

The level of impact of IT on organizational agility (Case study: Medical Equipment and Instruments Administration)

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ABSTRACT

Today, IT is one of the cornerstones of any agile organization that intends to take step on the stage of competition with others and also to meet internal needs and its customers. Thus, the rate of impact of IT on increasing organizational agility has been explored in this study in the medical equipment and instruments administration so that to determine how much it influenced in organizational agility with respect to high costs for implementation of IT in the given organization. To achieve this objective, the conducted study is an applied research and it has been carried out using field studies and by survey and presence in the organization and review of documents and evidences as well as distribution of questionnaire and data collection. Accordingly, it was characterized that organizational agility might be affected by parameters of rate of using IT, responsiveness potential, competency and flexibility. With respect to the given data, it can be concluded that even given the high costs for implementation of IT this issue was inevitable and any organization looks for organizational agility to meet suitably needs of customers (inside and outside organization), survival and also competitive potential should utilize IT.

1. Introduction

The fast and modern world developments have caused commercial and non-commercial organizations to exert several changes for their survival and also take policies and strategies to preserve and enhance these changes. Agility is one of such changes and requirements. Since 1991 when term 'agility' was used for the first time, agility denotes ability for fast and successful reaction to surrounding changes (Khosravi et al. 2014). It seems of course that agility has been generally helpful in all business phases from the past to this day in various forms and definitions and addressed by effective directors and successful business owners, but with respect to dramatic and huge developments in world of technology, this issue and or title has also possessed new dimensions and turned into one of modern requirements of business (Bashokouh et al. 2013). Surely, IT is one of the tools that are assumed alone as one of the modern world capabilities. IT is a subset of technology that deals with data and processing it and way of using IT is one of the most original factors in agility and improving organizational efficiency so that this potential is created with respect to fast technological advancement thereby with proper utilization one could achieve organizational goals. IT can support from agility concept in its various forms of internet and intranet communications and E-commerce by influence in decision making potential, reducing cost, rising quality and productivity and reducing operational cycles (Fathian et al., 2011). Medical equipment and instrument supervision and evaluation administration as affiliate to Ministry of Health, Treatment and Medical Education has mechanized the processes relating to customers, applicants and experts and directors of this organization at the last phase of IT implementation. It seems this event has generally led to their satisfaction, rising response speed and of course reduced using paper in operational processes. Therefore, with respect to the aforesaid cases, it is necessary to explore rate of impact of IT after using this important case so that to identify how much it has influenced in the given cases and to what extent given goals have been realized. Then nonetheless, some hypotheses are proposed such as identifying relationship among rate of IT use and organizational agility, relationship among rate of impact of IT with organizational competency potential and finally relationship among rate of influence of IT infrastructures with organizational responsiveness potential.

The research structure is as follows:

In Section II, research literature has been reviewed from both domestic and foreign aspects. Third Section has been devoted to interpretation of methodology and research processes. Data analysis is incorporated in Fourth Section of this study. Finally, the Fifth Section has been allocated to analysis of research findings and conclusion.

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2. Research literature

The conducted papers and studies in this field have been utilized for this study and summary of their results and analysis, which have been studied and explored, is presented as follows:

2.1. Domestic studies

Zagardi and Ismaili (2006) have presented the foremost findings resulted from analysis on other communications in a survey titled ‘Impact of IT on excellence in Iranian organizations’ as follows:

- 1- Size of organization affects depth of implementation of IT systems and organizational excellence model.
- 2- Although these systems may be mainly assumed as useful for all organizations, utilization and establishment of managerial and occupational systems depends on quality of existing sources in organization and human resources are more important than these sources and it can be probably said in Iran larger organizations have more access to sources with higher quality. The correlation analytical method has been used in this study.

In findings of his study under title of ‘Analysis of effective factors in using IT by experts in Iran agricultural development system’ that has been done, Falaki (2007) showed that providing necessary hardware infrastructures, equipment and facilities, encouraging personnel to develop their skills on IT and credit facilities and execution of IT training courses for personnel are some of important influential cases in using and employing IT in the organization.

In a study on role of IT in process of forming of agile organizations, Shahdad and Habibi (2007) explored parameters of responsiveness potential and competency and achieved the following results:

It seems impossible to create agility potential for organizations that still include characteristics of mass production and take measure for constant improvement and elastic system in line with manufacturing high quality products, deletion of wastes, zero defects, and multipurpose teams, reducing organizational layers, team leadership, and vertical information systems. Creation of above-said features, which are assumed as pure production principles, is considered as prerequisite for agile production and serves as start point to establish agile production.

In an investigation titled ‘review on role of technology to realize agility in Iranian electronic enterprises’, Zanjirchi and Olfat (2010) have dealt with this subject. They found these results in this survey: The first priority is designated for improving technological variables belonging to utilization from Hi-Techs of production in industries and it belongs to technological dimension of production. The advanced technologies, which are at disposal of developed countries, are necessary for industrialization of developing nations. To achieve this outcome, regression analysis was used and parameters of technology, production technology, product technology with data were explored.

In a study that was done by Abdi et al. (2010) under title of ‘analysis of impact of modern banking technologies on agility of organizations (Melli Bank of Sanandaj City Nariman Branch)’, they examined parameters of flexibility, responsiveness, speed and integration by Pearson’s correlation coefficient. Their findings showed that as the banks could increase skills in their personnel to use modern technologies and develop their data exchange networks and proceed to E-banking and provide creative environment for innovation and offering modern technologies it might be expected the agility has been well realized in banks and variable needs would be met for customers and market as well.

In a survey, Beiginia et al. (2010) explored effect of acceptance of IT in organizational agility (Case study: National petrochemical industries Company). Among three external variables of user’s experience, organizational support and quality of data, they showed only using experience might significantly affect acceptance of IT where they use multivariate regression to analyze organizational features, properties of systems and personal characteristics of users and other variables.

Fathian and Sheikh (2011) reviewed rate of meeting of market needs, quality of price upon delivery of products or services and it was characterized in these findings that agile companies were benefited from network infrastructures such as internet, intranet and extranet more than semi-agile and non-agile enterprises and thus they have acted more agile.

In an investigation done by Tanha (2011) to assess rate of impact of using IT on organizational agility (Case study: Alborz province Social Security Administration) he has analyzed parameters e.g. responsiveness potential, competency, flexibility and speed were evaluated by fuzzy approach. The intensity of relationship of agility potentials and rate of IT use in organization with speed, competency, responsiveness and flexibility has been respectively identified so that given the derived quantities that administration is placed at average agility level.

Yaqubi et al. (2012) showed in their study titled ‘analysis of effect of establishment of E-government on organizational agility: (Case study: Ministry of Sciences, Researches and Technology)’, that establishment of E-government was directly related to improving organization agility in four dimensions including flexibility, fast action, responsiveness and competency.

In a survey titled ‘study on E-government and agility in Tehran National Organization for registration of civil status’, Vaezi and Sedaghatpoor (2012) conducted this investigation in order to analyze ICT as the best tool for increasing speed and quality of service-giving and pivotal role of IT in organizational agility. The results of study suggest that there is significant relationship among organization and its dimensions with E-government. Likewise, findings indicated that the ICT had impact on agility of organizational rules and regulations, reducing extra official rules, human resource management and emphasis on training personnel in organizational agility.

In their study with title of review on status of effective factors on agility in IRIB organization, done by Salimi et al. (2013), they dealt with data analysis using descriptive and surveying method in which there are variables of supply chain relation, process relation and relationship among market and agility and the given finding has shown that all of defined variables are agile in this study and in order to improve current conditions, human resources and occupational processes should be more addressed. Human resources mainly include several subject e.g. utilization from skills and potentials of personnel, ability to replace skills, motivational issues, power assignment, cooperation in working teams and openness to changes. In this polling, this parameter has acquired lower rank than other variables and this shows the organization should make manpower involved in all activities and given them more powers.

In a study titled ‘impact of IT on intellectual capital of knowledge management strategies with moderating effect of organizational agility’ done by Sepahvand et al (2014), it was characterized by regression with analysis on parameters that organizational agility might have positive and significant impact on intellectual capital and KM strategies in Lorestan University.

In a survey titled ‘impact of IT potentials on business agility’ conducted by Bashokooh and Shekastehtband (2014), they found it by correlation and path analysis and considering parameters of architecture, human resources, infrastructure and communicative sources in IT that IT could provide an infrastructure on which other business processes relied and it caused better sensing and responsiveness to changes.

In a survey with title of ‘impact of IT on agility of organizations’, Ahmadi (2014) has explored parameters of responsiveness, competency and flexibility and it was known in Iranian small- medium- size enterprises the average impact of IT was more in higher servicing organizations than in production organizations. On the other hand, in production organizations the impact of IT is based on axis of human resource development and also in servicing organizations impact of IT is based on efficient communication with inside and outside organization to respond quickly to environmental changes and market more than other agility axes.

In a study titled ‘effect of IT on organizational agility in public universities at Khuzestan Province’ conducted by Khosravipoor and Amirnejad (2014) they used correlation coefficient and regression and concluded that variable of education could not create significant statistical difference in attitudes of individuals concerning organizational agility. This issue denotes that all members of faculty with different educational degrees took identical approach toward achieving organizational agility and external effective factors had positive and significant impact on IT and communications on organizational agility.

In an investigation titled ‘analysis of effective factors in creating agile organizations based on Goldman-Nagel agility model’, Sarlak et al. (2015) looked for identifying agility status in Ansar Bank and offering an applied suggestion to the bank. By analysis of parameters including empowerment and satisfaction of customers, ability to control changes and environmental uncertainty, and coordination between individuals and data the following results were derived of this study:

Whereas human capital is deemed as the highest and most valuable capital and greatest asset for any organization and country and it is a capital that is not reduced by further use and it develops increasingly thus in fact human capital is the foremost property for an organization and source of creativity and innovation that includes all individual capabilities, talents, knowledge and experience of personnel and managers of an organization.

In their study titled ‘impact of IT on organizational agility in light of organizational culture’ done by Rahnavard and Alikhani (2015) it was characterized that IT might influence in organizational agility. Secondly, organization culture appears with moderating role. This study was carried out by descriptive and inferential methods.

2.2. Foreign studies

In their investigation, Raza and Nad (2007) explored rate of using IT, hardware and software facilities in libraries in Punjab, Himachal Pradesh and Chandigarh in India and confirmed role of using IT in improving quality.

In a paper titled ‘impact of IT in universities’, Ranjan (2008) has expressed that IT based attitude taken by scientific and academic institutes would enable them to respond quickly to goals and destinations and even to meet demands and needs of members of faculty and personnel and also it might emphasize on IT development in educational and scientific centers for more effective production and efficiency of organization.

In a paper titled ‘creating agile organizations via IT’ (penetration of internal IT perceptions to quality of IT service and agility), Benjamin Lori and Wilson (2016) concluded that organizations looked for effective managerial strategy to manage resources and for this reason they highly invested in IT field. By analysis on impact of IT inside organization they came to the result that IT services could affect organizational agility positively both directly and indirectly.

In paper under title of ‘human influence in IT potential in organizational agility: an experimental analysis’, Panda and Kumar (2016) expressed that firstly it was identified that human could activate IT elements to create agility in organization including two elements of measurement and responsiveness. At the second place, if costs of unnecessary capabilities of IT are reduced It may encourage organizations to realize agility.

Similarly, theoretical framework of study is also as follows:

Table 1. Variables and previous studies

Variables	Researchers
Responsiveness	Falaki et al. (2007)- Eaza and Nad (2007)- Panda and Kumar (2016)
Speed	Abbaspoor et al. (2012)
Flexibility	Abbaspoor et al. (2012)- Vaezi and Sedaghatpoor (2012)
IT use	Zan and Poorkiani (2013)- Yaqubi et al. (2012)- Farsijani (2013)- Ranjan (2008)- Bashokooh & Shekastehtband (2013)

3. Research methodology

Statistical population of this study designated for determining rate of impact of IT on organizational agility includes layering of factors that comprise of organizational directors and IT user experts in organization as well as experts from applicant enterprises for organization. Statistical population includes 120 participants.

Given quota purposive sampling method is used for selection of sample, number of statistical population and samples is determined at any class based on the following table and quantity of samples has been derived from statistical population by Cochran's formula that included 5% error and derived decimal numbers have been rounded at upper bound.

Table 2. Statistical population and number of used samples

Medical equipment and instruments administration		
Organizational directors	Organizational experts	Experts from applicant enterprises
12	99	9
12	79	9

To conduct this study, initially several studies about organizational agility, IT- use have been examined in various organizational dimensions as well as other factors that affect organizational function.

At the next step, the documents and evidences should be explored inside organization including costs for setup various IT dimensions and also analysis of the documents relating to time of setup various interorganizational and intra-organizational systems and at the same time documents relating to critiques and proposals and even given complaints should be examined to give suitable vision to researcher about status of former organization and after using IT and thereby to help perceiving organization properly regarding research subject.

The standard questionnaire was prepared as organizational agility based on model of Sharifi and Zhang (Fig 1) because this study includes analytical aspect and validity and reliability of that model have been already determined. The questionnaires were distributed among statistical samples and answers entered SPSS software after collection and based on which research goals and hypotheses were analyzed. These questionnaires have measured four dimensions of flexibility, speed, responsiveness potential and competency in terms of IT use.

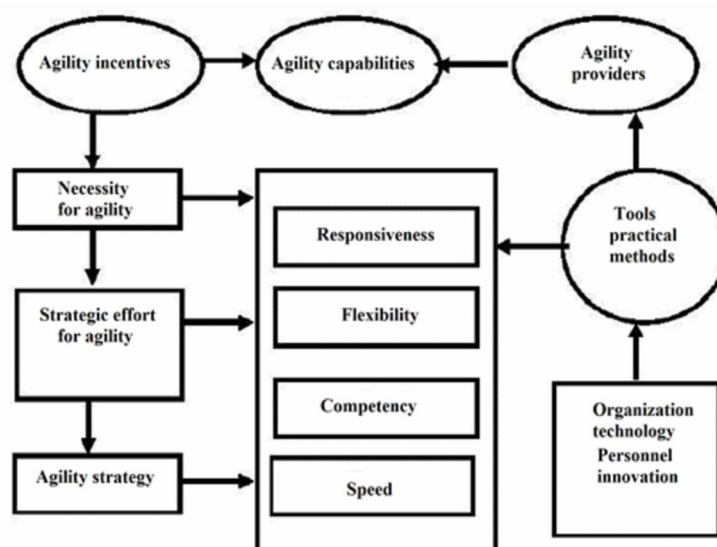


Fig 1. Zhang and Sharifi model

Statistical samples have initially answered to general questions including education and type of relation with organization and then to 30 questions designated according to Likert scale. Answering to questions is analyzed in five parts divided to examine parameters. The classification list of questions is given in any part with their numbers in Table 3.

Table 3. Frequency of questions in any part of questionnaire

	Classification	Quantity
1	Rate of using IT in organization	6
2	Impact of IT use on responsiveness potential	5
3	Impact of IT use on competency potentials	7
4	Impact of IT use on agility	5
5	Impact of IT use on flexibility rate	7

For analysis of collected data, Pearson's correlation method was employed in statistical samples and Analysis of Variance (ANOVA) was utilized to explore hypotheses and compare answers with respect to education and organizational position.

The reliability denotes to what extent the questionnaire can have identical results under various conditions. Given there is a standard questionnaire in this field so it was used and the questionnaire was reliable.

3.1. Research phases

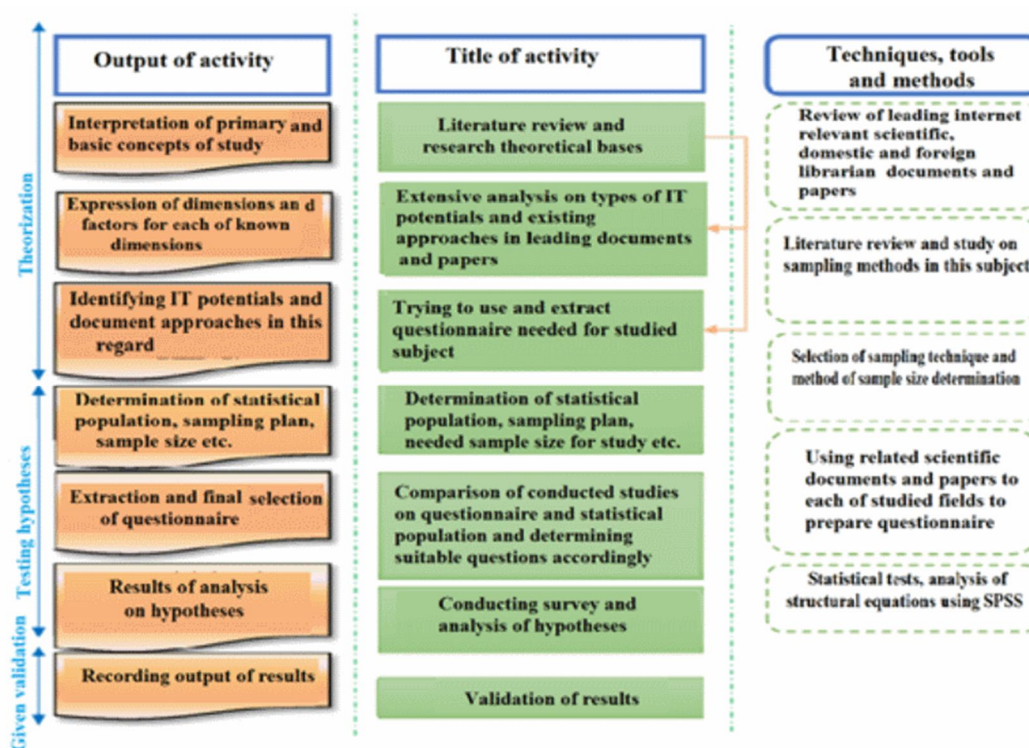


Fig 2. Research steps

4. Research data analysis

4.1. Research reliability and validity

Alpha Cronbach method was used for determination of reliability of questionnaire in this study. This method depends on matching performance of testee from one question to another and calculation of this coefficient is based on standard deviation of questions. Eventually, based on internal consistency of questions alpha value is extracted. If this value is greater than 0.7 it can be said the tool is highly reliable. In other words, items of a scale or parameter are highly consistent for measurement and inversely lower value of alpha denotes lower reliability of measurement tool (Habibpoor, Safari, 2011:358). It should be noted that Cronbach alpha coefficient was derived with high and good value ($\alpha=0.916$) in this study. It can be implied about validity of the questionnaire that whereas questions are concerned with the research subject therefore this issue was revised and confirmed by experts and academic teachers.

4.2. Descriptive findings

In this part of analyses, classification of respondents is examined according to education and based on their positions in the organization.

- Education in respondents

The frequency distribution of respondents is observed in terms of education in Table 1.

Table 4. Distribution of respondents based on education level

Education	Frequency	Frequency percentage
High school diploma	6	6
AA degree	17	17
Ba degree	48	48
MA degree	27	27
PhD degree	2	2
Total	100	100

- Type of communication with organization

The frequency distribution of respondents is observed in terms of position in Table 2.

Table 5. Distribution of respondents based on organizational position

Type of communication with organization	Frequency	Frequency percentage
Organizational director	12	12
Organizational expert	79	79
Expert from applicant enterprise	9	9

4.3. Analysis on research hypotheses

Each of research hypotheses is examined in this section:

- Analysis on relationship between IT and organizational variables (Agility, competency and responsiveness)

Table 6. Correlation test between parameter of IT-use and organizational variables

Variable	Correlation coefficient	Sig
Agility	0.398	0.000
Competency	0.539	0.000
Responsiveness	0.604	0.000

Pearson's correlation coefficient was utilized to determine correlation among IT-use in organization and 3 variables including organizational agility, organizational competency and responsiveness potential. Based on Table 3, the value of correlation coefficient is calculated 0.398 at significance level of 0.000 among variable of organizational agility and Use of IT so it can be concluded that correlation coefficient is significant at confidence level 99% and presence of average linear relation is proved among IT-use and organizational agility. Thus, the first hypothesis of study is approved.

Similarly, correlation coefficients of two other research variables (organizational competency and responsiveness potential) were derived 0.539 and 0.604 respectively. So with respect to their significance level (Sig = 0.000), correlation coefficients of these 2 variables have also become significant at confidence level 99%. Therefore, authenticity of second and third hypotheses is verified and also it is proved there is a relatively strong linear relation among effect of IT with organizational competency and strong linear relationship among impact of IT and organizational responsiveness potential.

1- Comparison of approach (mean responsiveness) to research parameters with respect to educational data and organizational position

- Analysis on mean responsiveness to research parameters with respect to type of relationship with organization (organizational position)

Given the mean scores of responsiveness, in order to analyze impact of IT on 4 studied parameters in organization, One-Way ANOVA (analysis of variance) test was employed in 3 groups of organizational director, expert and expert from applicant enterprises. LSD and Tukey tests, both as Post Hoc series test, are utilized after any type of ANOVA and significant difference among means (Sig level <0.05) to determine accurately among which of variable responsiveness level there is significant difference among means. (Neter & Kunter, 1996)

Table 7. One-Way ANOVA to compare means of research parameters with respect to organizational position

Variable	Group	Mean	Standard deviation	F-value	Sig
Agility	Organizational director	2.41	0.535		
	Organizational expert	2.94	0.609	4.555	0.013
	Expert of applicant enterprise	3.04	0.357		
Competency	Organizational director	2.34	0.529		
	Organizational expert	2.82	0.613	3.478	0.035
	Expert of applicant enterprise	2.80	0.384		
Responsiveness	Organizational director	2.61	0.617		
	Organizational expert	2.84	0.081	0.555	0.576
	Expert of applicant enterprise	2.80	0.159		
Flexibility	Organizational director	2.53	0.534		
	Organizational expert	3.05	0.655	3.544	0.033
	Expert of applicant enterprise	3	0.428		

As it seen table above, results of ANOVA test for 3 variables of agility, competency and flexibility in organization suggest significant difference of responsiveness at three levels of organizational director, organizational expert and experts from applicant enterprises (Sig<0.05). As a result, LSD and Tukey tests were used for determining among which of variable responsiveness levels there was any significant difference and their results were given in the following table.

Table 8. Results of Tukey tests for variable of agility

Variable	Group	Group	Mean difference	Sig
Agility	Organizational director	Organizational expert	-0.530	0.013
		Expert of applicant enterprise	-0.427	0.044
	Organizational expert	Expert of applicant enterprise	-0.102	0.827

Based on interpretation of results in above-said table it can be implied that there is significant difference among attitude of organizational director on impact of IT in organizational agility versus attitudes of organizational expert and expert from applicant enterprise and with respect to Table 4 and due to greater mean score of responsiveness for organizational expert and expert from applicant enterprise compared to responsiveness mean score of organizational director, these two groups have assumed higher impact for IT on organizational agility. No significant difference was observed between 2 groups of organizational expert and expert from applicant enterprise with respect to significance level in comparison between means in two groups (Sig=0.827).

Table 9. Results of Tukey tests for variable of competency

Variable	Group	Group	Mean difference	Sig
Competency	Organizational director	Organizational expert	-0.479	0.027
		Expert of applicant enterprise	-0.462	0.179
	Organizational expert	Expert of applicant enterprise	0.015	0.997

To analyze impact of IT on rate of organizational competency in results of Tukey tests, there is difference only between mean scores in groups of organizational director and organizational expert (Sig=0.027) and with respect to Table 4 and due to greater mean scores of responsiveness of organizational expert, they have assumed higher impact for IT on organizational competency.

Table 10. Results of Tukey tests for variable of flexibility

Variable	Group	Group	Mean difference	Sig
Flexibility	Organizational director	Organizational expert	-0.516	0.025
		Expert of applicant enterprise	-0.464	0.215
	Organizational expert	Expert of applicant enterprise	0.052	0.969

Also in order to analyze impact of IT on rate of organizational flexibility in results of Tukey tests, there is difference only between mean scores of 2 groups of organizational director and organizational expert (Sig=0.027) and the organizational expert has assumed higher impact for IT on organizational flexibility.

- Analysis on mean responsiveness to research parameters with respect to education level

Table 11. One-Way ANOVA to compare means of 4 variables of agility, competency and responsiveness and flexibility with respect to education level

Variable	Group	Mean	Standard deviation	F-value	Sig
Agility	Diploma	2.96	0.427	0.931	0.449
	AA	2.91	0.453		
	BA	2.94	0.651		
	MA	2.80	0.642		
	PhD	2.20	0		
Competency	Diploma	2.85	0.451	1.274	
	AA	2.77	0.604		
	BA	2.86	0.662		

	MA	2.61	0.508		0.286
	PhD	2.14	0		
Responsiveness	Diploma	2.33	1.04		
	AA	2.76	0.600		
	BA	2.88	0.678	0.879	0.479
	MA	2.82	0.694		
	PhD	2.70	0.424		
Flexibility	Diploma	3.28	0.423		
	AA	2.91	0.608		
	BA	3.07	0.660	1.148	0.339
	MA	2.83	0.668		
	PhD	2.64	0.101		

It is seen in table at above for analysis on results of ANOVA test that significance level is derived higher than 0.05 for all variables in this study and as a result there is no significant difference in responsive mean scores for each of variables in various educational groups (diploma, AA, BA, MA and PhD). Therefore, respondents' attitude at all educational levels is the same as impact of using IT in organization on agility, competency, and responsiveness potential and flexibility.

4.3. Limitations

With respect to the conducted analyses, recognition and diagnosis of agility is a long-term process and it should be examined in various times. Likewise, one can also refer to some limitations including impossible organizational analysis before using IT fully and confidentiality of spent costs especially for IT in the organization.

Given the necessity for rising interorganizational communications to increase speed and precision in responding, lack of proper function of relevant organizations may crucially affect the system to become agile more than ever and also capability of organizational experts and the applicant experts also highly impacts employing these systems for this issue that is considered as some limitations for more accurate analysis on effect of IT on organizational agility.

5. Conclusion and suggestions

With respect to research findings it is clarified that there is significant credibility among rate of using IT and reduction or non-use of IT for organizational agility parameters and this is led to non-agility of organization and also all individuals agree unanimously over this point that implementation and employing IT can affect organizational agility in medical equipment and instrument administration and this issue is evident and this finding was also obtained in study done by Khosravipoor and Amirnejad (2014).

It was also finally identified IT infrastructures (especially omission of paper documents from execution trend of works) was significantly related to organizational responsiveness potential and absence of suitable infrastructures and lack of interorganizational mechanized relations strongly impacts organizational responsiveness.

The important point that is inferred from research findings is that IT users at levels of organizational experts and experts from applicant enterprises which are placed lower than levels of directors have more perceived rate of IT impact and this is because of their more involvement in various processes in this administration and the relevant organizations.

With respect to the given findings, these results are much similar to the findings of research literature and this denotes this point that employing IT causes agility at any organization and community and employing it is necessary and inevitable. Thus, all studies indicate basic role of IT in realization of organizational objectives.

Furthermore, it is suggested in future studies to examine other effective factors and dimensions on organizational agility such as skills of users, impact of periodic trainings and effect of change in rules as well as organizational culture versus confrontation with IT.

REFERENCES

- Abdi et al. (2010). *Analysis of effect of modern banking technologies on agility of organizations (Case study: Melli Bank, Sanandaj City Keh Nariman Branch)*, the 4th national conference of technological management in Iran.
- Ahmadi, A. (2014). *Impact of IT on agility of organizations*.
- Bashokooh, M., & Shekastehtband, M. (2013). Impact of IT potentials on business agility. *Journal of IT management studies*, 1(4).
- Beiginia et al. (2010). *Surveying of impact for acceptance of IT on organizational agility (Case study: National Petrochemical Industry Company)*. two Scientific- Research Monthlies of Daneshvar and management behavior and progress, Shahed University, 18(50).
- Falaki (2007). Analysis of effective factors on using IT by experts in Iranian agricultural development system, *Journal of Iranian agricultural sciences*, 2.
- Fathian, M., & Sheikh, A. (2011). Analysis of impact of IT on agility of Small- and Medium-Size Enterprises (SMES), two Scientific- Research Monthlies of Daneshvar and management behavior and progress. *Shahed University*, 18(50).

- Habibpoor Gotabi Karam, S. S. (2011). *Comprehensive SPSS Manual in surveying studies*. 6th ed., Tehran: Luyeh Pub.
- Khosravipoor & Amirnejad (2014). Effect of IT on organizational agility in public universities at Khuzestan Province (Case study: Ahwaz Shahid Chamran University). *Quarterly of social development*, 8th series, 4.
- Lowry, P.B., & Wilson, D. (2016). Creating agile organizations through IT: The influence of internal IT service perceptions on IT service quality and IT agility. *The Journal of Strategic Information Systems*, 25(3), 211-226.
- Neter, J., Kutner, M., Wasserman, W., Nachtsheim, C., (1996). *Applied Linear Statistical Models*. Irwin/McGraw-Hill.
- Panda, S., & Rath, S. K. (2017). The effect of Human IT capability on Organizational Agility: An empirical analysis. *Management Research Review*, (just-accepted), 00-00.
- Rahnavard, F., & Alikhani, Z. (2015). Impact of IT on organizational agility in light of organizational culture. *Journal of management development and change*, 24.
- Ranjan, J. (2008). Impact of information technology in academia. *International Journal of Educational Management*, 22(5), 442-455.
- Salimi et al. (2013). Review on status of effective factors on agility in IRIB. *Scientific- Research Quarterly of organizational culture management*, 11th series, 2.
- Sarlak et al. (2015). Analysis of effective factors on creating agile organizations based on Goldman & Nagel's model. *Journal of management development and change*, 24.
- Sepahvand, M. (2014). Impact of IT on intellectual capital in KM strategies with moderating impact of organizational agility. *Human Resource Management (HRM) studies*, 5th series, 3.
- Shahdad, A., & Habibi, M. (2007). Role of IT in process of formation of agile organizations, *Monthly of management development*, 77.
- Tanha, A. (2011). *Evaluation on rate of impact to use IT on organizational agility (Case study: Alborz Province Social Security Administration)*. Thesis in Payam-e-Noor University (PNU),
- Vaezi Reza, S. F. (2012). Study on E-government and agility in Tehran Province National Organization for Registration of Civil State. *Journal of improvement and management and change*, 19(67).
- Yaqubi et al. (2012). *Review of effect of establishment of E-government in organizational agility (Ministry of Sciences, Researches and Technology)*. 4th national conference on engineering and innovation management.
- Zagardi, H., & Ismaili, M. (2008). Impact of IT on excellence in Iranian organizations, *Journal of management studies in Iran*, 13th series, 2, 45-53.
- Zanjirchi, S.M., & Olfat, L. (2010). Review of technological role to achieve agility in Iranian Electronic Enterprises. *Scientific- Research Journal of science policy and technology*, 3(1).