THE EFFECT OF THE USE OF INFORMATION TECHNOLOGY ON THE ORGANIZATIONAL CULTURE OF PUBLIC SECTOR WORKERS (FIELD STUDY ON EMPLOYEES IN SAUDI UNIVERSITIES)

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ABSTRACT

Summary

The study aims to reveal the impact of Information Technology on organizational culture, from the point of view of public sector workers, in the kingdom of Saudi Arabia. The study sample consisted of (176) employees at the Saudi university, and they were selected by a simple random sample, and the questionnaire was used as a tool for the study, and the researcher used the descriptive analytical method to achieve the objectives of the study.

The results of the study found that information technology, in its dimensions, has a statistically significant impact on organizational culture, from the point of view of employees in Saudi universities, where the value reached 2R (0.71), which reflects that (71%) of the change in organizational culture is a result of the change in Information Technology and its dimensions, so that the values of the impact coefficient β, which for the dimensions of Information Technology, reached (0.26, 0.34, -0.25) for both programs and applications, knowledge resources, hardware and physical components, respectively, and all the values of the impact coefficients were at the level of (0.05).

In light of the results, the study reached recommendations, the most important of which is the need to develop programs to adopt the activation of information technology elements in Saudi universities for its impact on organizational culture, stimulate the knowledge resources of employees in Saudi universities on an ongoing basis, and develop awareness programs on the advantages of Information Technology compared to traditional work in Saudi universities.

KEYWORDS: Information technology, organizational culture, public sector, Saudi Arabia.

INTRODUCTION

Recently, rapid and unprecedented developments have been witnessed in all aspects of life, most notably the development of information technology, as its entry into organizations, institutions, government and private sectors has had great effects, as it has led to the emergence of what is known as the information and knowledge era, an era in which knowledge has become an essential resource no less important than the rest of the production resources.

From this point of view, information technology has imposed new challenges on the public sectors that differ in form and content from previous periods (Badi and Ibn Omaira, 2018). Therefore, institutions and organizations of various forms are required today to follow up on special developments in the field of information technology to meet the challenges of the Times, and this comes only by providing a strong research environment that allows absorbing developments in this field and qualifying human resources so that they are able to take matters into their own hands in order to ensure continuity in this approach (Li & Fang, 2018).

In the same context, the shift to information technology within an effective organizational culture has a clear impact on all sectors of society and its various institutions (Habib et al, 2021). Therefore, the urgent need to employ information technology in the public sectors has become an academic, scientific and cultural requirement.

THE PROBLEM OF STUDY

The current era is witnessing accelerated changes in various fields, and what distinguishes our current era is the comprehensive renaissance and the increasing intensity of competition in all fields. Therefore, information technology has recently witnessed a clear development and an increasing demand for it, because of its impact on the productivity of organizations, and as a result, increased spending on IT tools is reflected in improving the quality of productivity for organizations (Ahmed, 2019). On the other hand, organizational culture has been of great importance in determining the efficiency and effectiveness of institutions in general and educational institutions in particular, as it radically affects the behavior of university employees, making decisions that contribute to achieving their goals, working on the quality and improvement of performance and the service provided (Buhairy, 2017). Therefore, Saudi universities are required to keep pace with the development in the light of information technology to search for Outstanding Performance, which has become a feature of contemporary organizations in order to survive and grow by adopting a strategy that contributes to the development (Al-Mabrouk, 2019).

In accordance with the previous considerations and the circumstances of the current era and the developments in various fields, and based on the keenness of Saudi universities to improve their services to keep pace with information technology, the problem of current research to study the impact of Information Technology on organizational culture has materialized. Given the existence of this problem and the fact that previous studies did not address it from the same angle, the study attempts to answer the following main question: what impact does the use of Information Technology (programs and applications, knowledge resources, hardware and physical components) have on the organizational culture of public sector workers in the kingdom of Saudi Arabia.

OBJECTIVES OF THE STUDY

The main objective of the study is to find out the impact of the use of Information Technology (programs and applications, knowledge resources, hardware and physical components) on organizational culture.

THE IMPORTANCE OF THE STUDY

The Scientific Theoretical Importance

the practical theoretical importance of the use of Information Technology and its dimensions (programs and applications, knowledge resources, hardware and physical components) and its impact on organizational culture in relation to organizational beliefs, and its impact on organizational culture in relation to organizational values, organizational norms, culture and organizational environment.

Practical Importance

The results of the current study may contribute to activating information technology in Saudi universities and its impact on organizational culture, stimulating the knowledge resources of employees at Saudi universities, and developing awareness programs on the advantages of Information Technology in Saudi universities.

Study Limits

The study limits are as follows:

- **Human and spatial limits:** the study was limited to public sector workers in the kingdom of Saudi Arabia, where the public sector is represented in Saudi universities.

- **Time limits:** the current study was completed and applied in the 2021/2022 academic year.

- **Objective limits:** the objective limit is to identify the impact of the use of Information Technology on the organizational culture of public sector workers in the kingdom of Saudi Arabia by applying to employees in Saudi universities, where it is represented by two dependent and independent variables.

THEORETICAL LITERATURE

Introduction

The new technologies produced by the technological revolution have fundamentally changed human life and the business world, as well as the form and content of the administrative process, in order to meet the challenges of the complex environment and intense competition in the environments of business organizations, modern management has used computer systems and kept up with its generations until it became an indispensable tool.

It is well known that information technology and dealing with it has entered into all aspects of life, and knowledge of dealing with it and taking advantage of it has become an indispensable necessity, helped by the presence of ready-made computer programs and putting them at the service of management regardless of its fields (Badi and Ibn Omaira, 2018). Information technology (IT) has also flourished in the service of Business Administration and its various fields, so that it has become an indispensable basic necessity in the culture of the organization (Almasri et al, 2018).

It should be noted that the expansion of the scope of technology and computers has led to an increase in the ability of information and communication technologies in Knowledge Management in organizations, at various levels and levels, and this is also due to the multiplicity of databases and the diversity of their sources (Al-derhobi, 2019).The success of the administrative leadership is linked to its ability and superiority in storing information and technology and employing them in order to build an "information society", where minds and technology are treated together, and thus the organization's policies, goals and objectives are transformed into A concrete reality in a completely information-technological climate (Behairy, 2017).

FIRST: INFORMATION TECHNOLOGY

The term information technology refers to everything that is new and modern in the field of using and employing technological means of knowledge resources, modern devices and machines, and software systems, and therefore information technology is considered creative and innovative solutions to the problems of public sector workers (Cloete, 2017).

SECOND: INFORMATION TECHNOLOGY ELEMENTS

Programs and Applications

The operating system software provides the interface between hardware and application software, examples of personal computer operating systems include Microsoft Windows and Ubuntu Linux, and Google Android and Apple iOS dominate the mobile operating system market.

Knowledge Resources

The processes of communication and sharing of resources between the devices and systems of computers on the network require rules and controls called protocols.

Hardware and Physical Components

It consists of several Input units: it includes all the devices used in the process of entering data into the computer system, sometimes called (inputs), examples of which are: Mouse-Scanner - Joystick-Microphone Keyboard, CPU (Central Processing Unit), in which all data-related operations are performed (al-Sarraj, 2007).

THIRD: THE IMPORTANCE OF USING INFORMATION TECHNOLOGY IN BUSINESS ORGANIZATIONS

Information technology is not only one of the main pillars of the public sector, the integration of Information Technology in the public sector is considered the main engine of management, and therefore work to provide the organization with the possibilities to raise the level of roles and speed of completion through the provision of information, from here, Information Technology can do a lot of work and tasks, and these functions can be summarized as follows: (Yusuf, 2008)

- The ability to convert data into information brings great benefit.

- Processing and utilization of information in other processing steps.

- Work to simplify the processing of information so that it is easier for the user to understand it in order to achieve the desired benefit.

FOURTH: ORGANIZATIONAL CULTURE

The concept of organizational culture is based on organizational theories that appeared at the beginning of the eighties, and emphasized that each organization has its own culture and consists of a set of foundations, standards and values that individuals form around their organizations (Al-Sarhan, 2011). Organizational culture is also defined as the set of ideologies, philosophies, values, beliefs, assumptions, common trends and patterns of expectations that characterize individuals in an organization (Sakarna, 2009).

THE IMPORTANCE OF ORGANIZATIONAL CULTURE

The importance of organizational culture lies in the fact that it provides a framework for organizing and guiding organizational behavior, in the sense that it affects employees and their formation of the behavior required of them within the organization, which makes it characterized by common qualities among employees and thus they can learn and may be inherited to them (blind, 2008). Their importance and role in knowledge resources and organizations can also be mentioned as follows: (blind, 2008).

- She works to bring the behavior of individuals within her conditions and characteristics.

- Culture expands the horizon and perception of individuals about the events occurring in their surroundings.

- It forms a frame of reference through which individuals interpret events and activities in its light.

- Culture helps to predict the behavior of individuals and groups.

PREVIOUS STUDIES

Hadar Study (2020)

The study aimed to show the impact of ICT factors in the organizational culture within the hospital environment, and factor analysis was relied on as a basic methodology through confirmatory factor analysis, a sample of 108 administrators distributed into three categories (executive administrative, specialized administrative, technical administrative)was relied on the study also relied on the construction of two questionnaires, the first related to it factors and the component of (internal communication, knowledge management, performance evaluation) and the second related to organizational culture and consists of ten indicators, and the study found that there is an impact of for information and communication technology the organizational culture was valued The total magnitude of the impact is 0.15, which is a weak value.

Kassem Study (2019)

The study aimed to demonstrate the contribution of Information Technology in the management of creativity in Algerian business organizations, where the study sample consisted of 64 administrators in real estate facilitation, the questionnaire was applied to them as a tool for the study, and the descriptive approach was used, and the results found that keeping up with information technology systems for modernity, contributes a very high percentage to stimulating the creative abilities of the organization's human resource by reducing the time factor of rapid and timely response to environmental variables, at the external level, represented by updating data and information and improving ways of dealing with the external environment of the organization.

Abdel Aal Study (2019)

The study aimed to identify the requirements of information technology to achieve strategic agility in Egyptian universities, and also aimed to identify the basic pillars of Information Technology in Egyptian universities and determine the actual reality of strategic agility, and the study sample consisted of (112) faculty members in Egyptian universities, where they applied the questionnaire as a tool for the study, and to achieve the objectives of the study, the descriptive approach was used, and the study has reached the requirements of information technology contributing to achieving strategic agility, and the results showed that there are aspects of strategic agility at Sohag university with medium proportions.

Hendrato&Subyantoro (2021)

Study, the study aimed to identify the impact of organizational culture and Information Technology on employee performance, the study used the correlational approach to examine the relationship between variables. The results revealed a positive and significant impact of organizational culture and job satisfaction on employee performance, as information technology has a positive and significant impact on job satisfaction, and performance is influenced by organizational culture and information technology through job satisfaction.

The Study of Iqbal Et Al (2020)

The study aimed to identify the impact of information technology resources on knowledge management capabilities by organizational culture. The study used a comprehensive survey method, and the sample consisted of (315) faculty members at Indonesian universities. The results of the study indicated that it HR does not affect knowledge management capabilities. There is also a good and qualified IT infrastructure in Indonesia's universities, and the results also indicated the presence of an IT infrastructure that positively and significantly affects the organizational culture in universities.

The Study of Chouki Et Al (2018)

The study aimed to identify the proposal of a research model of organizational culture being an obstacle to the adoption of information technology within Moroccan small and medium-sized enterprises (SME) the model presents some organizational variables as the main obstacles to the adoption of Information Technology in small and medium-sized enterprises (SMEs). By design, a qualitative study was conducted to collect data from Moroccan SMEs from various sectors. Finally, the experimental results of the final model proposal were analyzed, and the results showed the presence of some important barriers related to organizational culture, where the main obstacles discussed in this study are organizational informalization, resistance to stakeholder change in technologies, and centralized decision-making in SMEs.

COMMENT ON PREVIOUS STUDIES

Most of the studies agreed with the current study in terms of using the descriptive approach, such as the study of Qassim (2019) and Abdul Al (2019), and the rest of the study disagreed with it so that it dealt with the study of both Hendrato&Subyantoro (2021), while the Iqbal et al (2020) study relied on the comprehensive survey approach. The current study also agreed with most previous studies in terms of the study tool, which is the questionnaire as a tool for collecting information, and on the other hand, the study differed from all previous studies in terms of the study sample, except for the study of Abdul Aal (2019) and Viqbal et al (2020) so that the study sample was working in universities, some chose employees and others faculty members, and the current study differed from previous studies in terms of spatial and temporal field of study.

Methodology of the Study

The study followed the descriptive analytical approach, which is limited to collecting data and facts, classifying and classifying them.

Community and Sample Study

The study community was represented by all university employees in the kingdom of Saudi Arabia, in the current year 2021-2022, and a simple random sample was drawn from the study community, the size of which was (176) of the workers in Saudi universities, by distributing an electronic link to them for the study tool.

Data Collection Tool

To achieve the purposes of the present study, the information technology and organizational culture survey was used, so that the IT axis included three axes (programs and applications - knowledge resources - hardware and physical components). The focus of organizational culture was divided into (15) phrases, while the focus of organizational culture included (20) phrases. Also, the information technology scale was extracted from a study (Najm, 2019) and the organizational culture scale was extracted from a study (Darawsha, 2015).

EXPLORATORY EXPERIMENTATION OF THE STUDY TOOL

The researcher verified the psychometric characteristics, as follows:

Apparent Validity (Validity of Arbitrators)

The researcher presented the questionnaire in its initial form to a group of arbitrators, numbering (5) arbitrators who are specialists in Business Administration, in order to find out the extent to which the phrase belongs to each axis, and to

identify the clarity of the phrases, and the importance of the phrase, adding what they deem appropriate and is not mentioned in the questionnaire, and after collecting the opinions of the arbitrators, and in the light of the opinions of the arbitrators, the questionnaire in its final form became ready for application.

Cronbach's Alpha Reliability Coefficient

The questionnaire was distributed to (44) employees of Saudi universities from outside the study sample, and the following table shows the reliability coefficients of the questionnaire and each of its axes using the Cronbach's Alpha equation.

Table 1: Cronbach's Alpha Coefficients of Questionnaire Reliability

Tool axes	Items	Cronbach's Alpha
1: Information technology	**15**	**0.92**
1.1: Programs and applications	4	0.88
1.2: Cognitive resources	5	0.87
1.2: Hardware and physical components	6	0.89
2: Organizational culture	**20**	**0.94**

Table (2) shows that Cronbach's Alpha coefficients for the questionnaire axes ranged between (0.87 – 0.94), which are good reliability coefficients, all of which indicates that the questionnaire has a good degree of reliability and can be relied upon in the field application of the study.

Statistical Processors and Statistical Programs Used in the Study

The Social Sciences statistical package program(SPSS) was used to perform statistical analyses, where Cronbach's Alpha reliability coefficient was found, as well as multiple regression analysis.

THE RESULTS OF THE STUDY RELATED TO THE ANSWER TO THE MAIN QUESTION OF THE STUDY, THEIR INTERPRETATION

Text of the Main Question

What impact does the use of Information Technology (Software and applications, knowledge resources, hardware and physical components) have on the organizational culture of public sector workers in the kingdom of Saudi Arabia

To answer this question multiple regression analysis was used, as shown in the table:

Table 2: Multiple Regression Analysis Test Results

Dependent Variable	Model Summary			Anova		Coefficients			
	R	R^2	Adjusted r_2	F	*Sig	B		T	*Sig
Organizational culture	0.85	0.72	0.71	31.52	0.00	Software and applications	0.26	2.59	0.013*
						knowledge resources	0.34	3.21	0.003*
						hardware and physical components	-0.25	-1.78	0.041*

The results presented in Table (2) showed that information technology in its dimensions (programs and applications, knowledge resources, hardware and physical components) has a statistically significant impact on organizational culture, from the point of view of employees at Saudi universities, where the value reached 2R (0.71), which reflects that (71%) of the change in organizational culture is due to the change in Information Technology in its dimensions (programs and applications, knowledge resources, hardware and physical components).

The value of the statistical coefficient F of the total impact between the independent and follow-up study variables was (31.52), which is a function at the level of (0.05), and consistent with the above, and to determine the magnitude of the effects of each dimension of Information Technology, the values of the impact coefficient β were relied on, which indicated that the amount of impact of the dimensions of Information Technology, where programs and applications amounted to (0.26), knowledge resources (0.34), hardware and physical components (-0.25), as all the values of the impact coefficients were a function at the level of (0.05).

This result can be attributed to the importance of Information Technology and its reflection on the organizational culture, the secret of the increased interest in the culture of the organization is due to the main determinants of the success or failure of the organization, assuming there is a correlation between the success of the organization and its focus on organizational values and concepts that drive its members to commitment, hard work, innovation, modernization, participation in decision-making and work to create an organizational culture appropriate to the needs of stakeholders in the organization's work environment, and this is indicated (Li & Fang, 2018).

On the other hand, this can be explained by the fact that information technology, which includes computer systems with their physical and software components, communications and networks, has become the most important means of regulating the competitiveness of modern business organizations. It can be said that the knowledge and information technology assets have become stronger than the financial assets, as those who adopt the information and knowledge technology approach have been able to develop services, products, production process, marketing, cost reduction and quality improvement in an increasingly competitive global arena (Holtshouse, 2013). The fact that the current transformations at the local and international levels and the new challenges imposed by the ocean are the result of the phenomenon of globalization, which is mainly represented by the observed transition from physical to digital economies based on knowledge, science and the increasing use of Information Technology, and the profound effects that its applications have produced on our current world, especially in the business world (Mehta et al, 2014). What is happening in global organizations shows that organizational culture, in turn, influences the concrete aspects of the organization and the behavior of individuals, and also determines the way these knowledge resources are used in their decisions and management of their subordinates and organizations.

STUDY RECOMMENDATIONS

In light of the results of the expected field study, the study recommends the following:

- Developing programs to activate information technology in Saudi universities for its impact on the organizational culture, and the moral motivation of employees on an ongoing basis to pay attention to Information Technology.

- Developing awareness programs on the advantages of Information Technology compared to traditional work in Saudi universities.

- The need to enroll employees in Saudi universities in many courses to identify the devices and equipment used in Information Technology.

STUDY PROPOSALS

The researcher proposes to conduct future studies on:

- The obstacles facing the organizational culture in Saudi universities.

- Envisage a proposed program to reduce the problems of applying information technology in Saudi universities.

- The effectiveness of Information Technology on enhancing the organizational culture among employees in the private sector in the kingdom of Saudi Arabia.

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