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Cultivating Learning orientation and Support to Empower Hospital Technology Users in Digital Reforms

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Abstract. The current study started from an assumption that perceived organizational support (POS) is a mediation factor in the impact of organizational learning orientation (OLO) on the user empowerment of information technology (IT). This empirical analysis of 463 hospital technology operators investigates how OLO and POS shape user empowerment of information systems. Statistical evaluation using Structural Equation Modeling (SEM) reveals OLO positively influences empowerment directly and indirectly fully mediated through POS. Effectively transitioning to learning cultures thus entails engendering supportive climates where users feel valued, resourced and involved. As digitalization accelerates across sectors, firm policies must continually upgrade individual capabilities while fostering autonomy, efficacy and participatory decision making. Findings provide salient direction for developing economies specifically needing to harness technology's benefits through motivated, proficient workforces during trying reforms.

Keywords: User empowerment, organizational learning orientation, perceived organizational support.

1. Introduction

1.1. Theoretical Background of the Study

In the context of IT adoption, users play an active role in adapting technology to tasks. Information technology (IT) enables users to perform required tasks efficiently and effectively. The literature has pointed to an important issue, which is that user empowerment may be an important indicator to assess the success of designing and implementing IT. Empowering users who work in IT-dependent tasks means delegating broad authorities to those users when formulating their own work procedures, and decide how to use alternative functions and features in their (IT) applications in order to solve problems and support decision-making, and that may contribute in enhancing users' innovativeness, adaptation, and problem solving in their work (Deng & Doll, 2022, p. 2). The main issue that the study will address is the factors influencing the enhancement of user empowerment in the context of (IT). Sehgal & Stewart (2006) pointed out this issue and emphasized that studies that addressed the subject of users empowerment in the field of technology are still rare, specifically, the factors that affect user empowerment. Accordingly, this study attempts to investigate some of the factors affecting the user empowerment in the field of (IT). The current study focuses on the three variables: empowerment of (IT) users, (OLO), and (POS). The mechanism for linking these variables with each other depends on the assumption that empowerment of (IT) users depends on organizational learning orientation(OLO), which in turn will enhance the process of empowering the users and gives them some autonomy and independency in performing their work. The role of the (OLO) may not be direct, but rather through the POS provided to them by the organization. The essential idea on which the current study is based is that empowering the user requires an organizational orientation towards learning, and this empowerment must be followed by POS realized by the users.

One of the most important motivations for this study is the gap in the literature of user empowerment in the field of IT. User empowerment is considered to be multidisciplinary concept and deal with it requires knowledge in business, psychology, information technology, and organizational theory. However, the literature of information systems does not focus on the factors that affecting user empowerment in the IT filed (Gsenger, 2020). Therefore, one of most important contribution of this is study is to identify the effect of learning orientation on user empowerment mediating by POS.

The second gab of study is measuring the user empowerment, some studies such as (Kim & Gupta, 2014, 658) (Maas et al., 2014, 94)(Junglas, 2022, 5) (Gsenger, 2020, 4106) adopted same variables of employee empowerment without considering the specialty of IT. The measurement prepared by (Doll et al., 2003) is believed to be the most relevant measurement to the IT filed because the focus of measurement is the IT user. However, rare studies tested the validity and reliability of this measurement. Therefore, this study will contribute in testing this measurement.

1.2. Study Problem

Empowering users in the field of (IT) is one of the recent topics in this field, but there is still a lack of clarity concerning the factors affecting the empowerment of users, especially in the field of (IT). User empowerment in the field of (IT) is an important issue that needs further investigation, especially with regard to how to empower individuals working in with (IT) and its applications (Gsenger, 2020). The problem of the study was represented by the following questions:

- Does (OLO) affect the user empowerment of medical (IT) (represented by radiology and ultrasound devices) in the health institutions were the field of the current study?
- Does (OLO) affect (POS) in the health institutions under study?
- Does (POS) affect the user empowerment in the health institutions under study?
- Does (OLO) affect the user empowerment through (POS) in the health institutions under study?

1.3. Study Significance

The importance of the study is that it addresses one of the most important topics in the field of (IT), which is user empowerment, especially since this topic is still a fertile field for research and investigation, specifically with regard to the factors affecting the user empowerment. Kim & Gupta (2014, p. 656) pointed out an important issue, which is that despite the literature studying user motivation and behavior, the term empowerment has rarely been used and employed in the field of information systems. In the same aspect, Maas et al., (2014, p. 89) confirmed that studies related to user empowerment within the framework of the resource planning system are rare. Doll et al. (2003, p. 3) confirmed that the concept of empowerment and its role in the design and success of information systems has not been sufficiently studied, and this was the starting point for (Sehgal, 2007) to conduct a study based on this recommendation, by investigating the effect of users empowerment on the success of management information systems. In the context of the Arabic studies, the researcher did not find any study conducted in the subject of user empowerment, even after conducting a search in Google and Google Scholar search engines. Accordingly, the current study can be considered one of the first attempts (in Iraq) to identify the factors affecting the user empowerment.

1.4. Study objectives

The first objective is to test user empowerment measurement model which includes three sub-dimensions: problem solving and decision support, user self-efficacy, and user independence, noting that this model (both as a measurement model or structural model) has not been previously tested in the Iraqi environment? In addition, the validity and reliability of this measurement model in this environment have not yet been demonstrated (according to the researcher's knowledge.

The second objective is to identify the details of the impact relationships between the study constructs that focusing on the direct effect of (OLO) and (POS) in user empowerment, and examine the mediation role of (POS) in the context of impact (OLO) on user empowerment.

2. The Theoretical Framework and Study Model

The study model is considered to be a vital pillar in research, as it explains the constructs of the study, the sub-dimensions to measure the constructs, and the relationship between them. The model aims to demonstrate the relationships between the studied constructs and tries as much as possible to emulate the behavior of the targeted variables. In addition, it reflects as much as possible the network of relationships between the studied variables, which often go beyond mere correlation or mere difference without going into details or introducing variables of little importance into the study nor excluding or neglecting important variables a result of not paying due consideration to their importance in the model (Tigza, 2012, p. 130-131). A model is a diagram that explains the relationship between the latent constructs that were employed in the model based on theoretical foundations and it represents a tool for presenting the hypotheses that will be tested (Hair et al., 2019, p. 606). The relationships emerging from the study model are as follows:

2.1. (OLO) and user empowerment

(OLO) is one of the widely controversial concepts among researchers with various psychological, social and knowledge backgrounds. The reason may be due to the overlap between this term and the term organizational learning. Within the framework defining (OLO), it can be viewed as a multidimensional term that represents the organizational values that determine the organization's desire and ability to participate in creation and use of knowledge, which is the degree to which the organization is satisfied with its theory in use, and the extent to which proactive learning occurs (Sinkula, 1997 p.309). It is clear from this definition that (OLO) means that there is proactive learning in the organization, that is, the organization adopts values that drive it to acquire new knowledge that may not exist in other organizations. Baba (2015, p.237) comments on this definition stating that (OLO) does not mean merely training sessions or short term organizational development, but rather requires the establishment of an organizational culture, a culture with new standards, assumptions, values, beliefs, and behavioral

expectations. From the aspect of environmental responsiveness, (OLO) is defined by Baker & Sinkula (1999 p. 412) as an organizational characteristic that reflects the value that the organization places not only on responding skillfully to changes in the environment but on constantly challenging the assumptions that define the organization's relationship with its environment. It is clear from the above definition that the (OLO) is a continuous process of adjusting the organization's relationship with its environment. OLO has clear effects on the individual and the organization and the current study assumes that (OLO) could be an influential factor in empowering the users of (IT).

One of the important aspects of (OLO) is that it is an effective motivational means that motivates the individual to obtain rewards, a job position, or authority and power. In addition, it is considered a critical variable in the success of the organization and the individual as a means to acquire, absorb and process information and knowledge while shedding old ideas (Al-Kubaisi and Daham 2007, p. 140). This means that user empowerment does not happen from nowhere, but rather there is supposed to be organizational culture and values that push the organization towards organizational learning, and this in turn will push towards the users' possession of the required readiness and capabilities empowered by the management of the organization. Accordingly, the first research hypothesis can be formulated as follows:

The first hypothesis H1: (OLO) impacts the empowerment of medical (IT) users (represented by operators of radiology and ultrasound devices) in the health institutions under study.

2.2. (OLO) and (POS)

Employees develop beliefs regarding the extent to which the organization values their contributions and cares about their well-being, and this perceived support relies on the same causality that people generally infer when evaluating of commitment of other parties to social relationships. This means that (POS) will is influenced by the frequency, intensity, and sincerity of praise and acknowledgment, which will in turn influence the individual's interpretation of the organizational motivations behind that treatment. This means that there will be agreement on the degree of support the individual expects from the organization in a wide range of situations, including the organization's potential reaction for an individual's potential illnesses, mistakes, or excellent performance, and the organization's desire to pay a fair salary and make the individual's job meaningful and interesting (Eisenberger et al., 1986, p.501). Individual employees who perceive that their organization values their contributions and cares about their well-being are bound to increase their in-role performance. Conversely, repeated indications that the organization does not value the contributions of individual employees and fails to reward increased performance reduces individual employees' commitment and increases self-serving behaviors at the expense of the organization's well-being (Eisenberger et al., 1999, p. 469). Authors have many opinions regarding the definition of (POS). Eisenberger et al. (1986 p. 502) regards it as the general belief of employees about the extent to which the organization evaluates their contributions and cares about their condition. Organizational support is an indicator of the organization's readiness to increase rewards for work efforts. It is an indicator of the organization's tendency to provide assistance when the worker needs it to perform his work. In the context of the organization's interest in the well-being of employees, (POS) is defined as the extent to which individual employees realize that the organization values their contribution and cares about their well-being. The current study assumes that the (OLO) cannot be achieved unless there is organizational support that is perceived by individuals. When the organization works to urge individuals towards learning, it is supposed to provide support for individuals working in the organization in parallel with this orientation through encouragement and personal care while mitigating personal problems. Many studies have tested the effect of (OLO) and (POS) as two parallel variables in influencing other variables. Afzali et al. (2014), studied the effect of (OLO) and (POS) on job performance while Zahoor et al. (2022) tested the effect of (OLO) and (POS) on employees' well-being. The perspective of the current study on the relationship between (OLO) and (POS) is that the organization's orientation toward learning requires supporting employees. Thus, it is not possible to build an organizational culture and values that are directed toward organizational learning without

supplementing this orientation with employee support and care. Accordingly, the second research hypothesis can be formulated as follows:

The second hypothesis H2: (OLO) impacts (POS) in the health institutions under study.

2.3. (POS) and Empowerment of Users of (IT)

The concept of empowerment is a multifaceted concept, as the definition of this concept can be viewed according to many disciplines such as management, sociology, and psychology. Moreover, the term empowerment emerged from the literary of employee participation in the 1980s (Junglas, 2022, p. 2). Sehgal (2007, p. 88) points out that the term empowerment is a multifaceted term, and it is based on the management theory of empowerment, meaning that the term user empowerment in the context of (IT) was built within the framework of the management view of empowerment. He points out that until 2005 only (Doll et al., 2003) referred to user empowerment. Accordingly, (Doll et al., 2003, p. 2) defined user empowerment as an integrative motivational concept based on the evaluation of four cognitive tasks that reflect the individual's orientation toward computer-mediated work, and the four evaluations are the user independence, computer self-efficacy, intrinsic motivation, and perceived benefit. It is clear from this definition that the approach in defining user empowerment focuses on the user's use of the computer in performing the assigned tasks. Empowerment in this aspect focuses on the individual's tendency to use the computer. (Doll et al., 2003 p. 205) presented another definition of user empowerment, defining it as the cognitive readiness, reliability of the individual, and the readiness of resources to use an application. It is noted from this definition that empowerment is a state of readiness at the individual level to adopt an (IT) application, meaning that the process of empowering an individual is conditional on his readiness for this process.

The current study assumed that (POS) from individual employees has a significant impact on their empowerment in (IT), meaning that one of the requirements for empowering users is organizational support. In the context of the role of (POS) in empowering employees, Caesens (2022 p. 5) noted that many scholars have suggested that (POS) positively affects the dimensions of empowerment, as (POS) may make the individual feel that he is an accepted and appreciated member throughout the organization, which should reinforce the idea his work is useful. Such support would also provide feelings of self-determination as is appropriate for the individual, as an accepted member of the organization, to determine the goals and strategies for the work he or she does in the organization. Finally, (POS) provides both the material, social, and emotional resources needed by employees to adequately perform their work and achieve their personal work-related goals. Accordingly, the third hypothesis was formulated as follows:

The third hypothesis H3: (POS) has a direct significant impact on empowering medical (IT) users (operators of radiology and ultrasound devices) in the health institutions under study.

2.4. The Impact of (OLO) on Empowering the User through (POS)

One of the primary objectives of the current study is to discover the mediating role of (POS) in the context of the relationship between (OLO) and user empowerment. That is, the presence of (OLO) may not be sufficient to empower (IT) users unless there is (POS) by those users. Accordingly, the relationship between the (OLO) in empowering the user of (IT) is through (POS). Based on this idea, the fourth main hypothesis was formulated as follows:

The fourth hypothesis H4: The (OLO) has a significant impact on empowering medical (IT) users (operators of radiology and ultrasound devices) in the studied health institutions through (POS).

Figure (1) shows the study model and the hypotheses.

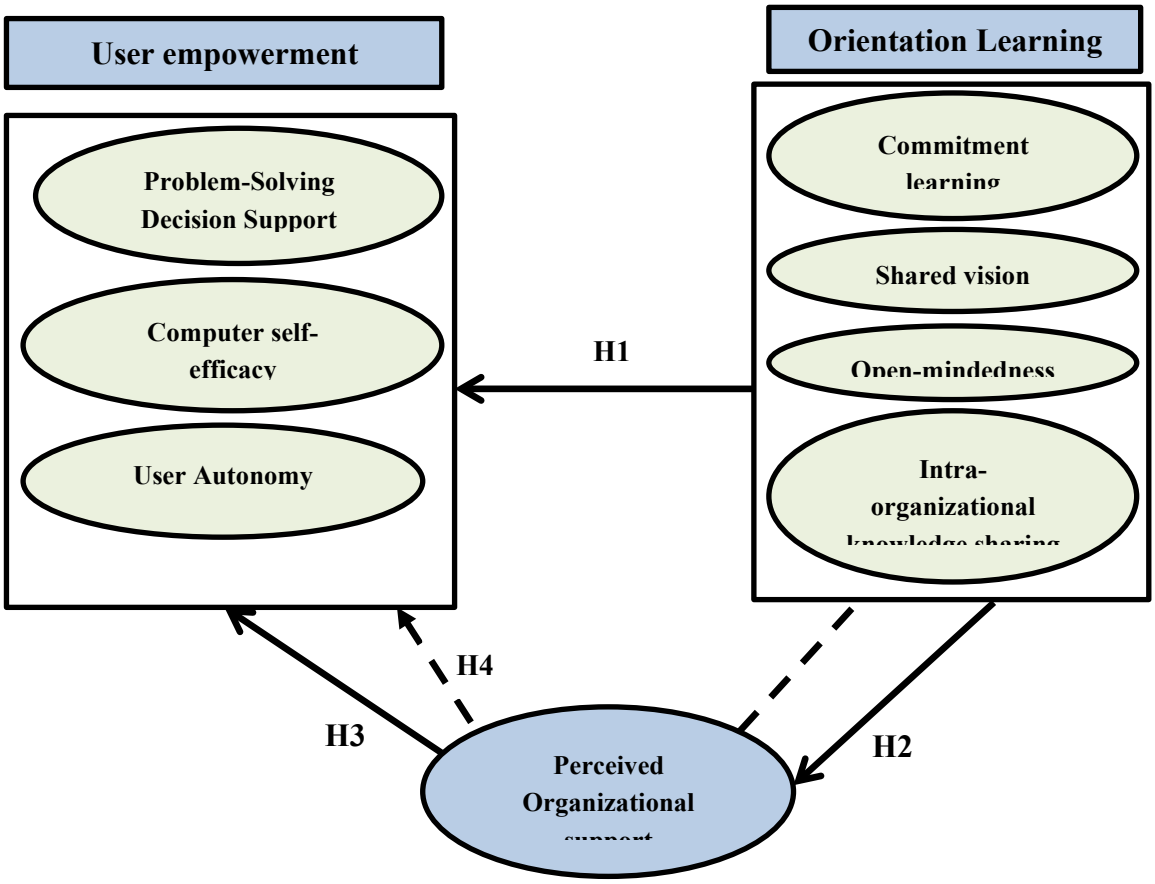

Fig .1 Study Model

3. Study Methodology

3.1. Study Approach

The current study adopted the survey method, which collects data, analyzes the current situation of a subject, and interprets it in a specific environment and at a specific time. This type of research seeks to provide explanation and clarification about the relationships between variables, especially causal relationships. Within the framework of the current study, the analytical survey method was adopted, which is appropriate to the nature and directions of the study. The survey method is usually applied on a large or small geographical range and may be a comprehensive survey or a sample method. In most cases, large samples are used in order to assist the researcher obtain accurate results with a low error rate, thus enabling the researcher to generalize the results to the study population. Within the framework of the current study, the research sample is geographically distributed throughout Nineveh Governorate, as it includes the center of the governorate (the city of Mosul) and its districts, so the optimal method is to adopt the analytical survey method. Besides, the researcher has adopted the comprehensive population survey method because the sample consisted of the individuals operating on radiology and ultrasound devices in all hospitals in Nineveh.

3.2. Data collection method and scale

A questionnaire was adopted to collect data for the current study. Questionnaire has been adopted as an instrument to gather the data due to some reasons: Questionnaire is a suitable instrument to collect the data based on the survey research approach used in the study; inspiring participants to answer frankly;

eliminating interview bias; reducing variation in the questioning process; facilitating collection and analysis of data; gathering large amount of data in a short timeframe; and it is economical to manage.

In preparing the questionnaire, the current study relied on previously applied measurement scales that validity and reliability in the measurement process was proven repeatedly in many previous studies. Regarding the measurement tool, the measures prepared by (Sinkula et al., 1997) and (Calantone et al., 2002) was adopted to measure (OLO), and as for (POS) a shorter version was adopted from the original scale by (Eisenberger et al. 2002) and (Eisenberger et al., 2006), noting that this scale was tested by (Eisenberger et al., 2002), and the validity and reliability of the scale was also confirmed by (Worley et al., 2009). The measurement of user empowerment was chosen from (Doll et al., 2003), that was tested in detail by (Sehgal, 2007). It was reliable and valid for the measurement process, and all tests indicated its validity.The five point Likert scale was used to allow respondents to express how much they agree or disagree with a particular statement measurement items.

After collected the questionnaire items from the original instruments, the items have been translated to the Arabic language by researchers, then checked by experts in Arabic and English languages. Then, the items reviewed by qualified experts to check the accuracy of items, correct the grammar, and avoid the bias. After that, interviews were carried out with five persons working in the hospitals under study (IT users) to identify and solve problems in the instrument. The final version of questionnaires were prepared based on the suggested improvements by the experts and IT users included (18 items) to gauge OLO, (8 items) to measure POS, and (13 items) to measure user empowerment.

3.3. Study Sample

The study sample included a group of individuals working in the Health Directorate of Nineveh who are specialists in operating various medical devices, such as radiology, ultrasound, magnetic resonance imaging, and CT scans (*computed tomography scan*). The total number of workers operating radiology and ultrasound devices in Nineveh hospitals is (550) operator. A total of (525) questionnaire forms were distributed to the study sample, and the number of respondents was (463) while the number of non-respondents was (62). Thus, the overall response rate reached (88.10%).

4. Analytical Framework of the Study

The structural equation modeling employed to test the study and hypotheses model. SEM is a "Multivariate technique combining aspects of factor analysis and multiple regression that enables the researcher to simultaneously examine a series of interrelated dependence relationships among the measured variables and latent constructs (variates), as well as between several latent constructs" (Hair et al., 2019, 606). The main justifications to employ SEM in this study are: lets researcher analyze the impact of predictor variables on several dependent variables simultaneously; it allows to account measurement error and even addresses error in predicting relationships; and it is capable of testing an entire model instead of just focusing on individual relationships (Collier, 2020, 1).To assess the model fit, some fit indices and the cut-off levels have been employed in this study as below (Schumacker & Lomax, 2010); (Hair et al., 2019); (Holmes-Smith, 2011); (Schermelleh-Engel et al., 2003); (Bagozzi & Yi; 2012):

Normed Chi-Square ($\chi 2/df$), 1-3
Root Mean Square Error of Approximation RMSEA ≤ 0.07
P of Close Fit PCLOSE ≥ 0.05
Root Mean Square Residual RMR
Standardized Root Mean Square Residual SRMR ≤ 0.07
Goodness-of-Fit Index GFI $\geq .90$
Adjusted Goodness-of-Fit Index AGFI $\geq .90$
Comparative Fit Index CFI ≥ 0.90
Tucker-Lewis Index (TLI) ≥ 0.90

After completing the data collection, statistical analysis was conducted in two steps, the first was testing the measurement model and the second was testing the structural model. In the context of testing the measurement model, each of the study construct was tested separately, and upon reaching the level of model fitness for the three constructs, they were combined within the framework of one measurement model. Fit was not achieved except after deleting some measurement indices and correlating the residual errors of a number of observed variables. The fit indices after correlating the residual errors were as follows:

(χ2/df), 2.219; GFI, 0.872; AGFI, 0.847; CFI, .911; TLI, .900; RMR, 0.048; SRMR, 0.0549; RMSEA, 0.051; PCLOSE 0.0282.

The results of CFA confirm that the model has a good fit. All the indicators reached to the acceptable level, except GFI, 0.872; AGFI, 0.857. The reason behind the gap between these indicators and the acceptable level is model. In this regard, Jais (2007) confirmed that GFI and AGFI can be affected by model complexity, and complexity can leads to reducing the value of GFI and AGFI. The model in this study can be considered as a complex model because it includes three main constructs, seven sub-dimensions, 35 measurement items. Thus, 0.85 as cut-off level considered an acceptable level of GFI and AGFI (Jais, 2007). Table (1) and Figure (2) show the test results of the measurement model.

Table 1. The results of testing the measurement model

Indicators		Latent Constructs		Estimate	S.E.	C.R.	P
X_1	<---	**Learning commitment**	**Organizational learning orientation**	1.000			
X_2	<---			1.284	.119	10.805	***
X_3	<---			1.218	.116	10.489	***
X_4	<---			1.095	.117	9.354	***
X_5	<---	**Shared vision**		1.000			
X_6	<---			.999	.088	11.334	***
X_7	<---			1.348	.114	11.839	***
X_8	<---			1.331	.110	12.071	***
X_9	<---	**Open-mindedness**		1.000			
X_{10}	<---			.983	.090	10.866	***
X_{11}	<---			1.079	.095	11.373	***
X_{14}	<---	**Knowledge sharing**		1.000			
X_{16}	<---			1.352	.136	9.970	***
X_{17}	<---			1.513	.143	10.594	***
X_{18}	<---			1.584	.148	10.723	***
X_{19}	<---	**Perceived organizational support**		1.000			
X_{20}	<---			1.004	.054	18.742	***
X_{21}	<---			1.144	.073	15.601	***
X_{22}	<---			.989	.065	15.161	***
X_{23}	<---			1.007	.067	15.025	***
X_{24}	<---			1.139	.071	16.025	***
X_{25}	<---			1.027	.066	15.601	***
X_{26}	<---			.971	.068	14.286	***
X_{27}	<---	**Problem-Solving Decision Support**	**User empowerment**	1.000			
X_{28}	<---			1.011	.060	16.984	***
X_{29}	<---			1.187	.087	13.707	***
X_{30}	<---			1.067	.086	12.418	***
X_{31}	<---			1.010	.089	11.332	***
X_{32}	<---	**Self-efficacy**		1.000			
X_{34}	<---			1.088	.131	8.334	***
X_{35}	<---			.705	.093	7.557	***

Indicators		Latent Constructs		Estimate	S.E.	C.R.	P
X_{36}	<---	User Autonomy		1.000			
X_{37}	<---			1.059	.061	17.362	***
X_{38}	<---			.886	.059	14.906	***
X_{39}	<---			.835	.063	13.172	***

It is clear from the results in the table above that all the measurement indicators were significant at the level (0.001) in measuring the latent constructs that were used to represent them. This means that the measurement models indicators were chosen in a proper way to measure the latent construct included in the measurement model, (OLO) (POS) and user empowerment.

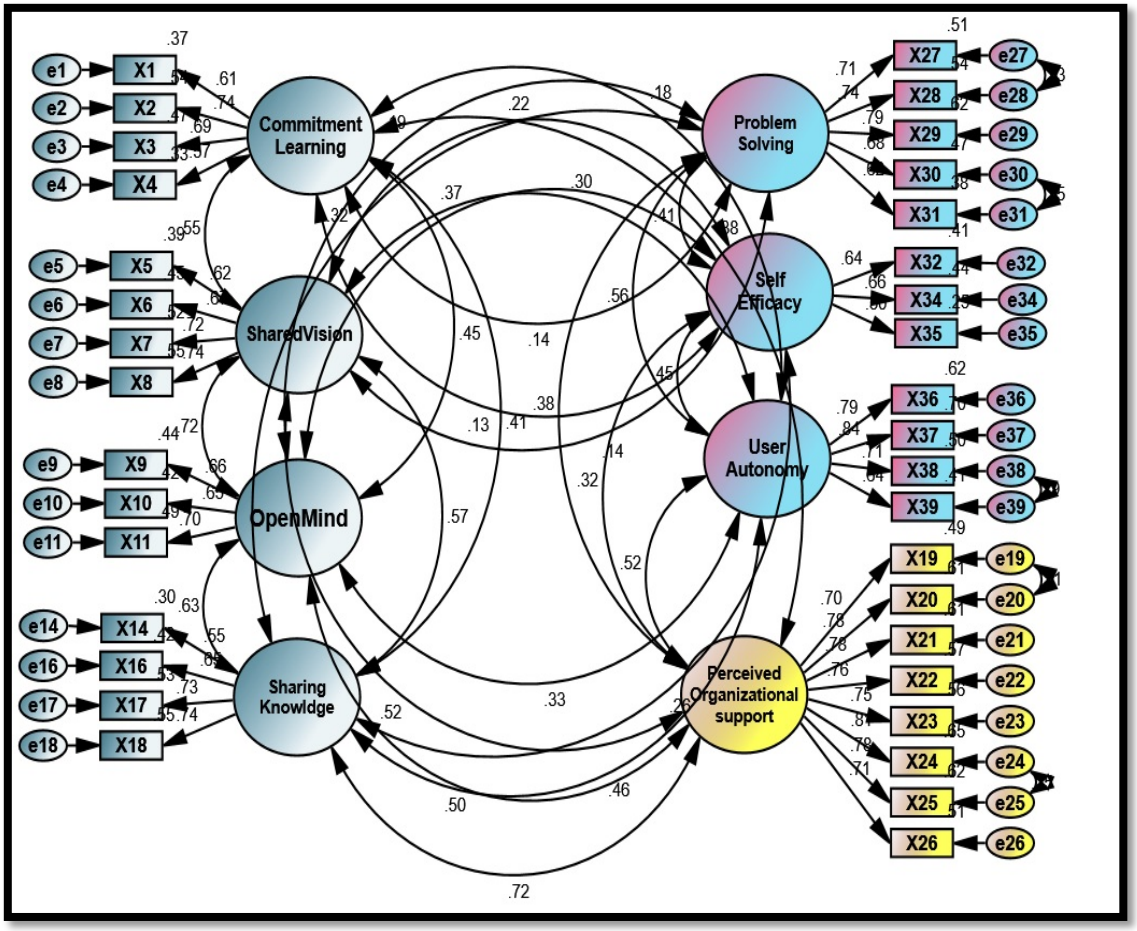

Fig. 2 Measurement model (Final stage)

The second stage of statistical analysis is testing the study model and hypotheses, and Table (2) summarizes the testing of hypotheses within the framework of the structural model of the study.

Table 2. the regression results of testing the hypotheses 1,2, 3

Hypothesis	Dependent factor		Independent factor	Estimate	S.E.	C.R.	P
H1	User Empowerment	<---	OLO	0.828	0.162	5.118	***
H2	POS	<---	OLO	2.082	0.284	7.317	***
H3	User Empowerment	<---	POS	0.371	0.050	7.357	***

*** 0.001

The results of the statistical analysis of the structural model of the impact of (OLO) on user empowerment indicate that the nature of the impact was significant and direct, as the value of the regression coefficient (Estimated β =0.828) was at a level of significance (0.001), which being less than (0.05) is a value that indicates the significance of the impact, while the critical ratio was (5.118.). These results confirm the significant impact of the (OLO) on user empowerment. The impact of the independent variable ((OLO)) was positive and significant on the dependent variable ((POS)). This is supported by the value of the regression coefficient (Estimated (β) =2.082) at a significance level of (0.001), which being less than (0.05) is a value that indicates the significance of the impact. The critical ratio supports this significant impact it was (7.317). These results clearly support the significant impact of (OLO) on (POS). The results of testing the third hypothesis indicated that there is a, direct and statistically significant impact of (POS) on user empowerment, as the value of the regression coefficient (Estimated (β) =0.371) was at a significant level (0.001) and a critical ratio was (7.357).

The fourth hypothesis represents the basis through which explains the mediation role of (POS) in the impact of (OLO) on user empowerment. That is, identifying the role of this construct as a mediator between these two variables or not, and if it is a mediator, is the mediation partial or full? This hypothesis is tested according to (Baron and Kenny (1986, p. 1173), as the researchers indicated that the three basic conditions for the mediator to be true are as follows:

- The first condition: The independent variable impacts the dependent variable.
- The second condition: The independent variable impacts the mediation variable
- The third condition: The mediation variable impacts the dependent variable

After confirmed the requirements, as is in Table (2) above, and for the purpose of testing the fourth hypothesis, two steps were adopted to test the mediator. These two steps were proposed by (Hair et al., 2014), and they were based primarily on (Baron & Kenny, 1986) as follows:

- The first step: testing the three relationships (conditions). This step was previously accomplished in testing the first three hypotheses, and as we indicated above, the three steps were achieved because the impacts were significant.
- The second step: This step consists of testing the mediation variable by building a model that includes the direct impact of the independent variable on the dependent variable (this model was built and tested in the first hypothesis and the result was a significant impact), and then creating a second model that includes the mediation variable, and includes adding two paths. The first path is the effect of the independent variable on the dependent variable, and the second path is the effect of the mediation variable on the dependent variable. Then the mediation variable is evaluated as follows:

❖ If the impact of the independent variable on the dependent variable is significant and does not change, this means that there is no role for the mediation variable.

❖ If there is a decrease in the impact of the independent variable on the dependent variable, but it is still significant, this means that the mediation variable is partial (Partial Mediation).

❖ If the impact of the independent variable on the dependent variable becomes insignificant, this means that the role of the mediation variable is a (full mediation).

After confirming the significant impact of the independent variable ((OLO)) on the dependent variable (empowerment of (IT) users) within the framework of the first hypothesis, the researcher proceeded to complete the second step by building a model that includes the two paths referred to by (Hair et al., 2019) The first path is the impact of the independent variable on the dependent variable, and the second path is the effect of the mediation variable on the dependent variable). Figure (3) and Table (3) show the results of testing this model.

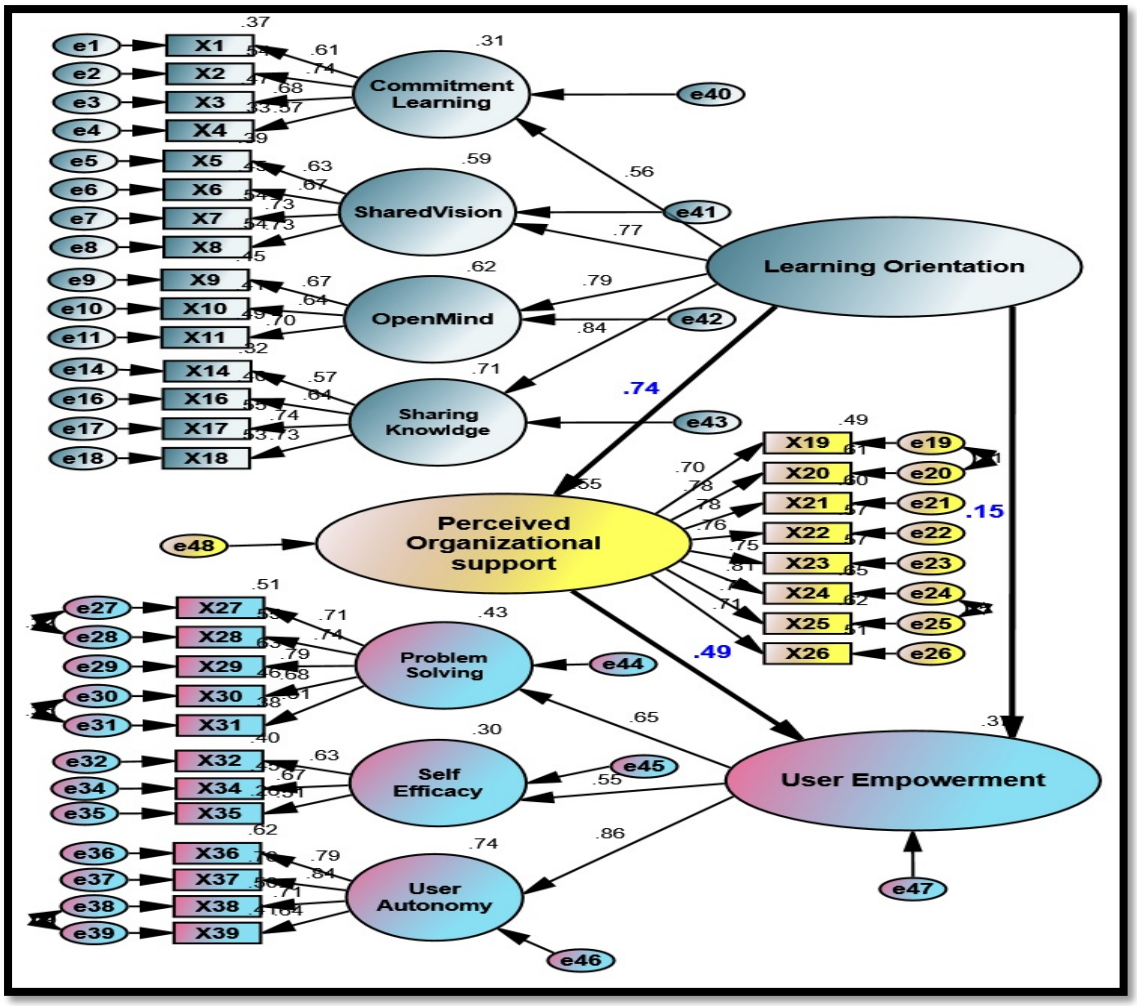

Fig 3. Results of testing the mediation variable (POS)

Table 3. The results of testing the mediation model

Dependent factor		Independent factor	Estimate	S.E.	C.R.	P
User empowerment	<---	OLO	0.259	0.172	1.508	0.132
POS	<---	OLO	2.130	0.291	7.318	***
User empowerment	<---	POS	0.297	0.063	4.706	***

*** 0.001

It is noted from the results of testing the model that includes the two paths (the first is the impact of the independent variable on the dependent variable, and the second path is the impact of the mediating variable on the dependent variable). The significant impact of the independent variable (OLO) on the dependent variable, user empowerment has become insignificant as the value of the regression coefficient (Estimated (β) has become (β (0.259) at a level of significance (0.132) and a critical ratio of (1.508). This confirms the non-significant impact of (OLO) in user empowerment, noting that the results of the regression analysis of the model of the impact of the independent variable ((OLO)) on the dependent variable (user empowerment) was significant, as the value of the regression coefficient (Estimate (β)) was 0.828 at a significance level of (0.001). The change in the nature of the impact of the independent variable on dependent variable from a significant impact to a non-significant impact within the framework of the model, with the presence of the two paths and the mediation variable, indicates an important issue, which is that the role of the mediation variable is a (full mediation), and

this result applies to the third rule in interpreting the mediation variable that was developed by (Baron & Kenny, 1986), which states" If the impact of the independent variable on the dependent variable becomes insignificant, this means that the role of the mediation variable is full mediation". Accordingly, (POS) is a fully mediation variable between (OLO) and the user empowerment. That is, the effect of the (OLO) on empowerment of (IT) users requires the presence of a mediation factor represented by (POS). According to these results, the final model of the study will be as shown in Figure (4).

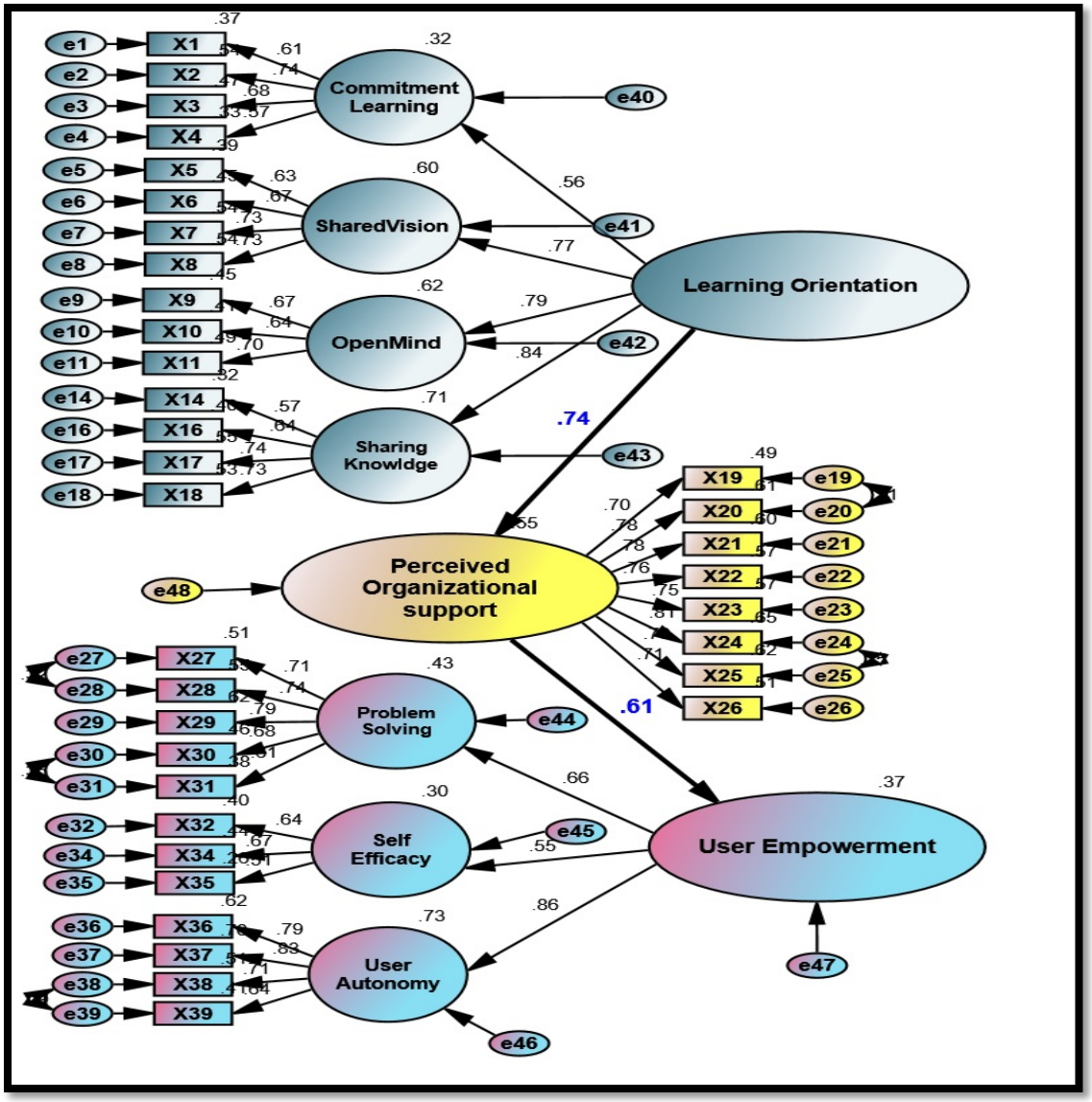

Fig 4. Results of testing the final model of the study

Table (4) Results of regression analysis of the hypothesis for the final model of the study

Dependent factor		Independent factor	Estimate	S.E.	C.R.	P
POS	<---	OLO	2.133	0.290	7.349	***
User empowerment	<---	POS	0.396	0.050	7.437	***

*** 0.001

The results of the above tests of the study hypotheses indicate the acceptance of all the study hypotheses, and this confirms the validity of the study model and the relationships that were tested within the framework of the researched field. The results of testing the study model confirmed the important role of the independent variable (Organizational Learning Orientation (OLO)) in enhancing the dependent

variable (user empowerment). For this impact process to be complete, it needs (POS). Thus, organizations' (OLO) can contribute to the empowerment of individuals who benefit from (IT), but in order for this relationship to be achieved, users of (IT) must perceive that there is support from the organization in which they work in the forms of organization's caring and supporting them in achieving their goals, paying attention to their opinions, and overlooking some unintended mistakes.

5. Conclusions and Recommendations

5.1. Conclusions

- The results of testing the structural model of the study (the relationship model) showed that there is a significant impact of (OLO) on user empowerment. This explains the important role that organizational learning plays in driving user empowerment, giving them more autonomy and independence at work, delegating more powers, and involving them in decision-making processes. Thus, user empowerment depends on (OLO). This orientation can be reflected positively in increasing the capabilities of employees, and then the employees (users) will have confidence in their abilities to use and operate radiology and ultrasound devices in the way they find appropriate, and will have the autonomy to make some decisions and support decisions related to patients' conditions.
- The results of hypothesis testing revealed a significant impact of (OLO) on (POS). This result reveals an important issue, which is that (OLO) is not sufficient alone to achieve the results required from this orientation. Rather, it is supposed to be followed by organizational support provided by the organization's management to the (IT) users. The (OLO) requires from the top management to supports the users and cares about their personal interests and goals and addresses their problems,
- The results of hypothesis testing showed that there is a significant impact of (POS) on user empowerment. This explains the important role that (POS) in giving users of (IT) the incentive and motivation to enhance their capabilities in working on radiology and ultrasound devices, giving them discretion for the best methods for carrying out the work assigned to them, and grant them powers and empower them in the decision-making process. This result explains the important role that organizational support plays in promoting and supporting the users of (IT), which provides them with more care and attention in developing their experiences and motivation towards work.
- Regarding the mediation role of (POS), the results of the analysis showed that this variable is a (full mediation) mediator in the relationship of the impact of (OLO) on user empowerment. In other words, the process of empowering users through (OLO) cannot be effective unless there is organizational support provided by the organization and perceived by the users.

5.2. Recommendations

For the purpose of benefiting from the study's conclusions, a set of recommendations that could contribute to s the field proposed as follows:

- With regard to enhancing commitment to organizational learning, the study suggests that it is necessary for the senior leadership in the Ministry of Health to direct the directorates of health institutions to pay attention to (OLO).This can be achieved by introducing the value of learning to those leaders by expanding and enhancing their vision while focusing the energies of employees to aspire to become distinguished among their peers, and encouraging new knowledge acquisition in the hospital through workshops, training courses and educational programs to enhance the skills of employees and improve their performance on radiology and ultrasound devices. Another way to enhance employees' orientation toward learning and commitment to it is to enhance confidence in the users regarding the information acquired through work, by notifying the users of the importance of this information and the extent of

development they have achieved at work as a result of acquiring this information, and urging them to commit to learning as a result of the gains they will obtain.

- With regard to strengthening the shared vision, the current study recommends the need for real attention and commitment from employees towards the vision of the hospital in which they work by consolidating this vision related to the future of the organization for all members of the organization. This helps to increase the speed of response to problems that occur during work. One of the most important mechanisms through which the shared vision is strengthened is through the involving the users in setting future goals and integrating them within the framework of the organization's goals, especially with regard to medical devices, specifically radiology and ultrasound devices, in addition to the need for the hospital to disclose its future directions regarding the adoption of these devices. Another important mechanism for building a shared vision is to have communication between management and users about the medical devices used at work and to receive and study the opinions of these users about developing the work. This could encourage towards bringing ideas and visions closer between management and workers.
- With regard to proposals for open-mindedness, the current study recommends the necessity of paying attention to the ideas of employees, by encouraging new ideas for employees that allow for the addition and improvement of knowledge, and giving those who benefit from (IT), specifically those working on radiology and ultrasound devices, the autonomy to express their points of view, and recognizing the value of the ideas provided by the users and supported financially and morally.
- This is done by adopting brainstorming and open discussions with workers regarding developing work in the field of radiology and ultrasound.
- With regard to recommendations for knowledge sharing, the study recommends the necessity of holding dialogues between workers to benefit from the lessons experienced by the health institution, in addition to creating communication platforms within the institution with a primary purpose of exchanging information and sharing knowledge. Knowledge can be shared by holding advisory sessions to exchange notes and ideas, and encouraging employees to develop and continuously improve, by providing incentives such as acknowledgment. Finally, the issue of knowledge sharing can be enhanced by forming work teams that match individuals with different skills and individuals with little experience and skills, in order to exchange knowledge gained from work with academic knowledge to reach an optimal combination of knowledge and skill.
- It is necessary that senior leadership to give special attention to the organizational support perceived by users by providing support to employees, and this is done by adopting several methods, including:
    - ❖ Developing a healthy relationship between the institution and employees, paying attention to social exchange mechanisms, and making employees feel that they are trusted by the institution in which they work, and this will instill among them feelings of pride and identification with their institution.
    - ❖ Providing the requirements to complete the work, such as providing devices and their accessories and related services accompanying these devices in order to enable those who benefit from this technology to complete their work as required.
    - ❖ Providing training opportunities in important fields related to the work of users of radiology and ultrasound devices, as training on these devices can give the user a feeling of the organization's interest in them and its work to develop their skills and functional capabilities.
    - ❖ Encouraging employees and praising them for their work that they perform in a new and creative way or for their exceptional efforts at work, which in itself is considered support to employees.
- It is necessary for there to be a role for those who benefit from radiology and ultrasound devices in solving health problems or in making medical decisions, and this is done by involving them

in the details of identifying some health problems and consulting them in some medical cases that need clarification or interpretation by them. These consultations and opinions presented by them can contribute to supporting the medical decision taken by the doctor. It is also necessary for management to support employees who have better information to work more intelligently, provide solutions to unstructured problems, adopt these solutions in solving problems, and support these solutions and the decisions that accompany them

- For the purpose of enhancing the self-efficacy of users of (IT) as it is an important factor that influences many technological variables, the process of enhancing is carried out through the following mechanisms:
    - ❖ Encouraging the user who works on radiology and ultrasound devices to delve into the details of the functions of these devices and be able to work on the functions of these devices easily and conveniently.
    - ❖ Enhancing confidence in those who benefit from medical devices, specifically x-rays and ultrasounds, by having the management send positive messages to those who benefit from x-rays and ultrasound devices that make them feel capable of using these devices efficiently and effectively.
    - ❖ One of the basic mechanisms through which the user's self-efficacy can be enhanced is for information related to ultrasound devices and rays to be shared among users working in this sector, especially with regard to the functions of these devices and the most important updates that take place on them, or alerts on additional functions on these devices which may be unknown to some users who use radiology and ultrasound machines.
- For the purpose of enhancing the independence of users, the study suggests the necessity of giving autonomy of action and independence to individuals working on radiology and ultrasound devices in performing their work on these devices, and granting them the authority to determine the method of work and detailed procedures for completing the tasks required of them in a way that does not deviate from the official or ethical contexts of the work. This contributes to giving them the motivation to work, and this is reflected in their sense of responsibility to accomplish what is required of them within the specified standards efficiently and effectively.

As the research bears out, cultivating organizational learning and progress fundamentally requires empowering the very individuals meant to fulfill higher aims. Technical skills, applications and infrastructure undoubtedly matter, but absent motivated usage and participatory improvement, investments rarely realize returns. Fortunately baseline orientations can be reinforced over time through transparency, engagement and demonstration. The nuanced picture of information technology adoption and success emerging spotlights you can automate processes but not necessarily appropriate culture. With digital transformations gaining speed but direction uncertain amidst global disruptions, this work helps managers and policymakers worldwide navigate inevitable growing pains productively.

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