

Reinforcing self-controlling among Employees, Consequence of Information Technology

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Abstract: - Information & Communication Technology (ICT) penetration in developed countries has been for years, as the African countries also that have poor people have used this technology and employ it well for developing human life, learning and.... Iran is one of the large developing countries of the world and regarding its strategic situation in Middle East and in the world, comparing to other countries, more than any country to be equipped with the technology and knowledge of the world. For many years, that Iranian individuals and organizations, in the form of hardware and software, use this technology. Thus, regarding information and communication technology as the development and is so important and we are estimating the way of influencing of this technology to indices of developing human resources in organization.

The research is in type of understanding and the main tool for gathering data is the question Nair. For this reason, we use different statistic test like holograph Smirnoff, will Cookson test two told mono- sample, one –sided mono-sample Wilcoxon test, two fold mono- sample symbol test, one- sided mono – sample symbol test and freedom test. The results show that information technology has a direct effect on the indices of developing human resources.

Keywords: -Technique, Technology, Information, Information Technology, Communication, ICT, Developing Human Resources (HRD)

1 Introduction

Since middle of 20th century, a new time was beginning which was accompanied. With the end of industry age. First, by entering of the computer into the market and then with evolution of information and communication, the computers joined to information technologies like/ telephone and TV, and the revolution of “information technology (IT)” happened the use of information and communication technology causes the increase of information processing power and speed, relative fall of hardware and soft ward’s price, wide spread use of mechanized systems, producing optional information.

Systems and rapid and easy availability to information in the form of collective and synchronous, possibility of data being counted and translated with a very high speed and in wide geographical yield.

By using the information and communication, it’s possible that the same products with lower price, an increase in products levels with. The same price and also exposure of products without unnecessary increase of prices being produced. Therefore, with the expansion of product scale and making the new abilities and situations, employing of the skilled persons is increased, and also the information and communication technology will cause the increase of performance value and wider level of organization

services and then will result in development, profit and extending human force.

Thus, in this paper we assay to understand whether the information technology effects on extending variables of human resources.

2 To review of literature

The organizations clearly contain of something more than the organization graphs. Their existence created on the base of multiple resources like human, financial, material, information and knowledge resources and the managers are responsible toward the combination and harmony of these multiple and various resources. Despite of this, the development of human resources for organizations seems a vital functionality, because the main constituent of organizations, are its human resources (Schuler, 236-260, 2000). Increase and development of human resources in two past decades has begun with some evolutions. In this span of time, this registers domain is introduces in the field of business management. These evolutions which are created on the base of economic, technology, legal and social changes, and impressed of growing structural, belonging to corporations, and geographical situation of organizations particularly, make changes in the rule and share of human resources (Abbas pour, 1384, p38).

Therefore, we concentrate on the way of accessibility of development variables of human resources.

3 The Information And Communication Technology

There are different definitions and interpretations of information and communication technology and human resource development, on the one hand shows the extent and importance of which can be considered from different angles, and the other hand, represents a dynamic subject that can provide models, theories and provide different opinions. According to the aforementioned documentary, below are a few of the various definitions provided in the information technology and communications and components and human resource development are addressed.

3-1 Techniques

In English language (Technic & Technique) means art, "technical work". The meaning of technical rules and expression, technical information, technical code, skill and masterfulness are its subsets. Therefore, someone who is informed of industry techniques, said technician. Now the term technology which in English literature and language consider noun, is heard. More in our language, that for sustaining the Persian language is replaced with term "technology".^[1]

3-2 Technology

Means the classical techniques with the technical rules of technology, technical expressions and technical savvy which are equal of technology in English language.^[2]

3-3 Communication

With regarding to its word it means connection, means of communication, exchange, transmission and means of transportation and rule eaten.

3-4 Information

The meaning of information regarding the expression ascribe to the processed words which has meaning for the user.^[3]

3-5 Information technology (IT)

IT means the ways of produce and gathering of the information and using then by minim ting, make chopper and easier use of computer programs in society and Information technology organization cause easier accessibility to information for everybody.^[4]

^[1] . M. Shohrati-far, 2008, pp14-18

^[2] . M. Shohratifar, 2008, pp14-16

^[3] . M. Shohratifar, 2008, pp17-20

^[4] . F. Mohammadnejad, 2008, p41

3-6 The Information and Communication Technology (ICT)

Technologies or techniques that by the techniques, the raw information or data that do not understand the meanings and concepts are in the process of analysis and after having understood meanings and were converted, it's possible to transfer them to consumer market by the electronic systems.^[5]

In the information and communication technology, the communication systems and technologies are so important and they are considered to apply the information and communication technologies gifts and privileges.

4 Human resources development

Human Resources Development (HRD) of continuous growth and continuous development and improvement of various aspects and is an all-encompassing.

On the other hand, the subject of human resources development is a broad debate, the development of a person relate to us working, social, private life, and the cultural and religious issues.^[6]

McLean, in 1982, described the human resources development, "Human resources development is the coherent use of learning and development, organic and occupational development in order to improve individual, mass and organic effectiveness".

In 1995, Swanson also described human resources development in this way. The procedure of human resources development is the procedure of developing the expert staff though organic development and training the staff and make development in order to improve the performance.

Van Cruder considers human resources development as a target and procedure. Human resources development contains a programmed approach in order to change the knowledge, skills, understanding, values and behavior, thinking of a learner or a grope of learners. The goal is to develop human resources, to train the required human resources, knowledge and skills needed for successful community, and create or enhance the productive capacity of the staff. However, many scholars and development planners believe that development of human resources and its goal is the

end point, but its main purpose is to understand the potential for human development and individual self-reliance.

5 Reasons of using the information technology in organization.

- 1) Supporting the business procedures.
- 2) Supporting the decision of the managers and the staff.
- 3) Supporting the organization strategies in order to gain the competition privileges.^[7]

6 Strategic applications of information technology

Make the increased value in working precedence; make an effective organic relation with customers, producing the new decision making and increasing the organic competence, to promote the organic learning, to gain the competition privilege.^[8]

7 Duty of information technology

- 1) Care and process
- 2) Dividing duties
- 3) Network management
- 4) Information management
- 5) Information development.
- 6) Development of IT engineering systems.
- 7) Functional development
- 8) Business development

8 Classified information systems

8-1 TPS (Transaction Processing Systems)

- Are simple and are popular;
- Most of them are used in organizations with little difference;
- Typically, the resources and powers will pursue them;
- Example: a simple system of accounting, warehousing or rights;

^[5] . M. Shohratifar, 2008

^[6] . A. Davoudi, 1999

^[7] . James A. O'Brien, 2005

^[8] . A. Ahmadi, 2004, p52

8-2 MIS (Management Information Systems)

- Provides management information to solve problems;
- A collection of interconnected systems that seek to use an integrated database.

8-3 DSS (Decision Support Systems)

- Several databases (including foreign banks) use;
- Manager using a series of filters that extract the relevant information.

8-4 ES (Expert Systems)

- Unlike the decision-making systems, expert systems alone will take some decisions;
- When used as a complete system that is capable of modeling;
- Expert systems are used in a limited range. (Example: a power plant control system.)

8-5 EIS(Executive Information Systems)

- Information is collected from different areas of operation;
- Uses of foreign intelligence;
- Critical success factors are under control;
- Problems and exceptions are reported at the time of creation.
- Graphical user interface is simple;

8-6 Office Automation Systems

Many believe that there is no system and framework with office automation, while there is a combination of various vehicles and equipment for the simplification of administrative activities that called office automation.^[9]

But from the 1960s that more aspects of the administrative and commercial activities use were expanded. There is a proper administrative system that encompasses large amounts of information, correspondence, correspondence will be clearly felt;

^[9] . Sarrafzadeh, 1386, p. 64

which has various names such as office systems, information systems, administrative systems, end-user and end-user computing systems.

But the most popular and highest degree of automation systems, to be called office automation. These systems have no clear definition but are limited to determining the user's perspective and this means that your office automation systems are numerous definitions. Some of them are mentioned here.

Office automation, including all the electronic systems of formal and informal. To communicate information between people inside and outside the organization is concerned and vice versa. Communication is the key word that is distinct Office Automation from data processing, management information systems and decision support systems. Office automation to facilitate communication, both verbal and written forms.^[10]

8-7 Communication system

position time	Different	similar
Different	Discussion groups and email Chat Room	Group decision support systems, electronic meeting rooms
similar	Discussion groups, Internet email	Video conferencing, interactive and chat rooms

Table 1: a framework of time - space in communication^[11]

- Internet: The Internet is a vast communications.
- Extranet: Communication within the company or organization is called the Extranet.

^[10] . Raymond, 1998

^[11] . Sarrafzadeh, 1386, p. 79

- Intranet: Intranet is a network between companies.

9 Research conceptual model

The model of case work that has been posed by Dr. Iraj Sultani^[12], investigate the role of the information technology in human resources development. Since the existence of functional and new information is the axis of human resources development, in a logical procedure in the name of international technology can help to make the new power development in human resources. Figure 1 illustrated 7 variables which are effective in human resources development.

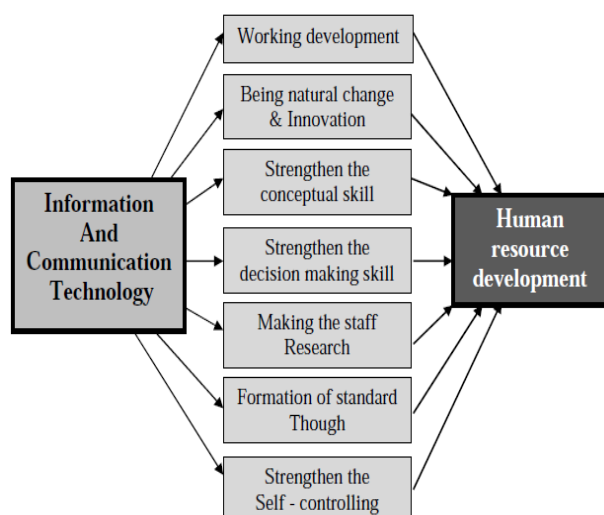


Figure1: the ductile variables of human resources development in the information technology^[13]

Seven variables in human resource development are affected by this process, along with their indicators are as follows:

9-1 Professional development, effective measures are:

- To renew old skills.
- To complete capacity of previously empty.
- Creates new skills.
- Skills training are a process.
- Make links between the skills of employees.^[14]

9-2 Institutionalization of change and innovation, effectiveness indicators are:

- Institutionalization of change
-
- Institutionalization of innovation

9-3 Revival Cognitive skills, effective indicators include:

- Understand the power of the individual elements of awareness of information systems will be strengthened.
- Understand the relationship between power and data components are enhanced.
- The overall picture and summary information is available.
- To understand the logical relationships between data, logical thinking person to be equipped.
- Predictive power goes up.^[15]

9-4 Revival Decision-making skills, effective indicators include:

- Troubleshooting problems and opportunities is the cornerstone of strategic decisions, faster and more accurately done.
- Comprehensive planning can be better developed.
- The quality of decisions increases.
- When decisions are minimized.

^[12] . Iraj Sultani, 2003, pp.70-75

^[13] . Iraj Sultani, 2003, p72

^[14] . Mohammad Nejad, 1380, p. 41

^[15] . Sultani, 1382, p. 43

- Human error in the network of data processing is reduced.
- Tendency to assume there is a rational decision.
- Rapid feedback from decision-making skills is improving.^[16]

9-5 To build Research staff morale, effectiveness indicators are:

- Ability to use information on individuals can be strengthened.
- Ability to select the information goes up.
- The ability to identify individuals increases.
- People are sensitive about the information.
- The research group is formed.^[17]

9-6 The standard-oriented thinking, effective indicators include:

- Overall framework of the standard makes clear.
- Criteria and indicators will be needed.
- Will determine the extent of the standard.
- Monitoring information to the person, for that.
- To promote a standardization of the documentation is concerned.
- Provide the intellectual coherence.
- Of subjectivity involved in the work will prevent.^[18]

9-7 Encourage self - control, effective measures are:

- It increases the speed of access to information.
- Rapid feedback allows information.
- Reform and change, knowledge is easily done.

^[16] . Varess, 1377, p. 54

^[17] . Sultani, 1378, p. 58

^[18] . Fadavi, 1357, p. 29

- The standard deviation is known.
- Person to discover weaknesses in your business and professional deals.
- Person does well on its knowledge management.^[19]

10 Research methodologies

This paper is acquired from a functional research which is a descriptive – survey type and was done in a sectional form and is the total of gathering the information in the questionnaire. The context of this questionnaire was investigated and confirmed by some of the experts and managers, also for durability of this questionnaire 35 ones of the training and human resources development center were selected to complete the questionnaire. **Cronbach's alpha** index for all the questionnaire was counted about 9. 903.

This questionnaire has **3 parts**, which are given below.

Part-A) General information contained type of employment, work history, educational field, academic paper and sexuality.

Part-B) these are some question about the information technology.

Part-C) by 37 questions will investigate the human resources development.

Depending on the type of questions and the Likert scale is used and the options of very low (1) to high (5) is determined. Questionnaire has been prepared by the researcher. Questions about the components of the independent variable and the dependent variable with other approaches and interpretations and have been openly questioned.

The research hypothesis was used in the questionnaire and the questioned subjects are the same components of independent and dependent variable. 377 questionnaires considering the statistics sample were gathered and the results were investigated.

^[19] . Mir - Fakhray, 1380, p. 51

Data analyzing methodology and steps of research for analyzing the questionnaire, first the questions were codified. Minimum choice 1, low 2, and the maximum.

Choice 5. Then each of the indices was counted by the average quantity. In this research two methodologies are used:

A) Descriptive statistics, tables and the amplitude and software SPSS & Excel graphs were used, in order to analyzing data and Information, and their graphic show.

B) Perceptive statistics: In order to describe the sample characters, the data were classified which by using the descriptive statistics indices were gathered first (table 2).

Row	Test case
1	Kulmugruf-Smirnov Trial
2	Two-Sided Mono-Sample Wilcoxon Trial
3	One-Sided Mono-Sample Wilcoxon Trial
4	Two-Sided Mono-Sample Symbol Trial
5	One- Sided Mono-Sample Symbol Trial
6	Freedman Trial

Table 2, Statistical tests used

11 Demographic characters of investigated sample

The main characters which this sample has are:

- 027. 1 percent with financial working nature ,50.9 percent supporting working nature, and 1.1 percent operational working nature 0.32.9 percent of the respondents , had less than 5 years, 18.6 percent 6-10 years, 10.3 percent 11-15 years, 16.4 per cent 16-20 years and 21.8 percent more than 20 years working story.
- 03/3 percent of than had management diploma, 26.8 percent computer diploma, 8.5 p

er cent accounting diploma and 31.3 percent others.

- 015.4 percent of them were managers, 16.4 percent supervisor, 61.3 percent experts and 6.9 percent staff.
- Bachelor's degree, 25.7 percent M.A, 6.4 percent doctorate.
- 032.4 percent of them were female and 62.9 percent male.

12 Research results

After investigating the sample results, we understand that:

- 070.8 percent of investigated society were used Transaction Processing Systems (**TPS**) and they made their ideas about this system.
- Regarding that 96.8 percent of researched society also worked with Office Automation System (**OAS**), we can consider their ideas about these systems, too.
- 053.3 percent of them worked with Knowledge Work System (**KWS**) and can consider their ideas about this system.
- 062.1 percent worked with Managing Information System (**MIS**), and their ideas are related to this system.
- Just 8.2 percent work with Decision Support Systems (**DSS**).
- A just 15.1 percent work with Executive Supporting Systems (**ESS**) and their ideas are related to this system.
- 092.0 percent work with the Communication System (**CS**), and their ideas are also related to this kind of system.

To perform this research a separate questionnaire was given to the manager of informatics sector, and because this questionnaire was owned to one person, its information show that the information systems in this company were covered the entire subject well.

Also, the result of normality trials of Komolgrov-Smirenov shows that the spread of research variables is not efficient, which finally by use of unporometric trials of Wilcoxon and symbol, the following results in table are gained:

Human development elements	The results of statistics hypothesis trial
Working development	Information communication technology has a positive effect on working development
Innovation & change being nature	ICT has a positive effect on innovation & change being nature.
Strengthen the understanding skill	ICT has a positive effect on strengthening the decision making skill.
Making the research mode for staff	ICT has a positive effect on making research need among staff.
Creating the standard thought	ICT has a positive effect on creating the standard thought
Strong then the staff self-controlling	ICT has positive effect on strengthening the staff self -controlling

Table 3, outline of the results of Wilcoxon and symbol trail (medium trial)

And also the results of freedman trial about the research variables are outlined in table 4.

Row	Index	Rank average	Rank
7	Strengthen the staff self controlling	5.55	1
1	Working development	4.02	2
3	Strengthen the understanding skill	3.88	3
4	Strengthen decision making skill	3.88	4
6	Create the standard thought	3.86	5
2	Innovation & change being nature	3.61	6
5	Making research mood among the staff	3.19	7

Table 4, classifying the human resources development variables by freedman trial.

13 Discussion & conclusion

The aim of this research is investigating the effect of ICT in HRD by using the aforesaid model. Since this technology is performed for a longtime in national Iranian Oil Company, thus we can understand the necessity of the way of performing the system in human resources development.

There are some indices for each of the variables that we can explain the ductile effect of ICT for each variable. For the primitive variable of strengthening self- controlling of these indecies are respectively: increase the accessibility rate to the information, make the expression and knowledge evolution to be easy, power of individual knowledge management , the rate of information reaction, founding the weakness of working, about second variable, working development, these indecies respectively are: skill training procedure, make the relation between staff skill, complete the empty capacities and refine the past skills, for third skill , strengthening the understanding skill they are: equipping the individuals to logical thought between data, to gain information outlook, strengthening forth variable , strengthening decision making they are: reducing the individuals faults in the organic information processing network, increase the decisions quality, reducing the decision making time, strengthening the documentation , make thought coherent, to make a total frame work of standards , to assign total deviation, the sixth variable, to being the innovation & change nature, the indecies are to being the change in organization nature, & to make the innovation nature in organization, the seventh variable, to make the research mood, they are: to strengthen the information use in personals, to increase the information selection ability by individuals.

Therefore, since the average of the indecies rand about the variables, it can be gains the following results:

- ICT can document the data and information, directly.
- ICT has a meningeal positive effect in reducing the human fault in the organic information processing network.
- It's possible to make thought coherent among the organic staff about particular problems by using the ICT.
- ICT makes possible the direct & rapid accessibility.

- ICT has a direct effect a reducing the decision making time.
 - ICT prepares the best reline of general programs.
 - IT increases the logical decision making.
- It's possible to manage the individual's knowledge by ICT.

On the other hand, we can conclude the following results by the research results:

- Since 96.8 percent of the staff work with the OAS, namely all the individuals can access the conference on video, sound box capabilities, particular capabilities of telephone, secretariat software ...
- 70.8 percent of the research society uses the TPS; with the system, such as payroll systems, personnel statistics, accounting, inventory, sales and marketing, quality control and...This work will impact on Human Resources Development variable.
- 53.3 percent of sample work with KWS' like engineering work stations, strengthening the understanding skill, designing the products...
- 62.1 percent of sample individuals work with the MIS, like controlling the cash, sale management, annual budget... it means that it has an approximate positive effect on HRD's variables.
- Just 8.2 percent of the sample individuals are working with the DSS. Like, the analyzing system of the sale's areas, analyzing the costs, the production programming... this system covers large amplitude of the organic strategic information & data, namely this system has a large effect on HRD's variables, but just the senior managers can access on it.

So, finally reached the conclusion that the variables and indicators of human resource development are meaningless without it. This is because it directly affects all the variables. So pay attention to information technology, will develop human resources easily; finally, organization will put in way of macro-development programs of country.

14 Suggestions

Regarding this research, we're trying to make some suggestions to reline the organic use of ICT for HRD in the future researches:

- How the ICT results in the innovation and change being natural?
- What should be done in the supporting system of the senior managers' decision to increase the predicting ability of the managers?
- Which feature: of Information and communication systems result in the mass research?
- How the ICT system effect on the reliving the staff's skills?
- How the staff ear effects on the mass working?
- How the information system effects on completing the empty capacities?

Therefore, it should be noted that the positive or negative, are expressed in the proposals; we identify them and try to strengthen or weaken the positive and negative points that need.

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