

## Investigating the Effect of Applying Information and Communication Technology (ICT) on Personal Development of Staff (Case Study: Electricity Distribution Company of Chaharmahal and Bakhtiari Province)

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**Abstract:** The objective of the present study is to investigate the effect of apply ICT on planning the personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province in 2014. Therefore, in terms of objective, the present study is applied and in terms of method, it is a descriptive study employing survey research for collecting data. The population of the study includes all the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province. In the present study, to predict the sample size, stratified random sampling proportionate to population size was employed. The research instrument was a researcher-made questionnaire evaluating five aspects including the effect of applying ICT on the reflection of thoughts and ideas of the staff; registering thoughts, ideas and experiences; planning tasks; implementing tasks; and evaluating tasks. To determine the formal and content validity of the questionnaire, Delphi method was used; it was submitted to the professors, expert at HRM, several times and in each time, the amendments was applied in the questionnaire. The reliability of the questionnaire was determined as 0.98 which indicate appropriate reliability for the instrument. To analyze the data, t-test and ANOVA were used. The findings of the research indicate that firstly, the level of the effect of applying ICT on the reflection of thoughts and ideas of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province is higher than moderate and is at a desired level, secondly, the level of the effect of applying ICT on registering thoughts and ideas of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province is higher than moderate and is at a desired level, thirdly, the level of the effect of applying ICT on planning of the tasks of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province is higher than moderate and is at a desired level, fourthly, the level of the effect of applying ICT on implementing of the tasks of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province is higher than moderate and is at a desired level and fifthly, the level of the effect of applying ICT on evaluating the tasks of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province is higher than moderate and is at a desired level.

**Key words:** Technology; ICT; Personal development planning

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### 1. Introduction

Paying attention to the staff as the biggest and most important capital and asset of each organization has been improved during two recent decades. A lot of upheavals of the recent years engendered in the form of decentralization of management system, reducing organizational layers, the staff's participation in decision making process and other similar matters, are due to attitude change in organizations towards workforces and the emancipation of organizations' staff from the old and deficit definition after the Industrial Revolution (Dolan and Schuller, 2005).

In recent decades, great upheavals have been engendered in the science of management and leadership of organizations and these upheavals have been more concerned with the role of the staff in the success of work and advancement of organizations. Nowadays, in the industrial world,

training the re-training staff have been development expansively and in these years, managers and owners of systems and organizations have found out the value of investing on training staff and have paid great attention to expanding the range of technical and professional training and also education of their staff (Shahani, 1998).

To Abili (2003), human resource development in organizations has been changed into a kind of mutual commitment and expectation between individuals and organizations and in the framework of these mutual commitment and expectation, staff should define mutual rights for themselves besides indicating their practical commitment to dong tasks in line with organizational objectives and behaving in the framework of organizational regulations. Among the most important cases of these rights, utilization of the chance of consistent development of knowledge and work skills and also completion of different personality aspects of the staff can be mentioned.

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The efforts of organizations to promote staff's personal development have created the possibility of exploring latent talents in them and also have enhanced the capability of facing them against critical conditions and preparing them to manage related affairs. It should be noted that the promotion of personal development of each employee has provided the grounds of development of the efficacy of organizations; in fact, it results in the development and growth of organizations besides staff's satisfaction because the first step in promoting and improving performance of productivity of organizations is the increase of personal development of each member of the organizations. As a result, each measure which increases and improves the level of staff's personal development is considered an important and invaluable issue. The importance of improving and promoting staff's personal development in all sections, organizations and institutions of countries is an inevitable necessity. Most of service and productive units and particularly state sections of countries have not satisfactory conditions. In the age of innovations and leading technology, the development and promotion of performance is the key to access achievement in social, economic and cultural aspects and they should be paid attention (Khoshbakht et al., 2012). One of the factors which cause the promotion in personal development is the degree of using and applying ICT in organizations.

Nowadays, the increasing development of ICT inevitably has influenced the everyday life of societies. In other words, the effect of this technology on the dimensions of life is in such a way that no longer one can consider the concepts such as sustainable development and knowledge-based economy separate from this word. What is axiomatic, by developing more quickly ICT in different societies, the productivity of workforces and public welfare will increase and new job opportunities will be created in the ICT capital. ICT as a new infrastructure has attracted much attention to itself in organizations. This infrastructure which generally is defined in the form of collective utilization of electronic systems, remote communication, software, decentralized computer sites and integrated media, has influenced deeply the spatial distance and consequently other systems (Islam Panah et al., 2012).

However previous researches have contributed in understanding the importance of using ICT by experts of HRM (Gueutal, 2005), this issue how ICT can influence the performance of HR units and their personal development has not been investigated yet. In addition, managers are interested to evaluating the value added if ICT in HR domains. To do so, they need to be informed of the effect of ICT on the personal development of the staff. Therefore, the present study is to investigate the effect of apply ICT on planning the personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province.

## 2. Theoretical framework

### 2.1. ICT

Nowadays, in quickly changing and competitive business environment, the access to accurate, timely and related information plays an important role in such a way that many of the activities of organizations such as business decision making, prediction and analysis depend on this information. IT is a tool capable to realize the information needs of organizations and help them in attaining their objectives. In fact, IT is a combination of telecommunication achievement, methods and strategies of problem solving and the ability to direct using software and hardware knowledge. It includes issues related to discussions of advanced computer sciences, technology as well as designing and implementing information systems and their applications (Manian et al., 2009).

In general, IT refers to studying, designing and implementing hard ware and software systems applied for processing, keeping, collecting, sorting, distributing, transferring and protecting information (Gunasekaran and Ngai, 2004).

IT can be defined as a set of computer system used in organizations. In a more accurate definition, IT refers to a technological aspect of information systems and includes software, hardware, databases, networks and other electronic equipment IT can be considered as a periphery system of information system. Sometimes, the word T and information system are used interchangeably (Sepahvan et al., 2011).

IT refers to the process of production, sorting, processing, publishing, transferring and exchanging information through telecommunication capacities and media such as radios, TV, and techniques such as computers and telecommunication which using them makes establishing justice in access to the public information resources and the possibility of interaction with other groups possible (Mathur and Ambani, 2005).

In general, the word ICT covers all technological and convergent innovations in information and communication which changes our world into what is called information society or knowledge-centered society Iranian Secretariat of the High Council of Informatics (1999) presents the following definition for IT:

"IT is an integrated set of methods, software, hardware, and equipment of communication in which information are collected, sorted, retrieved, processed, transferred or supplied in different forms (vices, image and text). IT is like an axis of a set of guided activities which is responsible for controlling management, productivity, production, training, and promoting a system with a centrality".

Recent years, the rapid growth of ICT has had a great effect on human life and the function of organizations in different countries. To experts, as the invention of the steam engine and the occurrence of industrial revolution have caused great upheavals

in work and personal life of individuals, communication revolution has had the same changes in human life (Lorin and Erick, 1997). Thanks to modern communication and information media, the world has been changed into a village which connects information and media as neural systems and limbs of the village to each other. ICT is an expansive set of information's (the Internet, satellites, mobile phones, cable TVs, PCs and videos) which are used for establishing communication among human beings (sending and receiving different kinds of verbal and visual messages) and also for producing, releasing, sorting and retrieving information (Rezaei, 2009).

In fact, ICT as a comprehensive technology has influenced different aspects of our lives and it has covered a wide range of changes in life patterns, education, management, business, transportation, entertainment, and government. In fact, nowadays, concepts such as power and authority are meaningful under the shadow of modern information technology and neglecting it means not having an appropriate status in the age of information. Because power, as a limiting factor for politics, culture and authority, with the constructive structures, has been concerned with these cases, the lack of application of modern technologies can change the face of countries. The increase in the authority of citizens via accessing to information, improving the relationship state organizations with commerce and industry, increasing accuracy and clarity on state tasks, growing state incomes and increasing state costs, creating better feeling in social participation, the role of participation in planning, and promoting efficacy of economic systems are all the advantages and capabilities which are not possible except by IT (Mohammadi et al., 2013).

## **2.2. Personal development**

Achieving success in different aspects of work, life, education and etc. has been among the desires and dreams of individuals, and human beings are interested in the issue to be successful in doing their burdened tasks and responsibilities and consequently use the benefits and positive results of their success in social, economic, family and etc. aspects (Khosravi, 2002). Staff as one of the invaluable capitals and valuable resources of organizations, in case that they are supported and encouraged in doing their organizational responsibilities, they will be an active and powerful motor which can guarantee the growth, development and activeness of organizations (ibid).

In fact, it can be said that the survival of the activities of organizations and institutes depend on the efficacy and efficiency of the staff's performance. Fundamental transformation in organizations has been so quick in recent decades that management of organizations is more complex than ever. Human forces in each country are the biggest capital and resource of organizations. Human resources of each

country can change cultural, social, political, economic etc. structures (Nazem and Hamoudi, 2006).

Personal development or professional development is a continuous process regarding evaluating educational needs of each individual and planning for realizing these needs. This process helps individuals to think about knowledge, performance or successes and plan for their personal and educational promotion and achievement. By creating and implementing planning for personal achievement, a situation is created in which each personnel finds opportunity to speak with his super-ordinate frankly and besides declaring problems, finds out the expectations of the super-ordinate and at last reaches a conclusion in line with better implementation of services. Further, by implementing this project, we can appropriately determine the domains in which the personnel require more training and by concentrating on training of the personnel, we can provide the grounds for increasing efficacy and efficiency of trainings.

The plan of personal development is a written scheduled plan for realizing professional needs of individuals in line with their development and growth. In this plan, it is tried that the staff be developed regarding their capabilities and abilities in line with objectives of their organizations and jobs and establishes a kind of dynamic relationship between the requirements of their personal development and professional tasks. Personal development planning as an applied tool causes the development and promotion of knowledge and skills of the staff via active participation of supervisors and managers, which the most important feature of it is mutual interaction of the staff and supervisors (managers) (Nixon, 1994).

Personal development planning is a tool by which supervisors make a relationship between the staff to compromise on developmental objective and requirements and get familiar with the staff's interests. Personal development planning is a cycle of the planning of the whole organization. As known, strategic planning of organizations concentrates on long-term objectives and practical planning in line with strategic planning of organizations is the guarantee of realizing strategic objectives. Managers and supervisors are burdened with implementing practical plans. Therefore, tasks should be consistent with the priorities specified by the supervisors for doing practical plans and the supervisors should be assured that the staff enjoys sufficient knowledge, skills and abilities for achieving determined objectives. In this line, designing and implementing a personal development plan and evaluating the staff's skills have an important role in doing practical plans of organizations and at last realizing strategic objectives of organizations.

## **3. Literature review**

Gholipour (2009), in a research titled as "the effect of IT on organizational behavior: investigating identity challenges in virtual teams and its effect on the behavior of the members of teams" tried to investigate the effects of virtual teams on organizational identity and analyze organizational consequences of it on team members.

Farhangi (2010), in a research titled as "investigating the barriers to applying efficiently ICT to improve response system of shareholders (case study of state mineral companies in Iran) indicated that the components of social, infrastructural barriers and digital and legal distance had created the most barriers and barriers of information security and change management the least barriers in applying efficiency ICT in line with improving the response system of state mineral companies in Iran.

Gholipour (2011), in a research titled as "the effect of IT on Organizational behavior: the effect of Emails on the evaluation of professors form students" indicted that performance evaluation is influenced by IT and its mechanism is interpreted form the perspective of technology. The lack of non-verbal and body language communications makes evaluation fluctuated and misinterpretations raise. The main idea of this study is that IT and particularly Emails applied abundantly in universities, in one of the main factors affecting evaluation of students in different aspects, while this issue is not important for most professors.

Aghapour (2012), in a research titled as "investigating the role of skills of personal development in curricula in formation of job capability among the students of higher education, Majors of Agriculture, Tehran University" investigated the components affecting the formation of personal development skills among the students of higher education of Tehran University. The findings indicated that of personal development skills are significantly effective on the formation of job capability.

Bani Najarran et al., (2013), by investigating the role of the application of emails in improving staff's and experts' performance of a Malaysian company, found out that the experts of this company, by applying emails in their communications can have better performance in the organization. In addition, they can improve their relations in and out of the organization by applying this technology.

According to Nile (2003), IT can be effective on productivity only through innovation in processes of business. In other words, IT without innovation in business processes cannot have much influence on increasing productivity.

Lee, Hung, Barence and Caw (2010) presented a model in which IT by influencing processes, causes increasing decentralization and integration and in turn improvement of business performance.

Tarutė and Gatautis (2014) investigated the effect of ICT on the performance of small and medium companies and concluded that ICT improves internal and external communication of

companies and consequently improves staff's performance.

Aristovnik (2012) in a research investigated the effect of ICT on educational performance among the countries of Southwestern Asia and Scandinavian countries and concluded that there is a significant difference between the studied countries in terms of application of ICT to educational performance and Finland, Norway and South Korea have more efficacy in ICT. At last, he indicated that the studied countries have the potential in the performance and efficacy of IT and improvement of performance and educational consequences.

### 3. Research questions

Regarding the role and importance of ICT in organizational development and improvement and due to the importance which ICT have for organizational staff, the present study is to investigate the effect of applying ICT on the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province. Doubtlessly, investigating such issue can improve and enrich the literature of personal development. Therefore, the following study is to answer the following research questions:

1. To what extent is applying ICT effective on the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province?
2. To what extent is applying ICT effective on each of dimensions (the reflection of thoughts and ideas of the staff; registering thoughts, ideas and experiences; planning tasks; implementing tasks; and evaluating tasks) of personal development of the staff working in in Electricity Distribution Company of Chaharmahal and Bakhtiari Province?

### 4. Population, sample size and sampling method

The population of the study includes all the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province who was 453 individuals. In the present study, to predict the sample size, stratified random sampling proportionate to population size was employed. In addition, due to having a 453 individual population, 208 participants were selected using the mentioned sampling method.

### 5. Research instrument

The instrument used in the present study is a 25 item researcher made questionnaire including five aspects consisting of the effect of applying ICT on the reflection of thoughts and ideas of the staff; registering thoughts, ideas and experiences; planning tasks; implementing tasks; and evaluating tasks. This questionnaire was designed based on five-point Likert scale and scored from 1 means strongly disagree to 5 strongly agree.

To analyze the data, descriptive and inferential statistics (one sample t-test) were used.

**6. Research findings**

In this section, based on the collected data, the research questions are investigated. T-test was used for analyzing the data.

To what extent is applying ICT effective on the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province?

To investigate the first research question, one sample t-test was used. The results are presented in Table 1.

According to the findings of the table, the mean score of the effect of applying ICT on the staff's personal development is 3.75. The observed t is bigger than the table t; therefore, the score of the effect of applying ICT on the staff's personal development is bigger than the moderate level and it is statistically significant.

**Table 1:** comparing the mean scores of the effect of applying ICT on the staff working in in Electricity Distribution Company of Chaharmahal and Bakhtiari Province with the hypothetical mean 3

| Components  | Mean | SD    | t    | df  | P     |
|---|------|-------|------|-----|-------|
| The effect of applying ICT on the staff's development | 3.75 | 0.734 | 2.58 | 206 | 0.011 |

To what extent is applying ICT effective on each of dimensions (the reflection of thoughts and ideas of the staff; registering thoughts, ideas and experiences; planning tasks; implementing tasks; and evaluating tasks) of personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province?

To investigate the first research question, one sample t-test was used. The results are presented in Table 2.

**Table 2:** comparing the mean scores of the effect of applying ICT on each of dimensions of personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province with the hypothetical mean 3

| Components  | Mean | SD   | t     | df  | P     |
|---|------|------|-------|-----|-------|
| the reflection of thoughts and ideas of the staff | 3.32 | 0.72 | 6.48  | 207 | 0.001 |
| registering thoughts, ideas and experiences       | 3.85 | 0.44 | 27.71 | 207 | 0.001 |
| Planning  | 3.73 | 0.41 | 25.34 | 207 | 0.001 |
| Implementing                                      | 3.94 | 0.49 | 27.50 | 207 | 0.001 |
| Evaluating  | 3.67 | 0.53 | 18.14 | 207 | 0.001 |

According to the findings of Table 2, the mean scores of the effect of applying ICT on each of dimensions of personal development (the reflection of thoughts and ideas of the staff; registering thoughts, ideas and experiences; planning tasks; implementing tasks; and evaluating tasks) of personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province are 3.32, 3.85, 3.73, 3.94, and 3.67 respectively. The observed t is bigger than the table t; therefore, the score of the effect of applying ICT on the staff's personal development is bigger than the moderate level and it is statistically significant.

**7. Discussion and conclusion**

The mean score of the effect of ICT on the staff's personal development is 3.75. The t observed is bigger than the t table; therefore, the score of the effect of ICT on the staff's personal development is more than the moderate level, which is statistically significant. It means that the results indicated that ICT is effective on personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province. The authorities should improve and promote ICT and eliminate problems with necessary and timely requirements

and measures and try to improve the weaknesses in their planning and decision makings.

In organizations with ICT, the issue of staff's personal development has faced with changes and transformation. Performance of every organization depends on the performance of its human resources and their interaction with resources, facilities, equipment and technology present in the organization. In addition, the performance of human resources depends on their motivation and capabilities. The ability of human resources in turn depends on professional skills and knowledge in applying the mentioned knowledge in doing professional tasks and activities.

IT with its factors has engendered great upheavals in companies and organizations in such a way that their total performance of such companies is totally influenced by the degree of applying discussed technologies. In this arena, human resource management, due to its expansive role in organizations, is influenced by these changes.

Growth and development of ICT cause cheaper and easier sorting, retrieving and distributing valuable information so that we have not to create them again. ICT has two advantages for every organization. First is that their organizations and managers enable them to access the data as easily as possible and this factor causes more support of the process of decision making. Secondly, by utilizing

ICT, organizations are enabled to in a competitive space, act more desirably and consider their qualitative decision makings and efficacy (Hedelin and Allwood, 2002).

Other results of the present study indicate that the mean score of the effect of ICT on each dimensions of personal development (the reflection of thoughts and ideas of the staff; registering thoughts, ideas and experiences; planning tasks; implementing tasks; and evaluating tasks) of personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province are 3.32, 3.85, 3.73, 3.94, and 3.67 respectively. The observed  $t$  is bigger than the table  $t$ ; therefore, the score of the effect of applying ICT on the staff's personal development is bigger than the moderate level and it is statistically significant.

As the results of the present study indicate, because the value of the significance level is less than 0.05, it can be said that the null hypothesis is rejected and the research hypothesis is confirmed; in fact, the effect of applying ICT on the staff's personal development is bigger than the moderate level and it is statistically significant at the significance level 95%. Accordingly, it can be concluded that the level of the effect of applying ICT on each of the dimensions of the personal development of the staff working in Electricity Distribution Company of Chaharmahal and Bakhtiari Province is higher than the moderate level and it is at a desirable level. The findings of the present study are consistent with those of Hassanzadeh (2005), Gholipour (2011), Aghapour (2012) and Bani Najjarian et al., (2013). It means that when the employees of the organization uses ICT, they feel that they can identify their unrealized needs and use the registered reports and documentations, and also contribute to registering and illustrating documents regarding plans in which they participated. IT can help to register and keep agendas and regulations of the staff. The findings of the present study indicate that the use of IT increase the degree of utilization of an integrated database for facilitating information transferring and due to implementing this technology in the organization, the enthusiasm to develop new method and models has been created among the employees more or less. In fact, this modern technology can engender conditions in the organizations in order that communications can be facilitated and ideas can be circulated in the organizations. In addition, the management receives this information seriously and investigates it. This issue can be possible via the management system of job ideas. Further, using IT, the wall of registering ideas and thoughts can be run systematically by the used of IT in order that everyone can register each idea comes to his or her mind.

When the organization utilizes IT tangibly, the employees feel that by using IT they can present their needs and ideas and determine their objectives better. In addition, they can identify what activities they can do to attain their objectives. They imagine

that by using IT modern method of tasks are changed in organizations. Declaring ideas and thoughts have threats and risks with it, some employees may humiliate the presenter of some ideas, or those who are not interested in changes may oppose those who have declared their ideas. But, by new technologies and IT, declaring ideas has been possible for the staff in a more desirable way.

The employees, using IT, can use the feedbacks amended by the system and think that without the Internet the ability to use standard electronic services will be reduced without considering the place where they are present. On the other hand, due to applying ICT, auxiliary and peripheral functions of friends and colleagues increase and applying the principles of new planning cause the increase in using IT. In addition, the degree of using IT is significantly effective in coordinating personal planning.

### 7.1. Applied suggestions

It is suggested to managers and supervisors that:

- They should consider tasks and standards of doing tasks, job accounts, knowledge of skills and necessary ability to do an appropriate performance with the approach of applying new technologies. It means that they should consider the needs of the organization in future years regarding the strategic plans of changes in technology of hiring employees. Further, they should identify the potentials of realizing needs after need assessment in order that the staff can have the motivation and ability to develop and reflect their ideas and thoughts.
- They use IT in issues related to hiring human resources such as employment, selection, training and systems of compensating service and evaluating staff's performance.
- They should identify the needs of the staff's development by comparing skills and abilities with job needs.
- They should identify the opportunities of job paths and selection of the best alternative for each person.
- They should provide educational software systems.
- They should provide information and training for the users of credit cards.
- They should regulate personal development plans.
- They should create enthusiasm in the staff for developing their knowledge and skills outside the requirements or official training presented by organizations and learning IT.
- They should discuss with the staff about the objectives of development: the role of supervisors and managers in the process of developing personal development is as a "tutor and guider". Managers and supervisors should provide the facilities and equipment (new technologies) for increasing knowledge and skills as well as

developing different aspects of the staff to access development objectives.

- They should create visual technology due to the fact that using these technologies; individuals can concurrently communicate visually with each other while they are outside the organization.
- Implementing a personal and professional development system for each of the staff.
- They should do measures regarding investigating and evaluating the best strategies of efficacy of ICT in personal development in small and medium firms and prioritize them. In addition, it is suggested to the researchers that small and medium industries should be divided in terms of fields and activity types and investigate the role of ICT in staff's personal development in each of these industries. After that, the results of different industries should be compared with each other.

## References

- Abili, Kh. (2003). Human resource development systems. The proceedings of the 1<sup>st</sup> conference of of human resources development. Tehran: Iran.
- Aristovnik, A. (2012). The impact of ICT on educational performance and its efficiency in selected EU and OECD countries: a non-parametric analysis, University of Ljubljana, Faculty of Administration, Slovenia.
- Doaln, L. Sh. And Schuller, S. R. (1999). Management of staff's and human resources' affairs. M. A. Toosi and M. A. Saebi. Tehran: Center for Training State Management
- Eslam Panah, M., Kavosi, E. and Hashemi, M. (2012). Investigating the application of IT and its role in increasing organizational productivity. Shoe Industry Monthly. 19 (178). 40-44.
- Gholipour, et al. (2011). The effect of IT on Organizational behavior: the effect of Emails on the evaluation of professors form students. ICT Journal. 3 (7). 115-132.
- Gueutal H. G., Stone D. L. Preface. In H. G. Gueutal, & D. L. Stone, The Brave New World of eHR. San Francisco: Jossey-Bass; 2005.
- Gunasekaran A, Ngai E. W. T (2004). Information systems in supply chain integration and management, European Journal of Operational Research, 159(2): 269-295.
- Hedelin, L., and Allwood, C.M (2002). IT and strategic decision making. Journal of Industrial Management & Data Systems. 102(3): 125-139.
- Khoshbakht, M. A., Khaef Elahi, A. A. and Ahmadi, S. A. (2012). Identifying and prioritizing factors of human resources management affecting on promoting staff's efficacy (case study: traffic police headquarters). Journal of Traffic Police. 1 (1). 31-56.
- Khosrvai, M. (2002). One hundred tips for improving staff's and managers' performance. Development Management Journal. 42. 69-73.
- Lorin, M. H. & Erick, B. (1997). Information Technology and Internal Firm Organization: An Exploratory Analysis. Journal of Management Information Systems, 14(9): 81-84.
- Manian, A. et al. (2009). Investigating the relationship between consistency of IT and business with organizational performance in companies active in IT using SEM. ICT Management Journal. 1 (3). 89-106.
- Mathur, A. and Ambani, D. (2005). ICT and rural societies: opportunities for growth. The international information and library review, 37(4): 345-351.
- Mohammadi, J. et al. (2013). An analysis of evaluating ICT and its role in realizing social participation and enablement of urban management: case study District 6 of Isfahan. Urban Management Journal. 11 (31). 223-239.
- Nazem, F. and Hamoudi, J. (2006). The relationship between managers' creativity and improving the staff's performance in oil organizations. Management Journal. 3 (7). 80-89.
- Rezaei, M. (2009). Theories of accepting ICT. Communicative Researches. 16 (4). 63-93.
- Sepahvand, R. et al. (2011). Investigating the role of ICT in decreasing factors affecting the occurrence of administrative corruption in the Document Registry organization of Lorestan from the perspective of the personnel. Evaluation Knowledge Journal. 3 (10). 57-84.
- Shahani, A. (1998). Evaluating in-service courses from the perspective of the staff of Agriculture Organization of Mazandaran Province from 1995 to 1997. MA thesis. Tarbiat Modarres University.
- Taruté ,A& Gatautis, R. (2014). ICT impact on SMEs performance. Procedia - Social and Behavioral Sciences 110, 1218 –1225.