

FACTORS INFLUENCING THE INTENTION TO USE E-GOVERNMENT SERVICES IN ALGERIA: AN EMPIRICAL STUDY

**FAROUK DJERMANI¹, ARFAN SHAHZAD², ADNAN AHMED
SHEIKH³, JAMAL MOHAMMED ESMAIL ALEKAM⁴**

ABSTRACT. The purpose of this paper is to investigate about behavioral intention of an Algerian citizen to use e-government services and also to see certain factors effecting to use these services. The research model includes; subjective norms and behavioral intention to use e-government services have been developed based on the technology acceptance model (TAM), which is supported by the theory of reasoned action (TRA) and theory of planned behavior (TPB). The overall framework has been applied to understand the intention to use e-government services in the context of Algeria. Furthermore, there are two independent variables family and media, which influence through mediation i.e. subjective norm on the dependent variable of intention to use e-government services. The study used 300 questionnaires, which was sent to Algerian students, 100 respondents have replied, which is about 33% response. However, the findings of this research analysis have shown that, family influence has a direct, positive and significant relationship towards intention to use e-government services, whereas media influence is significant towards intention to use e-government services with the mediation of subjective norm. Consequently, subjective norm mediates positively in the relationship between family influence and intention to use e-government. Thus, the

¹ *Othman Yeop Abdullah, Graduate School of Business, University Utara Malaysia (UUM),
frie.sein@gmail.com*

² *Othman Yeop Abdullah, Graduate School of Business, University Utara Malaysia (UUM),
arfan@uum.edu.my*

³ *Othman Yeop Abdullah, Graduate School of Business, University Utara Malaysia (UUM),
adnanucp@gmail.com*

⁴ *College of Business, School of Business Management, University Utara Malaysia (UUM),
jmal_mohammed2003@yahoo.com*

contribution made by this study is to provide further insight and a better understanding of citizens of Algeria to use e-government services. The study represents a guideline for establishing an appropriate model for e-government adoption of citizens' perspectives.

Keywords: e-government services, family influence, media influence, technology acceptance *model (TAM) and the theory of reasoned action (RAT)*

JEL classification: M15

Recommended citation: Djermani, F., Shahzad, A., Sheikh, A.A. (2016), *Factors influencing the intention to use E-government services in Algeria: An empirical study*, Studia UBB Negotia, vol. 61, issue 3 (September), 2016, pp. 35-68.

1. Introduction

In the last three decades, an influential research stream has emerged which highlights the dynamics of force of e-government services. E-governments are going-on line and using the Internet to provide public services to its citizens. Electronic government refers to government's use of technology, particularly web-based Internet applications to enhance the access to and delivery of government information and service to citizens, business partners, employees, other agencies, and government entities. It has the potential to help build better relationships between government and the public by making interaction with citizens smoother, easier, and more efficient. There are three main objectives for measuring e-government on the national level: Establishing a real political administration. Adopting a unified strategic plan common to all ministerial departments. Establishing organizational structures headed by the prime minister with the co-operation of all ministerial departments which have political influence (Alharbi & Hawryszkiewicz, 2015; Anastasopoulou & Kokolakis, 2013; E-government & Simplification, 2007).

Indeed, a government agencies report that, utilizing electronic trading will helps to enhance center business operations and communicate data to give rapid services in order to expand the group of customers. The

government has built up e-government and invested in billions to develop electronic-based exchange systems. This initiative allows governments by giving new channels of interaction with various government offices and business association prompting an expansion in government execution and proficiency. At Dubai seminar in 2007, the instrument and method of assessment, the national of advisory committee on e-government has a various specialists who submit reports and summaries the finished work on a quarterly, half year, and yearly basis. Additionally the committee then prepares and presents the national report containing official statistics on the utilization of ICT for administrative simplification. 50 - Algeria has presented a project, permitting every family to acquire its own PC and Internet access. Moreover, Algeria has worked on decreasing prices, encouraging and facilitating loans and instalments without forcing them to pay interest rates. - Furthermore, various projects have been built up permitting citizens to relate better to the judicial system and providing them with official report (the legal record, sentences, nationality etc.) in fast way. These projects were accepted by the citizens (Alharbi & Hawryszkiewicz, 2015; E-government & Simplification, 2007).

Moreover, it assists citizens by new sources of cooperation with several governmental departments. Based on the diversity of beneficiaries, e-government projects have been categorized into three main extents: government-to-citizen (G2C), government-to-government (G2G) and government-to-business (G2B) (Alsaghier & Ford, 2009). However, the primary issue needs to address is that, e-government success depends on citizens and their willingness to use these services, since they create the major sector of beneficiaries. Therefore, government has to ensure that, their projects are being utilized efficiently and effectively by citizens in order to gain the potential profits (Lean, Zailani, Ramayah, & Fernando, 2009). Moreover, the study focuses on the significance, by indicating the key components of e-government acceptance with respect to citizens' perspectives. However, the results of the study highlight some suggestions and rules for decision makers to have a clear understanding of the adoption development, especially in a distinctive context such as Algeria. It is also hoped that, the study reveals the reasons for failure to adopt the new services (Alruwaie, El-Haddadeh, & Weerakkody, 2012).

The current study is expected to assist government policy and decision makers to understand the relevant issues involved for identifying the challenges faced by citizens to establish e-government services in Algeria. Moreover, a seminar, which was held in Dubai on (12-13 March 2007) regarding Measuring and assessing E-Government services of Arab nations, with assessing its impacts to monitor the progress of e-government. Which needs to be introduced in Arab nations to have a clear understanding of “e-government success”. Therefore, to understand the effect of e-government in society – the common indicators need to be developed. That is why; a study has been established to find out common agreed indicators to measure the deployment of that system by reporting the results. However, the delegates intervening in this conference session has recognized the significance of implementing those systems, to measure ICT.

Additionally, Empowering change in government, to gain more political support, and justify investment decisions (Tunisia), evaluation of e-government progress being made in (Lebanon), shaping the direction of e-government projects to support a better government agenda in (Morocco), and establish a set of indicators which can mentor business investments in the region (E-government & Simplification, 2007).

In line with the previous discussion, evaluation would help to raise the return-on-investment to establish better culture and to enhance the efficiency between government organizations (Jordan, Syria). Empower Exchange of experiences and ideas plays a an important role in those nations which are still in early phase of e-government development so that they learn from other Arab and OECD countries avoid mistakes. Some pilot measurement and assessment projects are right now continuing in Arab countries, whereas few cases are more organized in their methodology, to measure and evaluate the e-government. Most of these Arab countries are along the measurement phase like (Algeria) and few efforts have taken place. Lack of a structured framework and methodologies for e-government establishment is also a key challenge. The poor data quality (lack of data standards, data dispersion) increases the cost of data collection for Arab countries and represent a barrier to e-government measurement (E-government & Simplification, 2007). Other than that, the experience of Algeria in e-government is too brief to discuss at this point of time. However, recent surveys have received positive significant results after analyzing citizen’s satisfaction with public service performance.

According to Organization for Economic Co-operation and Development (OECD) nations, share common objectives for experimenting and assessing e-government at the national, sectoral, ministry/agency and project levels.

These objectives are:

1.1 National level

To achieve public sector reform of the objectives the contribution of e-government should be evaluated. For re-alignment of initiatives with an over-arching plan if necessary, allowing and monitoring overall compliance of initiatives with national strategy. To strengthen the coordination of initiatives at the national level, a whole government approach to e-government should be ensured.

1.2 Project level

The risks of project implementation should be assessed and monitor the costs and benefits. The efficiency and effectiveness of implementing projects should be measured. Identifying good practices and promoting knowledge sharing among institutions. Data/information to decision makers should be provided. Justifying investments and determining resource to allocate for new projects. Therefore, the detailed table below summarizes main objectives for e-government highlighted.

The purpose of this survey is to identify the main factors that influence citizen adopt e-government services. Therefore, the researcher has organized the document to review relevant prior literature to examine the influence of social factor on subjective norm in order to evaluate the intention to use e-government services.

The key factors for adoption has been discussed by reviewing the most common, moreover the literature of IT has developed theoretical models in which is fit to experimental studies, tending the fundamental issues of trust in the adoption of technology and covering the literature on citizen adoption of e-government services. In addition to that, the methodology section will discuss; the design, procedure, and sample characteristics whose measures are presented and validated. Finally, the results are presented, and implications of the results are discussed in terms of adoption of e-government.

Table 1.

Main objectives of e-government in the following countries

<i>Countries</i>	<i>Assessment of objectives at the national or sectoral level</i>	<i>Assessment of objectives at the ministry/agency or project level</i>
<i>Algeria</i>	Strengthening the administration Administrative procedures should be simplified with reforming public sector Adopting a unified, common plan for all ministerial	
<i>Egypt</i>	Egypt's ranking has to be increased for the global economic competitiveness indicator And also measuring and supporting ICT use in the government administration Civil servants' performance should be improved with IT capacity. The effect of the technological readiness indicators on Egypt's economic should be measured with investment environment	To undertake reforms, the capacity of each public institution has to be monitored and assessed. Creating new opportunities for e-government projects Supporting government Institutions in planning projects and directing investments by presenting the development and improvement of work cycles through better use of technology Accurate information to decision makers for elaboration of accurate and efficient plans has to be provided
<i>Morocco</i>	The impact of adopted projects on the level of efficiency has to be measured and productivity of the administration e-government project implementation has to be followed up and evaluated	
<i>Tunisia</i>	To measure the extent to which e-government contribute to the achievement of development objectives	To assess the achievement of programmes/ project objectives

Source: OECD (2007), Country questionnaires

2. Literature Review

Although e-government is relatively a new domain and nowadays it becomes a universal issue. The literature demonstrates that there is several definitions for e-government. Different views about the concept reflect the various interests by governments, organizations and scientists. According to Carter and Belanger, they view three e-government figures that can be related to citizens, employees, government agencies and businesses (Alruwaie et al., 2012; Anastasopoulou & Kokolakis, 2013; Carter & Belanger, 2004):

“The use of information technology, especially telecommunications, to enable and improve the efficiency with which government services and information are provided to citizens, employees, businesses and government agencies”.

In addition, the use of information technology, and communication is an essential part in e-government. Others definition of e- government are expressed in a distinctive structured approach, for example, Leitold et al. (Leitold, Hollosi, & Posch, 2002) is defined E-government as:

“The interaction between state authorities and society with the help of information and communication technology (ICT) promises to improve the services for the citizen and at the same time tremendously reduces retention periods and costs, such as, by avoiding costly media transitions”.

The restriction of e-government is at only two basic features of interaction, which are state authorities and society. Furthermore, others highlighted the benefits that can be derived from the adoption of e-government, which will save the citizens' time and increasing the dynamic of economic, when operating from conventional to online services. Several studies have included the technology operation, especially web applications and accelerating the democratic process by application of e-government as it is defined By Fang (Fang, 2002b) who explains the circumstance as:

“A way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes”.

Fang, (2002b) explained that e-government has a different feature. Thus, he focuses on using web-based Internet applications to provide high quality services and giving access to new opportunities for the public in order to increase the participation of citizen with decision makers.

For the purposes of this research, the author adopts Fang, (2002a) definition, while it has the following characteristics. (1) Using information and communication technology present a broader view in the definition rather than only the Internet. (2) The e-government services has three major beneficiaries, as it is not a project only for citizens, employees or businesses but for all. (3) It develops the definition’s scope to include citizen’s participation in decision-making.

Consequently, G2C government emphasizes on how to provide advantages to the residential Citizens. The e-government services allow an access to its electronic forms by utilizing a friendly interface and from a one-stop point. According to Bose, (2004) who states that, direct operation of in an easy way to citizens can gain what they is required, in outstanding quality *form*, from one single contact point. At G2E, government support cooperation among employees and government agencies to enhance their working environment, which leads to a more productive workforce.

Meanwhile, Jaeger (2003) adds that G2G enhances government transitions and ensures that tasks are completed consistently. In addition, it speeds and facilitates networked information among different governmental departments. E-Government permits information to flow easily and smoothly, reducing employee time wastage and cost (Jaeger, 2003). Furthermore, by using G2B, however, for eliminating needless tasks that are not required from various government agencies, the government can enhance the business sector and increase the communication technology environment in term of the quality for better e-business. Moreover, some scholar like (McClure2001) has classified e-government into four dimensions: government-to-citizen

(G2C), government-to-employee (G2E), government-to-government (G2G) and government-to-business (G2B), (Doong & Wang, 2014; Hiller & Bélanger, 2001).

Several phases are required in order to establish e-government with full-coordinated services. Government can demonstrate different levels of cooperation with the public. Even though there are different stages mentioned by other scholars like Layne and Lee (2001) who has identified four distinct stages of e-government direction, which are different from the previous ones in some respects. However, this study will focus on some studies who points toward four stages, governments should assume in order to implement full-interactive online services. These phases are posting information, interaction, exchange and integration, which refer to Gartner's Groups, (Al-Adawi, Yousafzai, & Pallister, 2005; Rehman, Kamal, & Esichaikul, 2012).

In the stage of posting information, data are placed on websites by government offices, such as, contact information, regulations and announcements. The information in these sites can be accessed and viewed or downloaded by the public. At this level, the communication exists only in one direction from the government side. In the next stage, the interaction to the public provides the government applications to move forward towards using on-line services. However, this level has two dimensions of communication, that is, from the government side and the other one from the public. As well as, many opportunities are provided by these Web sites to individuals to the fill requests for information and to get responses to the requests later in emails or by letter (Hiller and Belanger, 2001; Qutaishat, 2013).

In the transaction stage, government provides services online through their websites. Communications is described in two significant directions, responses are done out in parallel with citizens' solicitations. Taxes and fees are paid, and forms are filled, these are examples of these transactions (Hiller and Belanger, 2001). In addition to this, the fourth stage is the integration in the Gartner Model. It permits to the public to access to different services and completing e-transactions from one stop point, no matter what the transactions are associated with different services or departments. Without concern for the beneficiaries of these services, all the transactions are integrated to different agencies. Moreover, Hiller

and Belanger (2001) claimed a participation in the fifth phase, where e-government offers a voting system. According to some authors, in order to propose a separate stage for participation, the information security and citizens' privacy should be protected. Lastly, it appears that there is a strong relationship between the degree of public interaction and these stages development of e-government. However, this interaction can be increased at high level and decreased until it dissipates at the base of the e-government model (Alateyah, Crowder, & Wills, 2014).

Table 2.

Summary of distinctive stages of E-government development

Stages	Objectives and examples	Level of Interaction	Reference
Posting information	Posting online information such as contacts information and announcements	No interaction	
	Providing a late response to participants when they submit a request such as email, or a filling form information request.	Simple interaction	Gartner Group's, Source: Al-Adawi et al. (2005)
Interaction	Availability of online services such as paying	Advance interaction	
Transaction	Fees, taxes and renew driver license.	Complete interaction between different government agencies and services.	
Integration	Providing services from one stop point.		
Participation	Offers a voting system to ensure high security and privacy	Interaction dedicated to democracy	Hiller and Belanger (2001)

Source: (Alateyah, Crowder, & Wills, 2014)

E-government services are provided using information and communication technologies. Consequently, theories on information technology adoption are relevant to understand the adoption of e-government. Generally, these theories take one of three possible approaches: a diffusion approach, an adoption approach or a domestication approach.

According to Davis, Bagozzi, & Warshaw, (1989) who proposed the TAM model which is one of the most well know models utilized among scientists to analyze peoples' attitudes towards technology in 1986, that is adapted from the Theory of Reasoned Action (TRA) as, it is see in (figure 1):

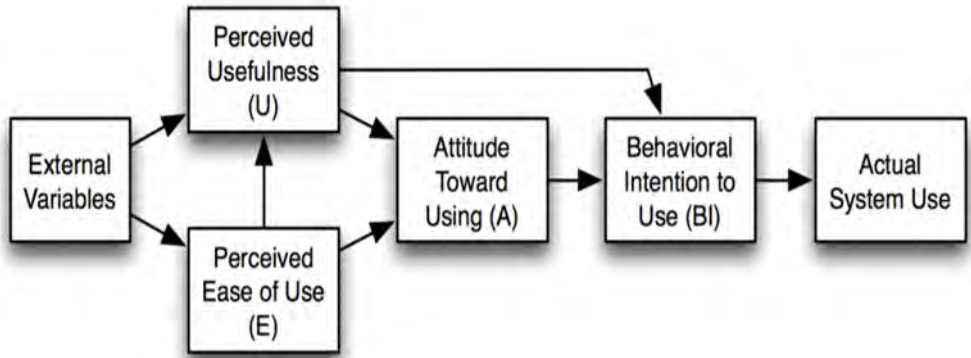


Figure 1. Theory Accepted Model

Source: The Technology Acceptance Model (Fred D. Davis, 2016).

TRA posits that the key prediction of actual behavior is shaped by behavioral intention, which is defined by subjective norm and attitude towards that behavior. Although, attitude is described as the degree to which an individual makes a positive or negative assessment about certain behavior and the subjective norm that denotes to the social impact to perform or not perform the behavior (Ajzen, 1991; Danila & Abdullah, 2014; Lawson-Body, Willoughby, Illia, & Lee, 2014).

Moreover, in the theory of planned behavior, according to study by George (2004) focusing internet purchases, subjective norm are based on an individual's normative structure, i.e. his or her beliefs about what important others think about the behavior in question. This factor directly influences his or her subjective norms or perceptions of the social pressure to comply with expectations about engaging in the behavior. Subjective norms should in turn influence the individual's proclivity to engage in the behavior. If social expectations are that people should

engage is the behavior in question, then the individual should be more likely to do so. Conversely, if social expectations are that people should not engage in the behavior, then the individual should be less likely to do so. In this case, if purchasing over the internet is seen as socially desirable behavior, based on what important others think about it, then the individual is more likely to make Internet purchases (George, 2004).

Additionally, the literature review shows that, numerous studies have inquired into technology adoption based on TAM, DOI/PCI and TPB/DTPB constructs in which few determinants: PEOU and PU of TAM model is outlined above in the figure 01. However, vigorous model of (Gefen, Karahanna, & Straub, 2003),viewed TAM in their studies, as a model of quality, which, has been tested and accepted in several experimental studies. As it is easier to apply with only twelve items so simplifying the data collection process.

The main purpose of this investigation, however, is to deepen our understanding of the determinants of electronic government services.

The main benefits of this study can be summarized as follows:

(1) Decomposed theory planned behavior (DTPB) captures the technology characteristics that are derived from the theory-accepted model (TAM) and diffusion of innovation (DOI) which present the attitude dimension. Hence, these theories' aspects are embedded theoretically in DTPB.

(2) In the context of Algerian families, the social dimension in DTPB is an essential unit in its society, similarly, the dynamic of social life is very strong, and older people are highly respected. Which means that, the factor of social dimension in the DTPB is important. Therefore, this will deepen and develop our understanding on the circumstance of intention to use e-government.

The research model of this study is supported by TPB, and focusing on the subjective norm, as it aims to evaluate the effect of the social influence and encourage the adoption of e-government services, which needs to validate its appropriateness for the adoption. Thus, it illustrates two direct hypothesis and three indirect hypotheses as follow:

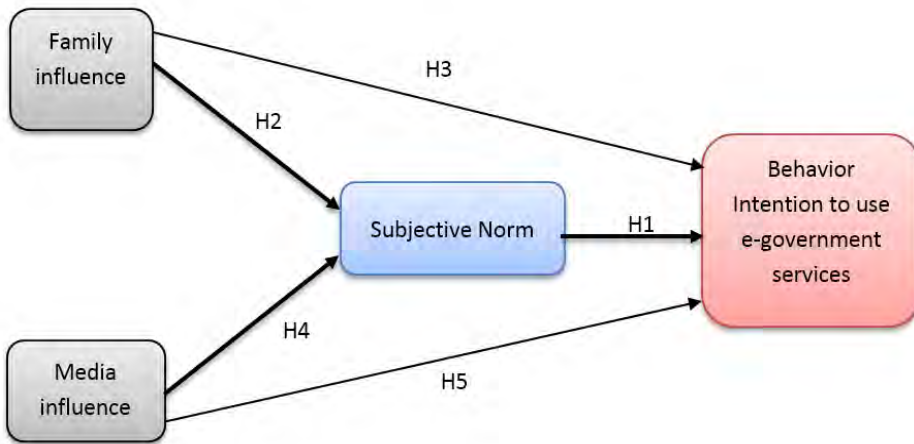


Figure 2. Research model with hypothesis

Source: conceptual framework

Subjective Norms Empirical evidence of the relationship between subjective norms and citizens' intention to use e-government services are found in many studies (Hung et al., 2006; Al Awadi and Morris, 2009). Lau (2004) studied the adoption of e-government services in Hong Kong and found that the opinions held by family members have a significant influence on an individual's use of e-government services. Individuals within the society would influence others to use e-services to increase acceptance (Loch et al., 2003). Hung et al. (2006) found that both peers/friends/colleagues and the media have significant effects on subjective norms. McGrath et al. (2011) claim that online social networking in e-participation allow the rapid mobilization of citizens and the transfer of immediate information.

Individual behavior in a collectivist culture, such as that of Algeria, is affected by social norms received from people who are considered important to the individual. For-example, some studies have shown that, Algerian culture is socially dynamic in the lives of its citizens and engenders strong relationships among family relatives. Therefore, family, and media influence is important referents of subjective norms and the intention to engage in e-participation. (Alharbi & Hawryszkiewicz, 2015). (Taylor & Todd,

1995) indicated that a significant effect on individuals to utilize a computing resource center is peers and superiors' influence. Also (Lee & Turban, 2001) declared there are two dimension of significant influences that affect consumers' decisions to shop online that are: the interpersonal influences, i.e. Friends, family and external influences.

Based on the literature, the following hypotheses have been developed to identify the relationship between these variables, as it was mentioned before two direct hypotheses (H3 and H5) the three indirect hypotheses (H2, H4 and mediating H1):

H1: subjective norm is related significantly and positively to behavior intention.

H2: Family influence has a significant and positive relationship upon the subjective norm.

H3: Family influence is related significantly and positively to behavior intention.

H4: Media influence has a significant and positive relationship upon the subjective norm.

H5: Media influence is related significantly and positively to behavior intention.

3. Methodology

According to Creswell's, (2014), who determined three available directions of research approaches, particularly, quantitative, qualitative and mixed. Moreover, Bryman (2004) identified that quantitative research has two dominant characteristics. First, is a deductive approach that is related to theory and research, which provides funding after testing the theory. Second, it demonstrates the practices of positivism and presumes an external perspective with real goals.

Subsequently, to test the model in the most practical way possible, the study was directed through a survey of a broad diversity of citizens at a community event. Items were adapted from past studies.

Subjective norm refers to the social influence to perform or not to perform the behavior (Ajzen, 1991; Danila & Abdullah, 2014; Lawson-Body et al., 2014). For this study, it refers to citizens' perceptions of the person's interest, or group to use e-government services. It suggests that an important influence on individual's behavior is through social pressure of those people who are considered important. Hence; the literature identifies a significant relationship between subjective norm and behavioral intention to use e-government.

3.1 Research Instrument

A questionnaire is utilizing a five-point scale was directed to gather data on Algerian citizen to investigate their intention to use e-government services for experimental analysis. Pavlou & Gefen, (2004) developed items based on the defined concept after determining each domain for each appropriate factor of the study. Then using validated items from past studies for operationalizing the chosen constructs. For instance, in the following table a list of adapted items for subject norm variables.

Table 3.

Subjective Norm variables with associated Items

Factor	Items	Adapted From
Behavior Intention (BI)	I intend to use e-government services. I would use the government services provided over the Internet. E-government services are something that I would do. I would not hesitate to use e-government services.	Belanger and Carter (2005).
Subjective Norm (SN)	People who influence my behavior think that I should use e- government services. People important to me think that I should use e-government services.	Bhattacharjee (2000), Lin (2007), and Taylor and Todd (1995a).

Factor	Items	Adapted From
	People whose opinions I value would prefer that I use e- government services. People who influence my decisions think that I should use e- government services.	
Family Influence (FINF)	My family thinks that I should use e-government services. My family thinks that using e-government services is a good idea My family influenced me to try out e-government services.	Bhattacharjee (2000), Lin (2007), and Taylor and Todd (1995a).
Media Influence (MINF)	I read/saw news reports that using e-government was a good way of doing government transactions. The popular press depicted a positive sentiment for using e- government services. Mass media reports influenced me to try out e-government services.	Bhattacharjee (2000) and Lin (2007).

Source: authors' compilation

3.2 Population

In this current study, main target population is a citizen of Algeria. The sample size is 300 emails send, and the total respondents is 100 were returned, this following a reminder mailing two weeks after the first with response rate 30 percent. The data were analyzed by using PLS.

To verify the significant influence of hypotheses, several research studies dealt with multiple regression analysis according (Hsieh, 2015; Wu & Chen, 2005). Consequently, the total effect on the dependent variable highlighted the feature of regression technique analysis. additionally, the R - square can calculate the percentage of variance in the dependent variable for explaining the effect on the outcome, as according to these

scholars (A. Field, 2013; A. Field, 2000) the R - square is the amount of the total sum of squares of all correlations between independent variables and a dependent variable. However, to provide the overall fit of the model PLS, covariance has the capability for generating a set of fit indices. In which it is specified for its ability to compare between the proposed model and the best possible fitting model. Thus, for testing theories according to Davcik (Davcik, 2014; Gefen, Straub, & Boudreau, 2000) the covariance statistical data analysis is more relevant for confirmatory research.

4. Findings

Contrary to prediction, results reveal that, subjective norm concluded to be not significant in order to use e-government services. In previous technology adoption studies, subjective norm was identified to be a significant for the behavioral intention factors (Ajzen, 1991; Danila & Abdullah, 2014; George, 2004; Lawson-Body et al., 2014; Lee & Kozar, 2005), Subjective norm reflects citizens' perceptions of the desire of people referent group to adopt e-government services.

According to the study's findings, two explanations have been highlighted that; first, most of the sample respondents declared that they were using the Internet for more than three years. Furthermore, the vast majority of them also mentioned that they have engaged largely in using e-government services in the past. Whereas, the participants declared that they have the knowledge and experience for using e-government services without influence from other important people (Ajzen, 1991; Danila & Abdullah, 2014; Lawson-Body et al., 2014; Venkatesh, Morris, Davis, & Davis, 2003; Ya-Yueh & Fang, 2004), who claimed that, When the usage of technology is not mandatory, subjective norm is determined to be not significant in slow environments, such as, in this investigation, which offers an alternative explanation.

Meanwhile, this implies that, the usage of technology is compulsory, which seems to be more dependent on others' opinions, such as, colleagues or managers. Overall, this study conducted in a voluntary setting the above hypothesis remained unsupported.

4.1. Descriptive analysis

The preceding section highlighted the framework and guidelines for the empirical work. It generated the research hypotheses and introduced the research model. The developed research instrument and the techniques that had been employed in the translation process were then presented.

4.2. Measurement Model Analysis

To settle the measurement model before proceeding to the structural model analysis, Confirmatory factor analysis (CFA) is considered an essential procedure. As, this process of clearing and establishing the model, is an important in construct validity for successful structural model analysis. In this phase, in order to evaluate the model's fit the CFA has to be run for the whole model. Hence, the model included 14 items describing two latent variables: family influence, media influence. Therefore, the study first concentrated on the investigation of the factor loading, which identify that some scales showed strong loading into latent variables (Saccenti, Hoefsloot, Smilde, Westerhuis, & Hendriks, 2014; Hair, Black, Babin, Anderson, & Tatham, 2006), suggest that items with a loading of less than 0.50 should be discarded. The results exceeded their acceptable levels being above 0.90 for the most of the items.

Table 4.

Cross loading				
Items	Behavior Intention	Family Influence	Media Influence	Subjective Norm
BI1	0,966492	0,601386	0,528244	0,696596
BI2	0,955587	0,56619	0,551245	0,677175
BI3	0,964281	0,539934	0,44553	0,668585
BI4	0,9127	0,525021	0,503165	0,741562
FINF1	0,537121	0,921137	0,596055	0,63251
FINF2	0,657533	0,889013	0,683048	0,626024
FINF3	0,383248	0,885055	0,486416	0,597943

Items	Behavior Intention	Family Influence	Media Influence	Subjective Norm
MINF1	0,539938	0,591546	0,88176	0,55142
MINF2	0,508727	0,548574	0,817268	0,533674
MINF3	0,272752	0,514834	0,829549	0,44615
SN1	0,569049	0,562993	0,468673	0,871631
SN2	0,67549	0,671546	0,599364	0,900297
SN3	0,722554	0,609751	0,570253	0,912641
SN4	0,676296	0,63976	0,554437	0,930136

Source: authors' calculation

4.3. Convergent validity

Three approaches are utilized to examine the convergent validity: firstly, factor loading is examined for computing the average variance extracted, then construct reliability is calculated for the first indicator, and lastly for evaluating items loading on their respective factors. Convergent validity should be examined in the measurement model. As well as the accepted cut-off value for item loading should be equal or greater than 0.50 or above 0.70 for an ideal loading (Hair, Black, Babin, Anderson & Tatham, 2010). Table 4 highlights that all items loaded are expected with values varying from 0.81 to 0.96 in their proposed constructs.

Convergent validity is shown when the AVE is greater than 0.8 indicating that item is holding more variance than error (Hair et al., 2006). Table (4) illustrates that all items have an AVE greater than the suggested value of 0.8 as an indication of good convergence.

Overall, the composite reliability was assessing convergent validity. According to the result of table (5) all the constructs are above the suggested value 0.70 which is highlighted by some scholars (Saccanti et al., 2014; Hair *et al.* (2006) that the convergent validity for all items are supported.

4.3. Discriminant Validity

According to Fornel (Lum, 1981) approach for evaluating discriminant validity, it should compare the average variance extracted (AVE) to the given construct with squared correlations between constructs (Segars, 1997). This procedure concluded that items within a latent variable gain more variance than any other item of other latent variables in the model (Ajzen, 2012; Segars, 1998). The observation of the average variance extracted for construct compatibility (0.50) was above the squared correlation of compatibility and family influence (0.9) indicating the existence of strong discriminant validity.

The observations of Table (6) identifies that all the construct of AVE for each individual is above constructs squared correlation which gives a strong support for discriminant validity.

Table 5.

Convergent validity

Varaibles	Items	Loading	Cronbachs Alpha	Composite reliability	AVE
Behavior Intention	BI1	0,966	0,964	0,974	0,903
	BI2	0,956			
	BI3	0,964			
	BI4	0,913			
Family Influence	FINF1	0,921	0,881	0,926	0,807
	FINF2	0,889			
	FINF3	0,885			
Media Influence	MINF1	0,882	0,797	0,881	0,711
	MINF2	0,817			
	MINF3	0,830			
Subjective Norm	SN1	0,872	0,925	0,947	0,817
	SN2	0,900			
	SN3	0,913			
	SN4	0,930			

Source: authors' calculation

Table 6.

Discriminant validity				
Variables	Behavior Intention	Family Influence	Media Influence	Subjective norm
Behavior Intention	0,902528			
Family Influence	0,58771	0,807387		
Media Influence	0,534568	0,656602	0,711193	
Subjective Norm	0,734603	0,688996	0,609622	0,817085

Source: authors' calculation

4.3. Goodness of fit

Goodness of fit (GoF) evaluates the whole fit of the model. However, GoF is the geometric mean of the **Average Variance Extracted (AVE)** (outer measurement model), and the **average R²** of endogenous latent variables. GoF represents an index for affirming the PLS model globally using the performance of both measurements as well as structural models. The closer the (GoF) to 1 the better the fit of the model under consideration.

Table 7.

Goodness of fit		
Constructs	R Square	AVE
Behavior Intention	0,539641	0,902528
Family Influence		0,807387
Media Influence		0,711193
Subjective Norm	0,51817	0,817085
Average	0,529	0,810
GOF		65%
	GOF Small = 0.1	
GOF=SQRT (R-Square * AVE)	GOF Medium = 0.25	
	GOF Large = 0.36	

Source: authors' calculation

At the time, when the fit model was established and the measurement model affirmed, the research can be analyzed the structural model and present the results of the hypotheses in the following section.

4.4 Structural Model Analysis

Once establishing the measurement model, then testing and affirming the structural model. The overall, for proceeding to fit the structural model is utilized the employed fit indices as described in table (4). The investigation then focus the dependence relationships to hypothesize model.

Additionally, The results conclude a good understanding of the forces that influence citizens' intentions to use e-government services, which is coherent with prior research results (Hernandez & Mazzon, 2007).

Table 8.

Path Coefficients (Mean, STDEV, Tvalues)

Variables	Original Sample (O)	Standard Error (STERR)	T-Statistics (O/STERR)	P-value	Decision
Family Influence -> Subjective Norm	0,508	0,128	3,962	0%	Supported
Media Influence -> Subjective Norm	0,276	0,144	1,915	3%	not Supported
Subjective Norm -> Behavior Intention	0,735	0,089	8,223	0%	Supported

Source: authors' calculation

***supported at p value <0.001.

** supported at p value <0.01

* supported at p value 0<.05

The results show that two significant predictors explain this variance in intention to use e-government, however, direct relationship between media and subjective norm are not significant with 3%, therefore it's not supported. The other paths (family influence and subjective norm) are found to be supported.

Advanced statistical approach, PLS is used in this study to validate the research model. Likewise, the study first presented the fundamental assumptions of PLS in which the results described that all the constructs fulfilled the criteria of reliability, convergent and discriminant validity. On the other hand, the results of structural model determined that to provide a well-fit model to the data all the fit measures has to fulfill the required values.

The next step is determining the significant paths and the supported hypotheses to validate the model. The paths estimations test described two designed casual relationships, one-path relationships were determined to be significant while the other paths were not significant. After accomplishing the statistical analysis of data and concluding the research findings, this research will illustrate the key elements that affect citizen to use e- government services. As mentioned earlier, an investigation of these facts will hopefully support the understanding of the antecedents of e-government acceptance. At the end, the study provides and discusses to validate intention to use of e-government model with partial least square. As the main purpose of this research is to identify the social aspects that influence citizens' of using e-government services.

Similarly, the findings identify three variables: family and media influence and subjective norm have a significant impact directly and indirectly on citizen intention to use e-government services.

This findings illustrates a significant relationship between family influence and subjective norms as t-value =3.3 with P-value = 0.00, and $p < 0.001$) that is supported, whereas the relationship of media influence and subjective Norm in hypothesis (t =0.4 and P = 0.5 more than 0.01) which is not supported.

Table 9.

Testing mediator between hypotheses

Hypotheses	Paths	Path Coefficients	a * b	St.Dev (a*b)	t-value = a*b/St.Dev (a*b)	p-value	Result
Family Influence - >Subjective Norm	a1*b1	4,114	0,381	0,115	3,306	0,000	Supported
Media Influence - > Subjective Norm	a2*b1	2,021	0,195	0,423	0,460	0,5	not Supported

Source: authors' calculation

5. Discussion

The results reveal that subjective norm was identified to have significant influence on behavioral intention of using e-government services. Moreover, Subjective norm reflects citizens' perceptions of the desire of his referent group to adopt e-government services.

Additionally, the family influence has a significant relationship to the subjective norm, whereas the media influence revealed to be not significant relationship with subjective norm. Consequently, the influence of the family on the participants is more influential than the media, and the People seem to be more dependent on their family.

The social influence variable has a significant relationship with the intention of using government services, as the Algerian culture socially active in the lives of its citizens and engenders strong relationships among family members, as well as the family have a strong impact on subjective norm. They found that just family and media influence have no significant relationship with the intention the using of e-government.

Finally, this study illustrated that media influence is a weak determinant comparing to social influence on subjective norm, furthermore subjective norm has a significant impact on the intention to use e-government (H1), particularly in its early stage.

Table 10.

Summary of hypothesis result

HY/ N	Hypothesis	Decision
<i>H1</i>	<i>Subjective norm has a positive relationship with citizen intention to use e-government services</i>	Significant
<i>H2</i>	<i>Family influence has a significant and positive relationship upon the subjective norm</i>	Significant
<i>H3</i>	<i>Family's influence has a positive relationship with subjective norm</i>	Significant
<i>H4</i>	<i>Media influence has a significant and positive relationship upon the subjective norm.</i>	Not significant
<i>H5</i>	<i>Media influence is related significantly and positively to behavior intention</i>	Significant

Source: authors' calculation

6. Conclusion

Establishment of an effective e-government depends mostly on several, of different components for development of e-government in Algeria such as;

- (a) Absence of a reliable and secure, to widen the accessibility and interconnectability between the parties with high-speed network, which will result on the availability of high transmission sufficient for the requirements of e-government, exchange services.
- (b) Limitation of regulatory comprehension of the framework that supports and controls the adoption of e-government in the country will lead to insecurity of the fundamental rights of all parties,
- (c) Lack of talented professionals,
- (d) Limited use of credit cards due to the lack of existing culture and awareness of the usage of credit cards, as well as the lack of trust in electronic means, coupled with an insecure financial platform, and

- (e) Absence and inadequacy in the infrastructure of logistics, which is an importance factor in ICT and e-commerce for the economic development, but this reactivity for the implementation, took place differently.

An important progress in the area of e-government and e-commerce for the most countries in the North of Africa (such as Egypt, Morocco and Tunisia) because it is a necessary component of their ICT strategies.

Whereas in Algeria, it is consigned to a secondary stage depends on the results achieved by the ICT strategies. This study gives understanding for a real implementation of e-government countries in Africa like Algeria as by understanding the reasons behind the absence of e-government in such country, appropriate procedures and incentive system can be better provided to encourage its adoption. Finally, the e-government development in Algeria is remarkably slow, but is running after to achieve it in the coming years.

Although, the trust factor is important, as further research has revealed the not significant effect of trust on the Internet on the intention to use of e-government. Scientists can consider the indirect effect of the trust in government and Internet factors on the intention to use of e-government by including the trust factor as a mediating factor.

REFERENCES

1. Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
[http://doi.org/10.1016/0749-5978\(91\)90020-T](http://doi.org/10.1016/0749-5978(91)90020-T)
2. Ajzen, I. (2012). The theory of planned behavior. *Handbook of Theories of Social Psychology*, 1(2012), 438–359.
[http://doi.org/10.1016/0749-5978\(91\)90020-T](http://doi.org/10.1016/0749-5978(91)90020-T)
3. Al-Adawi, Z., Yousafzai, S.Y., & Pallister, J. G. (2005). Conceptual model of citizen adoption of e-government. *The Second International Conference*, 1–10.
4. Alateyah, S.A., Crowder, R.M., & Wills, G.B. (2014). Identified Factors Affecting the Intention of Saudi Arabian Citizens to Adopt e-Government Services. *International Journal of Innovation, Management and Technology*, 5(4), 280–286.
<http://doi.org/http://dx.doi.org/10.7763/IJIMT.2014.V5.527>

5. Alharbi, A., & Hawryszkiewicz, I. (2015). The Influence of Trust and subjective Norms on Citizens' Intentions to Engage in E-participation on E-government Websites, *Australasian Conference on Information Systems*, 1–11.
6. Alruwaie, M., El-Haddadeh, R., & Weerakkody, V. (2012). A framework for evaluating citizens' expectations and satisfaction toward continued intention to use e-government services. In *Lecture Notes in Computer Science* (including subseries *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Bioinformatics*) (Vol. 7443 LNCS, pp. 273–286). http://doi.org/10.1007/978-3-642-33489-4_23
7. Alsaghier, H., & Ford, M. (2009). Conceptualising Citizen's Trust in e-Government: Application of Q Methodology. *Electronic Journal of E-Government*, 7(4), 295–310. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=1479439X&AN=50167681&h=sYlkjqlmgs700FumdFRwZ9SGBNB8s6n6xYcZJfTp2tBuz7lf8%2FZzOIi%2FtBuUmKgNJF9vPWROKsdpKW8AJnlcdw%3D%3D&crl=c>
8. Anastasopoulou, K., & Kokolakis, S. (2013). Exploring citizens' intention to use e-government services: the role of cultural bias. *International Journal of Electronic Governance*, 6(1), 3–19. <http://doi.org/10.1504/IJEG.2013.053378>
9. Bose, R. (2004). Information technologies for education & training in e-government. *International Conference on Information Technology: Coding and Computing, 2004. Proceedings. ITCC 2004*, 203–207 Vol. 2. <http://doi.org/10.1109/ITCC.2004.1286632>
10. Carter, L., & Belanger, F. (2004). Citizen adoption of electronic government initiatives. *37th Annual Hawaii International Conference on System Sciences*, 2004. Proceedings of the Conference, 1–10. <http://doi.org/10.1109/HICSS.2004.1265306>
11. Creswell, J.W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 4th Edition, Sage Publications Inc., Los Angeles, USA.
12. Danila, R., & Abdullah, A. (2014). User's Satisfaction on E-government Services: An Integrated Model. *Procedia - Social and Behavioral Sciences*, 164, 575–582. <http://doi.org/10.1016/j.sbspro.2014.11.148>
13. Davcik, N.S. (2014). The use and misuse of structural equation modeling in management research: A review and critique. *Journal of Advances in Management Research*, 11(1), 47–81. <http://doi.org/10.1108/JAMR-07-2013-0043>
14. Davis, F.D., Bagozzi, R.P., & Warshaw, P.R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003. <http://doi.org/10.1287/mnsc.35.8.982>

15. Doong, H. Sen, & Wang, H.C. (2014). Exploring the determinants of citizens' intention to participate in the development of e-government services. In *Lecture Notes in Computer Science* (including subseries *Lecture Notes in Artificial Intelligence* and *Lecture Notes in Bioinformatics*) (Vol. 8650 LNCS, pp. 54–62). http://doi.org/10.1007/978-3-319-10178-1_5
16. E-government, E., & Simplification, A. (2007). Measuring and Evaluating E-Government in Arab Countries. High Level Seminar on Measuring and Evaluating E-Government and 3rd Meeting of Working Group 2 on E-Government and Administrative Simplification - Dubai, (March), 1–148.
17. Fang, Z. (2002a). E-Government in Digital Era: Concept, Practice, and Development. *International Journal of The Computer, The Internet and Management*, 10(2), 1–22.
18. Fang, Z. (2002b). E-government in digital era: concept, practice, and development. *International Journal of the Computer, the Internet and ...*, 10(2), 1–22.
19. Field, A. (2000). *Discovering Statistics Using SPSS. Advanced Techniques for Beginners*.
20. Field, A. (2013). *Discovering Statistics using IBM SPSS Statistics. Discovering Statistics Using IBM SPSS Statistics*, 297–321. <http://doi.org/10.1016/B978-012691360-6/50012-4>
21. Fred D. Davis, R.P.B. and P.R.W. (2016). *User Acceptance of Computer Technology : A Comparison of Two Theoretical Models* Author (s): Fred D. Davis, Richard P. Bagozzi and Paul R. Warshaw Published by : INFORMS Stable URL : <http://www.jstor.org/stable/2632151> REFERENCES Linked references ar. *JSTOR*, 35(8), 982–1003.
22. Gefen, D., Karahanna, E., & Straub, D. W. (2003). Trust and TAM in Online Shopping: An Integrated Model. *MIS Quarterly*, 27(1), 51–90. <http://doi.org/10.2307/30036519>
23. Gefen, D., Straub, D.W., & Boudreau, M.-C. (2000). Structural Equation Modeling and Regression: Guidelines for Research Practice. *Communications of the Association for Information Systems*, 4(October), 7. <http://doi.org/10.1.1.25.781>
24. George F. Joey (2004). The theory of planned behavior and Internet purchasing. *Internet Research*, 14(3), 198–212. <http://doi.org/10.1108/10662240410542634>
25. Hair, J.F., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate Data Analysis*. Pearson Prentice Hall. (Vol. 6). <http://doi.org/10.1080/19447013008687143>
26. Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E., & Tatham, R.L. (2010). *Multivariate Data Analysis*. Prentice Hall.

27. Hernandez, J.M. C., & Mazzon, J.A. (2007). Adoption of internet banking: proposition and implementation of an integrated methodology approach. *International Journal of Bank Marketing*, 25(2), 72–88. <http://doi.org/http://dx.doi.org/DOI: 10.1108/02652320710728410>
28. Hiller, J.S., & Bélanger, F. (2001). Privacy Strategies for Electronic Government. Center for Global Electronic Commerce, 40.
29. Hsieh, P.J. (2015). Physicians' acceptance of electronic medical records exchange: An extension of the decomposed TPB model with institutional trust and perceived risk. *International Journal of Medical Informatics*, 84(1), 1–14. <http://doi.org/10.1016/j.ijmedinf.2014.08.008>
30. Jaeger, P.T. (2003). The endless wire: E-government as global phenomenon. *Government Information Quarterly*, 20(4), 323–331. <http://doi.org/10.1016/j.giq.2003.08.003>
31. Lawson-Body, A., Willoughby, L., Illia, A., & Lee, S. (2014). Innovation Characteristics Influencing Veterans' Adoption of E-Government Services. *The Journal of Computer Information Systems*, 54(3), 34–44.
32. Lean, O.K., Zailani, S., Ramayah, T., & Fernando, Y. (2009). Factors influencing intention to use e-government services among citizens in Malaysia. *International Journal of Information Management*, 29(6), 458–475. <http://doi.org/10.1016/j.ijinfomgt.2009.03.012>
33. Lee, Y., & Kozar, K.A. (2005). Investigating Factors Affecting the Adoption of Anti-Spyware Systems. *Communications of the ACM*, 48(8), 72–77. <http://doi.org/10.1145/1076211.1076243>
34. Lee, & Turban, E. (2001). A Trust Model for Consumer Internet Shopping. *International Journal of Electronic Commerce*, 6(1), 75–91.
35. Leitold, H., Hollosi, A., & Posch, R. (2002). Security architecture of the Austrian citizen card concept. In *Proceedings - Annual Computer Security Applications Conference, ACSAC (Vol. 2002-Janua, pp. 391–400)*. <http://doi.org/10.1109/CSAC.2002.1176311>
36. Lum, D. (1981). Japanese suicides in Honolulu, 1958-1969. *Hawaii Medical Journal*, 31(1), 19–23. <http://doi.org/10.2307/3151312>
37. Pavlou, P. a., & Gefen, D. (2004). Building effective online marketplaces with institution-based trust. *Information Systems Research*, 15(1), 37–59. <http://doi.org/10.1287/isre.1040.0015>
38. Rehman, M., Kamal, M., & Esichaikul, V. (2012). Determinants of Trust in E-Government Adoption: A Case Study of Pakistan. *18th Americas Conference on Information Systems (AMCIS 2012)*, 1–10.
39. Saccenti, E., Hoefsloot, H.C.J., Smilde, A.K., Westerhuis, J.A., & Hendriks, M. M.W.B. (2014). Reflections on univariate and multivariate analysis of metabolomics data. *Metabolomics*. <http://doi.org/10.1007/s11306-013-0598-6>

40. Segars, A.H. (1998). Strategic Information Systems Planning Success: An Investigation of the Construct and Its Measurement. *MIS Quarterly*, 22(2), 25. <http://doi.org/10.2307/249393>
41. Segars, a. H. (1997). Assessing the unidimensionality of measurement: a paradigm and illustration within the context of information systems research. *Omega*, 25(1), 107–121. [http://doi.org/10.1016/S0305-0483\(96\)00051-5](http://doi.org/10.1016/S0305-0483(96)00051-5)
42. Taylor, S., & Todd, P. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6, 144–176.
43. Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. <http://doi.org/10.2307/30036540>
44. Wu, I.L., & Chen, J.L. (2005). An extension of Trust and TAM model with TPB in the initial adoption of on-line tax: An empirical study. *International Journal of Human Computer Studies*, 62(6), 784–808. <http://doi.org/10.1016/j.ijhcs.2005.03.003>
45. Ya-Yueh, S., & Fang, K. (2004). The use of a decomposed theory of planned behavior to study Internet banking in Taiwan. *Internet Research*, 14(3), 213–223. <http://doi.org/10.1108/10662240410542643>

Appendix (A) Questionnaires

1=strongly disagree. 5=strongly agree

Family influence	My family thinks that I should use e-government services.		2	3	4	5
	My family thinks that using e-government services is a good idea.		2	3	4	5
	My family influenced me to try out e-government services.		2	3	4	5
Media influence	I read/saw news reports that using e-government was a good way of doing government transactions.		2	3	4	5
	The popular press depicted a positive sentiment for using e- government services.		2	3	4	5
	Mass media reports influenced me to try out e-government services.		2	3	4	5
Behavior intention	I intend to use e-government services.		2	3	4	5
	I would use the government services provided over the Internet.		2	3	4	5
	E-government services are something that I would do.		2	3	4	5
	I would not hesitate to use e-government services.		2	3	4	5
Subjective norm	People who influence my behavior think that I should use e- government services.		2	3	4	5
	People important to me think that I should use e-government services.		2	3	4	5
	People whose opinions I value would prefer that I use e-government services.		2	3	4	5
	People who influence my decisions think that I should use e- government services.		2	3	4	5

A) How long have you been using e-Government services?
Please tick the appropriate box

Never Less than three Less than six months

Less than 12 months More than one year

B) How long have you been using Internet?

Never. Less than 12 months One to less than 3 years

3-5 years More than 5 years

Please answer the following questions about yourself:

Gender: Male Female

Any comments please:

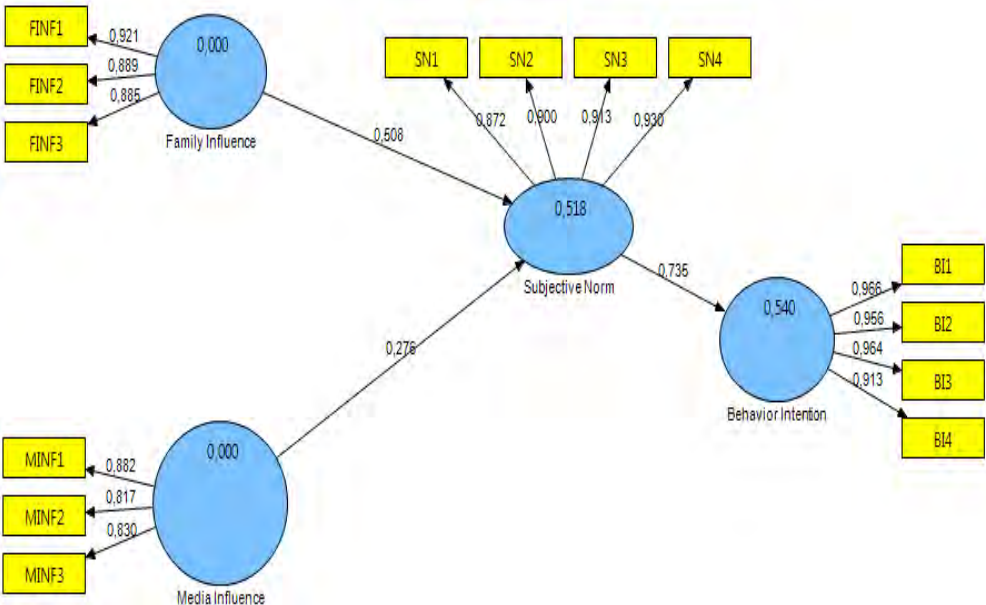
.....

.....

.....

Thanks for your time

Appendix (B) Measurement Model



Appendix (C) Construct model

