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Determine some factors that affect to adoption of e-commerce among small and medium enterprises in Erbil

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ABSTRACT

Electronic commerce has become indispensable for Small and Medium Enterprises (SMEs) around the world and it has special importance in, Erbil to develop the capability of SMEs to compete and survive in this very competitive environment.

***Purpose** of the study is to determine the factors that affect the adoption of e-commerce in Erbil, An intensive review of the related literature was conducted to cover the variables of this study. Four independent variables were developed to be tested as factors affect the adoption of e-commerce. These factors are ease of use, willingness of manager, customer need and cost,. The research adopted quantitative approach; an adopted questionnaire was distributed to 143 SMEs managers in Erbil.*

***The findings** show that expect ease of use, willingness of manager and customer need, have significant and direct relationship with adoption of e-commerce in Erbil , Iraq. Cost was found to have significant but negative relationship with the adoption of e-commerce. Based on the findings of the study, the recommendations and suggestions for the decision makers were stated.*

Keywords: *E-commerce, willingness of manager, Ease of use, customer need and cost.*

1. Introduction

Although the internet has appeared to the world in the beginning of 1990s and the e-commerce application started in 1994, the adoption of e-commerce by business firms in the developing world was late as of 2005. Most of the research in this regard was exclusive for the western world (Molla & Licker, 2005 P.22). Iraq, which is a country in the Middle East and classified as developing country, has been suffering from many wars (e.g. Iran-Iraq eight year's war, Arab Gulf war), United Nation (UN) sanctions, political and economic siege, and political, economic and social instability (Sponeck, 2006 P.30).

Until now, the adoption of e-commerce in Iraq is very limited due to many reasons such as internet accessibility, which estimated according to United Nation statistic to be 5.6% percent of the population enjoys internet access in Iraq. In addition, the power supply cut and the distrust of the online transaction have constituted other barriers for the e-commerce adoption by small and medium enterprises (SMEs) in Iraq (United Nation, 2012).

2. Problem Statement

Despite the high number of the SMEs in Erbil, (92% of total companies in Iraq are SMEs), the contribution of SMEs is still under the expected level. According to the chamber of commerce, in 2012 there are 855,000 SMEs in Iraq and they contributed by less than 15 to employment. Most of countries in the developed world are utilizing SMEs to increase the economic growth and reduce unemployment. For example, there are four million SMEs in UK and employ 45 percent of the workforce (Ganotakis & Love, 2011, P.53). Adoption of e-commerce by SMEs in Erbil has big potential to push the productivity of the SMEs and enhance their organizational performance (ICFSME, 2013, P21.). Reviewing the related literature, there is no any study researched the adoption of e-commerce by SMEs in Erbil. The developing world is lacking for such studies (Molla & Licker, 2005, P11).

3. Research Objective

The main objective of this study is to find the factors that can affect the adoption of e-commerce by SMEs in Erbil.

4. Research Questions

The questions of this research are as follows:

- 1- What is the association between ease of use and the adoption of e-commerce by SMEs in Erbil?
- 2- What is the association between willingness of manager and the adoption of e-commerce by SMEs in Erbil?
- 3- What is the association between customer needs and the adoption of e-commerce in by SMEs in Erbil?
- 4- What is the association between cost of adoption and the adoption of e-commerce by SMEs in Erbil?

5. LITERATURE REVIEW

5.1 Overview of SMEs

There is no universal definition of SMEs. However, generally, SMEs are defined as non-subsidiary and sovereign firms in which the number of employees is less than a stated number. For example, in the United States (U.S), SMEs are defined as firms with less than 500 employees; in the European Union (EU), the SME limit is set to 250 workers; while in other nations, the SME limit is set at 200 employees. Small firms are supposed to have fewer than 50 employees, while micro-enterprises have ten employees.

at most (Carter & Jones-Evans, 2006,P23). SMEs can also be defined by their financial assets. Moreover, SMEs can be described according to whether they are independently owned and operated, as in the U.S. The American definition assumes that SMEs are independently owned and operated and that they are not dominating their field in the overall marketplace (Bose & Sugumaran, 2006, P12). In this study, SME refers to companies, which have less than 50 employees, most of the SMEs companies in Iraq are considered as SMEs, and they are characterized by small size and small number of employees.

5.2 E-commerce

Even though the Internet has existed for several decades, e-commerce has become a reality only with the development of the World Wide Web (WWW) and its associated technologies (Napier, et al 2001 P29). The literature of e-commerce and SMEs suggest that there are at least three ways in which e-commerce is perceived. Some researchers see e-commerce in terms of Internet applications, such as e-mail, website, and intranet (Drew, 2003,P11). Some investigate the use of e-commerce in terms of business activities; for example, communicating with customers and suppliers (Daniel & Wilson, 2002P 43). Others see e-commerce as a mix of Internet applications and business activities (Kendall et al. 2001,P17). This study adopts the components of e-commerce as: e-mail, websites for online selling, and online buying. These three components will be the measures used in this study.

5.2.1 Definition of E-commerce

Early work in e-commerce, such as that (Daniel, Wilson and Myers, 2002 p 22), defined e-commerce simply as “the buying and selling of information, products and services via computer networks”, the computer networks primarily being the Internet. (Chaffey 2007,P16) used the term more broadly to encompass not only the buying and selling described above but also the use of Internet technologies, such as email and intranets, to exchange or share information either within the firm itself or with external stakeholders. This broad interpretation of the term e-commerce has continued with (Ching and Ellis 2004 p12) describing ecommerce as “technologically mediated exchanges”. For this study, E-commerce has been defined as the process of buying, selling, transferring, or exchanging products, services, and/or information via computer networks, including the Internet. This definition is adopted from (Turban et al 2008 P43).

Factors Affecting E-Commerce Adoption by SMEs

The reviewing of literature identified some factors that motivate e-commerce adoption by SMEs in developed and developing countries (Stockdale & Standing, 2004 P4, Al-Weshah et al P18 . 2012) and provided evidence of a relationship between e-business enablers with the level of this adoption.(Seyal, et al 2004,P17) found that governmental support and incentives are significant in influencing the adoption of e-business by SMEs in Pakistan. For Taiwanese SMEs, (Chen’s 2004 P32) stated that E-business is used to reduce costs and increase sales. Beck, (Wigand and König 2005,P15) conducted an international survey in Germany, the U.S., France, and Denmark, the study revealed that improved customer service and increased sales, are the main enablers of e-business adoption. (Kaynak,et al 2005,P19) suggested that reaching new customers and markets and reducing costs are the most important enablers, while increased sales, time savings and customer satisfaction are of no significant for motivating the adoption of e-business by SMEs in Turkey.

Ease of Use

Information systems that user perceive easier to use in their business and less complex to increase the likelihood of its adoption and usage (Lee et al. 2001; Tan & Teo 2000).

According to TAM perceived ease of use (PEOU) is a major factor that affects acceptance of information system (Davis et al. 1989). PEOU is defined as "the degree to which a person believes that using a particular system would be free of effort" (Davis 1989,P14). If the appropriate skills and understanding of the technology are in place then the use of e-commerce will be easier thus, it is more likely to be accepted by users.

Willingness of Manager

Studies have shown that new information technology systems will only succeed if there is support from senior management (Daniel & Myers, 2001,P11), where the propensity to adopt an EC strategy will be strongly associated with the importance placed on that strategy within the firm (Stokes, 2000,P14). From this perspective, managerial acceptance of an innovation will be based on their perceived beliefs and affects held towards the innovation (Rogers, 2003,P16).

Customer Need

According to (Bellaaj, et al 2008,P19) external pressures exerted by competitors, customers, business partners, the media and the larger public itself can force firms to adopt technological innovations. This shows that competitors, suppliers, and customers can exert direct or indirect pressures on SMEs to adopt e-commerce.

Recently, a number of studies have appeared that discuss how interactions with both other organizations and customers in a global economy have enforced these SMEs to adopt EC technologies (Hinson & Sorensen, 2006, P13; Sarosa & Underwood, 2005, P17). In addition, relationships between industry partners also affect the overall industry structure (Gregor & Johnston, 2000, P22). (Iacovou et al. 1995 p21) also stated that the competitive pressure that firms face within their particular industry greatly influences the company's decision to adopt IT and EC. Indeed, the use of IT and EC is often imposed on SMEs by major customers or suppliers and this has affected greatly on adoption levels among small firms.

Cost

The cost of adoption e-commerce is an important factor for SMEs to consider. No SME will be interested to adopt E-commerce unless the benefits outweigh the costs of developing and maintaining the system (Vatanasakdakul *et al* 2004,P18). They argue that SMEs are generally concerned about the costs of establishing and maintaining e-commerce since they generally suffer from budget constraints and are less sure of the expected return on the investment (Ernst & Young 2001, P16).

The cost factor was studied by various researchers (Seyal & Rahim, 2006P.31) and found direct and significant relationship between cost and adoption of technology. The lower cost of adoption and the higher innovation such as the e-commerce will be adopted by the company and vice versa.

6. Hypotheses

Based on the theoretical framework, the following hypotheses can be developed.

H1: The ease of use affected to adoption of e-commerce by SMEs in Erbil.

H2: willingness of Manager affected to adoption of e-commerce by SMEs in Erbil.

H3: customer needs affected to adoption of e-commerce by SMEs in Erbil.

H4: cost affected to adoption of e-commerce by SMEs in Erbil.

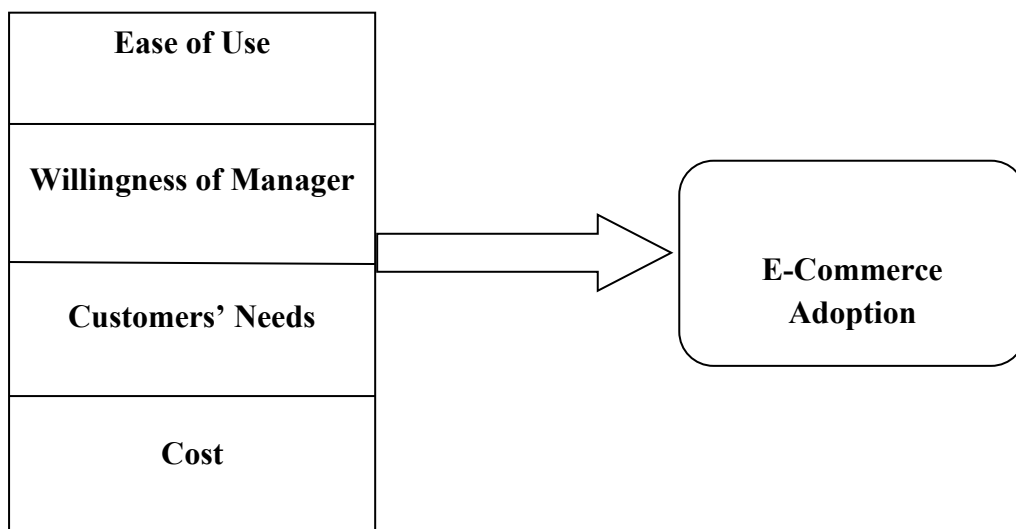
7. Theoretical Framework

Based on the literature review, the proposed theoretical framework for this study is:

Independent Variables (IV)

Dependent Variable (DV)

(Factors Affect the Adoption of E-Commerce)



7. Data Analysis

The data is analyzed through Statistical Package for Social Sciences (SPSS) version 20.0. The findings are present through descriptive analysis and the hypotheses are tested by Pearson Correlation to find the direction and the significance of the relationship between the independent variables and dependent variable.

7.1 Reliability Analysis

Table 1 shows the reliability test of the variables of the study. Cronbach's Alpha was employed to determine the reliability of the measures and to find the internal consistency of the scales and its items. In Cronbach's Alpha reliability analysis, the closer Cronbach's Alpha to 1.0, the higher the internal consistency reliability. According to Cronbach's Alpha reliability less than

0.6 considered poor, reliability in the range 0.7 is considered acceptable, and reliability more than 0.8 are considered good. The table below shows that all the scales are reliable. The table states that all the scales have acceptable, good and very good reliability.

Table 1: Reliability Test

Scales	Number of Items	Cronbach's Alpha	Status
E-commerce Adoption	11	0.916	Very Good
Ease of Use	6	0.748	Acceptable
Willingness of Manager	5	0.773	Acceptable
Cost	4	0.752	Acceptable
Customer Need	3	0.710	Acceptable

7.2 Pearson Correlation

Table 2 shows the results of Pearson correlation analysis. The relationship between all the independent variables and the dependent variables are significant. The highest correlation is found between e-commerce adoption and Ease of Use with correlation of 0.631. The lowest positive correlation is found between customer need and e-commerce adoption with correlation of 0.554. The negative yet significant relationship is found between e-commerce adoption and cost with correlation of 0.550.

Table 2 Pearson Correlation

Variable		E-commerce Adoption
E-commerce Adoption	Pearson Correlation	1
	Sig. (2-tailed)	
	N	143
Ease of Use	Pearson Correlation	.631**
	Sig. (2-tailed)	.000
	N	143
Willingness of Manager	Pearson Correlation	.576**
	Sig. (2-tailed)	.000
	N	143
Customer Need	Pearson Correlation	.554**
	Sig. (2-tailed)	.000
	N	143
Cost	Pearson Correlation	-.550**
	Sig. (2-tailed)	.000
	N	143

Table 3 Regression

Hypotheses	M	SD	Standardize d coefficients (β)	Sig. (p)	supported yes or no
Ease of Use $\longrightarrow$ E-commerce Adoption	3.34	6.12	0.91	0.01	Yes
Willingness of Manager $\longrightarrow$ E-commerce Adoption	3.51	6.50	0.83	0.01	Yes
Customer Need $\longrightarrow$ E-commerce Adoption	3.81	6.44	0.74	0.01	Yes
Cost $\longrightarrow$ E-commerce Adoption	2.88	5.39	0.09	0.05	No

7.3 Discussion

H1: The ease of use affected to adoption of e-commerce by SMEs in Erbil.

The first hypothesis of this research stated that, "H1: There is a relationship between ease of use and the adoption of e-commerce by SMEs in Iraq". The Pearson correlation presented in Table 2 shows that the relationship is significant because the correlation is significant at the level less than 0.05. The relationship is also positive due to the positive sign in front of the coefficient with correlation of 0.631. This result indicates that the increase of the ease of use for the adoption and the usability of e-commerce application will lead to increase in the adoption of e-commerce. The first hypothesis is accepted.

H2: willingness of Manager affected to adoption of e-commerce by SMEs in Erbil.

Based on Table 2 which shows the Pearson correlation of this study, the relationship is significant because the correlation is significant at the level less than 0.05. The relationship is also positive due to the positive sign in front of the coefficient with correlation of 0.576. This indicates that an increase in the level of manager willingness will lead to an increase in the e-commerce adoption. The second hypothesis is accepted.

H3: customer needs affected to adoption of e-commerce by SMEs in Erbil.

Based on Pearson correlation in Table 2, the relationship between the two variables is significant because the relationship is significant at the level of less than 0.05. The relationship is positive at correlation of 0.554 due to the positive sign in front of the coefficient. The result indicates that when customer needs increase, the SMEs managers' willingness to adopt e-commerce in their businesses will increase. Therefore, the third hypothesis is accepted.

H4: cost affected to adoption of e-commerce by SMEs in Erbil.

Based on Table 2, the relationship between the two variables is significant because correlation is significant at the level less than 0.05. However, the relationship is negative due to the negative sign in front of the coefficient. The result indicates that when the cost of adoption decreases, the adoption of e-commerce will increase. Therefore, the relationship is significant but negative and the forth hypothesis is rejected

8. Recommendations

Based on the findings of this study, the following recommendations and suggestion can be utilized by the SMEs managers in Erbil for more effective implementation of e-commerce and more beneficial adoption of the technology.

Ease of Use

Ease of use refers to the degree that the technology considers easy to be used by the users. The following suggestion can be made in this regard.

Willingness of Manager

Role of manager is essential for e-commerce adoption. SMEs are characterized by its small size and the manager (most likely, the manager is the owner of the company) has strong influence on the company decision making. The following recommendations can be made:

Customer Need

Customer requires the use of e-commerce by the company to ease their transactions. The following suggestions can be made.

Cost

Despite the cost that has to be paid to establish e-commerce, the benefits that can be derived from the technology can overweigh the cost. The following recommendation can be presented:

9. Conclusion

This study has been conducted in Erbil state, in Iraq. The purpose of this study is to find the factors that affect the adoption of e-commerce by SMEs in Erbil state in Iraq. An intensive review of the related literature was conducted to cover the variables of this study. The sample of the study included manager of SMEs in the state.

The findings of the research reveal that Erbil SMEs in critical need for the adoption of e-commerce in their businesses. Many advantages can be gained through the adoption of the technology. The most important advantages are that companies can create competitive advantages by adopting e-commerce. Cost is one of the major advantages as the adoption of e-commerce reduces the work force needed and reduce traveling cost along with communication cost. E-commerce enables companies to offer their product and services online and to reach to new markets. It provides companies with ease access to information and about customers, suppliers, competitors and so on. One of the most important advantages is that the companies can satisfy their customers more effectively. Satisfied customers will repurchase and use the product or the services again which can be translated in more sales and ultimately more profits.

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