

**Research Article**

## **CLARIFYING THE ROLE OF INFORMATION TECHNOLOGY IN DEVELOPING HUMAN RESOURCES AMONG THE STAFFS OF DIRECTORATE GENERAL ECONOMIC AND FINANCIAL AFFAIRS IN NORTHERN KHORASAN AND AREAS AROUND**

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### **ABSTRACT**

The aim of present study is to analyze the role of information technology in developing human resources among the staffs of Directorate General Economic and Financial Affairs in Northern Khorasan and areas around. Population for the research consists of all staff of the Department of Economic Affairs and Finance in North Khorasan and areas around. A sample size of 108 was achieved using Morgan Jersey Table, but the sample was calculated to be 100 in normal because of elimination of the number of samples. Data collection tool was a researcher-developed questionnaire of information technology and a standard human resources questionnaire which their validity and reliability were confirmed. The collected data were examined using statistical methods. The results indicate the relationship between information technology and its components except professional skills with the development of human resources.

**Keywords:** *Information Technology, Human Resource Development and Professional Skills*

### **INTRODUCTION**

Technology is a set of processes, methods, techniques, tools, equipment, machinery and skills required to make the product or service (Rezayian and Taghizadeh, 2007). In informatics culture, information is the set of digital letter or symbol elements with clear and specific meaning and can be subject to automatic processing (Shamszadeh, 2009). According to the definitions and Information Technology, numerous definitions are provided for information technology such that it can be integrated IT service achievements or methods and strategies for problem solving or the direct ability to use computer knowledge (Mashayekhi, 2007). Tambe & Hitt (2013) stated the IT workers movements in the company are supposed to be an important mechanism by which an innovation is related to the information published in the economy (Lal, 2006). One of the most important activities of the societies is to deal with labor shortages in the information technology industry and other public and private organizations and compensation costs and problems caused by the lack of IT (Mehri, 2002). Various factors relate to the development of information technology, such as the development of microprocessor technology, shrink of their size, reduction of the cost of computers, development in the use of computer, development of the network relationship and growth rate of Internet (Montazer and Fathian, 2003).

Today, human resources are the most valuable asset of any organization and the most important factor of production and the development of human capabilities of each organization. HRM includes all management decisions and actions that impacts on the nature of the relationship between an organization and its personnel or human resource. In this way, human resource management in organizations is of particular significance because in one hand it must be communicated the demands and expectations of top managers to employees and on the other hand transfer the needs and requests of staff to senior management. The nature of management requires close cooperation with other managers and all those who are responsible for monitoring and coordinating a number of staff (Yaghobi). There are lots of discussions about human resource development but what is important in this regard is that human resource development is not only the result of technical training, but rather through a comprehensive training system to foster staffs (Ghasemi, 2010).

In today's world, information technology is organizations' and society's base for human development and determines fundamental aspect appropriate to the needs of society and individuals. In human resource

## **Research Article**

development, must always know new capacity of people to develop human capabilities and qualities as a lifelong process. This will depend on the use of information technology, since information technology is the process of information production, processing, distribution and management, therefore, information technology will solve their problems when it is served to develop the subjects in human and combines capabilities to lead the development and productivity (Ghorbanizadeh, 2013). Decades have passed since the application of empowerment. But what is new is the role that information technology plays in enabling whole coherence. Ran dolt (2004) had experienced empowerment of ten institutions that and stated significant factors in enabling successful. He stated that the most important factor is information sharing (James, 2001). When the organization intended to empower their employees, information systems can be considered as an essential component in this field and justified greater access to information to provide lower levels of the hierarchy (Pohjola, 2002).

So as it was said, the main objective of the present study was to investigate the role of information technology in developing human resources among staffs in the Directorate General for Economic and Financial Affairs in Northern Khorasan and areas around. The other goal of this study was to evaluate the impact of information technology, including professional skills, perceptual skills, decision making skills and self-regulatory skills on human resource development.

## **Research Literature**

The concept of information technology

### **A: Technology**

Technology is a set of processes, methods, techniques, tools, equipment, machinery and skills that they offered to a product or service. Technology is the application of science to industry, using procedures and regular and objective studies (Tariq, 2002).

### **B: information**

There are numerous definitions of information, some of which are based on meaning (semantic) and others are based on quantity. Some of these definitions are:

According to the dictionary definition of "ALA", Information is the whole idea, the reality and mind creative works that are formally or informally registered, published or distributed in any case and may be documentary or unofficial (Young, 1983). On the basis of standard marking, information contained in one of the following statements (Fathian and Mahdavinoor, 2010):

- Books: textual materials that are single mapped.
- Consequence: textual material that are repeated on a regular basis, such as periodicals.
- Maps: geographical areas such as flat maps or globes.
- Computer files: which are used on different computers and softwares
- Auditory and visual: are included audio information cassettes and images.
- Combinations: a combination of the above.

In informatics culture, information is the set of digital letter or symbol elements that their concept is clear and specific and can be subject to automatic processing (Fathian and Mahdavinoor, 2010).

### **C: Information technology**

According to the definition of information technology, numerous definitions are provided for information technology. It can be said that the information technology (Montazer and Fathian, 2003) is:

- Integration of telecommunication achievements, methods and approaches to problem solving and ability to direct and the use of computer knowledge.
- Includes advanced topics related to science and computer technology, computer design, implement information systems and its applications.
- Integration of traditional knowledge of computer and communications technology to store, process and transfer of any data (including text, audio, image, etc.).
- Generic term that is used to broaden the innovative products and services for telecommunications and computer electronics.
- A set of hardware, software and thinkware that makes the flow and utilization of information possible (ibid).

## Research Article

### **Impact of Information Technology on Organizations**

Today any organization proposes the use of information technology and information systems and everywhere is the usefulness or necessity of using computers. Thus, managers have to use information technology in their organizations for expenditure or investment and are faced with a question: "where are the borders of investment in technology?" Naturally, technology is a cost-effective way than the traditional methods because of the use of information technology in organizations. Managers need to know how IT is useful and effective. In other words, information has impact on indicators that all are the preconditions for the success of today's organizations. Evaluate the implementation is the major concerns of organizational decision makers (Rezaeian and Taghizade, 2007). A lot of researches are considered positive aspects of information technology. However, ongoing researches describe the ways in which they often influence the use information technology in social and organizational life (Tarafdar *et al.*, 2013).

The use of information technology has been developed in addition to a variety of information systems that are designed for different needs. Information technology enables administrators to work with the environment and make relationship more and better. Participation in decision making, increasing the speed of decision making, increasing problem identification speed, reducing the height of the pyramid organization, improve coordination, and increasing in specialized staff are just some of the effects of information technology and information systems on some of their organizations (Mehri, 2002).

### **The Role of Information Technology in the Development of Human Resources**

In today's world, information technology is organizations' and society's base for human development and determines fundamental aspect appropriate to the needs of society and individuals. In human resource development, must always know new capacity of people to develop human capabilities and qualities as a lifelong process. This will depend on the use of information technology, since information technology is the process of information production, processing, distribution and management, therefore, information technology will solve their problems when it is served to develop the subjects in human and combines capabilities to lead the development and productivity. Accordingly, due to the impact of information technology on human resource development, this paper examines the concept of information technology, explaining the concept of human resources development and the role of information technology in various aspects of the human resource development (Golmohammadi, 2006).

Human resource development needs data-driven applications which data in the process named Information Technology will help the development of human resources. From the perspective of Gorbani Zade (2013) information technology leads to human resource development in the following dimensions:

1. **Professional Development:** A man developed operational symptoms that helps employment or makes easy process is a skill with developing areas. When capacity is a skill to progress but does not provide the appropriate content, skills become obsolete after a while and do not meet the organization and the individual need. Then will renew the information empty capacities and gives new life to old and will help to develop the skills of staff because new information creates new expectations on the people and after a while they will become proficient and to new skills and employment. In general, information technology will help to develop the skills of staff in the following dimensions and will facilitate employment and productivity.

A) Rebuilds the old skills

B) Completes the previously empty capacity

C) Create new skills

D) Provides a link between workers' skills (Ghorbanzadeh, 2013).

The value of skills will increase with advances in technology and advanced information technology provides the advanced skills. Information technology increases the range of human skill. Information technology create areas such as communication skills, verbal and written communication skills, presentation skills, communication skills, content and strengthen the use of information on staff (ibid).

2. **The institutionalization of change and innovation:** a sign of human development is that human constantly generates new ideas and employs mass opinion, in a sense, to be creative and innovative. Base of creativity is the existence of enough information so that information can be combined together to build

## **Research Article**

a new collection which features have new applications. The institutionalization of change and innovation depends on people deal with the data production.

In an interactive process, information and human technology influence on each other and change and innovation will become institutional if it works well. When the influence of information technology and the acceptance of the people in this situation are reduced, it does not change and the effort and energy spent on maintaining the quo status.

When the influence of information technology is high but humans' adoption is not much, information remains without customer and obtains no results and if the influence is low but the acceptance is high, creativity will occur in space of information thirst and ideally, the influence of technology is high and acceptance rate is high and the result is a combination of creativity and change. On the other hand, human resources development has a strong focus on innovation and development of organizations through involvement and participation of individuals and organizations and emphasizes human values (Haji Karim, 2004). Rendalf (1988) knows information sharing of staff as one of the key steps to create empowerment in the organization. Those with information can almost entirely be responsible for making decisions.

History of the first definition of the term empowerment refers to 1788 as the empowerment was known for self entrusting the role in organization which should be granted by authority to an individual or observed in his organizational role. The empowerment means the individual's willingness to accept responsibility for his words that was first interpreted as accountability.

Geru (1971) referred to the common definition in dictionary of empowerment that includes legal delegation of powers, entrusting the responsibility and mission and the power sector. In 1990 Gandz conceptualized empowerment with the transfer of personnel decisions but Zimerman (1990) pointed out the easy and impossible definition and believed that the definition of empowerment is easy when we consider it regardless of words such as distress, powerlessness and alienation. If we define it due to the different people, it is difficult (Jamshidian, 2007).

Empowerment literature so far has seen great changes until finally Li (2001) defined it as the field to promote dialogue, critical thinking, and work in small groups and noted that allowing activities to move beyond sharing, sharing experiences and refining, thinking, seeing and conversations are the main components of empowerment (Rajaeepour, 2007).

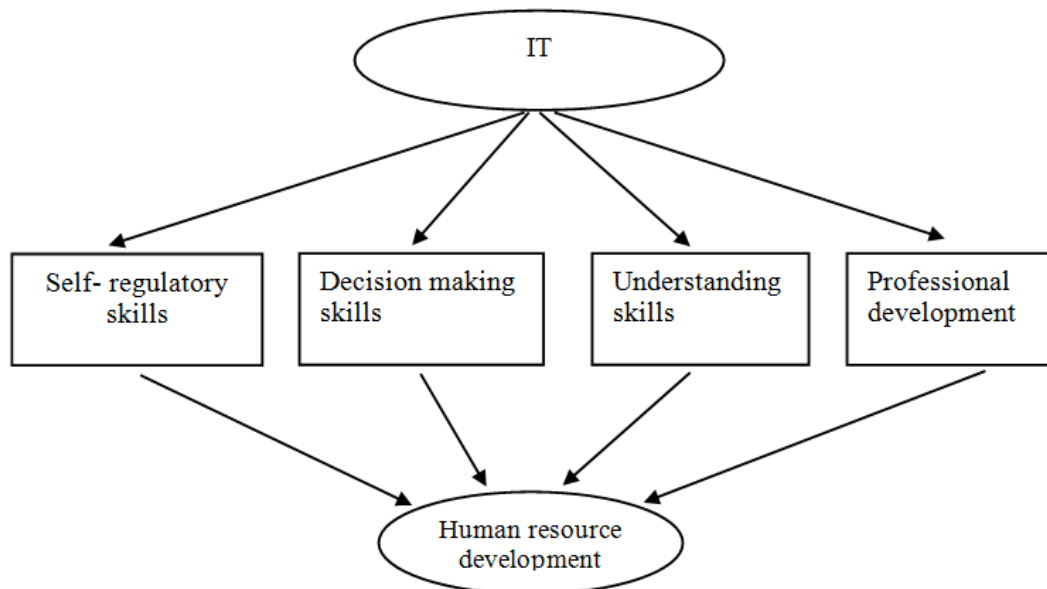
Decades have passed since the application of empowerment.

But what is new is the role that information technology is making to it possible to build an overall coherent. Ran dolt (2004) had experienced empowerment of ten institutions that and stated significant factors in enabling successful. He stated that the most important factor is information sharing (Andrew, 1997). When the organization intended to empower their employees, information systems can be considered as an essential component in this field and justified greater access to information to provide lower levels of the hierarchy (Ralp, 1997).

For example, expert systems, where experts are not available offer advice and computer networks allow team members to communicate effectively with each other and with other teams. Teamwork is a vital element in team-based organizations which are strongly supported by information technology. Information Technology makes possible the decentralization of decision-making and authority by a centralized control and enables employees to have access to the information they need to make quick decisions. Perhaps the most important IT support of empowerment is the providing of accurate and timely data with quality and appropriate cost.

In addition, information technology can provide new tools that enhancing the creativity and productivity of employees and also quality of work (Ephraim *et al.*, 1998). Therefore, in this study, a total of 2 main components and four sub-components are used that the components are a subset of the information in this research which are derived from the objectives and research questions. Thus, following model was designed for the study with respect to the objectives and existing scales.

## Research Article



**Figure 1: Conceptual model of research**

## Research Hypotheses

### Main Hypothesis

There is a relationship between information technology and human resource development of staff.

### Secondary Hypotheses

- 1- There is a relationship between professional skills and human resource development staff.
- 2- There is a relationship between perceptual skills and human resource development staff.
- 3- There is a relationship between decision making skills and human resource development staff.
- 4- There is a relationship between self-regulatory skills and human resource development staff.

## MATERIALS AND METHODS

This study is applied and solidarity. Survey method was used to gather information.

Population for the research consists of all staff of the Department of Economic Affairs and Finance is North Khorasan and areas around which the total number is 150 members. A sample size of 108 was achieved using Morgan Jersey Table. However, because of Outlier data in the normal calculation, the total numbers of 8 samples were excluded and the sample size was 100 cases. Amos Software reported measure called Mahalanobis distance or  $d^2$  which is calculated for each of the cases under study. The value of this index is based on the distance from the geometric center. Geometric center is determined based on the average of all observed variables.

For the case when the distance is large, it is considered to be remote. The minimum value of  $d^2$  is equal to zero while its maximum with respect to the measure of the observed variables can be of any great value. However, if the reported rate of Mardia at the end row is in the acceptable distance it is a sign of violated normality. Data removal is regarded as remote and show recalculating the normality as the main factor in violation of normality, shows there has been a remote data collection (Fathian and Mahdavinoor, 2010). In this paper, because the 8 cases have been considered as outlier data, they were excluded from the sample. Subjects were selected by random method.

The researcher made questionnaire was used for the information technology. The questionnaire contains 18 questions which are designed with a five-point calibration. The questionnaire is divided to professional skills, perceptual skills, decision making skills and self-regulatory skills. The professors' help and advice, teachers and other education professionals were used to determine the content and face validity of the questionnaire. After receiving a Masters of Education Comments, face and content validity was obtained.



## **Research Article**

Item analysis was used for validity. Reliability based on Cronbach alpha coefficient was  $\alpha = 0.86$  that indicates validity is good. Standard 14-item questionnaire of Subba *et al.*, (1999) was used to measure human resource development which is based on Likert scale. As facial validity is confirmed in Article Subba Rao *et al* and reliability coefficient (Cronbach alpha) was  $\alpha = 0.746$  that is good evidence for the validity of the questionnaire. Using the questionnaire mentioned and data collection, data analysis is calculated using regression.

### **Data Analysis**

#### *The Main Hypothesis*

There is a relationship between information technology and human resource development of staff. Checking multivariate normality assumptions for variables in the information technology and human resource development are shown in Table 2. Calculations are based on two variables; the Mardia coefficient at the last row of the table shows less than 1.96 which means the confirming of multivariate normality of assumption. Estimates to test the hypothesis can be seen in Table 4 which indicates a high correlation between information technology and human resource development according to the gamma factor standard. The critical ratio is 2.10 indicates a significant level of 0.03 and indicates the coefficient is significantly different from zero. With the least number of samples and at least 95% of confident it can be said that there is a relationship between information technology and human resource development.

#### *First Secondary Hypothesis*

There is a relationship between professional skills and human resource development of staff. Table (1) indicates multivariate normality assumptions for variables of professional skills and human resource development. Based on the calculations for the two variables, the value of Mardia coefficient is less than 1.96 which shows an endorsement of multivariate normality assumptions. Estimates to test the hypothesis can be seen in Table 4. Standard gamma factor is 0.55, the critical ratio is 1.28 and significance level is 0.20 which indicates that the coefficient is not significantly different from zero. Thus, given the sample size of the study can be concluded that with at least 95% of confident in the population, there is no relationship between professional skills and human resource development.

#### *Second Secondary Hypothesis*

There is a relationship between perceptual skills and human resource development of staff. Table (1) indicates multivariate normality assumptions for variables of perceptual skills and human resource development. Based on the calculations for the two variables, the value of Mardia coefficient is less than 1.96 which shows an endorsement of multivariate normality assumptions. Estimates to test the hypothesis can be seen in Table 4. Standard gamma factor is 0.69 which shows a close correlation between perceptual skills and human resource development, the critical ratio is 3.39 and significance level is 0.000 which indicates that the coefficient is significantly different from zero. Thus, given the sample size of the study can be concluded that with at least 95% of confident in the population, there is a relationship between perceptual skills and human resource development.

#### *3<sup>rd</sup> Secondary Hypothesis*

There is a relationship between decision making skills and human resource development of staff. Table (1) indicates multivariate normality assumptions for variables of decision making skills and human resource development. Based on the calculations for the two variables, the value of Mardia coefficient is less than 1.96 which shows an endorsement of multivariate normality assumptions. Estimates to test the hypothesis can be seen in Table 2. Standard gamma factor is 0.80 which shows a close correlation between decision making skills and human resource development, the critical ratio is 3.21 and significance level is 0.001 which indicates that the coefficient is a significantly different from zero. Thus, given the sample size of the study can be concluded that with at least 95% of confident in the population, there is a relationship between decision making skills and human resource development.

#### *4<sup>th</sup> Secondary Hypothesis*

There is a relationship between self-regulatory skills and human resource development of staff. Table (1) indicates multivariate normality assumptions for variables of self-regulatory skills and human resource development. Based on the calculations for the two variables, the value of Mardia coefficient is

### Research Article

less than 1.96 which shows an endorsement of multivariate normality assumptions. Estimates to test the hypothesis can be seen in Table 2. Standard gamma factor is 0.87 which shows a close correlation between self-regulatory skills and human resource development, the critical ratio is 4.36 and significance level is 0.000 which indicates that the coefficient is a significantly different from zero. Thus, given the sample size of the study can be concluded that with at least 95% of confident in the population, there is a relationship between self-regulatory skills and human resource development

Finally, this paper examines the relationship of information technology dimensions at the same time using a regression model to predict the development of human resources. For the purpose, information technology dimensions are considered as an independent variable and human resource development is considered as the dependent variable. Thus the dimensions of information technology have prediction power of 0.56 to express human resource development.

**Table 1: Evaluation normality assumptions of multivariate**

Critical ratio	Elongation	Critical ratio	Division	Highest variable	Lowest variable	Variable
0.12	-0.05	-0.52	-0.12	5	2.85	human resource development
-0.29	-0.14	-1.12	-0.27	5	3.77	IT
0.21	0.17					Mardia coefficient
-0.30	-0.14	-3.90	-0.95	5	3.60	Professional Skills
0.25	0.20					Mardia coefficient
-0.41	-0.20	-1.13	-0.27	5	3.40	Perceptual skills
0.29	0.23					Mardia coefficient
-1.38	-0.67	2.34	0.57	5	3.75	Decision making skills
0.55	0.44					Mardia coefficient
0.34	0.17	-3.55	-0.87	5	3.50	Self-regulatory skills.
0.11	0.09					Mardia coefficient

**Table 2: Parameter estimates for standard and non-standard gamma and significant level**

Non-standard gamma coefficient	SEM	Critical ratio	Significant level	Standard gamma coefficient		
0.03	0.01	2.10	0.035	0.88	IT	↔
0.01	0.01	1.28	0.20	0.55	Professional Skills	↔
0.12	0.03	3.39	0.000	0.69	Perceptual skills	↔
0.08	0.02	3.21	0.001	0.80	Decision making skills	↔
0.16	0.03	4.36	0.000	0.87	Self-regulatory skills.	↔

## Research Article

Thus the perceptual skills ( $0.05 > p$  and  $\beta = 0.20$ ), decision-making skills with ( $0.05 > p$  and  $\beta = 0.33$ ) and self-regulatory skills ( $0.05 > p$ ,  $\beta = .33$ ) are positive and significant predictor of the development of human resources. And self-regulatory skills and decision making skills are more powerful predictors. The four hypotheses were examined and the expected powers of information technology dimensions in human resource development are provided in following:

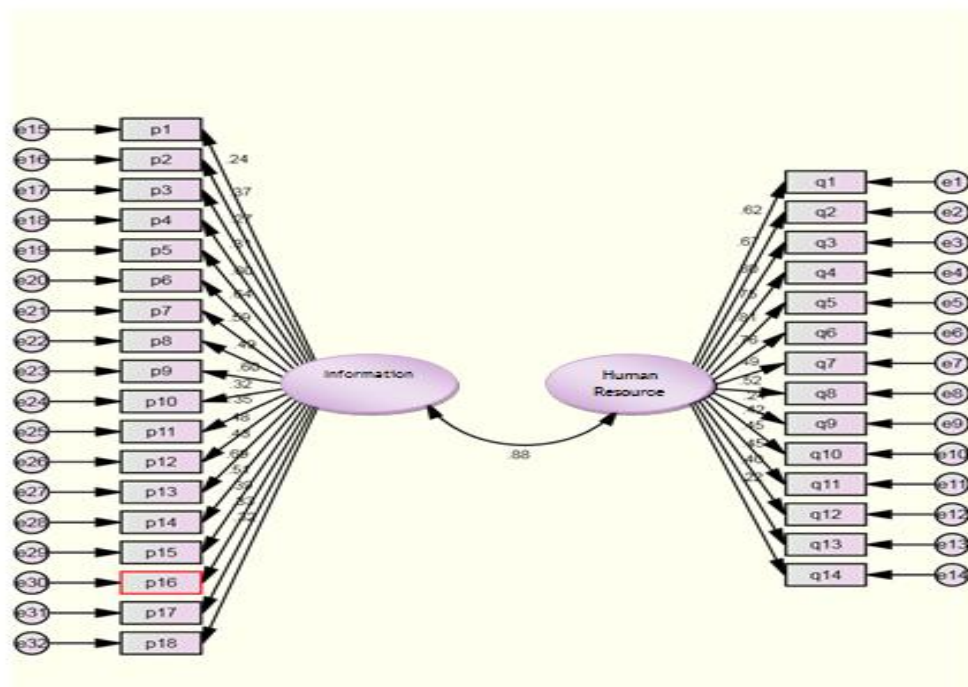


Figure 2: Relationship between Information Technology and Human Resource Development

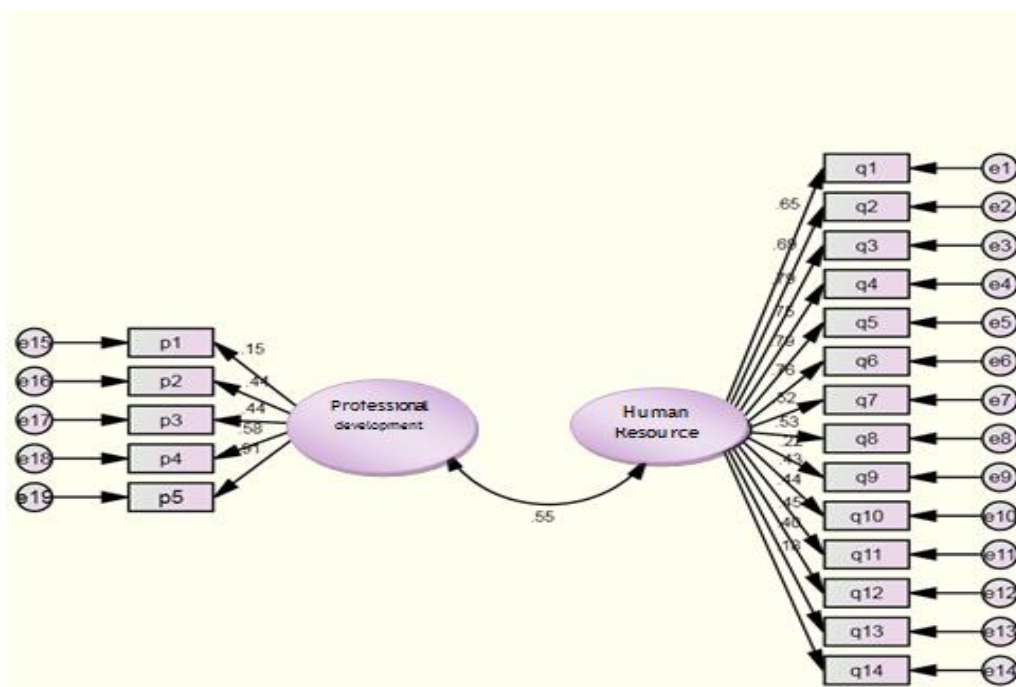
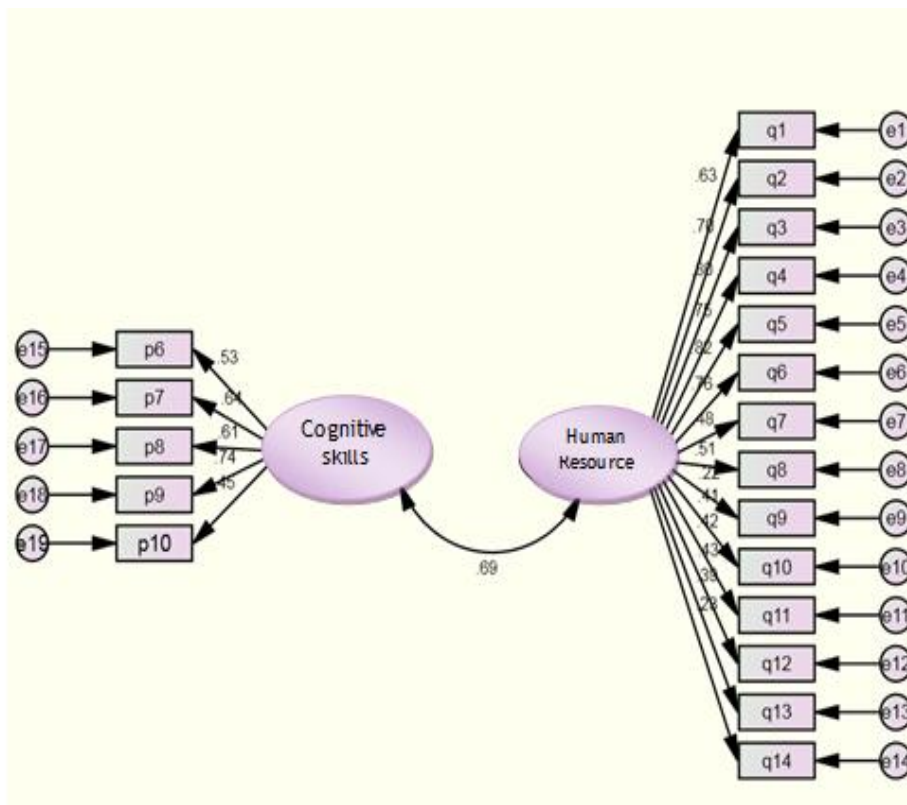
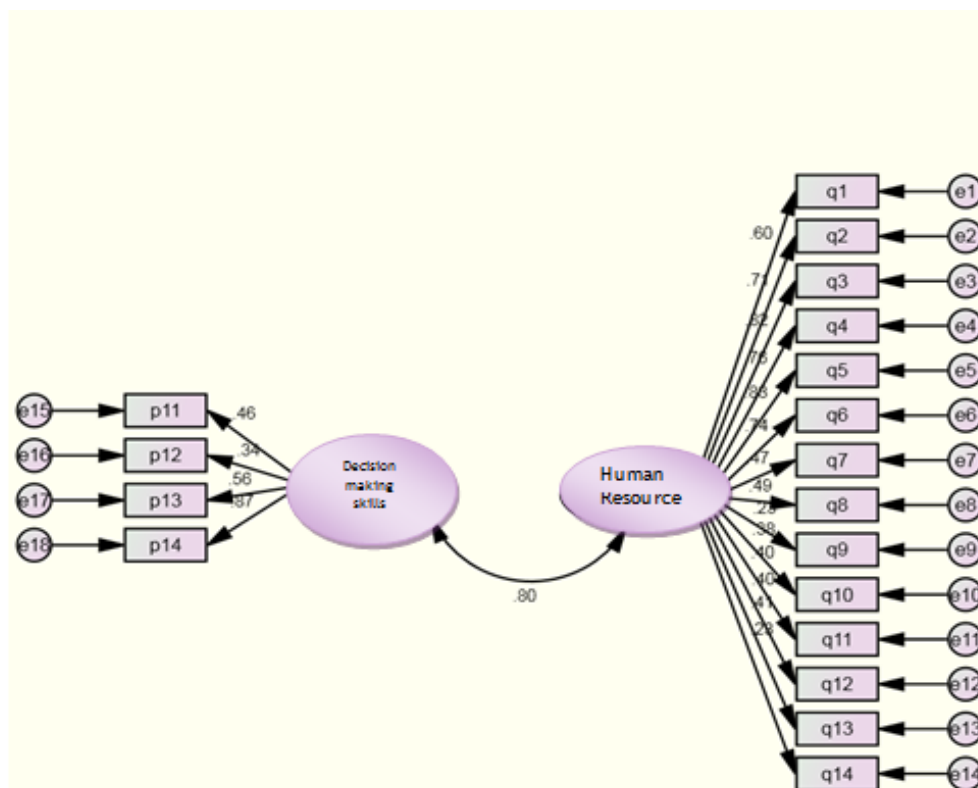


Figure 3: Relationship between professional skills and human resource development

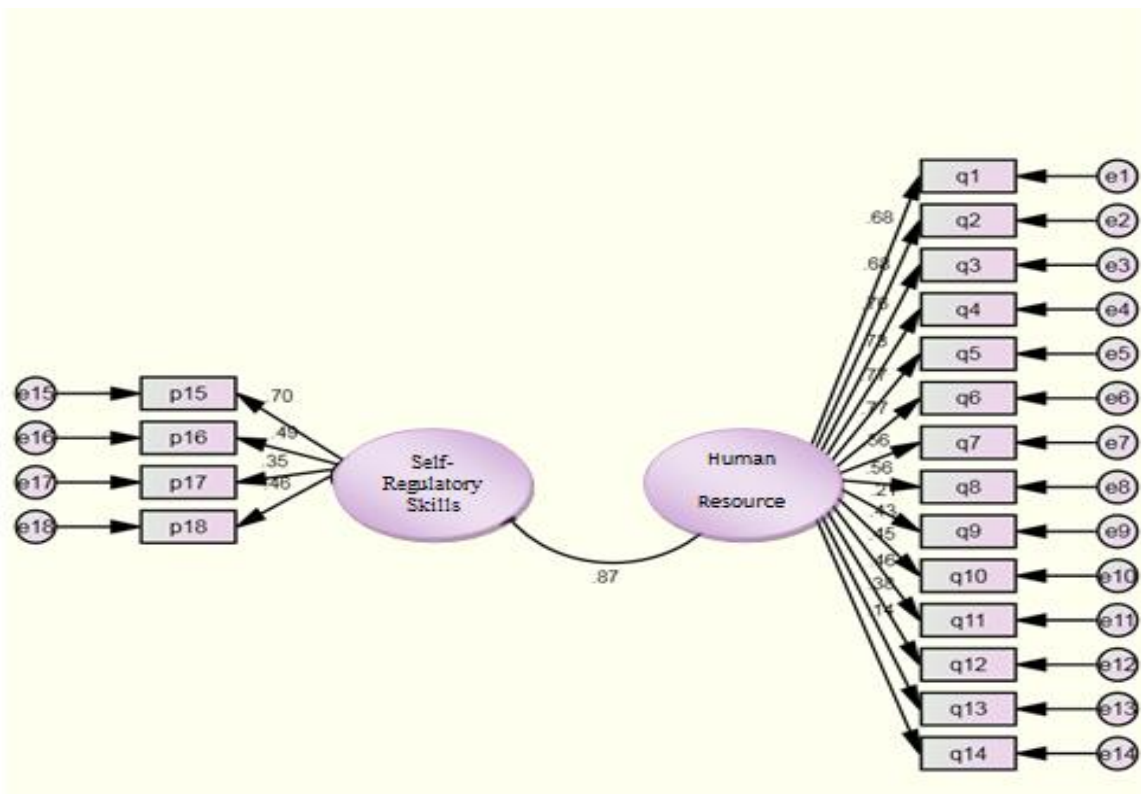




**Figure 4: Relationship between cognitive skills and human resource development**



**Figure 5: Relationship between human resource development and decision making skills**



**Figure 6: Relationship between self-regulatory skills and human resource development**

### Conclusion

The main hypothesis of this study was to investigate the relationship between information technology and human resource development which was confirmed that is consistent with the results of Mashayekhi (2007), Ismaili (2006), Sultani (2003) and Mahmood (2006) and also non- consistent with Rahnemon *et al.*, (2009). From four sub-hypothesis show no relationship between the professional skills and human resources development. The next three hypotheses about the relationship between cognitive skills and Human Resource Development are in line with the results of Mashayekhi (2007). Mazidabadi (2005) and Sultani (2003), and "self-regulatory" is in line with Mashayekhi (2007) and Mahmoodi (2006). Sultani (2003), "the decision making" are in line with the results of Ismaili (2006), Mashayekhi (2007) and Sultani (2003) which were approved.

In the present era of information technology should be beneficial to the quality of human resources otherwise, progress was not achieved. Information technology is being prepared for globalization and this globalization has impact on the next targets. In a world where communication has hundredths of seconds with a simple click to establish a relationship with the world, staying behind is a failure of this magnitude to any organ or training, or education, or economic or industry, therefore, it is essential for all organizations seeking to achieve the goal for increasing the quality of human resources to get the best results. There is no doubt that information technology and efficient use of this technology is the most effective method.

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### Research Article

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