



Factors Affecting Libyan Citizens Satisfaction with E-Government Services

*Omar Bin Musa^a, Fauzia Abuwdn^b, Iznora Aini Binti Zolkify^c, Abdullah Almasri^d, ^{a,b,c,d}Faculty of Business and Technology, UNITAR International University, Malaysia,

*Corresponding Author Email: omarm@unitar.my

E-government services have become the main interface between governments and their citizens. To ensure that citizens are satisfied with these services is priority government currently, as technology introduces a new feature every day in this digital world. This research paper will examine relevant factors of citizen Adoption and Use of and Satisfaction with E-Government among Libyan citizens.

Key words: *Satisfaction, Libyan citizens, E-government, E-government services.*

Introduction

Technology has played a significant role in our life since the late 1990's and enabling everything to be done quickly without any hard effort. One types of technology is a website, almost everyone in the world has gone through a website or some type of electronic services to perform a tasks or to find information. Customers are rapidly adopting online shopping services daily due to the availability of technology indicating consumers seem to be satisfied with purchasing online. The number of online shoppers is increasing every day. (Momotaz & Hasan, 2018) mention that the number of people in the world who purchase things online in 2016 is 1.61 billion. In turn governments around the world take advantage of the rapid development of technology, (Edmiston, 2003) since citizens of public services will expect similar level of services from government. They tend to improve public services to meet user demands and to meet the same level of service as in online shopping services in order to gain citizens satisfaction, (Athmay, Fantazy, & Kumar, 2016) and they have begun to provide transactions and information online, commonly known worldwide as "E-Government".



Background

E-government stands for electronic government; the online services provided by the government to citizens and other public institutions (Busoud & Živković, 2016). These services can be made available at any time instead of long waits to renew passport, birth registration or any tasks that government generally provides to citizens (InfoDev CDT, 2002). E-government has been defined also by the World Bank (Wilkinson, n.d.) as “the implementation of Information and Communication Technologies (ICT) in government work to achieve the easiest way of serving citizens and other sectors and supports the operation of government”. The concept of E-government services is not new in many countries, and its early use has utilized the benefits of information and communication technology in government. However, in some countries (Palvia & Sharma, 2007) including Libya, the sophistication of e-government services can be considered in an early stage.

(Ma & Zheng, 2017) state that e-government when compared to previous channels of service, is considerably more advantageous, appropriate, and helpful. Citizens, Organizations, and other customers of e-government have benefited to a great degree from these online services. From the citizen’s point of view, their online interactions will naturally leave them with either a good or bad feeling about the experience and an opinion about the e-government websites. Users will continuously use them whenever they need any government services, when they are satisfied with the services they provide while others may never think of using them. Dissatisfaction may be due to the lack of security and privacy or it might be because of the difficulty to use a website or not enough information was provided. Understanding the factors that make e-government websites useful and favorable or how people can be satisfied with their online interactions deserves critical attention since these sites are turning into the face of government institutions.

Only in the last few years when Internet services started to spread over Libya, did government private business initiate and implement websites for public and private purposes. After the 2011 revolution in Libya, many plans were proposed by the ministry of communication and informatics to implement E-services between government and citizens. One of these plans is the E-government service which will serve citizens electronically anywhere at any time through advanced technology (UNPAN 2013). Some of those plans had been implemented to serve citizens; hence, the government needs to ensure that citizens are getting what they are looking for and are satisfied with those services. Therefore, in this study we will investigate the factors that might affect citizen satisfaction with E-government services. The result may be useful for the government to provide better electronic services to citizens.

Literature Review

Several studies have attempted to identify and examine the factors that affect citizen satisfaction with E-government worldwide; yet, there are challenges that no one study can investigate when it comes to a relationship between governments and citizens. In this relationship, many elements exist: culture, availability of the internet and population to name a few, that differ from one country to another. Moreover, national technological advances will impact in a country dependent upon the new or different components themselves and how they are related to online services and, particularly the rate of adoption which differs significantly between one country and another. Hence, the factors cannot be generalized globally.

Satisfaction has been defined in the Cambridge dictionary as “a pleasant feeling that you get when you receive something you wanted, or when you have done something you wanted to do”. Satisfaction is crucial for strengthening long-term relationships between citizens and E-government. (Momotaz & Hasan, 2018) state Satisfaction is a critical element in determining the success of E-government services. User satisfaction is the total of emotions and behaviors with regards to recognizable factors which affect user satisfaction in a positive or negative way (Montesdioca & Macada, 2015).

E-government services must be easy to use to meet the ability for both who have experience and who have not, to be able to use the services without any real effort (AlAwadhi & Morris, 2009) . Carter & Bélanger (2005) state that Information provided in online services must be arranged in simple and easy structures based on their priority and citizens’ needs, so that citizens can effortlessly access whatever they are looking for. Further they state that if the information are not easy to locate and citizens lose the ability to complete a transaction, this will decrease adoption and the satisfaction with E-government services. Rahim & Alharbi, (2014) found that ease of use highly affects user satisfaction

AlAwadhi & Morris, (2009) in their study stated that more than half of their research participants said they had trust in online services since they believed the advanced security applied in web pages is capable of protecting the transactions from being fraudulent and from hacking. 30% of those involved in the same study believe security and privacy issues were the probable elements that prevents them from trusting and consequently using E-government services because in their perception, if the E-government services are not secure enough ,their personal information might be in danger. Welch, Hinnant, & Moon, (2004) found that there is a positive relationship between trust and citizen satisfaction in government.

Security and privacy ilends assurance that E-government websites provide secure services without any doubts or adverse consequences after using these services (Alawneh, Al-Refai, & Batiha, 2013).This factor is common among those who need to perform any online transaction.

They might keep wondering whether the information they upload is secure or not and moreover, whether this information can be improperly used for illegal purposes. There is a negative relationship between security and privacy and satisfaction (Mastoi & Gul, 2016; Rahim & Alharbi, 2014 & Alawneh et al., 2013).

Accessibility is also one of the dimensions for measuring user satisfaction in ACSI (American Customer Service Index) model (Sheibani, 2012; Mabika, 2016). It refers to the ability to search and navigation through a website freely. Also, the degree to which a service can reach as many citizens as possible and whether it fits any type of devices and can process transactions under any types of operating systems. Mastoi & Gul, (2016) examined the accessibility factor and found that there was a significant positive relationship between e- Satisfaction and citizens.

Information Quality can be defined as the nature of the information system content, and it is one of the attributes that measure user satisfaction. (Montesdioca & Macada, 2015) found that Information Quality was positively and significantly associated with User Satisfaction. In summary, many studies have examined satisfaction with E-government services using different factors (Table 1). There is no single country that has a perfect model of E-government services (Sheibani, 2012) since each country has different requirements and different objectives. Therefore, Libya specifically requires more studies to address the factors that make Libyan citizens satisfied with using specific E-government websites.

Table 1: Previous studies

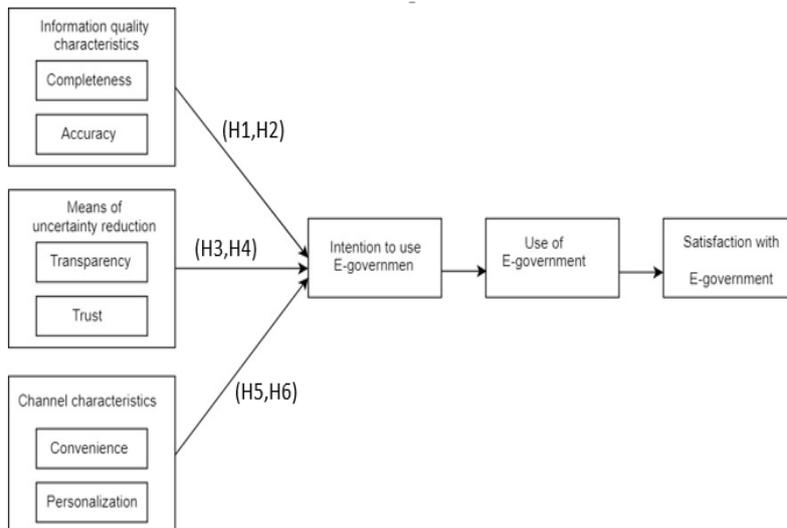
Literature sources	Description	Origin	Factors
(Mastoi & Gul, 2016)	Examine the factors that may affect citizens satisfaction towards E-government services.	Among Pakistani citizens	Accessibility, Security and Privacy
(Rahim & Alharbi, 2014)	Suggest a model that contain nine factors for evaluating user satisfaction.	Monash University Australia	Ease of use, Security and Privacy
(Alawneh et al., 2013)	Measuring the most affective factors with E-government services.	Philadelphia University, Amman, Jordan.	Accessibility, Trust, Security and Privacy
(Sheibani, 2012)	Investigating the relationship between proposed factors and a government website called E-value Added Tax.	Lulea University of Technology Iran	Accessibility
(Montesdioca & Macada, 2015)	Measure User Satisfaction	University Federal do Rio	Information Quality

		Grande do Sul (UFRGS)	
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Research Framework

As mentioned above each study sourced for the literature review had used or developed different models to examine the factors that affect user satisfaction with E-government services. For this research, the “Model of Citizens’ Adoption and Use of E-Government” which had been developed and examined by Venkatesh, Thong, Chan, & Hu, (2016) will be adopted (Fig. 1). This model is the most appropriate information system model to use for E-government services research since it has been developed specifically for E-government services.

Figure 1. Research Mode



The original model consists of six independent variables grouped into Three categories (**Information quality characteristics** (Accuracy and completeness), **Means of uncertainty reduction** (Transparency and Trust), and **Channel characteristics** (Convenience and personalization). These factors will be used to determine the intention to use E-government, use of E-government, and Satisfaction with E-government for Libyan citizens.

Information quality characteristics

Accuracy

Accuracy is one of the key measurements of Information Quality (Wangpipatwong, Chutimaskul, & Papisratorn, 2009; Wixom & Todd, 2005) and is defined in the e-government context as to what extent the information provided by E-government is correct and accurate (Venkatesh et al., 2016). As E-government services reduce the traditional way of getting

services from government, the information that citizens obtain must be accurate. After the E-government services are implemented, they become the primary source of information citizens will be looking for. For example, when citizens need to renew or apply for any official documents, they go through the government platforms to source the requirements and how the process flows to obtain what they need. Citizens who are sure that the information is accurate will feel that the information can be relied on. The hypothesis here is:

H1. Accuracy is positively related to e-government intention, use and satisfaction with use.

Completeness

Completeness is one of the Information Quality characteristics (Wangpipatwong, Chutimaskul, & Papasratorn, 2005)(Wixom & Todd, 2005).Completeness in E-government context implies all necessary information can be provided to fulfill citizen needs when they visit a website to explore any changes in regulation or tax policies or new rules that government implemented. Citizens are convinced that they will find the complete information about the changes. If the government services could not provide complete information the citizens will be confused and misguided. That is why Completeness is an important characteristics of information quality and can influence citizens adoption, use, and satisfaction with E-government services, Thus the hypothesis is:

H2. Completeness is positively related to intention to use e-government.

Channel characteristics

Convenience

When citizens use government websites to access government information and services, they expect that the whole procedure will be done with minimum time and effort. E-government promotes self-benefits through conveniently available self-administration advances that associate citizens and government offices each moment of the day, with no geographical limitations (Gilbert, Balestrini, & Littleboy, 2004). Convenience is a significant driver of e-government use on account of its capacity to positively impact time and opportunity costs (Layne & Lee, 2001). Thus, the hypothesis is:

H3. Convenience is positively related to intention to use e-government.

Personalization

Venkatesh et al., 2016; Lyston, (2018) defined personalization in e-government as the degree to which citizens can modify information online to accommodate their particular needs or priority. Personalization is a powerful feature, enabling users to indicate the data they need and conceivably, the reverse arrangement where they need the data, as opposed to being overloaded with data by receiving immaterial data (spam), or both. Customized e-taxpayer supported organizations can use the profile of a resident and give her appropriate data—e.g., alerting those citizens who have not made good on their regulatory obligations when the due date is drawing nearer, sending reminder emails about a rezoning hearing to the individuals who are probably going to be influenced, and holding all assessment data for the client to acquire a duplicate online without visiting an administration office. Thus, the hypothesis is as follows:

H4. Personalization is positively related to intention to use e-government.

Means of uncertainty reduction

Transparency

Transparency is one of the important factors that influence satisfaction with E-government services. In the E-government context Transparency is defined as the degree to which a citizen can get reasonable comprehension of the working of a specific government procedure or service (E. W. Welch, 2004; Hye, Lau & Tourres 2014) . The utilization of the Internet to get to services has influenced citizens to be more "client like" and diminish their cooperation with community workers. Citizen collaborations with e-government lessen the direct interaction between residents and the legislature and serves to increase the significance of transparency. Transparency appears to impact citizen perspectives on government functioning all in all. One explicit model features the significance of transparency which is determined as the degree to which citizens can look for data to decrease doubt about any services (Venkatesh et al., 2016). Thus, the hypothesis is as follows:

H5. Transparency is positively related to intention to use e-government.

Trust

AlAwadhi & Morris, (2009) mention that more than half of the participants in their research study said they had trusted in online services since they believed the advanced security applied in web pages is capable of protecting the transactions from being fraud and from hacking. 30% of those involved in the same study believe security and privacy issues were the elements that probably prevented them from trusting and consequently using an E-government service because they have the perception that if the E-government services are not secure enough ,their personal information might be in danger. There is a positive a relationship between trust and



citizen adoption, use, and satisfaction towards government (Eric W Welch et al., 2004; Bélanger & Carter, 2008; Afthanorhan et al., 2018) found that

H6. Trust is positively related to intention to use e-government.

Summary of main Hypotheses of the study

H1. Accuracy is positively related to intention, use and satisfaction with use e-government.

H2. Completeness is positively related to intention to use e-government.

H3. Convenience is positively related to intention to use e-government.

H4. Personalization is positively related to intention to use e-government.

H5. Transparency is positively related to intention to use e-government.

H6. Trust is positively related to intention to use e-government.

Research Methodology

According to Irani et al., (2012) the methodologies to utilize in an E-government study from a researcher of user satisfaction perspective are quantitative techniques and questioner research methods supported by statistical analysis. These were the most frequently used techniques and were preferred for collecting data from citizens over other alternative techniques such as interview methods and qualitative techniques or mixed methods for example combining interviews with surveys and/or focus groups. Thus, in this study the factors will be investigated using quantitative techniques utilizing the survey method. The researchers collected data by spreading the survey among Libyan citizens, since survey has been found to be the most appropriate technique in this research situation because surveys allow collection of a large amount of data from a massive population in an economical way (Irani et al., 2012). Also, because it is quite difficult for the researcher to interview the appropriate number of people to measure the factors.

Data Collection

Population

The Libyan population is 6,278,339, the male population is 3,162,136 and the female population is 3,116,203. The number of the population using the internet in Libya is 1,335,705 as per the last update in 2016 ("Libya Internet Users," n.d.).

Study Questionnaire

The questionnaire used in this study consisted of two sections. Section I consisted of 3 items that contain the respondent's demographic data. Section II consisted of 9 parts with 27 items to measure respondents across six factors including Accuracy with 3 items, completeness with 3 items, Transparency with 4 items, Trust with 3 items, Convenience with 3 items, personalization with 3 items, Intention to use E-government with 3 items. Then, the researchers measured the use of E-government with 2 items and Satisfaction with E-government with 3 items. All the items in section II were rated on 10-point Likert scale: 1= Strongly disagree and 10: =Strongly agree. The 10-point Likert scale adopted in this study as it has been proven it is more efficient and accurate than 5-point Likert scale (Zainudin Awang, Asyraf Afthanorhan, & Mustafa Mamat, 2016).

Analysis and Results

Demographic Profile of Respondents

The demographic data of 248 respondents which includes information of their Gender, Age, and Education Level were obtained using descriptive analysis. The following tables presents the percentage and frequencies of each item.

Table 1:

	Age		Cumulative Percent
	Frequency	Percent	
16-18	4	1.6	1.6
19-24	43	17.3	19.0
25-35	118	47.6	66.5
36-49	62	25.0	91.5
more than 50	21	8.5	100.0
Total	248	100.0	

Table 2:

EducationLevel

	Frequency	Percent	Cumulative Percent
secondary school	7	2.8	2.8
undergraduate degree	63	25.4	28.2
Graduate degree	77	31.0	59.3
Postgraduate degree	101	40.7	100.0
Total	248	100.0	

Table 3

Gender

	Frequency	Percent	Cumulative Percent
Female	98	39.5	39.5
Male	150	60.5	100.0
Total	248	100.0	

Reliability

Reliability analysis measures the overall consistency of the factors that are used in the questionnaires. Cronbach's alpha coefficient was selected to estimate the internal consistency of all independent factors and dependent factors. Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the underlying construct. Alpha coefficient ranges in value from 0 to 1; higher value indicate a higher internal consistency. The value of 0.70 is the minimum acceptable value. The Cronbach's Alpha value for the independent factors and the dependent factors are well above 0.7 which indicates that there is good internal consistency.

Table 4

Factor	Cronbach Alpha
Completeness – Independent Variable	0.917
Accuracy - Independent Variable	0.849
Trust - Independent Variable	0.891
Personalization - Independent Variable	0.929

Transparency - Independent Variable	0.938
Trust - Independent Variable	0.891
Intention - Dependent Variable	0.938
Satisfaction - Dependent Variable	0.858
E-government use - Dependent Variable	0.736

Normality Analysis

Normality analysis was performed to assess the normality of data used in the study to ensure the distribution of scores on the dependent variable is normally distributed. Normality can be assessed to the extent by obtaining skewness. Results shows that the data were normally distributed. The observed value falls in a single straight line, therefore the data is normally distributed. Therefore, the variable of Satisfaction is found to be normally distributed.

The Boxplot also shows that the distribution of score is positively skewed and doesn't show any outliers, allowing us to conclude that the distribution is approximately normally distributed.

Pearson Correlation Analysis

A correlation test determines whether two factors are correlated or not. This means to study whether an increase or decrease in one factor corresponds to an increase or decrease in the other factor. The correlation value can be positive or negative, the positive correlation indicates that as one factor increases, so does the other factor, the negative correlation indicates that if one factor increases the other factor will decrease. A Pearson correlation test was carried out to measure the inter correlation among the factors. The correlation coefficient will always be between +1 and -1. A Significance level of less than 0.05 are considered to be statistically significant. Table 5 presents the relationship between factors. All the factors show positive correlation with each other and the relationship is significant as indicated by (p-value < 0.05).

Table 5:

Correlations

		comp	Accu	conven	Trust	persona	Inten	Transp	Satisfa	EGOVuse
comp	Pearson Correlation	1	.839**	.830**	.749**	.734**	.655**	.686**	.644**	.630**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
Accu	Pearson Correlation	.839**	1	.835**	.812**	.768**	.740**	.730**	.718**	.702**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
conven	Pearson Correlation	.830**	.835**	1	.846**	.825**	.773**	.757**	.660**	.634**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
Trust	Pearson Correlation	.749**	.812**	.846**	1	.890**	.837**	.861**	.805**	.783**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
persona	Pearson Correlation	.734**	.768**	.825**	.890**	1	.848**	.880**	.808**	.768**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
Inten	Pearson Correlation	.655**	.740**	.773**	.837**	.848**	1	.876**	.812**	.777**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000
	N	248	248	248	248	248	248	248	248	248
Transp	Pearson Correlation	.686**	.730**	.757**	.861**	.880**	.876**	1	.843**	.807**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000
	N	248	248	248	248	248	248	248	248	248
Satisfa	Pearson Correlation	.644**	.718**	.660**	.805**	.808**	.812**	.843**	1	.976**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000
	N	248	248	248	248	248	248	248	248	248
EGOVuse	Pearson Correlation	.630**	.702**	.634**	.783**	.768**	.777**	.807**	.976**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	
	N	248	248	248	248	248	248	248	248	248

** . Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

As mentioned above all factors have significant relation with intention to use E-government services and satisfaction. Hence, a standard multiple regression was performed between respondents' intention to use E-government systems as a dependent variable and six factors that may influence the behaviour intention to use an E-government system. These are **Information Quality Characteristics (Completeness, Accuracy) Means of uncertainty Reduction (Transparency, Trust) Channel characteristics (Convenience, Personalisation)** to access how all the factors are significant towards the intention to use E-government and the use of E-government and satisfaction.

Independent factors towards intention to use E-government services

Table 6: Model Summary for independent factors towards intention to use E-government

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.902 ^a	.813	.809	2.94180

a. Predictors: (Constant), Transp, comp, Accu, conven, persona, Trust

In the model summary at table 6, Six independent factors had explained that 81% on the variance of the intention to use E-government by R square value of 0.813.

Table 7: ANOVA for independent factors towards intention to use E-government

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9092.170	6	1515.362	175.101	.000 ^b
	Residual	2085.665	241	8.654		
	Total	11177.835	247			

a. Dependent Variable: Inten

b. Predictors: (Constant), Transp, comp, Accu, conven, persona, Trust

In the ANOVA analysis as shown in table 7 above, it indicates that the F statistic has a value of 175.101 at significance value of .000.

Table 8: Coefficients for independent factors towards intention to use E-government

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	1.185	.626		1.893	.000	.048	2.418
	comp	-.158	.056	-.161	-2.835	.005	-.268	-.048
	Accu	.149	.063	.144	2.372	.018	.025	.273
	conven	.161	.063	.167	2.543	.012	.036	.286
	Trust	.100	.075	.098	1.326	.186	-.048	.247
	persona	.178	.071	.183	2.500	.013	.038	.318
	Transp	.384	.047	.509	8.087	.000	.290	.477

a. Dependent Variable: Inten

The coefficient analysis as shown in table 8 above shows transparency factor contributes the most to Intention to use E-government indicated by the (B value =0.384) followed by Personalization (B value= 0.178) , Convenience (B value= 0.161) , Accuracy (B value= 0.149) Completeness (B value= 0.158) and Trust (B value= 0.100). The result shows there is a significant relationship between Transparency and Intention to use E-government due to P value = .000 which is less than .05, therefore reject H_{null} and accept $H_{alternative}$.

Personalization shows a significant relationship towards Intention to use E-government due to P value = .013 which is less than .05, therefore reject H_{null} and accept $H_{alternative}$.

Convenience ,Completeness, and Accuracy shows a significant relationship towards Intention to use E-government due to P value = .012, P value = .005, P value = .018 respectively, therefore reject H_{null} and accept $H_{alternative}$.

The results also shows no significant relationship between Trust and Intention to use E-government due to P value = .186 which is higher than .05, therefore accept H_{null} and reject $H_{alternative}$

Intention to use E-government system and Use of E-government system

Table 9 : Model Summary for Intention to use of E-government

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.777 ^a	.604	.602	2.72255

a. Predictors: (Constant), Inten

In the model summary at table 9, Intention had explained that 60% on the variance of the intention to use E-government by R square value of 0.604.

Table 10: ANOVA analysis for Intention towards use of E-government

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2777.121	1	2777.121	374.664	.000 ^b
	Residual	1823.424	246	7.412		
	Total	4600.544	247			

a. Dependent Variable: EGOVuse

b. Predictors: (Constant), Inten

In the ANOVA analysis as shown in table 10 above, it indicates that the F statistic has a value of 374.664 at significance value of .000.

Table 11: Coefficients for Intention towards use of E-government

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.169	.521		6.087	.000	2.143	4.194
	Inten	.498	.026	.777	19.356	.000	.448	.549

a. Dependent Variable: EGOVuse

The coefficient analysis as shown in table 11 above shows Intention to use E-government (B value =0.498) and Sig (P value=.000). It shows there is significant relationship between Intention to use E-government towards use of -government, therefore reject H_{null} and accept $H_{alternative}$

The use of E-government system towards Satisfaction

Table 12: Model Summary for EGOVuse towards Satisfaction with E-government

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.976 ^a	.952	.952	1.38397

a. Predictors: (Constant), EGOVuse

In the model summary at table 12, use of E-government had explained that 95% on the variance of the Satisfaction with E-government by R square value of 0.976.

Table 13: ANOVA analysis for EGOVuse towards Satisfaction with E-government

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9440.363	1	9440.363	4928.742	.000 ^b
	Residual	471.181	246	1.915		
	Total	9911.544	247			

a. Dependent Variable: Satisfac

b. Predictors: (Constant), EGOVuse

In the ANOVA analysis as shown in table 13 above, it indicates that the F statistic has a value of 4928.742 at significance value of .000.

Table 14: Coefficients for EGOVuse towards Satisfaction with E-government

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	.922	.273		3.377	.001	.384	1.460
	EGOVuse	1.432	.020	.976	70.205	.000	1.392	1.473

a. Dependent Variable: Satisfac

The coefficient analysis as shown in table 14 above represent use of E-government (B value =1.432) and Sig(P value=.000). It shows there is significant relationship between use of E-government towards Satisfaction with E-government, therefore reject H_{null} and accept $H_{alternative}$.

Independent factors towards Satisfaction with E-government

Table 15: Model Summary for Independent factors towards Satisfaction with E-government

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.874 ^a	.764	.758	3.11349

a. Predictors: (Constant), Transp, comp, Accu, conven, persona, Trust

In the model summary at table 15, Six independent factors explained 76% on the variance of the Satisfaction with E-government by R square value of 0.764.

Table 16: ANOVA analysis for Independent factors towards Satisfaction with E-government

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7575.329	6	1262.555	130.243	.000 ^b
	Residual	2336.215	241	9.694		
	Total	9911.544	247			

a. Dependent Variable: Satisfa

b. Predictors: (Constant), Transp, comp, Accu, conven, persona, Trust

In the ANOVA analysis as shown in table 16 above, it indicates that the F statistic has a value of 130.243 at significance value of .000.

Table 17: Coefficients for Independent factors towards Satisfaction with E-government

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.697	.662		4.071	.000
	comp	.034	.059	.037	.576	.565
	Accu	.223	.067	.229	3.354	.001
	conven	-.293	.067	-.323	-4.367	.000
	Trust	.236	.079	.248	2.967	.003
	persona	.206	.075	.224	2.733	.007
	Transp	.344	.050	.485	6.857	.000

a. Dependent Variable: Satisfa

The coefficient analysis as shown in table 17 above shows Transparency factor contribute the highest to Satisfaction with E-government indicated by the (B value =0.344) followed by Convenience (B value= 0.293) Trust (B value= 0.236) Accuracy (B value= 0.223) and Completeness (B value= 0.034) .

It shows there is a significant relationship between Transparency towards Satisfaction with E-government due to P value = .000 which is less than .05, therefore reject H_{null} and accept $H_{alternative}$.

Personalization shows a significant relationship towards Satisfaction with E-government due to P value = .007 which is less than .05, therefore reject H_{null} and accept $H_{alternative}$.

Convenience ,Trust , and Accuracy also show a significant relationship towards intention to use E-government due to P value = .000, P value = .003, P value = .001 respectively, therefore reject H_{null} and accept $H_{alternative}$.

However, there is no significant relationship between Completeness towards Satisfaction with E-government due to P value = .565 which is higher than .05, therefore accept H_{null} and reject $H_{alternative}$

In Table 18 below, the Summary of Regression Analysis and Hypotheses Results are presented.

Table 18: Summary of Regression Analysis and Hypotheses Result

Summary of Regression Analysis and Hypotheses Result						
Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig	Hypotheses Result
	B	Std	Beta			

		Error				
(constant)	1.185	.626		1.893	.000	
Accuracy	.149	.063	.144	2.372	.018	Accept H1
completeness	-.158	.056	-.161	-	.005	Accept H2
convenience	.161	.063	.167	2.835	.012	Accept H3
personalization	.178	.071	.183	2.543	.013	Accept H4
Transparency	.384	.047	.509	2.500	.000	Accept H5
Trust	.100	.075	.098	8.087	.000	Reject H6
				1.326	.186	

In Table 19 below the Summary of Regression Analysis to Examining the relationship between intention to use and EGOV use are presented .

Table 19: Summary of Examining the relationship between intention to use and EGOV use

Summary of Examining the relationship between intention to use and EGOV use						
Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig	Relationship
	B	Std Error	Beta			
(constant)	3.169	.521		6.087	.000	Significant
Intention	.498	.026	.777	.777	.000	

In the following the Summary of Regression Analysis to Examining the relationship between EGOV use and satisfaction.

Table 20: Summary of Examining the relationship between EGOV use and satisfaction

Summary of Examining the relationship between EGOV use and satisfaction						
Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig	Relationship
	B	Std Error	Beta			

(constant)	.922	.273		3.377	.001	Significant
EGOVuse	1.432	.020	.976	70.205	.000	

Discussion

The results of this study indicate that all the factors examined in this study, Information Quality, Means of Uncertainty reduction (excepting Trust) and Channel Characteristics were found to have positive, significant influence on the intention to use E-government services, thus supporting hypotheses H1-H5. The next step which was investigating the relationship between Intention, Use and citizens' satisfaction found results which show that Intention to use E-government services was positively related to Use of E-government (B value =0.498) and Sig (P value=.000) and Citizens' satisfaction (B value =1.432) and Sig (P value=.000).

Furthermore, the effect of Information Quality Characteristics (Accuracy, Completeness), Mean of uncertainty reduction (Transparency, Trust) and Channel Characteristics (Convenience, Personalization) towards citizens' satisfaction were examined. The result was that the factors except completeness positively influenced citizen satisfaction. This answered the question: "Is there a relationship between (Information quality characteristics (Accuracy and completeness), Means of uncertainty reduction (Transparency and Trust), Channel characteristics (Convenience and personalization) and Libyan citizen satisfaction?"

As mentioned earlier, each country has its own factors that influence citizens' satisfaction and the result of this study proved this. The original model adopted in this study was used before among Hong Kong citizens and it was found that all the factors (except Personalization) positively influenced Intention, Use and Satisfaction with E-government (Venkatesh et al., 2016).

The most important factors were Means of Uncertainty Reduction (Transparency and Trust with B=.344, B=.236 respectively) which answered the question:

"Are the most important factors (Information quality characteristics (Accuracy and completeness), Means of uncertainty reduction (Transparency and Trust), Channel characteristics (Convenience and personalization) that affect citizens' intention, use and satisfaction to use E-government services in Libya?"

Suggestions for Future Research

This research only focused on user perception in using E-government websites in general without focusing on specific websites. The research could be extended by focusing on specific websites and performing a comparison between these websites in terms of satisfaction with E-



government websites. Also, the population could be segmented by geographical location to study any difference in results due to different levels of the availability and capability of the existing internet infrastructure.

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