

A Study on Electronic Human Resource Management at The Central Bank and Effectiveness of Human Resources Management System

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Abstract

The rapid development of internet and acceleration of the use of web-based technologies cause the penetration of information technology in processes and systems of human resources and create new approach in human resources management which is referred to as electronic human resource management. Electronic human resource management with advanced technologies are supportive and advocator of human resource management. While the implementation of this system has many advantages in organizations, some researches indicate hesitation on application of this technology. The present study sought to answer the question of whether electronic human resource management is effective on effectiveness of human resource management? This study is considered as a descriptive one. The statistical studied population is the Central Bank of the Islamic Republic of Iran, and the data was collected using a questionnaire. Research results suggest that the use of electronic human resources management will lead to effectiveness of human resources management system. At the beginning, Spearman coefficient test was used in order to investigate hypothesis at the end, use of the confirmatory factors analysis on general value of research model is investigated and emphasized.

Key Words: Electronic Human Resource Management, Strategic Effectiveness of Human Resource Management, Technical Effectiveness of Human Resource Management, Human Resource Management Effectiveness.

1. Introduction

With the advent of information technology and its development in various fields of business, various aspects of the organization, ways of doing things and looking at the processes have changed, the change is also on why and how the process are affected. The core focus of this change has been on human resource and its management.

Information technology with tools and modern systems is able to represent valuable services to managers and human resource departments and act as strong facilitators. Therefore, in order to integrate their business processes, reduce costs and increase efficiency and enhance strength and maintenance of its own organization in competitive conditions human resources management is required to use a web-based organizational systems, such as electronic human resource management systems (e-HRM).

This term was introduced in the 1990s; it is a way to implement strategies, policies and activities of human resources with absolute use of the web channels. Therefore, electronic human resource management is a concept and is a choice to accomplish the human resource management; it is not considered as a way for its replacement. Therefore, there must be policies and implicit or evident activities related to human resource management for implementation of this technology in this organizations. Hence the implicit or explicit management activities human resources exist(Reiss, 2003). e-HRM seeks delivering information anytime and anywhere to managers

and the employers. Recently, these systems may include enterprise resource planning software, human resources services centers and managers and employees association. So, it allows employees to manage their personal information through the updating and decision making. And it allows managers to access data and information management, analysis, and decision-making and communication with others without consultation with the Department of Human Resources (Ruel & Bodarouk, 2004). Reply to what extent these measures were in line with the strategic role of human resources, the aim of human resource management efficiency increase and improvement of the overall performance of the business and organization, field researches are needed to be done.

1.1. Statement of the Problem

The rapid and increasing development of information technology and its operational capabilities in the different areas of organization cause the penetration of information technology in human resources processes and systems and it creates new approach in human resource management named as electronic human resource management. (Mead et al, 2007) (3). Different organizations have applied these systems in different levels such as communicational, operational and transformational levels in terms of their expectations and conditions; they have experienced corresponding results in terms of organizational areas. It seems this is an opportunity for human resource professionals to be more efficient by keeping them away of lots of routine duties and works; it also helps them focus more on strategic aspects of their jobs. Today, companies are seeking facilities by which they can do human resources operations more efficiently. The need for more efficient operations on one hand and communication and information technology facilities on the other hand, all together have led to a rapid evolution of human resources electronic systems. It is expected that introducing human resource management in a strategic and more efficient way facilitates the job for human resource professionals (Voermans & Veldhoven, 2007). Although, many researches point out that electronic human resource Management has many positive and tangible results for organizations and leads to costs reduction, effectiveness, flexibility and participation of employees with the appearance of this system, some studies show that more obstacles are made in organizations such as Job stress, complex management of human resources and lack of success in the use of technology-based assets (Stone et al, 2006 ; Strohmier, 2007). This has prompted researchers to explore more about the results of the application of this technology in practice on the effectiveness of their human resource management.

2. Literature Review

2.1. Human Resource Management Effectiveness

The effectiveness of human resource management can be analyzed at different levels. Some conducted studies and researches focus on human resource management activities, while other analysis are relative to human resource system as a whole. Lepak and colleagues (2004) believe that there are three levels in the analysis of human resource system and considering these three levels seems to be very important for the understanding of human resource management. These three levels and the way of their influence on each other have been shown in figure (1).

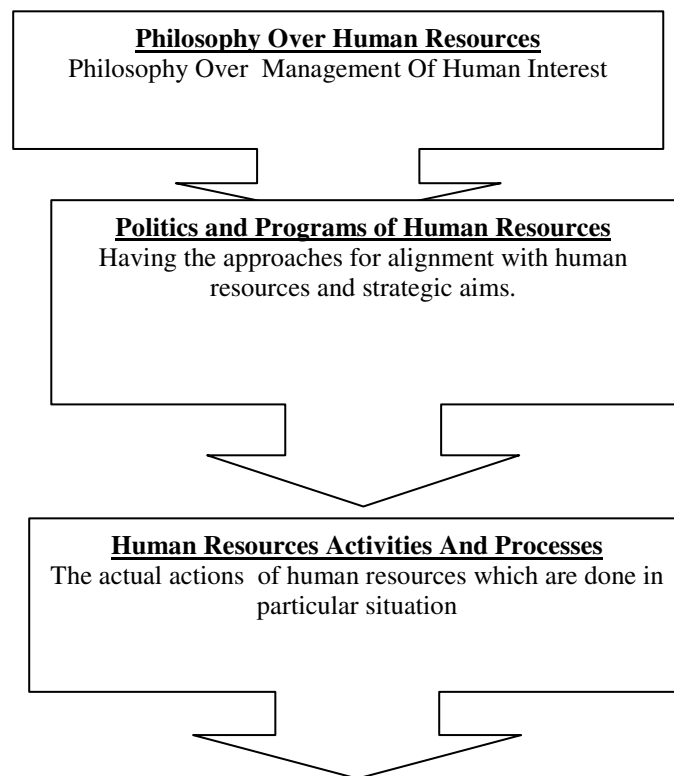


Figure 1. Levels of Analysis of Human Resource Management (Lepak et al, 2004)

Human resources philosophy deals with the issue of how these resources are organized and what role they have in success of organization, how is organization's attitude toward them and how organization is managed by these human resources. Human resource policies provide guidelines which come from the needs of strategic business activities in order to integrate human resources activities (Schuler, 1992). Thus, human resource policies aim is to make an integrated system of human resources to meet business needs. The programs of human resource are along integrating activities of human resources for the implementation of policies (Lepak et al, 2004). Human Resources activities describe how employees' behavior can be linked directly to organizational performance (Schuler, 1992).

This level of analysis seems very important and vital to understand the use and the effectiveness of human resource management (Lepak et al, 2005). For example, if the focus is on human resource philosophy, generalization to increase and accuracy will fall by disregarding changes in executing human resources system. Focusing exclusively on human resource practices will lead to increased accuracy, but on the other hand it leads to the neglect other significances of current human resource practices. Lepak and colleagues (2004) showed that there are different levels for assessing the effectiveness of human resources system. Guest & Peccei (1994) reached the following conclusions about the effectiveness of human resources system.

- At the highest level, human resource strategy should be aligned with the business strategy.
- At the policy level, consistency in the field of human resources is very important.
- In the processes level, the way various activities are done seems to be of great importance.

Many researchers have studied human resource management and searched on the relationship between human resource management practices and organizational favorite outcomes so that they be able to realize the value of the activities of human resource professionals to be survived. The effectiveness of human resource management is divided in two technical and strategic fields. The technical concept of effectiveness refers to human resource

management services, including absorption, training, performance evaluation. The indexes of technical effectiveness which were used in this study are: benefits and services, employment, health and safety, education, retirement strategies, employees relations, social Accountability programs, human resource management costs, performance evaluation and human resource information systems (Huselid et al, 1997, p.176). The strategic concept of effectiveness refers to activities such as talent management, knowledge management, organizational learning etc. that focuses on innovation on human resources management (Huub et al, 2006). Strategic effectiveness indicators which have been used in this study include teamwork, empowerment and participation of employees, workforce planning, labor productivity, management development, and communications between manager and employee, family and work plans and Strategic Studies (Huselid et al, 1997, p.176).

2.2. *Electronic Human Resource Management*

Electronic Human Resource Management which is also known as Digital Human Resource Management or web-based Human Resource Management was introduced in the mid-1990s, and quickly came to the attention of many organizations. Since the term e-HRM is novel, it is hard to clearly define it. Some definitions of Electronic Human Resource Management focus on performing activities and human resource policies through internet. (Ruel et al, 2004; Pankratius et al, 2003). According to these emphases, the following definition can be considered for this concept: "electronic human resource management can be defined as planning and application of information technology to support at least two people or units in performing human resources activities."

This concept highlights two critical aspect of e-HRM. First, human resource management, applies information technology in two areas, the first area makes information exchange between different people and their interactions possible, regardless of whether they work in a room or in two separate continents, so the technology is used for the purpose of communication and integration. The second area is related to technology supports from major players in the field of human resources. In this way Information Technology is used as a tool to perform HR functions (Strohmer, 2007). Scientific knowledge has achieved a certain number of concepts about human resource management within a decade of its history which are summarized below.

2.2.1. *Electronic Human Resource Management Goals:*

Lepak and Snell (1998) have mentioned four pressure factors on virtual human resources which can be cited as objectives of tendency towards electronic human resource management.

1. Human resources departments are asked to focus on strategic questions
2. These units need to be flexible in terms of policy and action.
3. The human resources department should be more efficient and knowledgeable (sensitive) about the costs.

Human resource departments should adopt a service-centered perspective towards employees and managers. In short human resources centers should be always strategy-centered, flexible, efficient and customer-centered. Ruel (2002) confirmed the above, and noted the importance of attention to the nature of the employment relationships. Due to labor shortages in the market (in the growing period of the 1990s), individualistic society, increasing the educational level of citizens (and consequently the staff), and orientation of the balance of power in employment relation in the favor of employees, employees are expected to conduct their own career path.

Therefore, according to Ruel and his colleagues progress towards e-HRM can be a tool to support this evolution (development). This aspect is compatible with the previously mentioned incentives, such as improved customer service; but it has external stimuli. So, the goals of organizations for the use of electronic human resource management are as follows:

1. Improving strategic orientation of human resources;
2. Cost reduction / increase in the efficiency;
3. Improved customer services;
4. Globalization.

2.2.2. *Types of Electronic Human Resources Management:*

Wright and Dyer (2000) has made a distinction between three different areas of human resource management that an organization can choose which can provide face to face services or provide the services through electronic means:

exchange/sharing HRM, traditional human resource management and transformative human resource management. Lepak and Snell (1998) also presented similar classifications: Operational human resource management, communicational human resource management and transformational human resources management. Electronic Human Resource Management in its simplest form can be used to inform employees, managers and human resource professionals. Any changes in policy can be transmitted quickly and easily with the use of information technology to the employees; thus, Human Resource Management can be defined as: human resource data and information digitalizing, recording and presenting them on the web. (Hall&Moritz,2003). Communicational Electronic Human Resource Management is: Providing human resources processes through web-based channels for workers who work in the field of human resources, and Transformative Electronic Human Resource Management is: any type of information technology that eliminates the limitations in the organizational hierarchy and releases human resources decision-makers from the effects and conflicts of bureaucracy and allows them to focus on the strategic human resources issues (Maatman,2006)(20). In practice, all three kinds of Electronic Human Resource Management are intertwined, but, this classification provides a framework for determining the level of development of the technology, however it does not mean that with the classification of organizations based on the use of electronic human resource we can assess the effectiveness of the technology, obviously there is a distinction between the creation and development of this technology and its application by employees and managers, because the establishment to its actual application is a long-term process (Ruel et al, 2007).

3. Conceptual Research Model

Davis and colleagues' (1989) 'technology acceptance model' showed that the users apply the technology considering its importance for organization. If this is a heavily invested technology and if senior executives have emphasized on the use of this technology, the possibility of using this system by staff increases. Another affecting variable is quality of the technology services; another factor is usefulness of the technology. Its efficiency is widely associated with its application motivation, the quality of interaction with it and its ease of use. In fact, organizations use technology with the hope that these tools increase efficiency in their activities, given that e-HRM is affected by the above factors. We go a step further and review the impact of electronic human resource management, on the effectiveness of human resource management.

So the research assumptions are as follows:

Hypothesis 1: There is a significant positive correlation between the ease of use, quality and occupational association resulting from the use of e-HRM with the technical and strategic effectiveness of HRM.

Hypothesis 2: Quality and occupational association resulting from electronic human resource management practices are considered as determining factor than ease of use for the effectiveness of human resource management.

Hypothesis 3: Ease of use resulting from electronic human resource management is considered as a better determining factor than quality and occupational association for the effectiveness of human resource management.

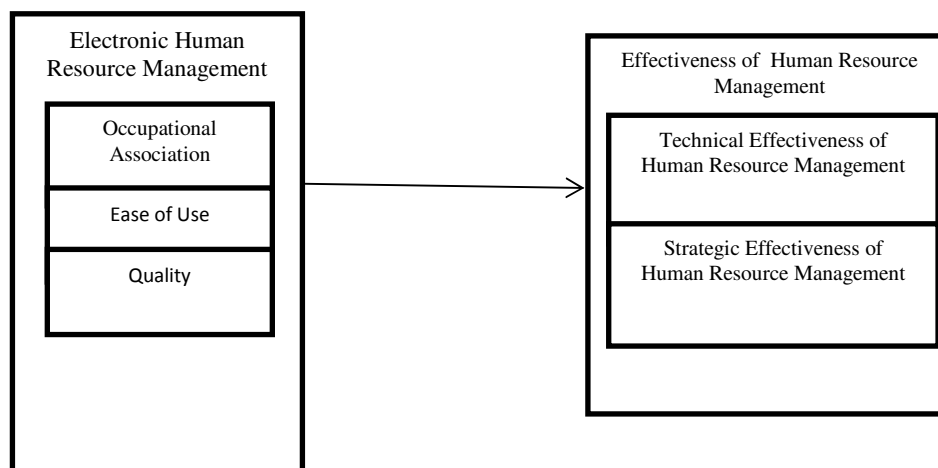


Figure 2: Conceptual Research Model

4. Research Methodology

In terms of methodology, this research is considered as an applied one due to its subject matter that is: effects of electronic human resource management on the effectiveness of human resource management; this research clarifies the issue for organizations that have implemented electronic human resource management, as well as organizations that have not yet been into it. Indeed, this research is considered as a survey research. It should be noted that based on the extracted parameters, a questionnaire was developed; its validity was confirmed by the masters of the field while its reliability was confirmed using Cronbach's alpha. Alpha amount in this questionnaire was more than 0.8 which is considered as high amount.

5. The Scope of Research

Since in comparison to other organizations, Central Bank has managed in taking good steps in application of Electronic Human resource management technology; in other words it is a pioneer in the field, it is selected as the statistical population of this research.

Statistical population includes 160 people which by using the sampling formula with the error of 5%, population sample of this study reached 113 people. To gather data in 2012, a questionnaire randomly distributed among 140 employees of training unit and human resources in the Central Bank; of this total, 120 questionnaires were returned and statistically analyzed.

6. Results Analysis

In the structural equation model, data adaptation and conceptual model of research is tested to observe if they are compatible or not, and on the other hand the significance of the relationships in this fitted model was tested. In this section, confirmatory factor analysis and path diagrams (standard weights and coefficients significance) of conceptual model of research are presented.

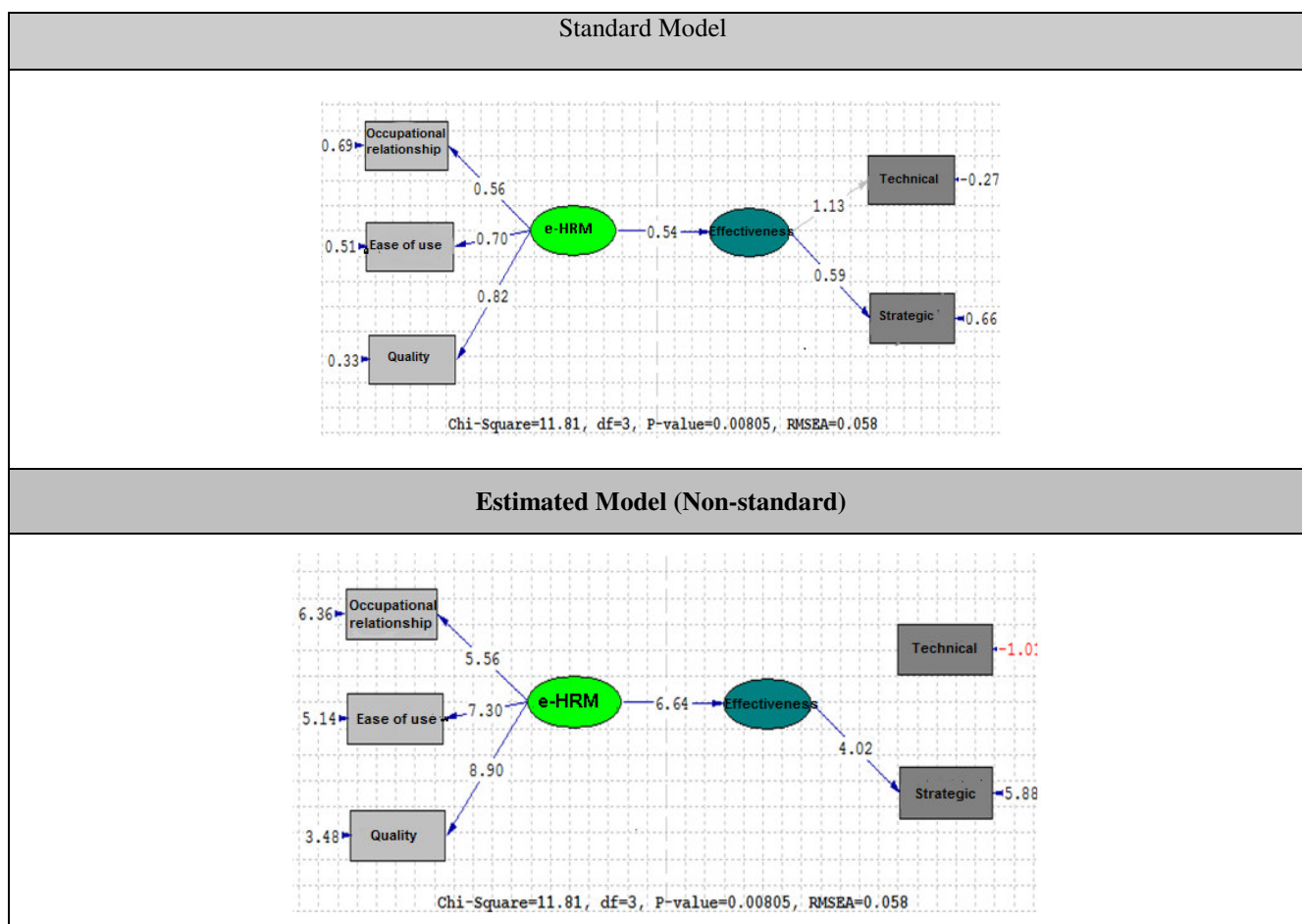


Figure3. Structural Equation Model

In table 1. The compatibility parameters of the model are shown which suggests that conceptual model is compatible. In other words, conceptual model of the study has been able to predict variables of study with respect to the experimental data sets.

Table1. Model parameters compatibility

Proportion parameter	Model	Acceptable Range	AMOS Output
χ^2/df		< 5	1/497
p-value		> 0.05	0/109
RMSEA		< 0.1	0.074
GFI		> 0.9	0/937
CFI		> 0.9	0/975

7. Hypothesis Test

The first hypothesis was that there is a positive and significant relation between ease of use, quality and occupational relations resulting from application of electronic Human Resource Management and technical effectiveness and strategic management of human resources. The hypothesis test results are presented in the table, below.

Table 2. First Hypothesis Results

Parameters Hypothesis Number	Variable of Function	Independent Variable	Correlation Coefficient	Significance Level	Test Result
Sub-hypothesis 1	Technical Effectiveness	Ease of Use	0.339	0.000	Accepting the Hypothesis
		Quality	0.516	0.000	
		Occupational Relation	0.439	0.000	
	Strategic effectiveness	Ease of Use	0.071	0.444	
		Quality	0.335	0.000	
		Occupational Relation	0.237	0.000	

As it can be seen there is significant and positive correlation not only between ease of use and strategic effectiveness of human resource management. The second hypothesis was that for the strategic effectiveness of HRM, the quality and occupational relation resulting from application of electronic human resource management is a better determining factor in comparison with ease of use.

With the path coefficient 0.34 and T 5.29 statistic between quality variable and strategic effectiveness of human resource management also path coefficient 0.27 and 1.92 T statistic between occupational relation and effectiveness human resource management it can be said that these two variables are better determining factor for the effectiveness of strategic human resource management than ease of use.

Also, the third sub-hypothesis declares that ease of use resulting from application of electronic human resource management is a better determining factor for technical effectiveness of HRM than quality and occupational relation.

With the path coefficient of -0.42 and statistic of T -2.82 between ease of use and technical effectiveness of human resources management compared with path coefficient and T statistic of occupational relations and quality variables with technical effectiveness we conclude that the ease of use variable is not a better determining variable than occupational relation and quality, so hypothesis (3) is rejected.

Table3. Hypothesis Status

Indicators Hypothesis number	Independent Variable	Dependent Variable	Coefficient of path Coefficient (β)	T statistic	Total Determined Coefficient	Test Result
Hypothesis (2)	Strategic Effectiveness	Occupational Relation	0.27	1.92	0.34	Hypothesis Acceptance
		Ease of Use	0.07	0.47		
		Quality	0.34	5.29		
Hypothesis (3)	Technical Effectiveness	Occupational Relation	0.02	0.14	0.75	Hypothesis Rejection
		Ease of Use	-0.42	-2.82		
		Quality	0.68	3.65		

8. Conclusions and Suggestions

With electronic Human Resource Management, there will be changes in employees' experiences of HRM and available tools they made use of in the field. Employees get the opportunity to be updated in the organizational dynamics, take part in online discussions and follow their own career path. Implementation of this technology has reduced the number of human resources staff, particularly in administrative and human resources offices. Proper application of this technology is a chance for HR department to provide a better image of itself.

In hypothesis 3, it was expected that ease of use variable compared to the other two variables is better determining factors than technical efficiency, but results analysis showed that quality is considered as a better determining factor for technical effectiveness of human resource management. Also, results analysis of the first sub-hypothesis showed that quality factor has the greatest impact on the technical and strategic effectiveness of HRM. Noticeable increase in the quality of electronic human resource management software will increase the effectiveness of human resource management. This means that how employees and managers judge the contents and design of electronic human resource management software technically and strategically determines their perception about effectiveness of human resource management.

When employees think and act more positively about the content and structure of electronic human resource management software, they tend to see more technical and strategic effectiveness of HRM. It is concluded that electronic human resource management issues are not technical.

The primary objective is to make changes in thinking and behavior of human resource personnel, operational managers and staff. In fact, the second priority is facilitating human resource processes through information technology. Accordingly, it is suggested that organizations describe the main reasons to use online human resources tools to employees, so they will have a better understanding of this tools.

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