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Developing A Management Framework Using Information Security Factors For Cloud Computing Implementation In Iraqi Universities

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Abstract

CC opens up a whole field of entrepreneurial opportunities for small and large - scale organizations, but this poses several security problems which have to be taken into account and solved before transitioning to a cloud device. The use of cloud computing services poses a significant challenge to security and privacy concerns. Due to numerous problems, including security / privacy, usability and deployment, the migration to cloud services is not yet popular at Iraqi universities. This paper discusses the crucial safety issues impacting the decision of Iraqi Universities to implement cloud computing. A framework was proposed for Information Cloud Security. Critical review of studies contained in the literature in relation to safety issues in CC implementation identified the structure influences. An experimental trial with a questionnaire was done. In order to strengthen and validate the system, data from a set of 256 probabilities were obtained from users and experts working in many universities in Iraq. Using the PLS-SEM method the usual data was analyzed. So, all factors in the proposed framework suggested (Security, Privacy, Awareness, Availability, Scalability, Accessibility, Trust, and Technical Support) were found to be statistically significant. Such studies are thought that will help facilitate the awareness of the current state of cloud computing technologies in education management and can provide policy makers with the requisite guidance to guide educational practitioners to actively explore the use of their universities of digital information and communication technology.

Keywords: *Information Security, Cloud computing adoption, university, PLS-SEM, Technology implementation, Iraq*

I. Introduction

In both private and public institutions, cloud infrastructure technologies will serve an integral part while reducing costs for the usage of IT services. It helps customers to use the service every day and anytime, with payment. Cloud computing is currently not commonly used in developed countries, such as Iraq, compared with western countries (Alkhater, Wills, & Walters, 2014). In order to promote the use of cloud technologies, the real and expected information protection and advantages of introducing this kind of technology are an important and specific consideration in cloud computing (Al-Samarraie & Saeed, 2018).

Cloud computing is used to describe distributed computing connected to the end user across a network (Mell & Grance, 2011). The cloud helps customers to only use the service and pay for what they want. Cloud computing provides computational tools focused on diverse technologies such as computer servers, distributed networks and web-based applications (Mouratidis, Islam, Kalloniatis, & Gritzalis, 2013). It has become an enticing opportunity for organizations to fulfill their Technology and technology needs.

In the other hand, the use of cloud computing must be taken into consideration. Cloud storage protection and threats is divided into various categories such as costs, anonymity, availability and efficiency (Sandu, 2017). In the cloud, consumers will not be able to track or modify the procedures and regulations by which their users may run the kind of data or the output of applications using conventional Information and communication technology (ICTs). The protection of the cloud and related privacy issues cause many companies to relax while they address their cloud storage problems (King, 2008).

Security issues, such as physical protection and safe access to equipment and services and conceptual protection, specifications on sector enforcement, auditability and more. Although the use of cloud computing resources will provide government departments with many benefits, few European countries have established government cloud strategic plans (Elena & Johnson, 2015). In addition, security threats can affect cloud computing acceptance in most parts of the world. Some research explored the impact of social and management problems that made cloud adoption in Iraq simpler or more difficult (Alsanea, Barth, & Griffith, 2014). As a consequence of the literature, insufficient attempts are made to recognize factors impacting adoption or refusal of cloud services because of security threats (Elena & Johnson, 2015). According to ICorps Technology, the cloud computing industry is estimated to reach $270 billion by 2020. This prediction suggests that there is an growth in the cloud sector and an increase in the number of cloud users around the globe. The growth in cloud technology is the product of its low initial expenditures, decreased operating costs and very high calculation capacity (Alharbi, Atkins, & Stanier, 2015). As cloud computing providers have several Security tests that bypass any organization's willingness to use cloud in Iraq are poor due to the risks to security (Abdullah & Hassan, 2015).

The cloud storage security issue is very critical and can hinder the fast growth of cloud computing (Al-Shqeerat, Al-Shrouf, Hassan, & Fajraoui, 2017). We addressed the associated work of numerous cloud safety writers. This paper examines concerns relating to security and problems facing service services and consumers in the cloud environment, and explores how questions of reliability, faith and privacy are handled in the case of cloud computing. Finally, we develop the adoption framework that may help the universities implementing the CC system.

II. The background of Cloud Computing Security in Universities

There are innovations that must be implemented in every institution to make major money. Of company should take advantage of Information & Technology (IT) at all stages to incorporate those ideas. IT applications for particular use must therefore be created. To build the IT program, data centers are required to manage these systems by servers and storage facilities, continuous power supply, cooling systems, problem software and experts (Choubey, Dubey, & Bhattacharjee, 2011). The development process includes the conception, deployment and construction of an IT application. The investment expense would be very high if we create several applications to an educational institution. In addition to technology, the enterprise has to be continuously upgraded (Jansen & Grance, 2011). Cloud computing is a source of the productivity and decreased costs for governments all over the world (Badger et al., 2014). Universities' cloud adoption is commonly considered a step towards cost savings, risk avoidance and the recognition of network scalability. Cloud computing is growing and its key aims are to reduce The costs , increase efficiency, performance, stability and accessibility and reduce response times (A Alharthi, Wills, Alassafi, Walters, & Alzahrani, 2017).

The Definition of Cloud Computing by NIST provides the following definition for cloud computing: " Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction" (Mell & Grance, 2011). Most recent cloud acceptance studies suggest that protection is most critical if cloud computing technologies are to be deployed in academic institutions (Alassafi, Alharthi, Alenezi, Walters, & Wills, 2016). Usually, the top cloud deployment issue was named. In order to illustrate security, first of all, the concept of cloud safety is worth noting. The Cloud Protection Alliance (CSA) says that security is a collection of regulated technologies and policies aimed at complying with regulatory rules and protecting web, web applications and cloud-related infrastructure (Al-Khayat & Al-Othman, 2016).

III. The benefit of CC Adoption

Cloud adoption provides big advantages (pay for product versions, scalability, flexible mobility, low downtime and fast deployment). Cloud implementation also has many advantages for institutions and one of the advantages is that it can minimize expense and save money for corporations and small or big firms by using the it, which provides an outside-sourcing platform that helps them to leverage infrastructure to pay for services. Instead of having an in-house IT service as a key cost, for example the amount that businesses pay on operating their operation. In addition, IT services are preserved and improvements rendered by a third party that assists organizations for assigning liability and money savings (Abdulrahman Alharthi, Yahya, Walters, & Wills, 2015).

IV. The Deployment Models of Cloud Risk

In recent years, the majority of cloud customers have adopted four-cloud implementation frameworks.

- Public clouds made open to the public on a pay-per-use basis for energy services. A entity, a university, or a government agency may own, maintain and run public clouds. Any individual who knows the location of the facility can access the infrastructure. The Azure Support portal of Microsoft and the Amazon AWS for example. Examples are.

- Private Clouds, a single entity composed of various users (e.g. corporate units) has an exclusive cloud service. A Private Cloud is intended to be owned and maintained by the enterprise only to sustain its corporate activities internally. Worldwide public, private and government organizations follow this approach to maximize the advantages of simplicity, cost efficiency, agility in the cloud (Avram, 2014). Amazon Virtual Private Cloud and eBay are examples.

- Hybrid clouds, integrating two or more clouds, will optimize cost savings. In order to secure private data an internal cloud should be used inside a business and a public cloud or a group cloud may be used to minimize the expense (Gong and al. 2010). There are currently few hybrid clouds in operation, while projects like IBM and Juniper still exist (Alassafi et al., 2016).

- Community clouds seeks to provide organizations with mutual interest free or low-cost resources (Lenka & Nayak, 2014).

V. CC Adoption Theories

The DOI Theory (diffusion of innovation) (Rogers, 2003) and the TOE Framework (Tornatzky, Fleischer, & Chakrabarti, 1990) are widely used in corporate product distribution and implementation tests. Other common theories like the technologies accepting model (TAM) (Davis, 1989), the TPB theory (theory of planned behavior) (Ajzen, 1991) and the unified theory of acceptance and use of technology (UTAUT) (Venkatesh & Davis, 2000) This studies are not regarded as they contribute to the adoption of an individual.

DOI is a popular adoption model used in research in IS (Al-Ghofaili & Al-Mashari, 2014; Choti & Datche, 2016; Kayser, Kushniruk, Osborne, Norgaard, & Turner, 2015; Saedi & Iahad, 2013). Das et al . revealed that DOI is one of the most popular modern technology hypotheses. It provides five attributes which describe an organization's embrace of innovation. (3) the sophistication, challenge of using innovation; (4) observability, how much innovation becomes apparent to others; and (5) trialability: (1) its comparatively decent, how much better innovation than previous generation is; Innovation: (2) usability, degree of innovation that can be incorporated with current market structures, strategies, and value systems; DOI is largely focused on technical features and consumer expectations of creativity. A corporation is a more dynamic organization than a human. In comparison, Rogers (2003) indicates that creativity is a networking mechanism through different social framework networks and the implementation of creativity in organizations, which is driven by three influences.

It should be remembered that DOI contributed greatly to acceptance and distribution analysis by offering crucial metrics that help forecast the adoption rate. It is claimed, however, that the principle does not

demonstrate how behaviors adapt to decisions of approval and denial, and how novelty properties are suitable for that practice (Al-Ghofaili & Al-Mashari, 2014; Kim et al., 2012). In addition , research on complex organizational technology questioned the inadequacy of the DOI theory's attributes to the adoption actions of complex organizational technologies (Kim et al., 2012).

Technology-organization-environment (TOE) framework as Tornatzky et al. (1990) The TOE framework was introduced to clarify the invention process in an organizational context. It considers three elements of a business which affect innovation adoption: technical, organizational and environmental contexts. The technical background refers to corporate related internal and external infrastructure and the innovations that can be implemented. The organisation's meaning applies to the company's structural attributes (i.e. administrative structure, business scale, management system, centralizing level), personnel (human and slack personnel), and interaction structures (formal and informal) between workers. The meaning of the environment includes business dynamics, competition and the regulatory system (Aboelmaged, 2014; Borgman, Bahli, Heier, & Schewski, 2013; Ciganek, Pudjianto, Zo, & Rho, 2011).

The TOE framework has been selected from these hypotheses as the theoretical base to establish our research model. There are many reasons behind this decision. First of all, prior studies have commonly accepted the TOE paradigm as a strong structure for researching the implementation of electronic commerce. The TOE paradigm often discusses diverse aspects, not only in terms of technology aspects (for example, the DOI), but also in relation to environmental and organizational contexts. Moreover, a model covering several dimensions is known to have greater clarity than a model covering only one dimension (Gangwar, Date, & Ramaswamy, 2015). Thirdly, the TOE structure is known as an integrated paradigm, which implies that behavioral improvements are dictated not only by people but also by the organization in which they exist. The interactive approach helps the students to discuss all variables and their experiences in a common complex sense, which is supposed to thoroughly clarify the implementation of advances in information and communication technology (ICT) (Lugtig & Toepoel, 2016).

VI. The Critical Factors of information Security

1. Security

Security is the main challenge in clouds rather than other challenges. Because of this issue, users do not use the clouds. A survey has been published in (Wu, 2011) What was done in 2011 indicates that security issues are the cause for 36 percent lack of cloud storage use. Via the indirect security concerns of SaaS , PaaS and IaaS, we can protect the cloud infrastructure. Sufficient or better protection can be gained by solving these problems. Protection of information, virtualized protection issues and issues relating to data security are all relating. The security of information includes the main issues of access, secrecy and honesty. Instead of these challenges, the emphasis should also be on trust, government, law and virtual machines. Application security issues (SaaS, PaaS, IaaS). Information security issues. Finally, security problems can simultaneously be seen as a possibility and a possibility, but mostly a uncertainty as seen by cloud adopters and non-adopters. It plays an important role in deciding the type of cloud-based systems and the kind of enterprise that will use cloud technologies. Thus, the following hypotheses were formulated:

H1: Security will have a negative effect on the adoption of CC in terms of information security

2. Privacy

Data privacy is an individual's right to reveal confidential details. Data is maintained on the server of service providers in clouds, which can be anywhere in the world and must comply with or interfere with the privacy laws of the country where the data is based (Al-Shqeerat et al., 2017). Data security can be compromised by breaching user accounts, improper treatment, stealing data, phishing and data deletion. In cloud computing, malicious insiders are always exposed, either by account manipulation or operation. A two-factor authentication solution is potentially less vulnerable, faster, and simpler than a static

password. Two considerations are usually "what's like pin code, fingerprint and so on" and "something you have like hardware key, cell phone, etc. This includes a digital certificate and biometric verification such as one-time password (OTP) (Gupta & Misra, 2016). Poor authentications can result in a privacy infringement. If the authentication of the customer is performed electronically through an database system, you can trust the user's identity (Bisong & Rahman, 2011). The following hypotheses were formulated:

H2: Privacy will have a positive effect on the adoption of CC in terms of information security

3. Awareness

Security tolerance is a crucial concern for all people concerned with daily sensitive data (Bulgurcu, Cavusoglu, & Benbasat, 2010; Colombo & Ferrari, 2015). However, security and legal concerns reinforce the need for student safety knowledge and enforcement in different jurisdictions where data centres. In addition , consumers must be aware of what is currently being done and they must be aware of what the advantages are. A variety of questionnaires include questionnaires that are used to assess the extent of cloud computing knowledge and comprehension of the participants' perception and use of cloud computing resources with universities in Iraq. The following hypotheses were formulated:

H3: Awareness will have a positive effect on the adoption of CC in terms of information security

4. Availability

The accessibility principle notes that the designated individual should obtain services on a permanent basis. At the moment the consumer wants it, there should not be a shortage of details. Availability is the most difficult thing to manage, since the Internet should still be accessible for cloud storage where there is no internet access in any region. It refers to programs being open and available. Data is either to be open to cloud customers, or to use it at the moment. This raises questions about the performance of cloud-based service providers. Kim (2009) claims that 100% device usability is assured by the introduction of widely accessible architectures and validated technologies and applications. The key guiding force for reaching the optimal level of availability are the Service Level Agreements (SLAs) and the mix of precautionary steps (safe storage, backup party, etc.). The following hypotheses were formulated:

H4: Availability will have a positive effect on the adoption of CC in terms of information security

5. Scalability

In terms of efficiency, scalability is an important aspect to take into consideration. The cloud providers should be able to scale their services and technology to accommodate the storage, service and link capacity requirements of the adopter as the specifications of Cloud Computing security adopters grow (Benlian, Koufaris, & Hess, 2011). In the other hand, Cloud Computing scalability is one of the greatest benefits and a major advantage for universities. As the needs of these businesses shift, their architecture can be rapidly extended to have a high degree of competitive versatility (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011). The following hypotheses were formulated:

H5: Scalability will have a positive effect on the adoption of CC in terms of information security

6. Accessibility

The risks of access to classified information can be improved by cloud storage. It is a new, evolving capacity to link to the Internet (Capricho, Obenque, & Musni, 2011). The accessibility in this research, for example, refers to the Internet potential in Iraqi universities to link users to CCs. Connectivity is all the Internet latency. Also scientists (Bhalalusesa, Lukwaro, & Clemence, 2013; Nyerere, Gravenir, & Mse, 2012) demonstrate Internet accessibility opportunities for the use of technologies by consumers , in particular where they need access and online execution of such activities. Bandwidth is, for example,

the primary source of The software for the facilities of the Iraqi university. The following hypotheses were formulated:

H6: Accessibility will have a positive effect on the adoption of CC in terms of information security

7. Trust

It is generally characterized as a conviction that someone is trustworthy, decent, truthful, successful, etc. When it comes to the protection and protection of implementation, the trust of M-Banking has been found to be essential and challenging, as the consumers can trust the universities' online services to complete their online use. It has also been seen that the trust in the M-Banking is protected and has no privacy risks (Karma &Ibrahim &Ali 2014). In order to access the service on the other side, users have to extend their trust to the cloud service provider so that a point of friction will arise. The following hypotheses were formulated:

H7: Trust will have a positive effect on the adoption of CC in terms of information security

8. Technical Support

The services are offered by banks for the various customers (Lau, Bergman, Castelli, & Oblinger, 2004). It is focused on the different utilities. The technological assistance in this study refers to the help provided to users by the Iraqi universities to the protection of information using CC services. This covers effective troubleshooting, peer help and program maintenance. Users should be advised in tasks such as troubleshooting, content control (Wiesenmayer, Kupczynski & Ice, 2008), device development and authentication and data protection setups. In the meantime, in most universities, these consumers require some basic skills to troubleshoot common issues when using cc programs. The following hypotheses were formulated:

H7: Technical Support will have a positive effect on the adoption of CC in terms of information security.

VII. Research Method

In order to analyze the core factors contributing to the definition of the survey test design to information security challenges to adopt cloud computing in Iraqi universities. In order to assess the opinions of university employees a questionnaire method was used for data collection. The key explanation for using a questionnaire is that it is more 'scientific' and analytical than other types of study, to facilitate the review of knowledge. It can also assist researchers in analyzing and evaluating other studies and can be used to calculate improvements that positivists think existent theories are called (Wright, 2005). The instruments are based on each factor 's material. Directly the method was a completed 5-item Likert scale-based questionnaire (Likert, 1932), in which interviewees had to react directly to the particular object. The analysis method was developed to incorporate objects from a number of previous studies pertaining to each element.

Due to the simplicity and generalizability provided by that approach, this survey employed a basic random sample process in which scientists picked respondents randomly from the target population. Both population elements are equal to and identified for collection as a sample subject in the unregulated chance survey method. This method of sampling has the lowest preference and is more common. This sampling process, on the other hand, may be slow and costly (Sekaran and Bougie, 2016). There were a total of 278 responses, giving a 92.66 percent response rate. Owing to missed data we removed 13 replies and we discarded 9 additional responses as outliers. The survey completed is 246. In addition, a skewness and kurtosis calculation is used to monitor the normality distribution data collection, where standard 0.126 for skewness and 0.167 for kurtosis errors have been observed.

VIII. RESEARCH FRAMEWORK

The available literature shows that any new system adoption, for example new technology, ideally entails developing a model (Yazdani, 2017). Utilizing the model is thought to support implementation mainly because it tends to make the process more feasible and organized, increasing the likelihood regarding successful roll-out about a policy or perhaps a program (Khairi & Baridwan, 2015). Theoretical (or Conceptual) model crucial to the conducted research. This model which can be utilized by other researchers to assist in the creation of a comprehensive opinion and a relationship theory for different contexts. This particular study, the theoretical model is suggested to make it possible for a researcher to show the supposed relations between many constructions described by the chosen theories as relevant to which problem is studied. Martins and Oliveira, (2010) said that it is important to integrate more than one model and theory within the analysis in order to achieve a deeper understanding of the IT phenomena. Studying the information security in CC adoption can increase education options and applications (Ahmed, Almotairi, Ullah, & Alam, 2014). It is envisaged that CC successful adoption can produce advantages that are competitive to the banks (Chaouali, Souiden, & Ladhari, 2017). Technology adoption is the main focus of this study therefore the theories of interest will be the ones that have a focus area on technology adoption.

To summaries, this research is broad in the field theoretically. In this research CC is considered as a dependent variable. The moderate variable is information Security which can utilize the level of intention to be discovered in this study to improve its services. Independent variables will be categorized in eight critical factors Security, Privacy, Awareness, Availability, Scalability, Accessibility, Trust, and Technical Support. Figure 1 illustrate the conceptual framework of this research.

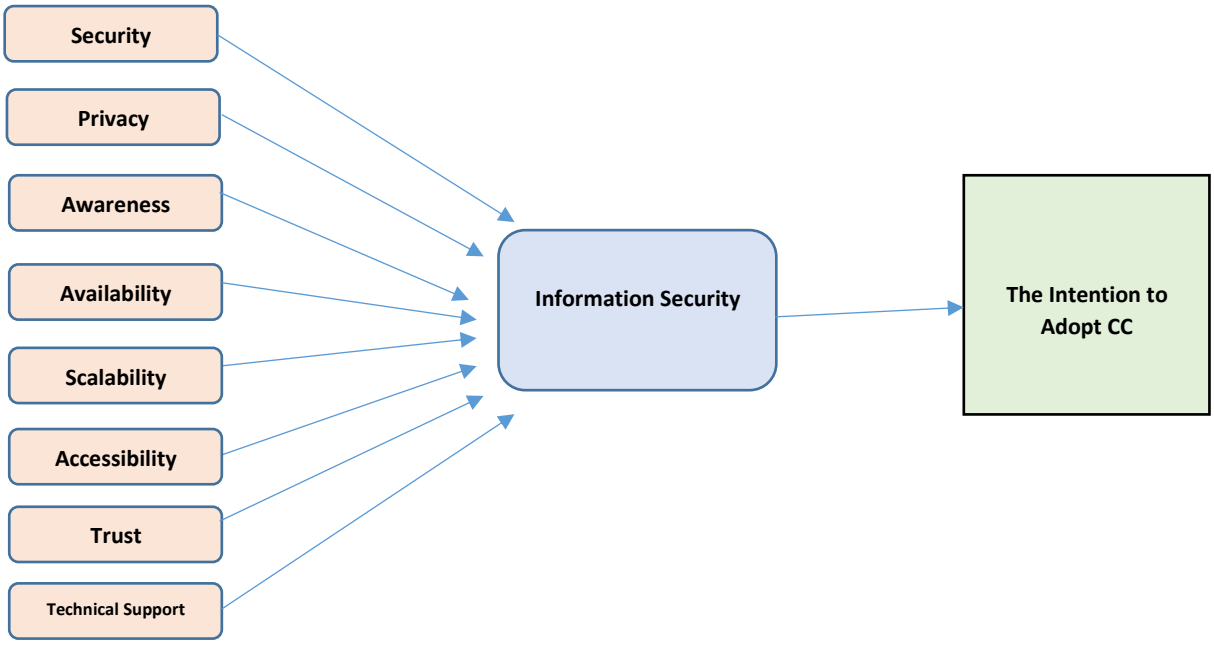

Figure 1: Research Information Security Framework

IX. Results

1. Demographic characteristics

The population figures for the respondents are shown in Table 1. About 64.1% were men and 35.9% were women. The bulk (34.0%) came between the ages of 25 and 30 years. The majority of respondents (40.2 percent) hold a master's degree as per academic quality. Most of them (64.8%) have 1 – 2 years of Cloud healthcare experience while 22.7% have 2–4 years and 12.5% have > 4 years of experience.

2. the analysis of Measurement model

Based on Hair Jr. et al.'s (2016) guidelines, a calculation model evaluation is a necessary phase in the PLS process, and serves to warn that such indicator variables found may be inaccurate. Examination of the models of reflective calculation includes testing composite stability and Cronbach's alpha to determine internal accuracy, efficiency and communality of individual measures and medium variance .

Extracted (AVE) to test the significance of the convergent. In addition, for analysis for discriminant validity the Fornell-Larcker and the Heterotrait-Monotrait (HTMT) tests were implemented

Table 1

Descriptive statistics and demographic factors

Demographic factors	Frequency	%
Gender		
Male	164	64.1
Female	92	35.9
Age (Years)		
25–30	87	34.0
31–35	82	32.3
36–40	51	19.9
> 40	36	13.8
Education		
High diploma	9	03.5
Bachelor	73	28.5
Master	103	40.2
PhD	71	27.8
Experience with the CC system? (Years)		
1–2	166	64.8
2–4	58	22.7
> 4	32	12.5

3. Measurement properties

In the conceptual framework, all structures were predictive and evaluated by several metrics. A study of the confirmatory factor (CFA) for the latent buildings was carried out on the measurement of item loadings, durability, convergent validity and discriminating validity. In their description of the latent variables, reflective structures should be unidimensional and therefore correlated. Size items factor loads should be greater than 0.71 2, indicating that the structures in Table 2 document the whole variance. The intrinsic accuracy of all constructions in the measuring model is shown by its stability values. All the structures in the logical structure are more than appropriate in terms of their hierarchical stability and vary from 0.733 to 0.896.

Table 2. Composite Reliability of Constructs and Factor Loadings

Construct	Indicator	Loadings	Composite Reliability (AVE/Cronbach's α)
Security	Se.	0.712-0.746	0.733
Privacy	Pr.	0.787-0.893	0.883
Awareness	Aw.	0.843-0.867	0.852
Availability	Av.	0.825-0.837	0.834
Scalability	Sc.	0.822-0.843	0.831
Accessibility	Ac.	0.768-0.876	0.875
Trust	Tr.	0.874-0.888	0.872
Technical Support	TS	0.738-0.849	0.853
Information Security	IF	0.893-0.898	0.896
Adoption of CC	ACC.	0.736-0.879	0.857

In order to test the validity of the discriminating system, (1) measures should be more charged with the required build and (2) the square root of the mean derived difference (AVE) be bigger than the inter-constructive correlations (Chin, 1998). The proportion of variation that a construct absorbs is determined by its AVE. PLS was introduced to test the authenticity of the main philosophical structure buildings by discriminating against them. As seen in Table 3, any building complies with this criterion. Composite reliability values both surpass the required minimum of 0.7. The convergent and inclusive relevance of all definitions will thus be maintained within the suggested philosophical context

Table 3. Inter-correlations and Descriptive Statistics between Constructs

Constructs	Composite Reliability	1	2	3	4	5	6	7	8	9	10
1.Security	0.882	0.830									
2.Privacy	0.936	0.546	0.832								
3.Awareness	0.827	0.153	0.340	0.836							
4.Availability	0.843	0.334	0.559	0.340	0.838						
5.Scalability	0.878	0.435	0.662	0.351	0.572	0.832					
6.Accessibility	0.865	0.495	0.577	0.225	0.348	0.635	0.843				
7.Trust	0.893	0.467	0.478	0.230	0.459	0.530	0.645	0.837			
8.Technical Support	0.877	0.332	0.583	0.382	0.433	0.557	0.586	0.648	0.882		
9.Information Security	0.833	0.314	0.423	0.270	0.387	0.439	0.697	0.658	0.637	0.837	
10.Adoption of CC	0.874	0.395	0.584	0.242	0.495	0.403	0.630	0.667	0.654	0.737	0.834

*Diagonal elements are the square roots of average variance extracted (AVE).

3. Test of the structural model

The relation between data protection and CC acceptance reflects the ultimate effect on universities. These findings provide clear empirical support for the nomological legitimacy of the IS and the impact of a CC adoption. The 0.621 estimation (R2=0.621) for the road to the e-health processes establishes a strong guide for the projected effect of CC on the dependence variable of information protection. In addition, as a moderator, there is considerable potential to affect information security when implementing CC ($P<0.05$). The value of the impact size of the whole experiment is further checked with a F test. There are important ($p<0,05$) dependent variables.

X. Conclusion

The purpose of the current research is to explore the determinants which impacts the adopters to continue using CC system in terms of information security in Iraqi universities. The present research is utilized different theories for the provision of an extensive model for the comprehension of the prospective variables of CC adoption in Iraq. This research was driven by the desire to look at the needs, problems and differences in the use of CC systems in Iraqi colleges. Based on previous studies exploring the proposed variables, a questionnaire was developed. The researchers were urged to investigate the interactions between device variables Privacy, Awareness, Availability, Scalability, Accessibility, Trust, and Technical Support, which have positively influence CC adoption system while the security has a negative influence. A unique framework of improving the information security has been developed. The system developer should consider these factors during the system development process by recognizing the variables that enhance the execution of the CC system. In addition, education workers should be involved in production and deployment processes to improve the efficiency and effectiveness of the system. The study model therefore gives insight that security issues need to recognize relevant prominent contexts impacting professional conduct to ensuring that all these aspects are taken into consideration in the available framework in order to properly make use of the cloud information system in Iraq. There are several limits to this analysis. For example, in Iraq, which is a developed country, the data collection was performed; the findings can also not be generalized to other developing countries even where the study into the latest usage / adoption environments is of concern. The survey was also restricted to professors from selected universities who were chosen using a basic random sampling methodology. In addition, cross-sectional data are used in the analysis, making time relations impossible to determine.

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