Review Article

The effects of applying information technology on job empowerment dimensions

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ABSTRACT

Information Technology (IT) is known as a valuable tool for information dissemination. Today, information communication technology can be used as a powerful tool to improve employees' quality and efficiency. The increasing development of technology-based tools and their adaptation speed with human requirements has led to a new form of the learning environment and creative, active and inclusive interaction. These days, information is one of the most important power resources in every organization and accordingly, acquiring information, especially central or strategic one can help organizations to build a power base and influence others. The aim of this study was to identify the most important criteria in job empowerment using IT and also the advantages of assessing empowerment. This study was a narrative review. The literature was searched on databases and journals of Springer, Proquest, PubMed, science direct and scientific information database) with keywords including IT, empowerment and employees in the searching areas of titles, keywords, abstracts and full texts. The preliminary search resulted in 85 articles, books and conference proceedings in which published between 1983 and 2013 during July 2013. After a careful analysis of the content of each paper, a total of 40 papers and books were selected based on their relevancy. According to Ardalan Model IT plays a significant role in the fast data collection, global and fast access to a broad range of health information, a quick evaluation of information, better communication among health experts and more awareness through access to various information sources. IT leads to a better performance accompanied by higher efficiency in service providing all of which will cause more satisfaction from fast and high-quality services.

Key words: Employees, empowerment, information technology

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INTRODUCTION

Today, the application of information technology (IT) has expanded rapidly in order to increase efficiency and productivity in most areas.[1] IT is known as a valuable tool for information dissemination.[2] Research reveals high power of new IT in increasing individuals' health-related knowledge levels.[3] At present, information is regarded as one of the most important global power resources. It is the basic component of decision making and planning.[4] Information is data which has taken quantity matter in order to adapt with objectives and connect to work. The organization should recognize necessary information for work management; otherwise, it will face a mass of confusing data.[5] Recognizing main axes of advance in organizations requires changes

of IT role from implicit into the objective or identifying its exact impacts to be able to use it in organization's decisions. This is in fact related to the organization's performance improvement or correction which can be dependent on IT; it provides managers an opportunity to control and co-ordinate complex structures using quick information processing which eventually leads to coherent and rapid management and better organizational performance.[6] Investment and identification of organizational performance based on information and the resulting products, is a new acceleration which is considered as the basis for mass organizational movement; perhaps one of the most obvious results in this area is observed in employees' faster and smoother access to required information which has been considered in most researches connected to information. Today, organizations can transfer orders and messages along organization without traditional management structures. This is possible through using computers and some parts of middle management and leadership responsibilities. This way, employees will have access to more information and do their duties with a higher speed.[7] With the advancement of science and technology in the field of computer and information systems, this trend is growing in health centers.[8] Another significant point is the impact and role of human resources and organizational staff that are among the most critical organizational resources. Therefore, for structural adaptation with information transformation and achievement of valuable and useful results in this area, human resources development is necessary in order to adapt readily to the outcomes of this era. Capable, experienced, influential scientists and specialists are required to meet the needs of this age. Undoubtedly, education and measurement of abilities will increase the rate of achievement toward expected results from application of IT.

Access to information as an effective and critical tool and acquiring central and strategic information is an advantage in every organization, because higher, faster, more appropriate and efficient production depends on the use of information and its proper turnover. This is what majority of today's organizations has defined as their working priority; on the other hand, when managers equip organizational members with more information those people will feel capable and more likely to work with productivity and prosperity along with management demands. Managers reinforce their power base through employee engagement in achieving good results. More information encourages individuals to experience self-order, self-control and higher confidence.[9]

Obviously, the only possible way to deal with such challenges is employee empowerment, which means their development in all aspects and possible fields to be able to do all major tasks. In the present age, empowerment is known as a tool that enables managers to run organizations with various features such as different influential channels, development, reliance on horizontal and network structures, minimum distance between employees and managers, reduction of organizational attachment and use of IT.[10] Empowerment leads to capable and motivated employees and helps managers

to act properly and quickly in dynamics of the competitive environment and provide competitive advantages for the organization.[11] Organizations and management have experienced changes and new opportunities. IT provides changes in organizations through which companies and organizations are more dependent on information, knowledge, training and decision-making of staff members.[12] Regarding the application of information and communication technologies at home and school along with organizations, recreational places and other sites, more attention should be given to its effects. With the advent of technology, not only the structure of employee changes due to altered activities or modified components, but some new jobs will also be created.[13] Therefore, IT is a powerful tool for data collection and processing into information. As a result, the application of IT is expanding rapidly through organizations. Management is easier in organizations which have high levels of technology and new information applications, because new tools will facilitate the ability of applying information.

Undeniable advantages of IT can be observed in higher accuracy and speed of affairs, high quality, lower costs and higher client satisfaction which has encouraged organizations to establish and use such systems in order to survive, develop and achieve their objectives while they enjoy its competitive advantages at the same time.[14]

Given the important role of employees as one of the main organizational resources, there is an urgent need to propel them toward IT. Therefore, the main question in this research is whether the use of IT can empower employees and improve their performance. However, previous comments and remarks emphasized that information is a critical organizational element in today's world. Accordingly, one of the most important ways to empower employees is through their access to information.

METHODS

This study was a narrative review. We used a sub-systematic method, which was divided into three phases: Literature collection, assessing and selection. The literature was searched with the assessing, and selection of libraries, databases (such as Proquest, PubMed, science direct and scientific information database) and also searches engines available at Google, Google scholar, books and conference proceedings with keywords including IT, Empowerment and employees in the searching areas of titles, keywords, abstracts and full texts. The preliminary search resulted in 85 articles, books and conference proceedings in which published between 1983 and 2013 during July 2013. Due to the large number of articles retrieved, a decision was taken to include only reviews published since 1983. Only articles written in English, American and Persian languages were considered because the researchers did not dominate on other languages. After a careful analysis of the content of each paper, a total of 40 papers and books were selected based on their relevancy. The study was performed in order

to select the most important professional empowerment dimensions using IT.

RESULTS

Definitions and dimensions of empowerment

The word empowerment by Oxford definition means giving power or the right of doing something to someone. Employee empowerment is generally a contribute process applied to utilize all capacities of employees and to encourage them to increase their commitment to their job. Some people believe that empowerment is a type of decentralization which requires assigning basic decision making to subordinates. Furthermore, empowerment provides decision- making powers and lets employees perform according to their desire. Therefore, it is an important management tool to provide service quality.[15]

Today, empowerment is regarded as one of the useful tools in promoting employees and increasing organizational effectiveness. In order to be successful in today's changing environment, organizations need knowledge, ideas, energy and creativity of all employees, including those at the first level to top managers.[16] Therefore, investigating methods to increase efficiency and use employees' maximum capabilities toward achieving organizational objectives has been a continuous challenge for managers and management scholars; so that in recent years empowerment has changed into a typical management term.

Researchers have viewed empowerment from different perspectives: Some concepts such as personal work control, independence in task performance, payment system associated with performance or payment based on performance, job enrichment, employee stock ownership and so on.[17] These different views are not purely personal, but they are techniques which theorists and administrators use in order to create an empowering environment or facilitate empowering conditions. Accordingly, different definitions have been provided on empowerment.

For example, Kinlow defines it as a process toward continuous improvement in organizational performance, which is possible through the expansion and development of influence based on individuals and team's qualifications whose performance affects the organization's general performance. Empowerment doesn't mean giving employees the right to vote, autonomy or even motivation; despite a strong desire to do more work will result from empowerment. The long-term goal of empowerment is continuous improvement in organization's overall performance, whereas its short-term objective is just application of existing qualifications.[18]

Armstrong quotes Conger describes the empowerment as a process of reinforcing employees' qualifications through identifying those conditions that have caused their weakness and trying to deal with problems through formal actions, informal techniques and also providing information which is necessary for their efficiency. Armstrong quotes Blak and

Piterz have defined empowerment as power-sharing process between people who work in an organization. Armstrong quotes Karsten introduces empowerment as process of control and authority subdivision. Shootz believes that empowerment includes employees and managers' full participation in decision-making.[19]

Various factors and variables affect employees' empowerment as listed in Table 1.

Given different views toward empowerment definitions and criterion, this research has been done based on the best and most comprehensive model which is more adaptable with employees' present conditions in our country. According to this model that is called Ardalan Model, the most important dimensions of empowerment include:
1. Employees' performance improvement
2. Occupational freedom and independence
3. Increased decision-making responsibility
4. Increased employment opportunities
5. Enhanced a self-control
6. Increased staff knowledge
7. Professional development of staff.[29]

Ardalan in his Master's thesis entitled "Investigating the Effects of IT on Employees Occupational Empowerment", said that IT increases employees' knowledge and awareness leading to easier and more exact communications, less expenses and decrease in human error in the information process. Today, organizations can transfer orders and messages along

Table 1: Various ideas about empowerment dimensions

Researcher	Empowerment dimensions
Kanter[20]	Manager support; self-confidence; information; authority; enrich by the experience clear objectives resources; availability reward; manager support; self-confidence
Scott and Jaffe[21]	Participating management, organizational structure; facilitating leadership group building; staff appreciation
Korukonda et al.[22]	Authority; resources availability; responsibility
Melhem[23]	Knowledge; skills; trust; communications; motivation
Paktinat and Fathizadeh[24]	Delegating authority; encouragement rewarding; participating management
Abesi and Kord[25]	Communications; training; adaptation; participation
Seyedjavadein et al.[26]	Personal development; job design work teams leadership style formality; clarity environment decentralization
Vaezi and Sabzikaran[27]	Low formality; decentralization; flexible scheduling
Gorji[28]	Delegating the authority; encouragement rewarding suggestions system
Ardalan[29]	Improve performance; knowledge and awareness; career opportunities; independence and freedom work; responsibility make decisions; control; professional development

organization without traditional management structures. This is possible through using computers and some parts of middle management and leadership responsibilities. This way, employees will have access to more information and increase their knowledge. They will also come to better results.[29]

Abdollahi and Nave-Ebrahim in his study on "Employees' Empowerment: Golden Key for Human Resources Management", said that having an appropriate career is one of the basic constituent elements of citizenship whose importance is not less than the presence at elections. Global developmental trends such as dramatic changes in demographic transition due to immigration, the emergence of new technologies and approaches in management have provided new horizons for employment planners. IT has generated new employment opportunities and brought about fundamental changes in many other jobs. In 2012, current jobs will be challenging and rewarding professions will be created. In the future, IT components will be more co-ordinated and their influence on employment status and the relation between developing and developed countries will be more evident. Not only has it created new professions which need special expertise in IT but also affected other jobs so that the time required acquiring knowledge will be shorter. In some cases it also leads to more limited works. Therefore, it can be considered as a facilitating factor in employees' career. Moreover, professions content which identifies the amount of individual's challenge with the organization and task performance has a significant impact on job satisfaction, creating job opportunities, job productivity and personal status of employees in organizations and society and efficiency.[30]

Goudarzi and Gmynyan in his investigation entitled "Principles, Fundamentals and Theories of Organizational Culture and Climate" said that since independence affects the individuals' needs to engage in decision-making and refers to influence on the control of career achievements, occupational freedom, giving comments and the right to vote, using IT and especially IT systems will facilitate organization's control and supervision through which managers supervision scope that is a limitation in traditional structures will expand. This leads to an increase in the number of middle managers and experts leading to less administrative levels. These facts show that IT helps employees to be more independent and free.[31]

According to Gudarzi, since the need for self-control and autonomy is a top scale, it is associated with an employees' desire to engage in decision-making, identify objectives and work based on self-control and autonomous methods without others' supervision. Employees tend to accept responsibilities and act freely and hence IT leads to an inner control system based on which individuals evaluate their own performance. This point emphasizes on the role of IT in increasing self-control.[31]

Sarrafizadeh in his research entitled "IT in Organizations" concludes that IT facilitates managers' roles and responsibilities. Achieving required information in order to make decisions, more control and supervision on organization and processes, the ability to analyze conditions, analysis, programing and decision simulation are among IT significant impacts. Moreover, less time to respond and make decisions along with task assignment to lower levels will help managers to be away from daily routines and step toward designing and creating work opportunities. Higher information about the organization and related responsibilities leads to better decisions which in turn results in more commitment in decision-making. Lack of information is resolved through IT and decision supporting tools. Moreover, some of the greatest advantages of advanced IT that have provided a higher communication between managers, staff and clients include: Electronic message system, administrative information system and video conference.[23] Safarizadeh states that IT leads to employees' more knowledge and enriches professional content. Knowledge helps employees to have professional command of the organization and if we accept the popular expression that "knowledge is the ability", we can conclude that IT leads to employees' professional development.[32] He refers to the quality and empowerment of human resources as important factors for organizations' survival; in other words, human resources are more important than new financial technologies. It means that the main difference between organizations refers to their knowledge, not the financial status. The role of efficient, capable and knowledgeable human resources in organizational achievement is undeniable and human resources are regarded as the most important, expensive and valuable organizational assets that can create a powerful organization. A powerful organization is a place where employees co-operate in different activities; therefore, human resources help organizations' productivity and eventually affect all the society. Undoubtedly, every community's prosperity is due to the development of human resources and thus administrators paying special attention to employees' progress.[32]

Urei Yazdi quotes Veten and Kemron (2002) in a study entitled "Empowerment and Authority Assignment" said that performance improvement means higher productivity, better quality, less expenses, less errors, higher speed, service providing, client satisfaction and following rules and regulations. On the other hand, IT leads to minimize human errors in information processing, while providing service and client satisfaction increases. These facts emphasize that IT leads to employees' better performance.[9]

Mazidabadi-Farahani (2004) in his research entitled "Investigating IT Applications in Employees" Occupational Empowerment in the Qom Social Security Organization" concludes that IT has empowered employees in the Qom Social Security organization. He relates this result to IT with probability of %95.[33]

Jafari et al. in a research entitled "Effective Strategies in Empowerment of Experts in Shahre Kord University of Medical Sciences" identify occupational freedom, human resources effective management, motivation promotion,

self-management and organizational learning promotion as influencing factors in empowering medical experts of Chaharmahal VA Bakhtiari province.[34]

A study (2002) in America shows that IT plays a significant role in the fast data collection, global and fast access to a broad range of health information, a quick evaluation of information, better communication among health experts and more awareness through access to various information sources. This eventually leads to higher quality and facilitates medical researches.[35]

McGuire in a study in 2003, states that IT facilitates and speeds up data collection, categorization, access and exchange. It also helps in efficient management of resources, decreases inappropriate reception of patients and avoids repeated works leading to less organizational expenses.[36]

CONCLUSION

Information plays a vital role in programming, evaluation and administration of management systems.[37] In fact, the first distinction between developed and developing countries is in production, programming, distribution and application of information.[38-40]

Therefore, the IT decreases human resources role and results in a systematic relation between human and machine. This may cause dissatisfaction due to work with a system and automation. On the other hand, employees are also an important organizational resource and it's necessary and unavoidable to pay enough attention to them in order to achieve organizational objectives. However, one of the important ways of employees' empowerment is education and access to information through topical technologies. IT is one of tools and mechanisms that collect categorize and process information and provide the results. The main objective of empowerment is to decrease governmental hierarchy and emphasize on client needs (instead of organizational needs). If more attachment and commitment is aimed, the traditional leadership chain between employees and managers needs to be changed. Among the outcomes of employee empowerment, the following cases can be mentioned:

- Employees' broader control over surrounding environment
- Decrease the role of top managers in organization's partial affairs
- Employees' overall understanding of whole organizational operations and
- Employees' higher concentration of organizational values, tasks and objectives.[29]

Moreover, the most important consequences of IT application in employee empowerment include:

- Increase employees' job opportunities
- Increase decision-making responsibilities among employees
- Increase employees' independence and freedom

- Increase employees' knowledge and awareness[32]
- Minimize human errors in processing information and higher service providing which lead to client satisfaction and emphasized on the role of IT in employees' performance improvement[9]
- IT leads to a better performance accompanied by higher efficiency in service providing all of which will cause more satisfaction from fast and high-quality services.

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