www.irmbrjournal.com December 2018
International Review of Management and Business Research Vol. 7 Issue.4

Effectiveness of Information Systems and Communication Technology in Offering the Quality of Information (Smartphone Under Focus)

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Abstract

This study aimed to measure effectiveness of information technology in offering the quality of information to the user of smartphones (smartphone under focus). For this purpose, the researcher revealed a study of 259 smartphone users in Saudi Arabia as a sample. Non probability data collection technique was applied. Collected data was analysed by using SPSS software. The technique that followed was the ANOVA test. In addition, the researcher found that there was a strong relationship between quality of information and smartphones to improve effectiveness of information technology. Moreover, there was a strong relationship between using smartphones and its consequences on supporting knowledge and information to the users. The results have been discussed in light of previous literature.

Keywords: *Smartphone, Communication, Learning, Knowledge Management, Information Technology, Information Quality, Information System.*

Introduction

Communication and Information technologies are significant to all smartphone users. Smartphones are one of the most accessible and widespread devises at our time and it will be the near future. All owners of smartphone such as; students, employees, professionals and many others are using it to reach and access valuable information that they need in their daily life aspects. According to Euro monitor (2010), in recent years, the mobile phones have evolved from essentially an interpersonal communication device to a multimedia machine known as smartphone.

The term smartphone refers to a programmable mobile phone that offers advanced capabilities and features that help individuals in their daily work and personal life. A study by Park and Chen, (2007) showed that with the popularity and functions offered in the phone, smartphones have seen an increase in terms of demand. A study done by Ni. (2009) found that in the third quarter of 2008, Canalys reported that global shipments of smartphones had hit a new peak of just under 40 million units. In addition, the sale of smartphones is booming in the years to come also the dependence of smartphones owners in getting good quality information is essential. Therefore, the purpose of this study was to examine effectiveness of information technology in offering the quality of information to the user, and smartphone will be an example in this study.

Literature Review

According to Gikas and Grant (2013), there are four major characteristics of mobile devices that are necessary for mobile learning. These characteristics are: constant access to the internet, a variety of downloadable applications, communication capability, and a small size to allow for carrying it in a pocket or handbag. Therefore, the study focusses exclusively on students' mobile learning with cell phones and smartphones. As stated by Dukic and Chiu, (2015) Cell phones and smartphones with web access are becoming popular among students in higher education. Mobile technologies allow students to access the relevant information and easily communicate with others. Becker (2013) found that among a variety of library mobile services there was a high demand for easy navigation of library databases, searching the catalog, accessing -books and reserving books. Park, and Jung, (2013) studied Korean smartphone users' perception of usefulness of smartphones for learning. The majority of survey participants think that smartphones are very useful for learning anytime and anywhere. Mobile phone perceived as an effective mean for informal self-directed learning because of its portability, accessibility and ease of use. As specified by Dukic, Dickson and Chiu (2015) most students participating in discussions agree that smartphones are not suitable for serious academic reading and even less so for academic work like writing assignment papers.

Research study by Cheong (2005) which showed that students in higher education use their smartphones for academic purposes, such as finding course information (schedulers, exam results), accessing course learning materials or for discussing assignment and collaborating with classmates on course assignment projects. According to Kotler and Armstrong (2007), Product features are related to the attributes of a product that help to meet the satisfaction level of consumers' needs and wants through owning the product, use, and utilization of the product. Bloch (1995) stated that Users largely value the smartphone features such as full-screen viewing for images and video and larger text and buttons with stylish design according to their preferences. Design was found to be the most important determinant of consumer response and new product sales success. Swani and Yoo, (2010) believed that the consumer relying on the perceived value for price. Consumers typically look for low prices of brands or substitutes to get the best value. Cornelis, (2010) missioned that more and more companies realize that one of their priceless assets is the brand name related to their products or services.

Tian (2009) supposed that the Friends and family members are social influences that are, Consumers are dependent on their smartphones when they have high continuous use and are reluctant to be apart from them. Nuttall (2010), specified that the mobile communication devices have become a means to not only seek information but these devices also afford the user the ability to deliver information to others as well. Elias Carayannis, Stephen Clark & Dora Valvi (2012) explained that, based on this evolution, a study was conducted to investigate what is the perceived usefulness of mobile devices among Chief Executives Officers and do mobile technologies serve as tools for leveraging information, knowledge, and the fundamentals of learning. As Hemp, (2009) stressed that, in a growing economy that is driven by knowledge, communication, and innovation, information becomes our most valuable asset.

Van Dijk, (2010) dressed as communications technology grows in complexity, adequate skills for consumption become even more critical. A smartphone will not be "smart" if its user does not have the skills to utilize its smart. Gill Clough, Ann Jones, Patrick McAndrew, and Eileen Scanlon, (2011) stated that most formal learning materials for distant education are now configured to be accessible via smartphones. In fact, researchers found that smartphones have been used as pedagogical tools to develop a ubiquitous learning environment. As a study conducted by pewinternet.org/Commentary/2012/March stated that, by smartphone, applications have the potential to enable a user to be connected anytime and anywhere, thus increasing his/her social capital. In fact, recent surveys found that above 40% of cell phone owners use a social networking site on their phone and 28% do so every day. As stated by Liccardi (2007) one can share knowledge and experiences, collaborate on relevant topics, and ask for advice or assistance.

According to Abir Al-Harrasi, and Al-Badi (2114), In using social networking sites, students face many challenges such as whether or not to trust the information they find, and how to choose from the different sources of information that are provided by these sites. Wang, (2011), found that "ninety percent of smart phone user spent their time on entertainment; there were not too many college students who did not prefer using social media to do their homework."

Research Methodology and data collection

A survey was designed by the researcher to serve the purpose of this study, it contained two parts, part one was the demographic items such as age, gender, educational level, employers experience and Professional statues. And part two was the core research questions there were 24 survey questions. Target population of the current study was students in higher education degree awarding institutes and universities. A no of 300 questionnaires were distributed and in response I got 259 useable questionnaire. The response rate was high which is normal in eastern culture (Tufail, Shahzad, Gul & Khan, 2017). The survey questions that designed by researcher to cover all aspects of the study, these items were reviewed by experts and academics in the field of information technology, no corrections were made by them to the original questionnaire.

The survey was distributed personally to several educational institutions such as colleges, universities, academic institutions, and many smartphone users who have interests in information and communication issues. Meanwhile, the survey was distributed also to professional firms specialized in information and communication technology, the participants were very helpful and cooperative in filing the questioner, after that all survey questions were downloaded on excel sheet in order to be analyzed by SPSS software, the technique that followed was ANOVA test.

Results

Demographic questions analyses

The purpose of this part of the study was to collect data about the sample such as age, education level, employers work experience and professional state.

Table 1: Sample age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	{18-30}	144	55.6	55.6	55.6
	{31-40}	83	32.0	32.0	87.6
	{41-50}	22	8.5	8.5	96.1
	{>50}	10	3.9	3.9	100.0
	Total	259	100.0	100.0	

The total number of the sample was 259 participants, the age distribution was as follow, from age (18 - 30) of the total sample was 55.6%, also the ages (31-40) of the total sample was 32% and the ages (41-50) was 8.5% more than (50) years was only 3.9%.

Table 2: Education level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school	150	57.9	57.9	57.9
	Bachelor	73	28.2	28.2	86.1
	Master	16	6.2	6.2	92.3
	PhD	20	7.7	7.7	100.0
	Total	259	100.0	100.0	

That indicated the younger people are the most interested and interactive in this study comparing to the rest of sample ages.

In the education level item, it is very clear that most of participants, which are 56%, have a high school diploma because they were university students and in the process of getting the Bachelor degree, 28% of the total sample have bachelor degree, 6.2% of the participates have master degree and finally 7.7% have a PhD degree. That shows all levels of educations have participated in this study, thus, it will give the study more legitimacy.

Table 3: Employers work experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 year	17	6.6	6.6	6.6
	2 years	35	13.5	13.5	20.1
	3 years	53	20.5	20.5	40.5
	4 years	87	33.6	33.6	74.1
	> 4 years	67	25.9	25.9	100.0
	Total	259	100.0	100.0	

The employers experience item shows that 33% of the total sample have 4years experience in different fields of professionals, and 25.9% of the total sample have more than 4 years of experience, 20% of the total sample have 3 years work experience, 13.5% have 2 years of experience and last 6.6 have 1 year of job experience. It is noteworthy that the response of the study has an effect in the professionals who have more job experience than those have less job experience.

Table 4: Professional state

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Student	205	79.2	79.2	79.2
	Employee	54	20.8	20.8	100.0
	Total	259	100.0	100.0	

The professional statues shows that 79.2% of the sample were students and 20.8% were employees.

The Principal Component Analysis (PCA)

Based on the responses to Q18: 70.7% of participants agreed that smartphone shows information about the subject in an interesting and easy ways. The Q28: 85.3% strongly agreed that, they help others whenever someone was asked to spread the knowledge of how to use smartphone or access information to help in completion of a transaction.

The dependence between SMARTPHONE , AVAINFO availability of information, KNOW knowledge, QUAL quality, EAUSE easy use and Confident.

The dependence between Smartphone, availability of information:

H0: There is no relationship between SMARTP and AVAINFO
H1: There is a strong relationship between SMARTP and AVAINFO

Independent Variables	F	Sig	Accepted hypothesis
SMARTPh	491.016	0.000	H1

The alternative hypothesis H1 was accepted, which stated that, there is a strong relationship between SMARTP and AVAINFO because the p-vale (0.000) is lower than 0.05 (alpha). Responses to Question 22. There are 50.6 % of the sample stated that they disagree that they use the smart phone for entertainment not for scientific use, on the other hand, Q29. 15% of the answers strongly disagree that they can dispensable voluntary my smartphone without affecting the level of their knowledge or the quality of knowledge, q5. 76.5% of the sample agree that, there is a major role for smartphones in the search for information and knowledge that interest them in the field of working and learning, Q12 72.2% of the sample agreed that smartphones help to increase the intellectual experience of its owners, which makes them more willing to obtain knowledge and learning. Finally Q17: 72.2% of the answers agreed on that, smartphone plays an important role in providing knowledge to the user.

The dependence between Smartphone and Knowledge:

H0: There is no relationship between SMARTP and KNOW
H1: There is a strong relationship between SMARTP and KNOW

Independent Variables	F	Sig	Accepted hypothesis
SMARTP	504.250	0.000	H1

The alternative hypothesis H1 which stated there is a strong relationship between SMARTP and KNOW was accepted, because the p-vale (0.000) is lower than 0.05 (alpha). The answers for Q6: 83% of the sample agreed that, there is a major role for smartphones in facilitating education.

The dependence between Smartphone and quality:

H0: There is no relationship between SMARTP and QUAL
H1: There is a strong relationship between SMARTP and QUAL.

Independent Variables	F	Sig	Accepted hypothesis
SMARTP	548.556	0.000	H1

Alternative hypothesis H1 which stated that, there is a strong relationship between SMARTP and QUAL was accepted because the p-vale (0.000) is lower than 0.05 (alpha). Responses for question 7 were 50.2% of the sample agreed that smartphones provide information in a scientific manner, exciting and attractive ways, Q14 responses 71.8% agreed on that, smartphones assist on the development of cognitive skills to the users. Q16 answers 62.5% agreed that there is a difference in the quality of knowledge before and after they have a smartphone.

The dependence between Smartphone and Ease use:

H0: There is no relationship between SMARTP and EAUSE
H1: There is a strong relationship between SMARTP and EAUSE

Independent Variables	F	Sig	Accepted hypothesis
SMARTP	463.142	0.000	H1

The alternative hypothesis H1, which stated that, there is a strong relationship between SMARTP and EAUSE because the p-vale (0.000) was lower than 0.05 (alpha). The answers for Question 8 showed that, 66.4% of the sample agreed on that they could use a smartphone skillfully.

The dependence between Smartphone and Confident

H0: There is no relationship between SMARTP and CONFID
H1: There is a strong relationship between SMARTP and CONFID.

Independent Variables	F	Sig	Accepted hypothesis
SMARTP	420.893	0.000	H1

The alternative hypothesis H1, which stated that, there is a strong relationship between SMARTP and CONFID was accepted because the p-vale (0.000) is lower than 0.05 (alpha). Answers from question 15 showed that, 50% of the participants agreed that the smartphones assist in organizing the ideas to the user.

Table 5: ANOVA 1

		Sum of Squares	df	Mean Square	F	Sig.
AVAINFOG	Between Groups	3693.761	6	615.627	491.016	.000
	Within Groups	315.953	252	1.254		
	Total	4009.714	258			
Know01	Between Groups	458.284	6	76.381	504.250	.000
	Within Groups	38.171	252	.151		
	Total	496.456	258			
QUALG	Between Groups	3304.599	6	550.766	548.556	.000
	Within Groups	253.015	252	1.004		
	Total	3557.614	258			
EAUSE01	Between Groups	336.185	6	56.031	463.142	.000
	Within Groups	30.487	252	.121		
	Total	366.672	258			
CONFID01	Between Groups	344.966	6	57.494	420.893	.000
	Within Groups	34.423	252	.137		
	Total	379.390	258			

The dependence between ESERVCE e services, AVAINFO availably of information, KNOW, knowledge QUAL quality, EAUSE easy use and CONFID confident.

The dependence between E-service and availability of information.

H0: There is no relationship between ESERVCE and AVAINFO
H1: There is a strong relationship between ESERVCE and AVAINFO

Independent Variables	F	Sig	Accepted hypothesis
ESERVCE	194.222	0.000	H1

The alternative hypothesis H1 which stated that there is a strong relationship between ESERVCE and AVAINFO was accepted because the p-vale (0.000) is lower than 0.05 (alpha).

The answers from Question Q18 showed that, 70.7% of the sample agreed on that, The smartphone shows information about the subject in an interesting and easy ways, answers from question q28 showed that, 85.3% of the sample strongly agreed on` that they help others whenever they were asked to spread the knowledge of how to use a smartphone or access information to help in completion of a transaction.

The answers from Q5 showed that 76.5% agree on that, there is a major role for smartphones in the search for information and knowledge that interest me in the field of working and learning, Q12 showed that 72.2% agreed on that smartphones help to increase the intellectual experience of its owners, which makes

them more willing to obtain knowledge and learning. Finally, Q17 showed that 72.2% of the sample agreed on that, smartphone plays an important role in providing knowledge to the user.

The dependence between E-SERVCE and Knowledge

H0: There is no relationship between ESERVCE and KNOW
H1: There is a strong relationship between ESERVCE and KNOW

Independent Variables	F	Sig	Accepted hypothesis
ESERVCE	169.192	0.000	H1

Alternative hypothesis H1 which stated that, there is a strong relationship between ESERVCE * KNOW was accepted because the p-vale (0.000) is lower than 0.05 (alpha).answers from Question 6 showed that 83% of the responses agreed on that, there is a major role for smartphones in facilitating learning.

The dependence between E-service and Quality.

H0: There is no relationship between ESERVCE and QUAL
H1: There is a strong relationship between ESERVCE and QUAL

Independent Variables	F	Sig	Accepted hypothesis
ESERVCE	346.129	0.000	H1

The alternative hypothesis H1, which stated that, there is a strong relationship between ESERVCE and QUAL was accepted because the p-vale (0.000) is lower than 0.05 (alpha). The answers from Question 7showed that, 52.2% of the sample agreed on that, There is a difference in the quality of knowledge that they have before and after they have a smartphone, answers from q17 showed that, 50.2% of the sample agreed on that smartphones provide information in a scientific manner and exciting and attractive. The answers from Q14 showed that, 71.8 of the sample agreed on that, smartphones assist on the development of cognitive skills to the users, and finally The answers from Q16 showed that 62.5 % of the sample agreed on that, there is a difference in the quality of knowledge before and after they have a smartphone.

The dependence between E-SERVCE and Ease USE.

H0: There is no relationship between ESERVCE and EAUSE
H1: There is a strong relationship between ESERVCE and EAUSE

Independent Variables	F	Sig	Accepted hypothesis
ESERVCE	398.975	0.000	H1

Alternative hypothesis H1, which stated that, there is a strong relationship between ESERVCE and EAUSE was accepted because the p-vale (0.000) is lower than 0.05 (alpha). Answers from Question 8 showed that, 66.4% of the sample agreed they can use a smartphone skillfully.

The dependence between E-SERVCE and Confident.

H0: There is no relationship between ESERVCE and CONFID
H1: There is a strong relationship between ESERVCE and CONFID

Independent Variables	F	Sig	Accepted hypothesis
ESERVCE	280.575	0.000	H1

The alternative hypothesis H1, which stated that, there is a strong relationship between ESERVCE and CONFID was accepted because the p-vale (0.000) is lower than 0.05 (alpha). The responses to question 15 showed that, 50 % of the responses stated that, smartphones assist in organizing the ideas to the user.

Table 6: ANOVA 2

		Sum of Squares	df	Mean Square	F	Sig.
AVAINFOG	Between Groups	3296.791	6	549.465	194.222	.000
	Within Groups	712.923	252	2.829		
	Total	4009.714	258			
Know01	Between Groups	397.725	6	66.287	169.192	.000
	Within Groups	98.731	252	.392		
	Total	496.456	258			
QUALG	Between Groups	3172.640	6	528.773	346.129	.000
	Within Groups	384.974	252	1.528		
	Total	3557.614	258			
EAUSE01	Between Groups	331.749	6	55.291	398.975	.000
	Within Groups	34.923	252	.139		
	Total	366.672	258			
CONFID01	Between Groups	329.993	6	54.999	280.575	.000
	Within Groups	49.397	252	.196		
	Total	379.390	258			

The dependence between IT information technologies, AVAINFO availability of information, KNOW knowledge, QUAL quality, EAUSE easy use and CONFID confident.

The dependence between information technology and Availability of Information:

H0: There is no relationship between IT and AVAINFO
H1: There is a strong relationship between IT * AVAINFO.

Independent Variables	F	Sig	Accepted hypothesis
IT	1077.554	0.000	H1

The alternative hypothesis H1 which stated that, there is a strong relationship between IT and AVAINFO was accepted because the p-vale (0.000) is lower than 0.05 (alpha).

The responses to question 20 showed that 75.6% of the sample agree smartphone can display information in several forms, and shape such as audio-visual and more, answers from Q23 showed that 75.7% of the sample agreed that, smartphones can be updated so that the user can be updated about an new applications, answers from q5 showed that 76.5% of the sample agree that there is a major role for smartphones in the search for information and knowledge that interest me in the field of working and learning.

Answers from Q12 showed that 72.2% of the sample agreed that smartphones help to increase the intellectual experience of its owners, which makes them more willing to obtain knowledge and learning. Finally, answers from Q17 showed that 72.2% of the sample agreed that smartphone plays an important role in providing knowledge to the user.

The dependence between information technology and Knowledge:

H0: There is no relationship between IT and KNOW
H1: There is a strong relationship between IT and KNOW

Independent Variables	F	Sig	Accepted hypothesis
IT	1743.897	0.000	H1

The alternative hypothesis H1 which stated that, there is a strong relationship between IT and KNOW was accepted because the p-vale (0.000) is lower than 0.05 (alpha). The answers from Question 6 showed that,, 83% of the sample agreed that there is a major role for smartphones in facilitating learning.

The dependence between information technology and Quality:

H0: There is no relationship between IT and QUAL
H1: There is a strong relationship between IT and QUAL

Independent Variables	F	Sig	Accepted hypothesis
IT	1193.833	0.000	H1

Alternative hypothesis H1, which stated that, there is a strong relationship between IT and QUAL was accepted because the p-vale (0.000) is lower than 0.05 (alpha). The responses to Question 7 specified that 50.2% of the sample agreed that smartphones provide information in a scientific manner, exciting and attractive ways.

The responses to Q14 showed that 71.8% of the sample agreed that smartphones assist on the development of cognitive skills to the users. The responses to Q 16 showed that, 62.5% of the sample agreed that there is a difference in the quality of knowledge before and after I have a smartphone.

The dependence between information technology and Easy use:

H0: There is no relationship between IT and EAUSE
H1: There is a strong relationship between IT and EAUSE.

Independent Variables	F	Sig	Accepted hypothesis
IT	5043.112	0.000	H1

Alternative hypothesisH1, which stated that, there is a strong relationship between IT and EAUSE was accepted because the p-vale (0.000) is lower than 0.05 (alpha). The responses to Question 8 showed that, 66.4% of the sample agreed on that they can use a smartphone skillfully.

The dependence between information technology and Confidant.

H0: There is no relationship between IT and CONFID H1: There is a strong relationship between IT and CONFID.

Independent Variables	F	Sig	Accepted hypothesis
IT	444.689	0.000	H1

Alternative hypothesis H1, which specified that, there is a strong relationship between IT and CONFID was accepted because the p-vale (0.000) is lower than 0.05 (alpha). Answers from Question 15 stated that, 50 % of the sample stated that smartphones assist in organizing the ideas to user.

Table 7: ANOVA 3

		Sum of Squares	Df	Mean Square	F	Sig.
AVAINFOG	Between Groups	3859.290	6	643.215	1077.554	.000
	Within Groups	150.424	252	.597		
	Total	4009.714	258			
Know01	Between Groups	484.780	6	80.797	1743.897	.000
	Within Groups	11.675	252	.046		
	Total	496.456	258			
EAUSE01	Between Groups	354.210	6	59.035	1193.833	.000
	Within Groups	12.461	252	.049		
	Total	366.672	258			
QUALG	Between Groups	3528.230	6	588.038	5043.112	.000
	Within Groups	29.384	252	.117		
	Total	3557.614	258			
CONFID01	Between Groups	346.650	6	57.775	444.689	.000
	Within Groups	32.740	252	.130		
	Total	379.390	258			

Research Analysis and Discussion

The results of this study based on the analyses were as follow, from the age of (18 - 30) was 55.6% of respondents from (31-40) was 32% and the ages (41-50) was 8.5% and more than (50) years was 3.9%. In term of education, 56% of respondents have a high school degree, 28% have bachelor degree, 6.2% have master degree and finally 7.7% have a PhD. The employers experience item shows that 33% of respondents have 4 years job experience, and 25.9% have more than 4 years, 20% 3 years, 13.5% 2 years and 6.6 have 1 year of job experience. Finally, the professional stats shows that 79.2% of the sample are students and 20.8% were employees. The hypothesis H1 that argued that, smartphone has a positive impact on provide good quality information to its user was confirmed. Hypothesis H2 that stated that smartphone contributes to improve the quality of e-service was also confirmed. In addition, there is a strong relationship between smartphone, and availability of information because the p-vale (0.000) is lower than 0.05.

On the other hand, the researcher found that, there is a strong relationship between smartphone and knowledge because the p-vale (0.000) is lower than 0.05. Furthermore, there is a strong relationship between smartphone and Quality because the p-vale (0.000) is lower than 0.05. Additionally there is a strong relationship between smartphone and easy use because the p-vale (0.000) is lowers than 0.05. Moreover the analyses shows that, there is a strong relationship between smartphone and confident because the p-vale (0.000) is lower than 0.05 (alpha). Likewise, there is a strong relationship between e-service and availability of information because the p-vale (0.000) is lower than 0.05. In addition, there is a strong relationship between e-service and Knowledge because the p-vale (0.000) is lower than 0.05. Similarly there is a strong relationship between e-service and quality because the p-vale (0.000) is lower than 0.05. Correspondingly there is a strong relationship between e-service and easy use because the p-vale (0.000) is lower than (0.05). In addition, there is a strong relationship between e-service and Confident because the p-vale (0.000) is lower than 0.05. Furthermore, there is a strong relationship between Information technology and availability of information because the p-vale (0.000) is lower than 0.05. Correspondingly there is a strong relationship between IT and Knowledge because the p-vale (0.000) is lower than 0.05. Similarly there is a strong relationship between IT and quality because the p-vale (0.000) is lower than 0.05 alpha. Analyses displays there is a strong relationship between IT and easy use because the p-vale (0.000) is lower than 0.05. Finally there is a strong relationship between IT and Confident because the p-vale (0.000) is lower than 0.05.

Based on findings, hypothesis H1 that argued that, smartphone has a positive impact on provide good quality information to its user was confirmed. To justify our decision, the researcher found that all dependents (Knowledge/ confidence/ quality/ easy use/ availability of information) variables and independents variables (smartphones/ eservices/ IT) have a positive correlation and global significance with p-value = 0.000. That statistical means that exist a strongly relationship between using smartphones and its consequences on supporting knowledge and information for users. Therefore, our findings have a consistency with researches of literature review. On the other hand, the hypothesis H2 stated that smartphone contributes to improve the quality of e-service was also confirmed. To justify that decision, the researcher found that all dependents (Knowledge/ confidence/ quality/ easy use/ availability of information) variables and independent variable e-services have a positive correlation and global significance with p-value less than 0.000.The result prove that exist a strongly relationship between e-services and smartphones to improve effectiveness of IT. Therefore, our findings have a consistency with other researches of literature review.

Conclusions and Recommendations

This study contained two hypothesis, based in the analyses H1 argued that, smartphone has a positive impact on providing good quality of information to its user was accepted. Likewise, hypothesis H2 stated that, smartphone contributes to improve the quality of e-service was also confirmed. Researcher found that all dependents variables (Knowledge/ confidence/ quality/ easy use/ availability of information) and independents variables (smartphones/ eservices/ IT) have a positive correlation and global significance with p-value = 0.000. Researcher found that all dependents variables (Knowledge/ confidence/ quality/ easy use/ availability of information) variables and independent variable e-services have a positive correlation and global significance with p-value = 0.000. In term of demographic items, the study presented that, the majority of the sample which (contained 259 participants), were in the age of (18 to 30) years which is (55.6%), and (32.6%) were from (31 to40) years old. Furthermore, the level of education presented (59.9) have a high school degree and they are still resuming their education (28.2%) have a bachelor degree. Moreover There was (33%) have 4 years of job experience in different fields of specialties and (28.9) have more than 4 years of experience. Moreover, there was (79.2%) students and 20.8% are employees.

The study shows that (40.2%) agreed and (36.3%) strongly agreed that the smartphone helped them at work and learning purposes. Also (46.7%) agreed and (35.5) strongly agreed that the smartphone facilitate the education. Correspondingly, (33.6%) agreed and (23.9%) were neutral about the way smartphone provide information. The study presented that (44.4%) agreed and 22.0%stroongly agreed that they use smartphone skillfully. Also (30.9%) agreed and (22.8%) disagreed that the smartphone provide information in lesser cost. Likewise, (38.6%) strongly agreed and (52.7%) agreed that the smartphone save time in searching for information. In addition, the analyses indicated that (45.6%) agreed and (26.6%) strongly agreed that the smartphone played important role in increasing of cognitive experience of its users. Furthermore, (46.7%) agreed and (25%) strongly agreed that the smartphone made terminology ad mysteries terms easy to understand. It is notable from the study that (40.5%) agreed and (31. 3%) strongly agreed that smartphone assisted on improving cognitive skills. Similarly, (37. 8%) agreed and 23.8% disagreed on smartphone capability of organizing ideas. Likewise (44.0%) agreed and (22.8%) were neutral about their quality of knowledge before and after having smartphone. The analyses indicated that (59.9%) agreed and (19.3%) strongly agreed that the smartphone played important role in providing new knowledge to them. (48.3%) agreed and (22.4%) strongly agreed about smartphone provided information in interesting way. (46.3%) agreed and (23.2%) were neutral about the possibility of correcting the afford information. Item stated that smartphone displayed information in a several form, shape and style, (48.6%) agreed and (27.0%) strongly agreed on that. In addition. The study exposed that (23.9%) disagreed and 23.9% were neutral when it comes to the flexibility of smartphone and its applications. Item stated that I use smartphone for entertainment not for scientific uses, (31.3%) disagreed and (25.1%) was neutral. (45.6%) agreed and (30.1%) strongly agreed about smartphone can be updated for new applications. About the affordability of smartphone prices 45.2% disagreed and 30.9% strongly disagreed. (43.2%) agreed and 23.9% strongly

agree about smartphone shape, design, and weight. (34.6%) agreed and (42.1%) strongly agreed that they use smartphone to accomplish homework and job task. Here the study demonstrated that (43.2%) strongly agreed and (42.1%) agreed that they help each other in completion transaction and how to use smartphones if the asked to do that. Finally (51.4%) strongly disagreed and (36.7%) disagreed about dispensable voluntarily their smartphone without effecting the level of their knowledge.

This study is limited to its sample and all results and recommendations are limited to the research sample. Thus, many people will benefit from this study, specially smartphone companies, communication firms, computer programmers, researchers and smartphone users.

Based on this the study a few recommendations made hereunder. It is clear that there is substantial awareness among the sample of the study about the smartphone role in providing good information and strongly relationship between e-services and smartphones to improve effectiveness. Therefore, the researcher is recommending that the smartphone providers should take in considerations the important of consumer's feedback when they decide to introduce new products to the market in order to achieve efficiency and gain competitive advantages, also to satisfy the smartphone user. In addition. The study exposed that (23.9%) of them disagreed and 23.9% were neutral when it comes to the flexibility of smartphone and its applications. Therefore, the researcher recommend that the smartphone providers improve the applications flexibility and creating new applications accessible. The study exposed that, 45.2% of the respondents disagreed and 30.9% strongly disagreed when it comes to smartphones affordability and smartphone prices the majority of the sample showed strong dissatisfaction about that item, therefore, it is highly recommended to review the policy of pricing by the smartphones providers and make it affordable in a reasonable prices to all users.

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Elias G. Carayannis & Stephen C. Clark &Dora E. Valvi Received: 13 January 2012 / Accepted: 19 January 2012 Published online: 18 February 2012# Springer Science + Business Media, LLC 2012.

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Zvjezdana Dukic and Dickson K.W. Chiu (2015) www.emeraldinsight.com/0737-8831.