Effect of employees' abilities on successful ICT Application and Sustainable Development Goals: a descriptive study in hospitality organizations in Iraq

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Abstract

The aim of this study is to evaluate the implementation of ICT applications in public service organizations, which is responsible for the implementation of public policy. The study examined the success of ICT in achieving its goals by meeting the main needs of the community members which is the first requirement in the success of sustainable development plans before determine the capabilities of ICT. The main pillar of success in the implementation of ICT systems is the key to improving the efficiency of the organization's performance. This is a reflection of the effectiveness and quality of the services provided to its beneficiaries. The study concluded that the current level of capabilities of individuals working in public organizations is not commensurate with the requirements of successful application of ICT systems in accordance with the requirements of implementing sustainable development plans. A number of recommendations were made that will help the administrations of these organizations and also hospitality enterprises, to develop the capabilities of their employees and make them commensurate with the requirements of the application of ICT systems in addition to the different levels of spending allocated to the development programs of the workers.

Keywords: ICT systems, public service organizations, staff capabilities, sustainable development

Introduction

One of the topics that have received widespread interest by researchers and scholars in the field of human resources management and organizational behavior is the subject of human capabilities in public organizations. The subject is one of the core capabilities important in contemporary organizations. Alfred Marshall stressed the importance of investing in people by positing that capital is what is invested in humans as human capital is characterized by rising productivity curve with the same curve of his experiences and skills (Cook, 2005). The morality of human changes as time changes and will not disappear only by the cessation of one's time while its meaning is not subject to the law of diminishing utility.

In the early 1980s, researchers in the field of management stated that human abilities possessed by organizations were often the main determinant of their success and growth which necessitates attention to their management and development (Sveiby, 1986). Under the changes in the external environment, the success and growth has driven the increasing tendency of these organizations including hospitality enterprises, to achieve their goals as quickly and cheaply. Also, its new concepts such as globalization, economic openness, ICT revolution, human capital, economic knowledge and knowledge-making are affecting the structural and conceptual structures of these organizations in order to highlight the importance of the availability of administrative and technical skills necessary for adaptation. Organizations of all kinds, especially the general public, such as hotels, have begun to focus on attracting individuals who possess the knowledge, skills and capabilities that are compatible with the requirements of today's work environment in order to achieve the goals of these organizations and improve their overall.
performance. One of the main pillars that determine the success of any work or application program is the human resources. Public organizations have the frameworks for their work on the implementation of information and communication technology systems used in conducting activities and operations. These capabilities are developed in order to acquire knowledge, experience and skills related to the latest methods of electronic performance of business and service activities. The question here is that, what is the nature of the capabilities and skills organization should have today especially public service organizations? What techniques can FAO use to enhance and develop these capacities? This will be answered in the content of this research, which is divided into four sections as follows:

Human potential is today one of the main pillars of any organization, especially the public, as any defect in its applications negatively affects the overall performance of the organization in a short term, thus, its success in the long term. Quality initiatives and a greater consciousness of quality as an all important aspect of operation relating to human resources, impact positively on a business and ultimately sustainability (Nicolaides, 2015b). One of the main problems experienced by the majority of service organizations in Iraq is the problem of the weak capabilities of workers in public service organizations. This happened after the changes suffered by the Iraqi environment which includes the effects of the development of ICT systems imposed on the departments of those organizations as a necessity of work. Public organizations are still managing despite the developments in human capabilities in the fields of learning, education and skills in developed and some developing countries as they lack the most basic processing and active environment which work as the component of information and communication technology. Limited attention from the departments of public service to the importance and the impact of the capabilities of workers in the success of ICT system applications of the organizations are the problem of this study. Therefore, the problem led to the following questions:

1. To what extent do the administrations of public service organizations recognize the importance of the capabilities of employees in enhancing the efficiency and success of ICT systems?
2. What is the impact of the capabilities of workers in the organizational performance of public service organizations?
3. What are the main challenges and problems facing the development of the capabilities of workers in public service organizations?
4. What are the requirements for the successful application of ICT systems in public service organizations?

The contribution of this study is derived from the capabilities of workers in the success of the application of ICT systems in public service organizations. The successes are reflected from the following:

1. Presenting and forming a contemporary vision and perceptions of the importance of the role of the capabilities of the employees in ICT applications in public service organizations and; also, from the success of the nature of their impact on organizational performance.
2. Up keeping with the latest developments in the field of applications of ICT systems in public service organizations with the identification of fundamental ideas.
3. The contribution also lies in the fact that it falls within the context of public administration in general especially in the management of service organizations that are primarily responsible for meeting the needs of members of society. They are also responsible for the implementation of social policy. Hence, its success is the basis for achieving sustainable development.
The objectives of this study are determined based on the problem and importance of the study as follows:

1. To highlight the reality of human capabilities working in public service organizations and identify the level at which the administrations of these organizations recognize the importance of their commitment in order to develop their impact on the success of the application of ICT systems.
2. To present and analyze the most important applications to be committed to in order to improve and develop the capabilities of the employees and reflect on the success of public organizations in meeting the needs of beneficiaries in accordance with the successful requirements of the application of ICT systems to electronically provide services.
3. To make attempt in reaching some results and recommendations that help public service organizations to study and identify ways to provide the human capabilities necessary for the success of applications of ICT systems in a manner that leads to a successful public service organization.

Literature Review

Human Capabilities of Employees and the Use of ICT Systems

There is confusion among the researchers on the concept of capacity and sufficiency. Some scholars are of the opinion that the both concepts are similar in nature (Hitt, 2012). They claim that the basis and existence of capacity and sufficiency are the unique resources of the organization. The source of the ability is to possess the necessary competence according to the measures of competitive advantage. For the purposes of the present study, the capability will be adopted as the broader concept that includes both competencies and qualifications required for performance (Pagon et al., 2008). The following are the concepts of human capabilities by some researchers as listed below:

Table 1. Some Concepts of Employee Capabilities

<table>
<thead>
<tr>
<th>Authors</th>
<th>Concept</th>
<th>Concentration</th>
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<tr>
<td>Hase (2001)</td>
<td>The ability of individuals to learn, innovate and self-efficacy.</td>
<td>Learning and innovation</td>
</tr>
<tr>
<td>Gruban (2003)</td>
<td>Use the knowledge and other skills necessary to ensure efficient accomplishment of the specific task</td>
<td>Use the knowledge</td>
</tr>
<tr>
<td>Awad &amp; Ghaziri (2004)</td>
<td>A group of individuals use their minds more than their own hands because they have the experience - values - culture - the ability to innovate and creativity to find a specialized solution or create value.</td>
<td>Use the mind</td>
</tr>
<tr>
<td>Svetlik (2005)</td>
<td>Individuals’ willingness to use and relate knowledge acquired in complex, unpredictable situations.</td>
<td>Use of acquired knowledge</td>
</tr>
<tr>
<td>Pagon et al. (2008)</td>
<td>Knowledge, capabilities, social, managerial and financial skills, and all the talents that individuals can use to accomplish diverse tasks in different locations</td>
<td>Knowledge and skills</td>
</tr>
<tr>
<td>Grahall (2010)</td>
<td>The range of skills, abilities and expertise possessed by individuals, which allows the possibility to accomplish and achieve an organized mission.</td>
<td>Skills and capabilities</td>
</tr>
<tr>
<td>Baldrige (2011)</td>
<td>Knowledge, skills, capabilities, competencies enjoyed by the members of the organization, which allows the completion of various operations and work.</td>
<td>Capabilities and competencies</td>
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</table>
The ability of an individual is a representation of new patterns of learning aimed at maximizing innovation and creativity in solving problems and meeting the challenges of complex environment and evolving ICT systems. Learning and creativity with a high degree of self-efficiency will enable them to exploit their abilities in new situations in addition to traditional methods. They can work well with others and this is required by the successful application of ICT systems. It requires people with high mental and analytical abilities to perform functions efficiently and effectively.

**The Importance of the Capabilities of Workers**

Hase (2001) and Viljoen and Henama (2017) have reported that individuals with ability are likely to be more able to deal effectively with a turbulent environment in the light of adaptability and high willingness to change. Noe and Daft (2001) added that the selection and replacement of workers with special abilities is a key process for any organization as the intelligence and innovation are difficult to learn but can be promoted and developed. To develop people at all levels, great efforts and resources are put in place. The optimal solution here is certainly based on the accuracy of the selection of individuals commensurate with the nature of the objectives and work of the organization and to ensure that the right person is in the right place. On the other hand, organizations which are currently in the process of achieving high levels of performance, find their distinctive human abilities are the key ingredient to achieve high level of performance. It is reported that coming up with the idea is the easiest part, but making things happen is the hardest part. Individuals determine success because they are responsible for the achievement process which requires management to involve them and enable them to make decisions (Nicolaides, 2014; 2015a). It puts them in a better position to understand change. The Figure (1) shows the role of human capacity of staff and ICT systems in the process of implementing the strategy prepared by the leadership in regards to the overall standard of the performance. In the same vein, business experts agree that the reason behind the success of some organizations is due to the availability of a workforce with the appropriate technical, technical and administrative capacity, the availability of cash capital and the provision of high quality products.

**Figure 1.** Role of human capacity of staff and ICT systems in the process of implementing the strategy
The Impact of the Use of ICT Systems in Public Organizations

Increase in changes of public service delivery models have forced public organization to emphasize the use of ICT systems in conducting operations as a means to improve productivity and increase the efficiency and effectiveness of service delivery to citizens. For the use of technology within the administrative bodies and service organizations, there is a significant increase in the aim of the governments to improve relationship with the individuals (Source: Summary of Creative Practices in Governance and Public Administration). Technology has the potential to enhance response. Thus, more sustainable outputs to implement public policies and enhance the overall legitimacy of governments are ultimately provided by transparency, accountability, interdependence and creativity. Furthermore, creativity is enhanced and external skill is developed by maintaining open contracts with the private sector, individuals and governments while external skills are developed by increasing specialization and expanding access to create new products and beneficial services at lower and higher cost.

There is still a need for the governments of developing countries to seek economic growth and sustainable development to expand their investment and public expenditure on infrastructure and capital although (ICT) promotes the advancement and empowerment of individuals in the development of their ability to successfully use modern information technology. These countries can achieve a high leap in development in order to make the most of these cognitive developments according to the summary of creative practices in public administration. Similarly, the problem of the digital divide known as digital gap may result in marginalization of the least developed, poorest and most in need of technological advancement but it suffers from the weakness of its public resources and the decline in its various fields of investment. Technological progress requires investment policies in technological, economic and social infrastructure. This indicates that enough of expenditure and allocations are available for sustainable development projects.

![Figure 2. The gap in the human capacity of public service organizations](Source: Australian Public Service Commicion, 2011)

The large increase in the accumulated data allows organizations to speed up the tasks in a more efficient manner and it is the responsibility of public administrations to work on adapting the
structures of their organizations and their information systems. These are put in place in order to enable their internal operations and allow their different units to interact and share information and development of new services. The organizations strive to design and adopt new software applications to deliver public services of high quality and reliability with rapid response, and facilitate dealings with individuals and other business organizations. The gap in the human capacity of public service organizations is illustrated in Figure 2 above in accordance with ICT developments according to the Australian Public Service Review Report (ASP, 2011).

Developing the Capabilities of Employees to Use ICT Systems

Requirements for Training and High Diversification in the Capabilities of Employees

For advanced skills and knowledge, as well as the diversification of capabilities and scientific and cognitive qualifications, the field of work within the public administration organizations needs to be highly trained. Achieving sustainable development needs to be well employed for the public administration being the body responsible for achieving the strategic development goals. Any effective organizations that possess highly qualified human resources have the ability to deliver the specified results and are capable of dealing with changes and developments in the environment.

The requirements of work and progress on the movement of change will change rapidly in universities which are the main source of access to human resources. Therefore, it is necessary for universities to review their curricula and programs of study; then do research in accordance with the requirements and needs of the labor market by seeking self-development and adopt effective curricula and mechanisms. Many universities in both developed and developing countries that have been able to achieve economic and social growth for their communities such as Malaysia and Singapore have begun to set up future-oriented departments and draw up scenarios in preparation for labor market fluctuations and empowerment.

To keep pace and continue to work, the human resources must adapt to technological advances rapidly as when there is no delay, there would be progress and high development. The best evidence is that evolution and change are natural features imposed by the movement of life and time. Those who do not realize it and do not keep up with it fall behind. The past few decades have been accelerating changes in the direction of ICT which is referred to as the era of information development with a major impact that is difficult to control and keep pace over the course of human history without seeing the speed of its progress (Keniston & Kumar, 2003; Flayyih, Mohammed & Talab, 2019).

Easy access to a variety of sources of knowledge for billions of people has been given to us by the ICTs. ICT operators are allowed to use ICT to change the way they do business, improve services, and improve human conditions of members of society. These systems have had an impact on how countries organize their systems and administrative organs.

The Development Agenda for the coming years unanimously adopted in September 2015 recognized that the spread of ICT has had a great force in accelerating human progress, and the development of knowledge societies (Compendium of Innovative Practices, 2016). ICT has been defined as the main means to implement all the objectives as it is a potential force for development. It directly contributes to social and economic advancement according to the Higher Meeting of the Information Society and it is the key element in environmental protection and natural disaster risk reduction (High Level Event Outcome Document, 2014; Talab, Mohammed & Flayyih, 2018).
Requirements to Change the Human Factor in the Field of Capacity and Renewal

Achieving development needs capabilities and knowledge of individuals first, then the material things and potentials. Individuals are the main component in the economic and social transformation of any country. They are the vision of development and the establishment of the institutions necessary for its implementation. The quality and strength of the institutions performance and good governance effectiveness is determined by the capabilities of the employees. It is a prerequisite for supporting the structure of the Sustainable Development Goals (SDGs), which requires building transparent, accountable and effective institutions. Human resources armed with the skills and capabilities are required for achieving responsiveness, inclusiveness, participation and representative decision-making for goals of sustainable development.

As individuals are considered strategic agents of change, they are the basis of innovation and change in any field, including the field of public administration institutions and their function at present within these institutions requires that they receive sufficient training to enable them to carry out operational and productive activities as well as he ability to adapt to the requirements of changes in the business environment of management institutions. The main responsibility for achieving the SDGs through leadership, behaviors, actions, skills, knowledge, relationships and attitudes of its workers is the lack of qualification, ethics, diversity, motivation and work motivation according to Compendium of Innovative Practices (2016). In achieving institutional and administrative effectiveness and weakening the overall performance of public institutions, public servants can be an important obstacle. However, the availability of strong human capacity makes the implementation of public policy successful and ensures its effectiveness and sustainability of its results and its impact on the political, economic and social aspects for sustainable development goals (Kamarck, 2012; Tefera & Mutambara, 2014).

The Challenges of Human Resources in the Field of ICT Systems Implementation

The development of human resources is a prerequisite in building new values to help individuals and nations and in building technical knowledge and cognitive abilities. A necessary prerequisite is however, the employment of ethically competent managers and the opinions of all employees should be considered seriously and valued. (Nicolaides, 2013). It is also a factor to accelerate social and environmental change according to the Proceedings of the Commission for Development of Environment and Development (Nissanke, 2003; Braimah, 2016). The performance of public institutions in the majority of developing countries in the areas of economic growth and sustainable development for more than three decades has been below expectations compared to the rates of development in some developing countries in East Asia such as China, Singapore and Malaysia and some Arabian countries such as the United Arab Emirates and Saudi Arabia. Despite the performance rates having witnessed some developments in some countries, they are still considered to be below expectation (Oji, Iwu & Tengeh, 2017; Vettori, 2017).

There is no doubt that growth depends on the prosperity of sustainable natural resources that enable the construction of a sound development path. Therefore, the actualization of ICT systems is a milestone and achievement in the development and prosperity of societies which include the possession of natural resources and human resources that must be appropriately exploited to ensure comprehensive development benefits.

Many important issues and challenges that should be considered by public decision makers and policy makers are included in the study of ways to develop human capital for the purpose of adapting to the requirements of the use of ICTs in public organizations. This also includes the education policy and the need to emphasize the development of programs and curricula that
promote technical abilities of individuals at all levels of education in order to create a knowledge-based economy.

The technological capacity is known as the capacity available to a country to enhance the use of knowledge to acquire, absorb and adapt to existing technological changes. This capacity improves the productive processes for the development of products and services provided and to achieve development goals.

The human resource capabilities include:

1. Process and management capabilities
2. Institutional infrastructure capabilities
3. Technological infrastructure capabilities
4. Financial capabilities

Figure (3) illustrates these capabilities available if the objectives are to be achieved and the roles are fulfilled by the participants in the preparation and implementation.

Figure 3. Capability building through technology and knowledge transfer

According to Eagle and Nathan (2006), Mhlanga, (2018) and Sachs (2006), there are three main aspects of technological capability that must be understood:

1. Using the human components to understand technical processes and gain knowledge about them and work to interpret and adapt to the processes to suit the local conditions of the country.
2. To be institutionalized by the existence of institutions capable of achieving integration with technical knowledge and to make them owned by the community in the framework of building a coherent information structure involving the main actors.
3. To be guided through the common purpose of society; thus, deriving its strength from the interactions and interdependencies that exist among all actors (government, private organizations and civil society organizations) with their objectives as determined in accordance to the public policy expectations of society.

To ensure that technological capability achieves its objectives, these aspects are not taken individually but are taken collectively on an equal footing.

Research methodology

This study employed a descriptive approach as it is the most appropriate approach to the nature of the research with the aim to identify the capabilities of workers necessary for the success of ICT applications in general and its impact on the overall organizational performance of the public organization. The method is capable of linking the implications of the research to reach a deeper dimension for better explanation of the phenomenon.

Analyses of the Indicators

Indicators of Human Capabilities

The key determinants of the success of sustainable development in any country are the workforce skills. Additionally, failure in any industry, including the manufacture and operation of ICT systems has direct impact on economic growth and productive abundance. Education is one of the most specific elements in the budget. One of the most difficult tasks facing developing countries, especially the poor is the provision of qualified and efficient capabilities. These capabilities have a direct impact on the overall performance of public institutions and hence the overall performance of the government. Human capacities can be measured through indicators of measurement of overall educational achievement.

The measurements are taken into account by other important factors such as actual skills and abilities required in completed studies and personal characteristics such as motivation for work and commitment to individuals. The measures are used to assess the performance of educational efforts and to determine the path of sustainable development.

According to OECD (1998) and some scholars (Tseane-Gumbi & Mini, 2017; Vettori, 2017), human capital is defined as the knowledge, skills, competencies and other characteristics embodied in individuals, which are linked to productive and operational capacity with the potential to enhance and support productivity, creativity and thus improve the overall performance of the enterprise. The following are integrated into human capital:

1. Formal education provided by educational institutions at various stages
2. Non-formal education provided by institutions and organizations through training, programs and research and development activities.
3. Education in informal settings such as family, community, social media and learning from observing others.

The Impact of ICT Systems on Human Capabilities

The growth and development of ICTs has had a direct impact on enhancing the skills, changing the structures of human capital required and knowledge of individuals working in public organizations. According to some important findings of various studies devoted to demonstrating the impact of ICT systems on the uses of human capital in a number of organizations (USA), the results are as follows (Zarqan, 2017; Ateljevic, 2017; Lacina, 2011):
1. Computerize the work environment and widen the gap between employees with university degrees and those with secondary or lower certificates.

2. Due to the intertwined effect of building the workforce, the development of information technology has made it difficult to isolate the net impact of these developments on their overall use, just as in the case of effects on both business cycles, industry conditions, and the effects of labor force transition.

3. The use of ICT systems led to the emergence of many industries that have already been predicted by specialists and researchers. Due to the increasing demand for computer services and data processing, the number of industries doubled from 1986 to 2006, which has led to the increase of industries and business related to information and technology systems.

4. The evolution of ICT systems led to an increase in demand for workers with analytical ability and cognitive skills in information processing compared to workers who collect and unload data. The ICT systems also increased the demand for professional, technical and administrative skills.

5. An important factor that has led to the increasing demand for skilled workforce is the growing demand for skilled workers in industries with a focus on computer-intensive work.

6. Within the support staff of the management of public institutions, industries and businesses that rely on the widespread use of computers tend to experience a shift in the complex use in order to attract professional and technical staff.

7. In the present world, one of the main characteristics of economic, social and cultural development is the ICT through proper application; products and services to develop stabilize and improve human relations and communities.

Conclusions

The development of ICT extends beyond the realization of individuals with its implementation to reduce distances of communication and to also find solutions to multiple issues and the production and delivery of diverse products and services. Eventually, this has led to achievement of community welfare and thus sustainable development. Human resources along with other equally important factors including globalization, has forced organizations to have employees who are able to work under changing competitive conditions due to changes in places and population and the need for young workers to have skills such as technical and cognitive abilities needed for renewable technological systems.

Furthermore, this study reported that the application of successful ICT systems needs to provide the appropriate institutional, economic and social environment in order to build a knowledge-based economy that needs economic stability. This will provide perfect conditions for foreign investment and freedom of action for telecommunications and information sector in addition to the establishment of good industrial relations – liberalization. Undoubtedly, the majority of developing countries suffer from a lack of human resources capital such as technical capabilities, technical skills and scientific knowledge of the ICT systems which lead to weaknesses in public policy and poor levels of education in this field.

There is also lack of knowledge and the lack of balance in the application of educational policy among the majority of employees in public institutions as a result of the decline of the level of public education among the inhabitants of the areas that make up these countries.

Recommendations

There is a need to formulate public policies that have a direct impact on the improvement of human capital and labor forces in public organizations of developing countries by taking into
account the developments of ICT systems and the requirements needed for enhancing overall technological capabilities. The modern states must emphasize the need to transform developing societies by seeking ways to achieve the goals of sustainable development through creation of sophisticated societies based on knowledge and applications adopted from developed countries and some successful developing countries in this field. The national budget should be prepared to be sufficient to establish advanced technological and communication infrastructures in order to succeed in implementing those systems. The role of knowledge and employees in improving the performance of the organization has increased since the evolution of ICT systems. Thus, there is need to develop an embodiment of how to include the knowledge, skills and capabilities inherent in individuals who are capable to sustain and develop the society. This obliges the public organization to seek and adopt a strategic approach by strengthening the learning programs and developing the capabilities of individuals to be an integral part of the workforce adapted to the needs and requirements of today's changing work environment.

There must be a clear vision on the extent at which the ICT is intended to be implemented in a manner that makes it easy to involve the beneficiaries of its services in the formulation of its decisions and service strategies. This can enhance partnerships and alliances with private organizations, civil society organizations and international organizations. It leads to good employment policy generally and by working with highly qualified personnel and advanced cognitive and technical skills commensurate with the requirements of the implementation of ICT systems. Finally, it is important to have indicators of progress used to achieve the effectiveness in the development of applications of ICT systems in public organizations.

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