Factors Affecting the Decision of Adoption Cloud Computing Technology: The Case of Jordanian Business Organizations

Thabit Atobishi[1], Miriam Bahna[1], Katalin Takács-György[2*], Csaba Fogarassy[3]

[1]Szent István University, PhD School of Business Management and Administration, Páter Károly u. 1, 2100 Gödöllő, Hungary
Thabet.Tubashi@moj.gov.jo; Miriam.Bahna@phd.uni-szie.hu

[2]Óbuda University, Keleti Károly Faculty of Business and Management, Institute of Management and Organization, H-1084 Budapest, Hungary
Takacsnegyorgy.Katalin@kgk.uni-obuda.hu

[3]Szent István University, Climate Change Economics Research Centre, Páter Károly u. 1, 2100 Gödöllő Hungary; Fogarassy.Csaba@gtk.szie.hu

*Corresponding author

Abstract: This research, is a clear case for developing countries, that realize the profits of cloud computing, to enhance their business and develop cutting-edge technology, but first, they need to address the concerns of decision-makers toward cloud computing technology. This research is based on a Technology Acceptance Model, which is modified to fit the context. The factors applied in this research are: Perceived Usefulness, Perceived Ease of Use, Perceived Risk/Security, Cloud Computing Awareness, compatibility, cost and an aim to use where it is a dependent variable in this study. Within this study, the Likert Scale (five-point scale) survey was produced, to get data from IT employees of the Jordanian business organization. Data was collected from 175 IT employees. Linear regression was used to examine the data using SPSS software. The outcomes revealed that perceived ease of use, perceived usefulness, cost, perceived risk were statistically significant, while compatibility and cloud computing awareness were found not to be statistically important. These outcomes explain that cloud computing systems can be quickly deployed in developing countries (avoiding unnecessary innovation); if users accurately understand their utility, it is clear that operating costs might be reduced. The perceived risk of system usage is low. We consider, of particular importance, the research line that technological compatibility is not significant, with the successful introduction of cloud applications. Fast deployment of cloud applications are good opportunities for developing countries, because of the lower cost of new software applications and use of big data.

Keywords: cloud technology; cloud computing; cloud security; Technology Acceptance Model (TAM); Technology-Organization-Environment framework (TOE); Jordan

1   Introduction

The new big difference in the information technology sector, currently takes place everywhere, using information technology services called "cloud computing." This new paradigm shift expects to reform all information technology industries and the way of delivering information technology services to the business organizations; it's expected that the leaders in the cloud computing industry will reach 160 billion revenue [1]. Many advantages organizations can gain by this new technology such as on-demand, on-service, more mobility access, shared resource pooling, rapid elasticity, and pay measured service, which ultimately drives to cost reduction and more efficiency [2]. Hence in the coming future, information technology services will deliver to a business organization as a fifth utility to be like water, telephone, gas, and electricity [3].

Despite its great benefits, the choice to utilize cloud computing holds several concerns about this latest technology. The perceived ease of use and perceived usefulness are essential factors in adopting new innovative technology [4, 5]. But also in cloud computing adoption, different parts can be classified as technology, human, and organizational elements [6]. Jordan, as a developing country still suffering a lack of cutting-edge technology, and the digital divide is high compared with developed countries. So that cloud computing considers as promised with its vast possibilities to support business organizations to overcome this digital divide, but like any new technology, many matters regarding the adoption of this technology. Trends in different years show that cloud computing will play an active role in business development in both developed and developing countries. One of the common critical questions is whether there is a variety in the dynamics of the introduction of new systems, and there are vital differences between the advantages and disadvantages of cloud computing in developed and emerging countries. What effects are expected on cloud computing innovation in Jordan or countries with similar levels of growth to Jordan?

Information and communication technology (ICT) sector is a promising sector in Jordan that can help in developing the economy and reduce the impact of its crisis specially the unemployment issue [7]. IT expenditures are growing exponentially for enterprises, which are primarily the purchase of hardware and software licenses, but their education and training costs are similarly rising [8]. Also 82% of the employees in business organizations use the internet in their work and have an access and about 70% of the business formations have an access to the internet as well as more than 3000 business organizations use the internet from outside of their workplaces [8]. The above information means Jordanian business organizations are capable to get the cloud computing services in the future [9]. Cloud computing can be an effective solution to allow the companies and entrepreneurs to utilize the cutting-edge IT solutions at a reasonable price through the cloud computing solutions: infrastructure as a service, data platform as a service and software as a service.

Since the internet advent, in the late 20th Century to the ubiquitous computing facilities of the present day, the internet has drastically changed the whole world of computing. It has moved from the parallel computing concept to distributed, grid, and now to cloud computing [10]. Conforming to [1], cloud computing is relevant to as the software applications and several other resources available online via the internet to multiple users, rather than being installed in local computers of certain users only. [11] also defined cloud computing as an act of performing business activities on off-premises and shared computing systems. The traditional models of software in which organizations were tied to applications and which were supplier-specific, restricted by the license of users, required software upgrades or patches, and incurred annual license fees are being displaced by the cloud computing solutions [12]. Also, the cloud computing system provides monetary benefits, which cannot be neglected by business organizations. However, many scholars identified privacy and security as the two biggest concerns in cloud computing [10, 13, 14]. It is because some people fear to yield their important confidential data to another company [15]. The authors inferred that customers pay cloud service vendors, when they find them reliable and trustworthy in security measures. Another factor that affects cloud computing is privacy. Data can be derived from any place, so the privacy of clients cannot be compromised [16]. In addition, reliability is also seen as a problem in cloud computing [17]. According to a report by the National Institute of Standards and Technology (NIST), cloud computing is enabled when needed and provides convenient network access to IT resources and applications. This includes storage, various servers, data networks, services, and other applications that need to build up to provide to develop and maintain services. A general question related to the use of cloud systems is what level of trust the systems can operate in, what are the security levels of data storage and data sharing in the business and private spheres, and whether their mixing is typical when using the system?

2   Issues that Impact the Decision to Utilize Cloud Computing

Multinational companies are focusing more on adopting information technology to compete in an ever-changing market. The customers are increasingly demanding more product choices and outstanding product quality at lower prices. That one way to get such needs of customers, organizations are utilizing more sophisticated IT systems. It is because reliable and timely information is the key to achieving efficiency in performance, and information technology are significantly considered as a tool to obtain the needed capability to endure competitively [18] [19] for instance the cloud computing technique supports an individual to access their work at any time and from anywhere with any portable device by reducing administrative cost to perform the business activities [20]. Such approach supports

suppliers to offer several virtual or real resources in a dynamic manner in the cloud [21]. However, Davis, Bagozzi & Warshaw [22] inferred that organizational performance could not be improved by computer systems if they are not used properly. In this connection, [23] identified that an essential factor that contributes to the contradiction of productivity is the low usage of installed information systems, which also defines less financial returns on investments in IT. Also, it seems that people are unwilling to adapt to the changes [24]. Moreover, risk presents in all projects of IT and the resistance of users can increase such risk. Therefore, information systems' successful implementation that ranges from simple applications, like spreadsheets and word places into more complicated apps, requires acceptance of users.

In the above context, a model has been proposed by Davis, Bagozzi & Warshaw [22] to estimate the manner in which users accept new technologies, which is known as TAM (Technology Acceptance Model). The particular model was produced to forecast further IT use and individuals' level of adaptation with it. TAM suggests two beliefs, including 'perceived ease of use' and 'perceived usefulness,' determining the behavioral aim of individuals to use information technology. Perceived usefulness is indicating to as the degree to which a person assumes that utilizing IT will develop his/her performance at the job while perceived ease of use is indicated to a degree to which a person considers that adopting a new IT system in his/her routine operations will require no additional efforts [25]. The model also provides that external variables (such as, design characteristics) affect behavioral intention that is mediated by two variables, 'perceived ease of use' and 'perceived usefulness.

Professional opinion written by Agarwal et al. [26] [27], in their diffusion of innovation theory, studied individuals' perception and their concerns regarding new innovative technical characteristics, which is not restricted to variables of TAM but comprise and evaluated two outcomes in such context in the manner of users' perception. First is new technology utilization and eagerness to keep on utilizing the same. Second is the perceived volunteer variable, which means whether the new technology adopters feel that supervisors are mandatory to deploy and use the latest technology or not. Tornatzky and Fleischer developed a multi-perspective TOE (technology-organization-environment) framework in 1990. It is an organizational-level theory, which characterizes only one part of the change process, such as how the company's context influences its capability to adapt and perform new technology [28]. In the subject of this framework, there are three factors of an organization's context, which influence its process to utilize technological innovation [29]. First is a technical context that represents the external and internal technologies of the companies, i.e., both the technology available in the market but not currently in use as well as the technology already in use by the firm. Such techniques might include either practice or equipment. Second is organizational context, which is relevant to the firm's characteristics and sources, like its managerial structure and size. For instance, correlated to small

firms, big companies have more capital to fund new technology adoption and implementation [30] [31]. The third is the environmental context, which is about the arena wherein the company carries out its business activities.

Based on the analyzes in the literature, it can be well defined that the technological conditions for the introduction of cloud systems do not pose a major financial challenge for businesses, but operation can be a major competitive advantage, especially for small businesses. The present research provides an answer to how user support can be used to use cloud systems.

The main question is; will the perceived usefulness of users increase the use of cloud computing? An important research question is the relationship between perceived simplicity and perceived usefulness of cloud computing. The subject of our study is whether the perceived ease of use, perceived utility, cost, and perceived risk are statistically significant during the operation of cloud computing systems.

2.1   Computing Awareness

Technological awareness "keeps abreast of available technology, understands applicability and limitations of technology to the work of the office, actively seeks to apply technology to appropriate tasks, shows a willingness to learn new technology" (glosbe.com, "technological awareness in English," 2019). Tarmidi, Rasid, Alrazi, & Roni, (2014) [32] assured that the level of awareness is a crucial factor in the adoption of cloud computing technology. So, when the level of awareness increases, then adoption and using the level of cloud computing will increase as well [33]. A study by [34] conducted on students showed a low level of awareness about cloud computing because of not enough necessary resources.

H1. Cloud computing awareness to use has a straight impact on Behavioral intention to use

2.2   Computing Perceived Ease of Use

First, Rogers [35] argued that perceived ease of use is a term that indicates the difficulty innovation is encountered, learned, or operated. He also declared that perceived ease of use is the extent to which users perceive a new product or service as a substitute [35]. The researchers said that the perceived ease of use means that a person considers it is realistic that applying a rigorous method does not cost that person. Perceived ease of use is when a user thinks that the use of a particular technology or system is open to mental and physical support. Also, it is equal to self-efficacy, which is related to 'judgments about how effectively one can implement a required course of actions, that one may carry out potential situations [22] [36].

H2. Perceived ease of use has a straight impact on behavioral intention to apply.

H8. Perceived ease of use has a straight impact on perceived usefulness

2.3   Perceived Usefulness

Belonging to the TAM, a perceived utility is the point to which one accepts that utilizing a precise system would improve work performance. According to [22], perceived usefulness is considered as a level to which user-perceived that a particular technology will advance his/her performance at the job. According to [22], perceived usefulness is considered as a level to which user-perceived that a particular technology will advance his/her performance at the job [1].

H3. Perceived usefulness has a straight impact on behavioral intention vital intention to use

2.4   Perceived Risk in Security and Privacy

Risks in cloud computing are mainly about security and privacy concerns [37]. According to [36], data security is the most critical barrier to choose cloud computing, as it goes along with several other significant challenges, including privacy, trust, legal matters, and compliance. As in the cloud computing mechanism, data are divided into various locations of machines like PCs, mobile phones, servers, and storage devices, the problem of data security converts more serious. The study has identified several aspects of security and privacy concerns in cloud computing environment such as accountability, confidentiality, preservability of privacy due to failure of physical control on data, integrity due to manipulation of data or dishonest computation on remote servers, and availability issues of bandwidth and pricings [36].

H6. Perceived risk has a straight negative impact on behavioral intention to apply.

2.5   Compatibility and Incompatibility

This variable came from the dissemination of innovation theory, the concept of the compatibility tool: "the degree to which an innovation is perceived as being consistent with the existing values, needs, and past experiences of potential adopters" [26]. Incompatibility in between needs of potential adopters and business process and features of innovation is perceived as the key barrier that affects the adoption of new technology [38]. Two factors determine the compatibility: the internal organizational infrastructure (e.g., current values organization's strategy and needs) and internal information systems environment (e.g., IT infrastructure)). Historically, in new technology adoptions, it showed that first adopters tend to point upon the expected benefits of the latest technology and

on the compatibility between the new technology and the current organizational environment and infrastructure [39].

H4. Compatibility has a straight impact on behavioral intention to use

H7. Compatibility has a straight effect on perceived usefulness

2.6   Cost as a Vital Factor

Previous studies about the adoption cloud computing indicated that cost factor is a key determinate of cloud adoption [40]. Compared to end-users and business executives who have been generally researched in previous research, IT employees may make different decisions about utilizing the technology. For example, many IT employees do not have a high level of technological knowledge (no info about the price of technology) despite their general competence and learning ability [41] [42]. Cost is a vital factor when the organization decides to adopt new technology. Many types of research have indicated that TAM needs to be integrated with other variables that may give a better adoption model [43]. Behavioral decision theory emphasized that the cost-benefit pattern is significant to both perceived usefulness and ease of use in the choice to utilize new technology [43].

H5. The cost has a straight negative result on behavioral intention to use

3   Method and Data

TAM model was mainly developed to assess how technology affects the user's behavior, and it uses two factors: perceived usefulness and perceived ease of use, but it has been examined because it gives only general information about the adoption level by the individuals [44]. In our proposed model, we investigate the individual adoption level within the organizational context. So, we need to extend the TAM model and use additional variables from other theories that adjust on the organizational scale, such as TOE theory. The suggested research model was derived based on other studies that extended the TAM model: a study by [45] (Gangwar, Date & Ramaswamy, 2015) and a study by [37].

In the first step, we have defined the essential factors that influence cloud computing decisions (Figure 1). By analyzing the previous models and reviewing existing literature, the following variables (these variables can be further expanded based on sectoral differences) are recognized as the most critical to be investigated throughout this study (based on TAM):
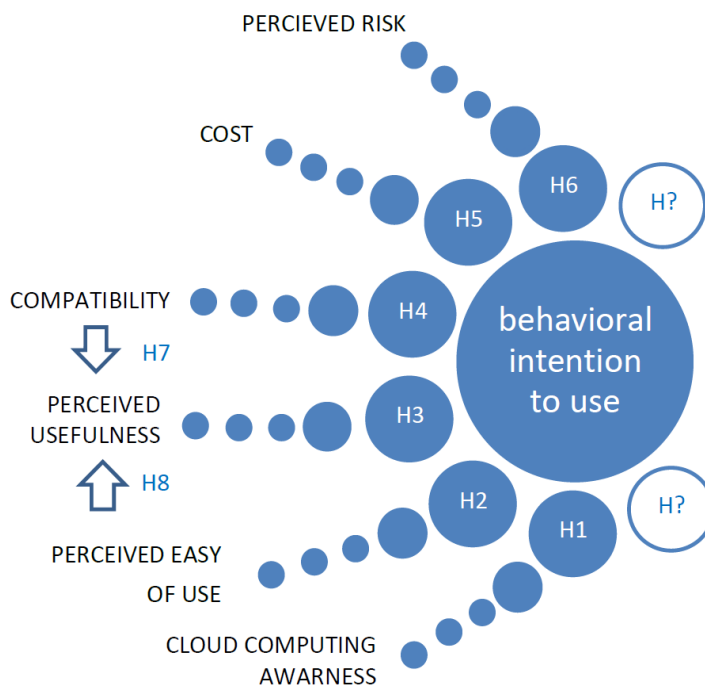
Figure 1
Essential factors of cloud computing decision

3.1 Quantitative Research

This is quantitative research depends on a regression model and descriptive analysis. The cause and impact relationship of variables is investigated. The study involved a sample of N = 175IT employees from different business organizations in Jordan. The data was collected using a 23-item quantitative scale, which assessed the factors that influence the decision making for using cloud computing services. The questionnaire was based on seven contracts; Cloud Computing Awareness, Perceived Risk, Cost, Compatibility, Perceived Usefulness, Perceived Ease of Use, and Behavioural Intentions to Use. The scale reliability was 0.74, and among the constructs, Perceived Risk and Perceived Ease of Use have High reliability, Cost, Perceived Usefulness and Behavioural Intensions to Use, have Above Average reliability while the subscales Cloud Computing Awareness and Compatibility have average reliability. Data collection and analysis was done in line with the research model presented herein. Though it would be a systematic procedure to ensure all techniques address the research problem along with hypotheses outlined for research. Also, a criterion to answer questions in research undertaking focused at, in a pure, comprehensive atmosphere to easily be understood by decision-makers in Jordan investments sector at the national level.

We, therefore, present the following intended methods to be used in primary data collection. They are the methods identified as the best methodology in the course of data collection by the point that data collection should be of high accuracy, as well as address the significant scope of the study. Interview sessions with IT specialists, computer systems engineers, and CIOs. Nearly 220 questionnaires were supplied to IT employees, in the main commercial and industrial cities of jordan: Amman, Zarqa and Irbid. We got back 175 valid questionnaires. Mainly the survey was submitted in traditional form in hand, but in some cases it was send by email. The questionnaire was built on previous studies and reviewed by the supervisors and by an external consultants (appendix A).

By way of the goal of our research, we chose quantitative research methods to meet the objectives of this study. The questionnaire, based on the study model and by using previously tested and validated instruments, was utilized to get the IT employee s 'responses regarding the overall intention to use cloud computing technology, and the same data is also used for validation of the model using statistical analysis.

After all these methods, mainstreaming of data from all primary sources was on course. Badges shall be provided to guarantee the right people are on the ground conducting research. Since the data collected for this research is quantitative; therefore, quantitative data analysis techniques would be applied. Moreover, different statistical measures would be calculated based on the nature of the analysis. If the analysis addresses the system evaluation, one of the research questions of this study, then descriptive statistics would be applied. For model validation, statistical measures for hypothesis testing calculated. The test of the structural model includes the estimation of the route coefficients in conjunction with coefficients of determination. Path coefficients show the strengths of the correlations between the dependent and independent variables [41] [46].

3 Results and Discussion

3.2 Demographic Characteristics

The questionnaire included questions associated with demographic characteristics such as age, gender, and position in an organization. Following Tables 1 and 2 show a summary of those characteristics.

Table 1 shows the age of the members and records that the most number of members were from age 30-39. And the least number of members was from the age range of more than 39. There were 175 members, and no data values were missing. It shows the gender of the members, and the values show that there were

more male participants with a percentage of 46.4% and fewer female participants
with a percentage of 42.9%.

Table 1
Demographic Characteristics

		Frequency	Percent
Age	Less than 30	57	32.9
	30-39	66	37.7
	More than 39	52	29.7
	Total	**175**	**100**
Experience	Less than five years	41	23.4
	5-10 years	69	39.4
	More than ten years	65	37.1
	Total	**175**	**100**
Gender	male	91	52
	female	84	48
	Total	**175**	**100**
Position	top-level	46	52.2
	middle level	69	35.2
	non-management	60	30.6
	Total	**175**	**100**
Size of Organization	Small	46	26.2
	Medium	66	37.7
	Large	63	36.1
	Total	**175**	**100**

The table also displays the position of employees in their respective organizations.
The table presents that the most number of members from the middle level of
management and the least of members were from the top level of management,
which means that the study results can be concluded on the population of Middle-
Level Management positions. The size of organizations is also presented in the
table in which the participants have been working. The table records that the most
number of members were from Medium size organizations. A medium-sized
organization is the one that has 50-250 employees.

3.3   Reliability of Scale

The reliability of the scale reflects the size to which the measure of a scale is
dependable or consistent. Reliability analysis was used as a scale to assess the
reliability in this study. The following are the results of the reliability analysis.

Table 2
Reliability of Scale

No	Domain	Alpha	Item No
1	Cloud Computing Awareness	6.73	3
2	Perceived Risk	8.46	4
3	Cost	7.54	3
4	Compatibility	6.98	3
5	Perceived usefulness	7.87	3
6	Perceived Ease of Use	8.23	3
7	Behavioral Intentions to Use	7.16	4
Value of Cronbach's Alpha		**0.74**	**24**

The above Table 2 shows that the questionnaire had a reliability value of Cronbach's Alpha=0.74, which reflects the Good reliability of the scale. This shows that the model is an excellent fit for data. It shows that among the subscales, Perceived Risk and Perceived Ease of Use have High reliability, Cost, Perceived Usefulness, and Behavioral Intensions to Use, have Above Average reliability. In contrast, the subscales Cloud Computing Awareness and Compatibility have average reliability.

3.4　The Regression Analysis

To assess the impact of factors that are likely to affect decision making in using cloud computing, Regression analysis was used. The study hypothesized impacts of different factors which are stated below:

H1. Cloud computing awareness to use has a straight impact on behavioral intention to use

Table 3
Regression analysis for Cloud computing awareness variable

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Cloud Computing	1.655	0.100	0.600	0.737	0.642	110.736	0.325

Table 3 shows that there is no statistically significant effect at a considerable level ($\alpha \leq 0.05$) of Cloud computing awareness on behavioral intention to use, where "f" value reached (110.736) by statistically insignificant (0.325). (R) Value reached (0.737), and (R^2) value reached (0.642).

H2. Perceived ease of use has a straight impact on behavioral intention to use

Table 4

Regression analysis for Perceived ease of use variable

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Perceived ease of use	0.761	0.001	0.021	0.684	0.743	110.823	0.000

The above Table 4 shows that there is a vital impact of Perceived ease of use on behavioral intention to apply at a considerable level ($\alpha \leq 0.00$), where "f" value reached (110.823) by statistically insignificant (0.00). (R) Value reached (0.684) and (R^2) value reached (0.743).

Table 5

Regression analysis for Perceived usefulness variable

H3. Perceived usefulness has a direct effect on behavioral intention to use

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Perceived usefulness	0.987	0.000	0.029	0.579	0.637	112.464	0.001

The Table 5 shows that there is a statistically vital effect at a considerable level ($\alpha \leq 0.05$) of Perceived usefulness of use on behavioral intention to use, where "f" value reached (112.8464) by statistically insignificant (0.01). (R) Value reached (0.579), and (R^2) value reached (0.637).

Table 6

Regression analysis for Compatibility variable

H4. Compatibility has a direct effect on behavioral intention to use

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Compatibility	0.001	0.975	0.034	0.639	0.742	110.346	0.253

The above Table 6 shows that there is no statistically significant effect at a considerable level ($\alpha \leq 0.05$) of compatibility on behavioral intention to use, where "f" value reached (110.346) by statistically insignificant (0.253). (R) Value reached (0.639) and (R^2) value reached (0.742).

Table 7

Regression analysis for Cost variable

H5. The cost has a straight negative result on behavioral intention to apply

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Cost	-15.131	0.00	-0.540	0.755	0.570	228.953	0.00

The above table shows that there is a statistically vital effect of cost on behavioral intention to use at a considerable level ($\alpha \leq 0.05$), where "f" value reached (228.953) by statistically substantial (0.00). (R) Value reached (0.755) and (R^2) value reached (0.570).

Table 8

Regression analysis for Perceived risk variable

H6. Perceived risk has a straight negative result on behavioral intention to use

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Perceived risk	-14.895	0.00	-0.492	0.749	0.561	220.799	0.00

The above Table 8 shows that there is a statistically significant effect at a substantial level ($\alpha \leq 0.05$) of Perceived risk on behavioral intention to use, where the "f" value reached (220.799) by statistically significant f sig (0.00). (R) Value reached (0.749) and (R^2) value reached (0.561).

Table 9

Regression analysis for Compatibility variable

H7. Compatibility has a straight impact on perceived usefulness

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Compatibility	3.014	0.768	0.025	0.752	0.643	112.248	0.560

The above Table 9 shows that there is no statistically significant effect at a substantial level ($\alpha \leq 0.05$) of compatibility on perceived usefulness, where "f" value reached (112.248) by statistically insignificant (0.560). (R) Value reached (0.752), and (R^2) value reached (0.643).

Table 10

Regression analysis for Perceived ease of use variable

H8. Perceived ease of use has a straight impact on perceived usefulness

Independent variable	"t" value	"t" sig	B	R	R2	"f" value	"f" sig
Perceived ease of use	36.357	0.000	0.761	0.793	0.647	116.375	0.000

The above Table 10 shows that there is a statistically significant effect at a substantial level ($\alpha \leq 0.05$) of Perceived ease of use on perceived usefulness, where "f" value reached (116.375) by statistically insignificant (0.00). (R) Value reached (0.793), and (R^2) value reached (0.647).

Based current literature, the context of an organization has three factors that affect the method of introducing technological innovation. The first is the technical

environment, which represents the external and internal technologies of the companies. Based on the answers to questions about technology compatibility, we believe that there is no vital relationship between the successful introduction of cloud applications and some degree of familiarity with technology. The second is the organizational context, which is relevant to the characteristics and resources of the company, like its management structure and size.

According to the studies, there is a clear correlation, meaning that more significant and more powerful companies are implementing new technology solutions faster and more successfully. The third is the business environment, which belongs to the business arena, where the company conducts business. The answers to the question perceptual usefulness are significant, so we can say that business partners in the studied environment do influence the successful introduction of cloud applications.

Conclusions

By discussing all of the above factors, it can be concluded that cloud computing is an emerging and advanced technology, within the industrial set-up. It has many benefits related to cost reduction, time consumption, compatibility of staff, equal platform provision, virtualization, flexibility, security, etc. All these factors greatly contribute to the path of success, for not only the organizations, but also for staff members. It reduces their burden, as well as, the organizational load. Hence, to reach the goal formulated by the companies and to compete within the market, cloud computing adoption becomes a certain factor. Moreover, in the current study, hypothesis are approved that perceived usefulness increases the use of cloud computing. And there is also link with perceived ease and perceived usefulness of cloud computing. The results of our research shows that perceived ease of use, perceived usefulness, cost, perceived risk are statistically significant, while compatibility and awareness of cloud computing are not statistically vital. The result is a important achievement because, as we have described, in the literature, compatibility and cloud computing awareness are the conditions that have been recognized, to enhance the spread of cloud computing systems. Therefore, there may be a vital distinction between developed and developing countries in the success rate of cloud-based systems. Studies have shown that ease of use and perceived usefulness in Jordan, and in countries with a similar economic development to Jordan, should be the focus of decision-making mechanisms. It also clearly shows that the attitude of companies, is market-oriented and it is the demand, rather than technological momentum and innovation, that defines the speed of adaptation of new systems. Future cross company comparisons should be executed for the evaluation of the adoption of cloud computing. The results show that, according to IT professionals, cloud computing systems can be deployed quickly in developing countries and perhaps the avoidance of costly and risky technological innovations. If users have a clear understanding of their usefulness, it is clear that operating costs can be reduced. The perceived risk of using the system is low. We consider it a particularly

important research outcome that technology compatibility is not that significant with the successful deployment of cloud applications. The rapid deployment and deployment of cloud applications offers good growth opportunities for businesses in developing countries, due to lower costs for new software applications and big data usage. The present study is realized from just one culture. Future research may include comparisons of cross-cultures, so that this phenomenon can be explored around the globe. The sample size herein was small, future sample sizes should be increased. Equal opportunity should be given in the sampling means and male/female participation ratios should be similar. The present research quantitatively assesses the phenomenon only. It is recommended in the future, to apply further qualitative means of exploration and a comparison should be made between professional and beginner levels, for the use of cloud computing and their attitude. A comparison should also be made between private and public sectors.

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Appendix (A) Questionnaire

Introduction

In the frame of a PhD research program we are conducting a study entitled with measuring factors that affecting the decision of adoption of cloud computing services in Jordanian business organizations. Please answer all the enclosed items of the questioner by adding (x) under the suitable alternatives given in each item, knowing that your answers will be used only for scientific research purposes.

Thanks for your cooperation.

Note:

Cloud computing is the new generation of IT services paradigm. Cloud computing is a model for enabling convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. Essential Characteristics of this technology: on-demand self-service, broad network access, resource pooling, rapid elasticity and measured service.

First part: personal information.

Gender: Male   Female

Age: less than 30   30-39

            more than 39

   Experience: 5-10 years   less than 5 years

                                 More than 10 years

The occupying position   : ☐   lower level IT management

                             ☐   Middle level IT management

                          ☐ Top level IT management

Second part: Organization information

Organization size: ☐   small (Number of employees >50)

☐ Medium (50 <=number of employees<=249)

☐   Large (Number of employees>=250)

What is the primary type business conducted by your organization?

☐ Agriculture, forestry and fishing   ☐   Mining

☐ Manufacturing   ☐   Electricity

☐ Construction   ☐   wholesale trade

☐   Retail trade   ☐   accommodation,

hospitality, food/beverage services

☐ Banking and insurance service   ☐   real state service

☐   Health care   ☐   public

administration

☐ Education and training   ☐   transportation

Where is the market scope of your organization?

☐ Local   ☐ national   ☐   international

Item	strongly agree	agree	neutral	disagree	strongly disagree
Cloud computing awareness					
I have received enough information about cloud computing					
I have received enough information about benefits of using cloud computing					
I have enough information about services that are offered through cloud computing					
Perceived risk					
I think using cloud computing in monetary transactions has potential risk					
I think using cloud computing in merchandise services has potential risk					
I think using cloud computing in product purchases has potential risk					
I think using cloud computing puts my privacy at risk					

Cost					
I think the equipment cost is expensive of using cloud computing to offer integrated services					
I think the access cost is expensive of using cloud computing architecture of my organization					
I think the transaction fee is expensive of using cloud computing would be easy					
Compatibility					
Using cloud computing is compatible with most aspects of my tasks					
Using cloud computing fits my work					
Using cloud computing fits well with the way I like to engage in doing my work					

Perceived usefulness					
I think Using cloud computing allow me to manage business operation efficiently					
I think Using cloud computing allow me to increase business productivity					
I think Using cloud computing enables me to do my organizational task more quickly					
Perceived easy of use					
I think Learning to run and use the cloud services would be easy for me					
I think my interaction with the cloud computing services would be clear and understandable					
I think that cloud computing services is easy to use.					

Behavioral intension to use					
Generally, I think that using cloud computing services is advantageous					
Generally, I am in favor of using the cloud computing services					
Assuming I had access to cloud computing, I intend to use it					
Given that I had access to cloud computing , I predict that I would use it					

Any additional notes

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