordingly, the conditional decisions of innovation are posed in organizations that adopt an initial decision about acceptance of innovation, and the users have little choice power in acceptance. Therefore, they strive to perform adaptive actions, to use that specific innovation, in performing their tasks [35] [28].

A summary of the most important models and processes of IT innovation acceptance are presented in table (1) below:

Source	Model	Process
(Liao & Liu, 2008) [36]	Change Model	Exit from freezing, changed, re-freezing
(Pierce & Delbecq, 1977) [37]	Organizational innovation model	Initially, acceptance, implementation
(Darmawan, 2001) [38]	Acceptance process innovation	Initially, acceptance, implementation,
(Becker & Whisler, 1967) [31]	Admission process innovation	Motivation, perception, suggestions, decided to accept
(Gallivan, 2001) [28]	Acceptance of innovation in organizations	Awareness, consideration, intention, the acceptance decision, continuous use, acceptance by the user
(Rogers, 1995) [39]	Acceptance of innovation	Knowledge of innovation, attitude towards innovation, the acceptance decision, applying innovative ideas, making decisions
(Dixon, 1999) [40]	Information Technology Acceptance Model	Requirements and Assessment, analyzing the appropriateness of the technology, making acceptance, approval (implementing or upgrading)
(Zaltman et al, 1973) [35]	A two-stage model of innovation acceptance	Early acceptance (organizational decisions for acceptance), accepting a secondary (implementing innovation and acceptance at the individual level)
(Agarwal & Prasad, 1998) [30]	Model derived from research	Knowledge, understanding, acceptance decision

Table (1) Acceptance Model of IT Innovation

By looking at the table above, it is observed that we did not select a specific conceptual model, because all studied models are not commensurate with the status of our organization. Therefore, we have to choose the most important factors affecting the acceptance of IT innovations. All models studied, and a questionnaire was prepared containing all of the factors affecting the acceptance of IT innovation. Then we took questionnaires to experts and university professors. They completed the questionnaires and we have analyzed the questionnaire, and the most important of all factors relevant to the situation of our organizations were selected based on the results of the ques-

tionnaire.

2.5 The acceptance of IT innovation in public organizations

Governmental organizations are trying to improve their productivity and effectiveness, by reviewing missions, re-engineering process and establishing IT systems [13].

Studies have shown that Information technology has many advantages to governmental organizations, but it creates challenges for management and policy-making of organizations. Governmental organizations are involved with new challenges such as changing priorities and goals, so they

face changes in the political, economic and social environment. Effective use of information technology is essential for dealing with these changes [23]. IT innovations, such as the World Wide Web, information systems, data warehouse and customer relationship management, are examples that are used in governmental agencies to support the aims and interact with citizens and other organizations [41]. Using information technology, government agencies quickly redesign their business processes and promote their productivity [8].

2.6 Affecting factors on the Acceptance of IT innovation in government agencies

Various internal and external factors are affecting the acceptance of information technology in governmental organizations. These include government policies on trade and investment; market forces, such as competition and technology costs and National infrastructure of information technology. Organizational culture is one of the main factors. That is effective on acceptance and dissemination of IT in governmental organizations. Other factors such as size, degree of centralization and formalization are effective on the acceptance of information technology innovation [42]. The probability of adopting IT innovation in organizations that are unwilling to change their political environment is higher. Thus, improvement of IT facilities in public organizations depends on the support of senior officials. Managers' tendency to innovation plays an important role in the allocation of resources to do so. Acceptance of new information technology requires high investment and its effect will not be marked in the short time [43]. As a result, senior managers need to risk and accept the risk of failure and delay receiving the results of new technology acceptance [44]. Managers who are aware of the capacities of information technology will have positive attitudes towards simply accepting innovation. Legislator governmental agencies play a key role in the acceptance of IT innovation because of being effective on funding and legal protections [2]. The availability of financial resources for the development, improvement of IT infrastructure, procurement of software and hardware, and user education are important factors that play a role in

the acceptance of IT innovation [45] [24]. Investment in information technology should be along with the change of IT infrastructure. Therefore, support leading and future innovations [46] existing in a lot of human resources, with capabilities to create a new idea, are other factors influencing information technology acceptance [45], and innovations are proposed by people who are experts in a particular field [47]. IT managers' capability in identifying problems in the current system is very impressive. These capabilities include IT knowledge, willingness to innovate and a willingness to change [43].

Successful acceptance of an innovation is associated with open style of management [41]. By investigating large innovative organizations, it is recognized that IT innovation emerges in these organizations continuously; because the top management encourages innovation and leads organizational environment to support innovation [48]. The complexity of a technology refers to the systems required for effective communication and whether the staff of the organization understands sharing of information by systems that they thought whether difficult to be used or not. The complexity of a technology plays a role as a major factor influencing the acceptance decision [49]. While some believe that complexity is a powerful disincentive for innovation acceptance [50]. Information technology within organizations has been very influential; nevertheless, it has been more complex as well. In a way, decisions and organizational processes form technologies; and this adds to the complexity of the organization [51].

New technology compatibility and compliance with existing technologies of the organization play an important role in making its acceptance. To achieve Technology integration, compatibility and compliance will be considered as a main factor by decision makers. The integration of technologies is the most important issue of concern among public sector managers [52].

Incompatibility of hardware, software and communication networks has a negative impact on inter-organizational information sharing [53]. Studies have shown that history of innovation-oriented organizations leads to positive organizational environments that facilitate the acceptance

of technology by governmental agencies [54] [55]. Many innovations have been successful because of the knowledge and understanding of market demands. An unstable environment causes increase of the potential for innovation absorption. The need for IT innovation in institutional infrastructure creates demand for information technology in order to facilitate innovation processes [56].

Size (the number of provided services and extent of a society that has received the services) has a positive effect on the acceptance of information technology innovation [24].

Governments in larger cities compared to smaller ones accept more advanced information technologies [55].

In addition, size of the organization is a stimulus for innovation and the acceptance of information technology innovation [45] [54]. Increasing awareness and knowledge causes rapid development and these changes reduce the cultural differences between different information systems in geographical distances [41].

This means that a rapid innovation improves coordination between systems and different parts of the organization. Therefore, communication and collaboration between departments and organizations are factors that lead to the acceptance of innovation [56].

Capabilities of information technology within an organization, such as the extent of information technology resources, knowledge of workers in the field of information technology and ease of access to adequate equipment are important factors that are considered in the acceptance of new technologies [57] [49].

One of the major factors affecting the application of Information Technology is qualified employees [58]. Staffs of governmental organizations are not well trained for the use of information technology, and this inadequate education creates an obstacle to the change and use of innovation [55]. Having skills and perfection in information technology, indicating the level of understanding, as well as managers' support of information technology to achieve organizational goals; have been introduced as affective factors on the Ac-

ceptance of IT innovation [24] [50].

Factors such as the grant, the pressure for technology transfer, and technical support are the external factors influencing public acceptance of IT innovation in organizations. In addition, the socio-economic situation of cities is associated with the acceptance of technological innovation. So that in cities with lower socioeconomic status, probability for acceptance of need-driven innovations is more in comparison with the innovations for welfare. Nevertheless, the opposite is true in larger cities [59] [2].

Mutual trust for sharing information between organizations is necessary. Despite the mutual trust between organizations and departments of an organization, it is not necessary, for every organization, independently to start collecting the required data for a single issue. Therefore, mutual trust between organizations can be effective in the acceptance of IT innovation [53] [60]. Governmental organizations are influenced by organizations accepting IT innovation; that are similar in size and budget, as well as the trading partners [50] [2].

Therefore, factors affecting the acceptance of innovation in government agencies are provided in table (2).

Row	Source	Factor
Var 1	(Clegg et al, 1997; Dasgupta, 1997)[51][42]	Consistency and compliance
Var 2	(Chwelos et al, 2001; Newcomer & Caudle, 1991; Norris, 1999)[50][57][55]	Comparative advantage and innovation capability
Var 3	(Ebrahim & Irani, 2005)[8]	Security and reliability
Var 4	(Anderson et al, 2003)[61]	Organizational Structure
Var 5	(Gunes et al, 2003; Kim & Bretschneider, 2004)[62][2]	Organizational Culture
Var 6	(Koh et al,2006; Anderson et al, 2003)[43][61]	Financial support
Var 7	(Damanpour, 1991; Rogers, 1995)[54][39]	The size of the organization
Var 8	(Dasgupta, 1997)[42]	Knowledge and information technology skills
Var 9	(Akbulut, 2002; Chwelos et al, 2001)[49][50]	Socioeconomic status
Var 10	(Bingham, 1976; Brynjolfsson, 1993; Brudney & Seldon, 1995)[59][63][64]	The size of the community and support from clients
Var 11	(Kim & Bretschneider, 2004)[2]	Legal and political framework
Var 12	(Dasgupta, 1997)[42]	Cooperation and coordination parts of the organization
Var 13	(Gunes et al, 2003)[62]	Inter-organizational trust
Var 14	(Akbulut, 2002)[49]	Complexity
Var 15	(Chircu & Hae-Dong Lee, 2003)[65]	Productivity
Var 16	(Kim & Bretschneider, 2004)[2]	Social attitudes
Var 17	(Koh et al,2006)[43]	Innovation capacity
Var 18	(Kim & Bretschneider, 2004)[2]	Integration

Table 2. Factors Affecting the Acceptance of IT Innovation

3.Methodology

Research method, method of sampling and data analysis software

This research is an applied and empirical. In particular, it is considered as a structural equation modeling. Its statistical population consists of IT managers and experts of government agencies (Asia Insurance Agency and Organization of information and communication technology) that were selected randomly (three hundred; 300), and by calculating the statistical sample by law Cochran, we see that our samples were 168. The data collection instrument was a questionnaire whose responses were considered based on Likert five-choice scale. To measure the reliability of the research questionnaire, Cronbach's alpha coefficient was used. Its amount was estimated 0.895 and represented reliability. We have to choose the most important factors affecting the

acceptance of IT innovations. All models were studied, and a questionnaire was prepared containing all of the factors affecting the acceptance of IT innovation. Then we took questionnaires to experts and university professors. They completed the questionnaires, we analyzed them, and the most important factors relevant to the situation of our organizations were selected based on the results of the questionnaire. To evaluate the contents of the questionnaire, the comments of several professors and specialists in the field of information technology have been used for the index appropriateness. Also, determining of inventory validity (factor) carried out by using questionnaires from exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The results are presented in the following. The data have been analyzed by the software SPSS 20 and LISREL 8.50.

4.Results

Two indexes from eighteen, identified indexes including the integration and usability were removed because of overlapping with other similar variables in the analysis of content validity, and twenty-two other indexes entered exploratory factor analysis. According to the estimated value of KMO, that equals 0.843. This value is more than 0.7, thus adequacy of sampling is approved. (Square of K: 1626.741 and Significance level: 0.000) In addition, this analysis shows that factor analysis can be completed on its indices. After that, using factor analysis by using varimax rotation indicators of complexity and maximum possibility, productivity, social attitudes and creative capabilities, due to acquiring less than 0.5, were excluded from the set of investigation variables and remaining eighteen indexes were placed in five factors. According to the indicators placed in each factor, the extracted factors were named based on table (3).

Increased public access to information technology has affected methods of work and life of the citizens. For this reason, e-government during the last decade, has been mentioned so extensively in the developed world and has been faced with a good chance. The successful implementation of e-government requires knowledge of effective

factors in the acceptance of IT innovations. The findings show that according to standardized coefficient (Figure 2) technological factors in explaining the variance of indices of comparative advantage and innovation capability (0.67) and the security and reliability of (0.6) are most effective. Organizational factors have the highest impact coefficient (0.31) in explaining the variance in organizational culture. The supportive factors are effective in explaining the variance in the management support with the coefficient of 0.55. External factors have the most influence in explaining the social and economic status in the variance (0.34) and the size of the community and support of the clients is 0.33. Cooperation and coordination are the most influential factors with a coefficient of 0.44 in explaining variance of cooperation and coordination among parts of the organization. Due to the significant coefficients between the five factors, it is clear that these are not independent factors. According to the covariance estimation, the greatest interaction between organizational factors and factors related to cooperation is with the covariance of (1.34), and the lowest relationship between technological factors and protective factors is with the covariance of 0.49.

Indicators	The first factor	The second factor	The third factor	The fourth factor	The fifth factor
	Technology factors	Organizational factors	Supportive factors	External factors	Cooperation and coordination factors
Var 1	0.791				
Var 2	0.679				
Var 3	0.829				
Var 4	0.747				
Var 5		0.703			
Var 6		0.693			
Var 7		0.751			
Var 8		0.737			
Var 9			0.810		
Var 10			0.863		
Var 11			0.631		
Var 12				0.702	

Var 13				0.729	
Var 14				0.765	
Var 15				0.664	
Var 16					0.865
Var 17					0.755
Var 18					0.706

Table 3. Factors derived from factor analysis and load index

After extracting five factors by exploratory factor analysis, in order to verify the indicators and the identified factors based on structural equation modeling confirmatory factor analysis was used. Using confirmatory factor analysis will determine how much the five factors (Latent variables) are involved in explaining the variance of their indices (indicator variables). The parameters of model fitting show the rate of model fitting for research data. In figures (1), (2), and (3) respectively, the results of confirmatory factor analysis

of non-standard estimation, standard estimation and significant coefficients are presented. According to the chart in figure 1, with the assumption of zero in factor analysis, considering zero in the factor identifying analysis as the indicator of model justifying, and based on significance level estimation equating (0.08322) more than 0.05, with accepting of zero assumption; it is resulted that the presented model is justified in the population.

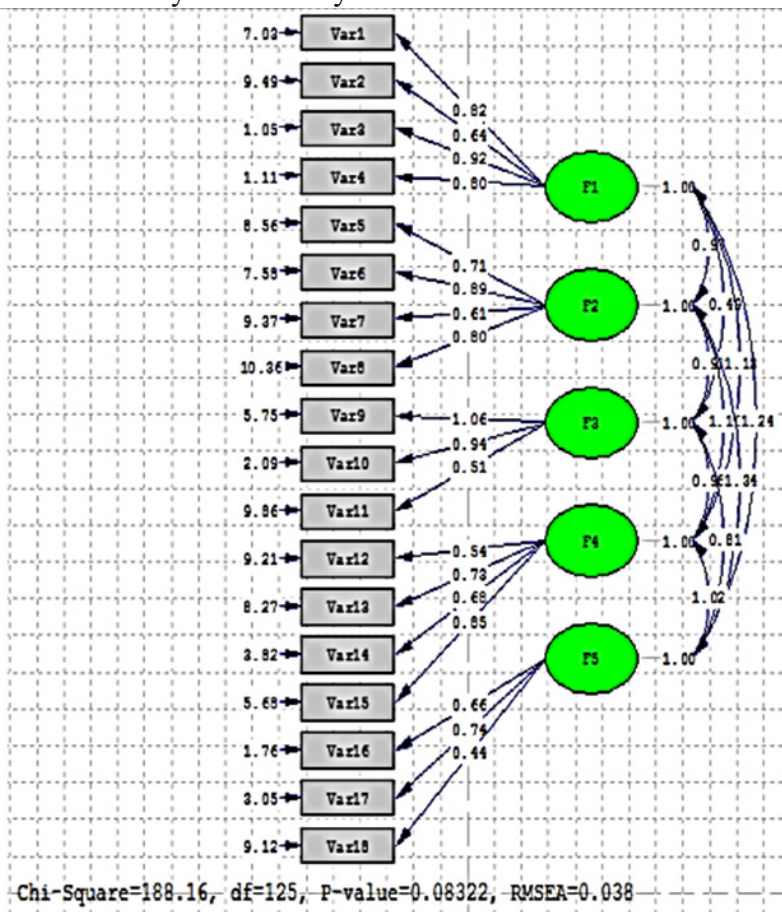


Figure 1. The results of confirmatory factor analysis in the estimation of non-standard diagram

Standard coefficients are provided in figure (2); that indicates the effect of each factor in explaining the variance of indexes.

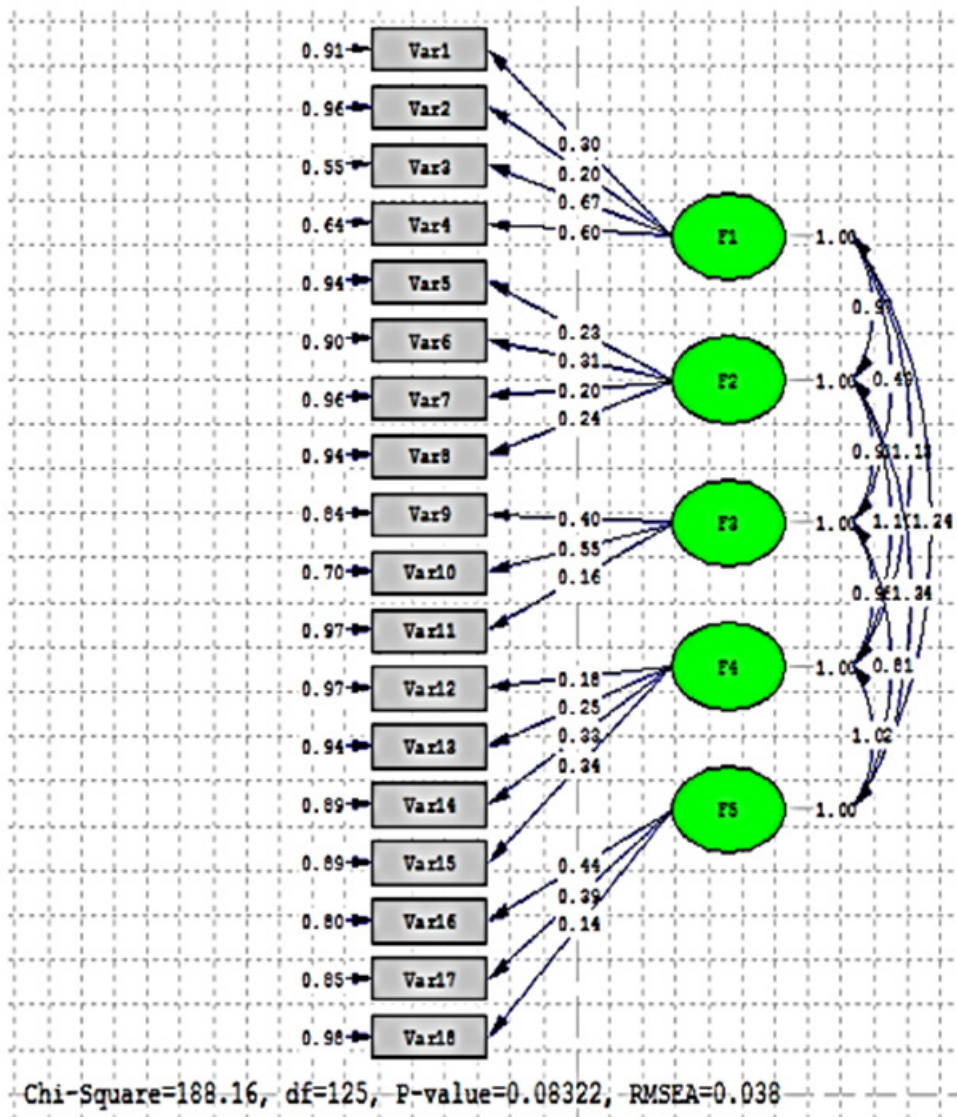


Figure 2. Diagram results of confirmatory factor analysis in standard estimate

Based on the chart of figure (3) and due to the fact that all statistic values of t , which are more than 1.96, it is found that All designated routes in Model are significant. In other words, the five factors extracted from factor analysis, will

explain the variance of their coefficients marker. Therefore, five factors identified, together with relevant variables, are approved.

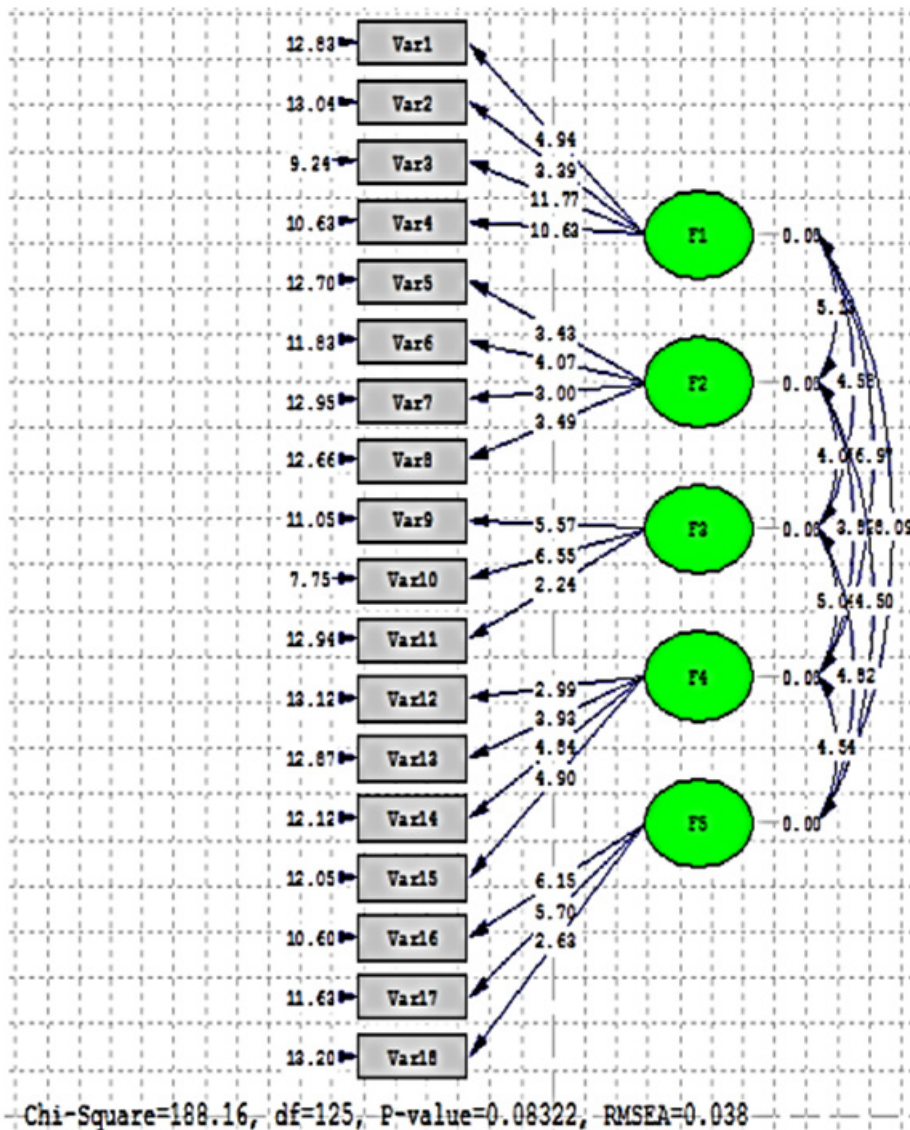


Figure 3. Diagram results of confirmatory factor analysis in significant coefficients

Also, according to various indices fitting provided in the table (4), it is concluded that the

proposed model with research data has a good and acceptable fitting.

Indicator	the amount
Square of the degree of freedom (χ^2/df)	1.50
The square root of the variance estimation error of approximation (RMSEA)	0.038
Fitness Indicator (GFI)	0.94
Adjustment intensity fitness Indicator (AGFI)	0.92
Comparative fit Indicator (CFI)	0.89
Softened fitness Indicator (NFI)	0.86
Not soft fitness Indicator (NNFI)	0.89
Increasing fitness Indicator (IFI)	0.88

Table 4. The results of the model Fitness

5. Conclusion

Due to the lack of independence of five factors affecting the acceptance of IT innovation, attracting investment planning and policy innovations in information technology will play an important role. These findings correspond and are parallel to the results of many other studies. Indexes in this study were confirmed in previous studies such as Akbulut (2002)[49], Anderson et al (2003)[61], Bingham (1976)[59], Brudney & Seldon (1995) [64], Brynjolfsson (1993)[63], Clegg et al (1997) [51], Damanpour (1991)[54], Dasgupta (1997) [42], Ebrahim & Irani (2005)[8], Johannessen (1994)[41], Newcomer & Caudle (1991)[57], Kim & Bretschneider (2004)[2], Norris (1999) [55] and Premkumar & Ramamurthy (1995)[66]. In addition, the factors affecting acceptance of information technology in governmental organizations have been identified. According to these findings, it is suggested, adopting new technology to relative advantage and capabilities of it should be considered more than the previous or similar technologies. Moreover, if it is superior compared to previous or similar technologies, it should be introduced to the organization. In addition, the consideration of the security level and reliability of technologies to ensure accuracy in the sharing and exchanging of information is recommended. By strengthening the organizational and cultural environment that encourages change and acceptance of new technology, along with senior management support, we can take an effective step in facilitating the acceptance of new technology. As well as focusing on creating external and internal mutual confidence within the organization will play an important role in the acceptance of IT innovation in order to enhance cooperation and coordination among various departments.

References

- [1] Ahmad, A. & Zink, S.D. (1998). Information technology acceptance in Jordanian public sector organizations. *Journal of Government Information*, 25(2): 117-34.
- [2] Kim, H.J. & Bretschneider, S. (2004). Local government information technology capacity: an exploratory theory. *Proceedings of the 37th Annual Hawaii International Conference on System Sciences*, Big Island, HI.
- [3] Cardozo, R., McLaughlin, K., Harmon, B., Reynolds, P. and Miller, B. (1993). Product market choices and growth of new businesses. *Journal of Product Innovation Management*, 10: 331-340.
- [4] Fannie, A. And Mosleh, A. (2008) structural and managerial factors affecting information technology in governmental organizations of Bushehr. *Journal of Humanities Teacher*.
- [5] Najafi, M., Atari, d. And FARROKHI, SA. (2010) Assessment of electronic public administration services in Iran. *Conference of electronics*. The third and fourth of June. Tehran: Information and Communication Technology Research Center (SID).
- [6] Nour, M., & Fadlalla, A. (2008). A context-based integrative framework for e-government initiatives. *Government Information Quarterly*, 25: 448-461.
- [7] Landsbergen, D. & Wolken, G. (2001). Realising the promise: government information systems and the fourth generation of information technology. *Public Administration Review*, 61(2): 206-218.
- [8] Ebrahim, Z. & Irani, Z. (2005). E-government acceptance: architecture and barriers. *Business Process Management Journal*, 11(5): 589-611.
- [9] Kamal, M.M. (2006). IT innovation acceptance in the government sector: identifying the critical success factors. *Journal of Enterprise Information Management*, 19(2): 192-222.
- [10] Herrera, L., Muñoz-Doyague, M.F & Nieto, M. (2010). Mobility of public researchers, scientific knowledge transfer, and the firm's innovation process. *Journal of Business Research*, 63: 510-518.
- [11] MASHAYEKHI, AS., Frhngy, AS., A believer, d. And Alidoust, SA. (2006) studying the factors affecting the application of information technology in Iranian public organizations: Application of Delphi. *Quarterly lecturer in humanities*,
- [12] Ramezani, d. And Bsaqzadh, n. (2012) The

effect of organizational culture on the success of the implementation of IS in companies' ability to attract and automotive products Gilan province. *Journal of Information Technology Management*

[13] Mohammadi, a. And Amiri, a. (2013) provide interpretive structural model achieving agility through IT in manufacturing organizations. *IT management*,

[14] Abedi Jafari, H., Asdnzhad pillar, d. And God, h. (2012) investigated the effect of information technology on operational performance and strategic performance unit of human resource management in Tehran automotive companies and domestically listed components. *IT management*.

[15] Gholipour, a. And Rasoliy, e. (2012) Effect of IT on organizational behavior: the impact of e-mail on teachers evaluate students. *Technology Management*.

[16] Frhngy, AS., Zadeh, H. And Saleh AS. (2011) examine the barriers to effective use of ICT to improve the system of accountability to stakeholders. *Journal of Information Technology Management*.

[17] Roshandel, i., Gafori, A. And Ebrahimpour, h. (2012) channel customer relationship management within the framework of e-government. *IT management*.

[18] Zarei, b., Saghafy, p. And Klathayy, g. (2010) provide a model for the critical success factors of IT applications in the state. *Conference of electronics. The third and fourth of June. Tehran: Information and Communication Technology Research Center (SID)*.

[19] Akesson, M., Skalen, P. & Edvardsson, B. (2008). E-government and service orientation: gaps between theory, and practice. *International Journal of Public Sector Management*, 21(1): 74-92.

[20] Alvani, d. And Danaee Fard, h. (2002) reveals the philosophy of public administration. *Tehran Publication illumination*.

[21] Glassey, O. (2004). Developing a one-stop government data model. *Government Information Quarterly*, 21: 156-169.

[22] Ebbbers, W.E. (2007). Resistance and support to electronic government, building a model of innovation. *Government Information Quarterly*, 24: 554-575.

[23] Laia, Y.L. & Linb, F.J.(2012). The Effects of Knowledge Management and Technology Innovation on New Product Development Performance, An Empirical Study of Taiwanese Machine Tools Industry. *Social and Behavioral Sciences*, 40: 157-164.

[24] Previtali, P. & Bof, F.(2009). E-government acceptance in small Italian municipalities, *Business Research Department. International Journal of Public Sector Management*, 22(4): 338-348.

[25] Lewin, K. (1952). *Group decision and social change*. Henry Holt and Company, New York.

[26] Gonzalez, R., Gasco, J. & Llopis, J.(2007). E-government success: some principles from a Spanish case study. *Industrial Management & Data Systems*, 107(6): 845-861.

[27] Gopalakrishnan, S. & Damanpour, F. (1997). A review of innovation research in economics, sociology & technology management. *Omega*, 25(1): 15-28.

[28] Gallivan, M.J. (2001). Organisational acceptance and assimilation of complex technological innovations: development & application of a new framework. *The DATABASE for Advances in Information Systems*, 32(3): 51-85.

[29] Ajzen, I. (1985). *From intentions to actions: a theory of planned behavior*. Springer, New York.

[30] Agarwal, R. & Prasad, J. (1998). The antecedents and consequents of user perceptions in information technology acceptance. *Decision Support Systems*, 22 (1): 15-29.

[31] Becker, S.N. & Whisler, T.L. (1967). The innovative organisation: a selective view of current theory and research. *The Journal of Business*, 40(4): 462- 469.

[32] Bhattacharjee, A. (1998). Managerial influences on intra-organisational information technology use: a principal agent model. *Decision Sciences*, 29(1): 1362-91.

[33] Fichman, R.G. & Kemerer, C.F. (1997). The assimilation of software process innovations: an organisational learning perspective. *Management Science*, 43(10): 1345-1363.

[34] Orlikowski, W.J. (1993). CASE tools as organisational change: investigating incremental and radical changes in systems development. *MIS Quarterly*, 17(3): 309-340.

[35] Zaltman, G., Duncan, R. & Holbeck, J.

- (1973). *Innovations and Organisations*, Wiley & Sons, New York.
- [36] Liaoa, Sh., Feib, W. & Liu, Ch. (2008). Relationships between knowledge inertia, organizational learning and organization innovation. *Technovation*, 28: 183-195.
- [37] Pierce, J.L. & Delbecq, A.L. (1977). Organisation structure, individual attributes and innovation. *Academy of Management Review*, 2(1): 27-37.
- [38] Darmawan, I.G.N. (2001). Acceptance and implementation of information technology in Bali's local government: a comparison between single level path analyses using PLSATH 3.01 & AMOS 4 and multilevel path analyses using MPLUS 2.01. *International Education Journal*, 2(4): 100-123.
- [39] Rogers, E.M. (1995). *Diffusion of Innovations*, 4th ed., The Free Press, New York.
- [40] Dixon, R.D. (1999). The behavioural side of information technology. *International Journal of Medical Informatics*, 56(1-3): 117-123.
- [41] Johannessen, J.A. (1994). Information technology & innovation: identifying critical innovation factors. *Information Management & Computer Security*, 2(2): 4-9.
- [42] Dasgupta, S. (1997). The role of culture in information technology diffusion in organisations. *Proceedings of Innovation in Technology Management – The Key to Global Leadership*, Portland, OR.
- [43] Koh, Ch.E., Prybutok, V.R., Ryan, Sh. & Ibragimova, B. (2006). The importance of strategic readiness in an emerging e-government environment. *Business Process Management Journal*, 12(1): 22-33.
- [44] Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29: 770-791.
- [45] Mohr, L.B. (1969). Determinants of innovation in organizations. *The American Political Science Review*, 63: 111-126.
- [46] Ross, J. & Beath, C. (2002). Beyond the business case: new approaches to IT investment. *Sloan Management Review*, 43: 51-59.
- [47] Daft, R.L. (1978). A dual-core model for organisational innovation. *Academy of Management Journal*, 21:193-210.
- [48] Quinn, J.B. (1986). *Managing the innovation: controlled chaos*. *Harvard Business Review*, May/June, 73-84.
- [49] Akbulut, A.Y. (2002). An investigation of the factors that influence electronic information sharing between state and local agencies. *Proceedings of 8th Americas Conference on Information Systems*, Dallas, USA.
- [50] Chwelos, P., Benbasat, I. & Dexter, A.S. (2001). Research report: empirical test of an EDI acceptance model. *Information Systems Research*, 12(3): 304-321.
- [51] Clegg, C., Axtell, C., Damodaran, L., Farbey, B., Hull, R., Lloyd-Jones, R., Nicholls, J., Sell, R. & Tomlinson, C. (1997). Information technology: a study of performance and the role of human and organisational factors. *Ergonomics*, 40(9): 851-871.
- [52] Caudle, S.L., Gorr, W.L. & Newcomer, K.E. (1991). Key information management issues for the public sector. *MIS Quarterly*, 15(2): 171-188.
- [53] Lee, J.D. & Jongsu Lee, J. (2009). E-government acceptance in ASEAN: the case of Cambodia Sinawong Sang. *Internet Research*, 19(5): 517-534.
- [54] Damanpour, F. (1991). Organisational innovation: a meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34(3): 555-590.
- [55] Norris, D.F. (1999). *Leading edge information technologies and their acceptance: lessons from US cities*. Idea Group Publishing, Hershey, PA.
- [56] Rothwell, R. (1977). The characteristics of successful innovators and technically progressive firms. *R&D Management*, 7(3): 191-206.
- [57] Newcomer, K.E. & Caudle, S.L. (1991). Evaluating public sector information systems: more than meets the eye. *Public Administration Review*, 51(5): 377-384.
- [58] Perry, J.L. & Danzinger, J.N. (1980). The adoptability of innovation: an empirical assessment of computer applications in local governments. *Administration and Society*, 11(4): 461-492.
- [59] Bingham, R.D. (1976). *The Acceptance of Innovation by Local Government*, Lexington Books, Lexington, MA.
- [60] Dawes, S.S. (1996). *Interagency information sharing: expected benefits, manageable risks*.

Journal of Policy Analysis and Management, 15(3): 377-394.

[61] Anderson, M., Banker, R.D. & Hu, N. (2003). The impact of information technology spending on future performance. Proceedings of the International Conference on Information Systems, Seattle, Washington.

[62] Gunes, F., Basoglu, A.N. & Kimiloglu, H. (2003). Business and information technology strategies and their impact on organisational performance. Proceedings of the Portland International Conference on Management of Engineering and Technology, Portland, OR.

[63] Brynjolfsson, E. (1993). The productivity paradox of information technology. Communications of the ACM, 36(12): 67-77.

[64] Brudney, J.L. & Seldon, S.C. (1995). The acceptance of innovation by smaller local governments: the case of computer technology. American Review of Public Administration, 25(1): 71-87.

[65] Chircu, A.M. & Hae-Dong Lee, D. (2003). Understanding IT investment in the public sector: the case of e-government. Proceedings of the Ninth Americas Conference on Information Systems, Tampa, USA.

[66] Premkumar, G. & Ramamurthy, K. (1995). The role of inter-organisational and organizational factors on the decision mode for acceptance of interorganisational systems. Decision Sciences, 26(3): 303-336.