INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 14, Issue 9, (2024) E-ISSN: 2222-6990

A Conceptual Framework of Factors Influencing Citizens' Intention to Use E-Government Services in Togo

Bouklinam Abalo[a], Apetogbo Komlan Aklikokou[b]

[a]School of Economics & Management, China University of Geosciences, Wuhan 430074, China, [b]College of Public Administration, Zhejiang University, Hangzhou, P.R. China, 310058

Corresponding Author Email: bouklinam@yahoo.fr

To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v14-i9/22680 DOI:10.6007/IJARBSS/v14-i9/22680

Published Date: 19 September 2024

Abstract

The uptake of e-Government services by citizenry remains a key challenge for governments trying to offer e-services. A situation much more complicated in developing countries including Togo where the digital divide is at its extreme. Previous literature on the subject provides information on factors which can influence citizens intention to adopt or use e-Government services. Some of these factors are used in this study to construct a framework based on the Togolese context. A set of questionnaires was prepared and administered to gather primary data for the study. The framework or research model variables were tested for convergent validity and discriminant validity through Exploratory and Confirmatory Factor Analysis. Measures used include Average Variance Extracted, Composite Reliability and Squared correlations. These measures provide an assessment of statistical and empirical significance for the research model. Regression analysis was performed to test the model after validation of the constructs and significant and non-significant variables were analyzed and discussed. Perceived E-Government Benefits, Social Influence, Degree of Openness to E-Government, Trust in Public Authorities, Internet Experience, and Internet Access, all have a significant impact on Citizens' intention to use e-Government services in Togo.

Keywords: E-Government, Citizens, Factor Analysis, Intention to Use, Framework.

Introduction

One of the main challenges in public administration and management in the last two decades, has been the digitalization of public services (Dumitrache et al., 2021). The emergence of Information Communication Technologies and globalization are placing new demands on governments around the world. And Information technology has become an essential part of managerial reforms (Moon, 2002). Internet has eventually reshaped the organization of government (Tat-Kei Ho, 2002). By going digital through the e-Government Initiative, governments around the world are actually reconsidering the core aspects of public administration. Internet is progressively being used to reinvent the structure and efficiency

of the public sector (Chen et al. 2006). Moon (2002), actually suggested that e-government will become a defining aspect of governance. The Post and Digital economy minister of Togo Cina Lawson at the opening of a training workshop points out the struggling state of the Togolese public administration and insists on the fact that an improvement is needed through a successful and well performing e-government platform (Da Silva, 2015). Because the success of government leaders is increasingly being measured by the benefits they are creating for their constituents, namely, the private sector, citizens and communities. However there is an acceptance problem from citizenry in countries where e-Government services are being provided. And the low adoption of e-Government services does not allow citizenry and governments to fully benefit from its vast potential.

There is a consensus among e-Government scholars on the low-level of uptake or adoption of e-Government services. As such there is a growing interest of research on the factors which can influence citizens use or intention to use e-Government services. But it is imperative to note that the differences in social, cultural, political, economic and e-Government readiness features among countries make it difficult to apply the “same rule for all”. Moreover, research on factors influencing e-Government adoption are few in developing countries and non-existent in the Togolese case. This research therefore attempts to fill the gap through identifying the factors which influences citizens’ intention to use e-Government services in developing countries, with a sole focus on the Togolese case, by developing a conceptual framework based on empirical evidences.

In the first part of this research, theoretical and empirical studies on e-Government adoption are discussed and a conceptual framework is proposed based on constructs’ hypothesis. Methods employed for the study are described in the second part. A set of questionnaires was prepared and administered to gather primary data for the study. SPSS Statistics 20 and Amos 23 are used for the data analysis. The third part of the study is based on Findings, Model testing and discussion. The framework or research model variables were tested for convergent validity and discriminant validity through Exploratory and Confirmatory Factor Analysis. Measures used include Average Variance Extracted, Composite Reliability and Squared correlations. These measures provide an assessment of statistical and empirical significance for the research model. Regression analysis was performed to test the model after validation of the constructs and significant and non-significant variables were analyzed and discussed. A brief conclusion is provided in the last part. The research framework model is developed primarily based on citizens behavioral intention to use e-government in Togo. However, the findings of this study shall be applicable to other countries as well especially in the developing world.

Literature Review

E-Government Adoption

Administrative reforms generally occur when government is not able to meet social, political, economic and environmental changes or fail to meet its citizens expectations (Zhang and Zhang, 2001). Globalization is opening up many possibilities to change and innovate how governments bureaucracies relate to citizens (Bonsón et al. 2012). Moon (2002), informs that E-government, introduced in the late 1990s, is one of the most interesting concepts in public administration studies. Carter and Bélanger (2005), define E-government as the use of

information technology to efficiently provide government services to citizens, employees, businesses and agencies. And the United Nations Public Administration Network (UNPAN) defines e-Government as the delivery of information and services to citizens through ICTs. Increasingly throughout the world, there are many e-Government programs and initiatives (Layne and Lee, 2001). Holliday and Yep (2005), note that E-government is spreading at a rapid pace beyond its initial heartlands in the advanced countries to reshape public administration in the developing world including Africa. However based on the e-Government Index Report (United Nations, 2016), African countries lag far behind the world average. And despite the technological advances, Sub-Saharan African countries continue to account for some of the poorest of the world (Thomas et al. 2009).

The benefits of e-Government includes reduced corruption, increased transparency, greater convenience, higher revenues, and lower costs (Bhatnagar and Deane, 2004). Information Technology has actually created avenues for improving efficiency and quality of public service delivery to citizens (Moon, 2002). However, these benefits can be achieved only through actual and effective e-Government uptake by citizens (United Nations, 2014). On that note, Yonazi, Sol, and Boonstra (2010), informs that designing citizen adoptable e-Government initiatives is still a challenge in the developing world. Achieving users adoption in E-Government requires planning and designing processes namely a user, usage and usability assessment (Bertot, Jaeger and McClure, 2008). In developing countries, Implementation of e-Government initiatives have less emphasis on citizen adoption possibilities (Yonazi, Sol and Boonstra, 2010). Welch, Hinnant, and Moon (2004), inform that a number of factors determine the extent to which citizens visit government websites. Ndou (2004), remarks that the potential for e-Government remains largely unexploited in the developing world. And Thomas et al (2009), note that the failure of E-government Implementation in developing countries is partially due to internal resistance from low level civil servants to high level diplomats.

One of the key questions facing countries engaging in e-Government initiatives is their readiness to implement e-government (Bhatnagar and Deane, 2004). Basu (2004), adds that the strategic objective of e-governance lies under its capability to support and simplify governance for the main stakeholders which are the government, the citizens and the businesses. Thomas et al. (2009) insists that the lack of ICT infrastructure such as basic telephone service in some remote rural areas pose serious constraint to e-government implementations. For e-Government to be successful, services should be made available to the whole citizenry (Layne and Lee, 2001). Zhang and Zhang (2001), advocate that the economic and social development of a country depends on how well the government is organized.

Empirical Model

In order to describe how users come to accept and use technology applications and understand the success or failure of new IT applications implementation, many theories have been developed (Abu-Dalbouh, 2013).

Rogers' Diffusion of Innovation (DOI) Theory, Davis' Technology Acceptance Model (TAM) (Park, 2009) and the Unified Theory of Acceptance and Use of Technology (UTAUT) model proposed by Venkatesh et al (2003), are frequently used models for research into new

information technology acceptance. The TAM suggests that perceived usefulness and perceived ease of use determine the intention to accept technology (Abu-Dalbouh, 2013). The two variables of TAM which are perceived usefulness and perceived ease of use predict intention to use a system (Carter and Weerakkody, 2008). The DOI model on the other hand has been used as a framework in a variety of disciplines (Sahin, 2006). It originated from the fact that getting a new idea adopted can be very difficult despite the benefits it may present (Rogers, 1983). The DOI model proposes five constructs which influence potential adopter's decision: relative advantage (the degree to which an innovation is perceived as being better than the idea it supersedes), compatibility (the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters) complexity (the degree to which an innovation is perceived as relatively difficult to understand and use), trialability (the degree to which an innovation may be experimented with on a limited basis) and observability, the degree to which the results of an innovation are visible to others (Carter and Weerakkody, 2008).

The Unified Theory of Acceptance and Use of Technology (UTAUT) model is the most comprehensive improvement of the Technology Acceptance Model (Venkatesh et al. 2003) and is described as a consolidation of earlier research constructs. Venkatesh, Thong, and Xu (2016) explain that in predicting the behavioral intention to use a technology and the actual use of the technology, the UTAUT identifies four main determinants (effort expectancy, performance expectancy, social influence and facilitating conditions) and four moderators (age, gender, experience, and voluntariness). Effort expectancy, performance expectancy and social influence have a direct effect on usage intentions and Facilitating conditions has a direct impact on actual usage (Carter and Weerakkody, 2008). The UTAUT is described as a valid tool to predict Behavioral Intention (Algharibi and Arvanitis, 2011).

Research Model and Hypotheses

Research Model

This study integrates constructs from existing models (TAM, DOI and UTAUT) and other proposed constructs found in the literature. The proposed framework (Figure 1) indicates that Awareness on e-Government, Internet Access, Trust in public authorities, Social influence, Internet Experience, Degree of Openness to e-Government, Perceived e-Government benefits and Perceived Risk all have a significant impact on citizens' intention to use e-Government in Togo.

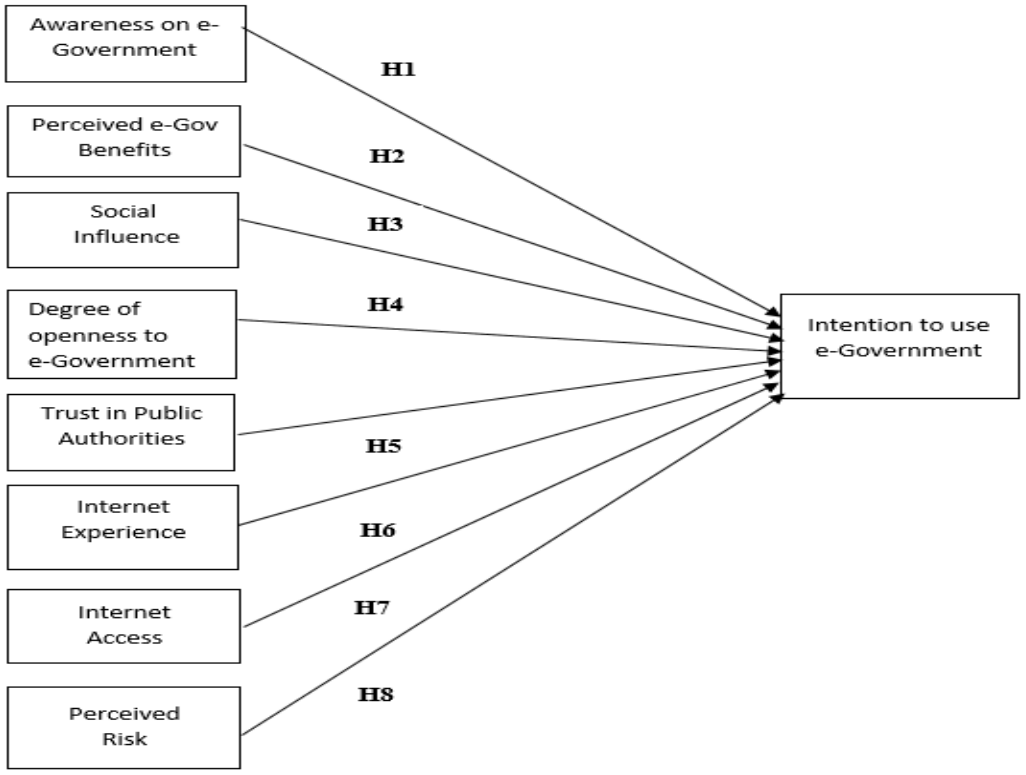

Figure 1. Proposed Conceptual Model for this Study

Research Hypothesis

Awareness on E-Government

Awareness plays a major role in e-Government usage (Al-Jaghoub, Al-Yaseen, H. and Al-Hourani, 2010; Al-hashmi and Suresha, 2013). This dimension reflects how awareness on e-Government influences the citizens' intention to use and use e-Government services. Low usage of e-government is due to the lack of promotion to introduce e-government services to the citizenry (Farouk and Kalid, 2005)

H1 Awareness on e-Government significantly influences intention to use e-government services

Perceived E-Government Benefits

This dimension is referred as Perceived Usefulness in the TAM, Relative Advantage in the DOI and Performance Expectancy of the UTAUT. It is hereby adapted to the present investigation. Performance expectancy is defined as the degree to which an individual believes that using a system will help him or her attain gains in job performance (Venkatesh et al. 2003; Jahangir and Begum, 2008; Algharibi and Arvanitis, 2011). Perceived e-Government benefits will be the degree to which an individual believes that using e-Government services will be beneficial to him or her and better than the traditional public services delivery system. Citizens may perceive e-government as transparent, responsible, effective, efficient and participatory (Tolbert and Mossberger, 2006)

H2 Perceived e-Government benefits significantly influences intention to use e-government services

Social Influence

As one of the dimensions of the UTAUT model, Social influence is the degree to which an individual perceives that important people believe he or she should use the new system (Venkatesh et al. 2003; Jahangir and Begum, 2008; Algharibi and Arvanitis, 2011). This dimension is part of the constructs in the Theory of Reasoned Action as Subjective norms (Chang, 1998; Venkatesh et al. 2003) and also used by Legris, Ingham and Collerette, (2003) and Zafiropoulos, Karavasilis and Vrana (2012).

H3 Social Influence significantly influences intention to use e-government services

Degree of Openness to E-Government

This dimension has been proposed by Algharibi and Arvanitis (2011) as a moderator under Technology anxiety, defined as the extent to which an individual's psychological and/or habitual readiness to adapt a change influences his or her intention to use an innovation. Degree of openness to e-Government is how psychologically open and ready an individual is toward the e-Government services

H4 Degree of openness to e-Government significantly influences intention to use e-government services

Trust in Public Authorities

This dimension is based on the fact that Trust has an impact on citizens' intention to use e-government services and citizens must have confidence in the government (Carter and Bélanger, 2005). Welch, Hinnant and Moon (2004) suggest that Internet technology and citizens' trust in government are interrelated. Koenderink (2013) adds that trust in public authorities influences the use of e-Government. Carter and Bélanger (2005) propose that trust in public authorities should be evaluated within the context of e-government.

H5 Trust in Public Authorities significantly influences intention to use e-government services

Internet Experience

This dimension has been introduced considering the fact that an individual would use or not e-Government services based on his experience with the internet. In this study Internet experience is considered to provide better information than effort expectancy construct. Internet experience has also been used by Horst, Kuttschreuter and Gutteling (2007) and Algharibi and Arvanitis (2011)

H6 Internet experience significantly influences intention to use e-government services

Internet Access

This dimension has been proposed by Carter and Weerakkody (2008) as predictor of intention to use e-Government services in the United Kingdom. Even though the construct's impact on intention to use was not significant, it is considered for this research since it is carried out in an environment where the access divide is considerable. Layne and Lee (2001) suggest that universal access is a fundamental issue for an efficient and effective e-government supporting citizens' demands

H7 Internet access significantly influences intention to use e-government services

Perceived Risk

Perceived Risk as a construct has been used by Al-Khattab et al. (2015) and Zafiropoulos, Karavasilis and Vrana (2012). Featherman and Pavlou (2003) define risk as a combination of uncertainty and the outcome involved in a particular situation. Citizens decide to adopt e-government services by weighing its benefits and risks (Horst, Kuttschreuter and Gutteling, 2007) and citizens who perceive the reliability and security of the internet to be low, in other words, risk to be high will be less likely to use e-government services (Carter and Bélanger, 2005). In his study, Pavlou (2003) referred to uncertainty in the technology-driven environment by integrating the construct of risk in predicting consumers acceptance of e-commerce. Layne and Lee (2001), in reference to risk, cite privacy and confidentiality as fundamental for citizens' adoption of e-Government services.

H8 Perceived risk significantly influences intention to use e-government services

Research Methodology

This research investigation is based on empirical data. Methods includes a set of questionnaire (final questionnaire items are in Table 1) used to obtain the necessary data on factors affecting citizens adoption of e-Government. Additionally, some demographic variables such as age, gender and education were collected. In terms of age, the study is carried on individuals aged 16-74. As measured by the OECD (2015), e-Government uptake by citizens is "the percentage of individuals (aged 16-74) who have used the internet to interact with public authorities". Questions pertaining to nationality and residency of respondents were also included in the questionnaires.

Table 1
Questionnaire scales and items

SCALES AND ITEMS
Awareness on e-Government
1. I am familiar with the term e-Government
2. I am aware of the Togolese government investment in the e-Government project
3. I am aware ministries, government institutions, SOEs and state agencies have an online presence in Togo
Internet experience
1. I use the internet
2. I have a positive experience with the use of internet
3. In general, I like using the internet
Degree of openness to e-Government
1. I am favorable to technological innovations
2. I approve the use of Information Communication Technologies in delivering public services
3. I am favorable to e-Government services
Perceived Risk
1. I believe using the internet is risky
2. I believe using public services over the internet is risky
3. I believe using e-Government services is risky

Internet Access
1. There are internet access points or locations in my country
2. I can get access to the internet on my phone or computer
3. Internet is accessible in my country
Perceived e-Government benefits
1. I can get information more quickly on e-Government portals
2. Checking information on e-Government portals is more convenient
3. Using e-Government portals to access government services increases the government transparency
4. Using e-Government portals to access government services increases the government accountability
5. The benefits of using e-Government services are apparent to me
Trust in Public authorities
1. I have trust in the judiciary system in my country
2. I have trust in the health care system in my country
3. I have trust in the education system in my country
4. In general, I have trust in Public Authorities in my country
Social Influence
1. It is important to use the internet in my environment
2. I can use the e-Government services if people important to me use it
3. I can use the e-Government services if people important to me think I should use it
Citizens intention to use e-Government
1. I would consult Togolese public institutions websites
2. I would access government or public services online
3. Overall, I would use e-Government services

The questionnaires were prepared using five point Likert scales ranging from Strongly disagree to Strongly agree. The questionnaires were distributed to 500 respondents from various backgrounds in the Capital city, Lomé. To ensure reliability and validity, the instrument was subjected to a pilot study among 25 respondents before final distribution. The construct effort expectancy was removed from the final questionnaire after the pilot study because respondents insisted that at the present stage of e-government in Togo, they are not exposed to e-government services enough to be able to provide answers for the construct. Based on the development stages proposed by Layne and Lee (2001), a survey of state websites (Table 2) conducted by the authors, from September 2019 to December 2019, indicate that e-Government in Togo is at the first stage consisting of only an online presence and existence of downloadable documents. The questionnaire items were translated into French which is the national language. Responses in which respondents were not Togolese and not residing in Togo were removed. Observations for which data values were missing, were eliminated for effective calculation of the mean values of the variables. As such out of the 500 responses received, a total of 460 responses were considered for the research.

To examine the effects of the variables on citizens intention to use e-Government services Factor Analysis, Exploratory and Confirmatory and Regressions were run using SPSS Statistics 20 and Amos 23. Cronbach's alpha, Average Variance Extracted, Composite Reliability,

squared correlations were calculated to confirm internal consistency, reliability and validity of the measured constructs.

Table 2
Public websites in Togo

	Websites
INSTITUTIONS	
Presidency	http://presidence.gouv.tg/fr
Government	http://www.republicoftogo.com/
National Assembly	http://www.assemblee-nationale.tg/
Electoral Commission	http://www.ceni-tg.org/
High Authority of audio-visual and communication	http://www.haactogo.tg/
GOVERNMENT	
a	
Prime Minister office	http://www.primature.gouv.tg/
Ministry of finances	http://www.finances.gouv.tg/
Ministry of foreign affairs	http://www.diplomatie.gouv.tg/
Ministry of public service and administrative reforms	http://fp.gouv.tg/
Ministry of local development, art, youth and employment	http://devbase.gouv.tg/fr
Ministry of public works and transports	http://travauxpublics.gouv.tg/
Ministry of agriculture, breeding and hydraulic	http://agriculture.gouv.tg/fr
Ministry of justice and human rights	http://justice.gouv.tg/
Ministry of trade, industry and private sector promotion	http://commerce.gouv.tg/fr
Ministry of mines and energy	http://mines.gouv.tg/fr
Ministry of tourism	http://www.togo-tourisme.com/
Ministry of posts and digital economy	http://numerique.gouv.tg/
Ministry in charge of strategic planning and development	http://planification.gouv.tg/fr
Ministry of communication, culture, sports and civic formation	http://communication.gouv.tg/fr
Ministry of environment and forest resources	http://environnement.gouv.tg/fr
Ministry of town planning, housing and life environment	http://urbanisme.gouv.tg/fr
Ministry of social action, promotion of women and literacy	http://actionsociale.gouv.tg/fr
Ministry of primary and secondary education	http://education.gouv.tg/fr
Ministry in charge of technical education and professional studies	http://edutech.gouv.tg/fr
Ministry of interior, decentralisation and local collectivity	http://territoire.gouv.tg/fr
Ministry of security and public protection	http://securite.gouv.tg/fr
Ministry of health and social protection	http://www.sante.gouv.tg/fr

Ministry of research and tertiary education	http://edusup.gouv.tg/fr
AGENCIES	
National Committee for Economical Politics (CNPE)	http://cnpe.gouv.tg/
Permanent Secretary in charge of Political reforms and financial programs	http://www.togoreforme.com/fr/
National Direction for public market control	http://www.marchespublics-togo.com/
Public market regulation authority	http://armp-togo.com/
Tax and revenues authority	http://www.otr.tg
Diaspora service	http://diasporatg.org/
National agency for employment	http://www.anpetogo.org/
National agency for volunteering	http://togoanvt.org/
Service of laws and regulations of Togo	http://www.legitogo.gouv.tg/
Togo free zone authority	http://www.zonefranchetogo.tg/info/
Togo e-Regulations	http://togo.eregulations.org/
Togo port authority	http://www.togo-port.net/
Togo chamber of commerce and industry	http://www.ccit.tg/
Center of enterprise creation	http://www.cfetogo.org/
Accelerated Growth and Employment Promotion Strategy	http://scape.tg/
Togo International airport	http://aeroportdelome.com/tg/
STATE ENTERPRISES	
Togocel	http://www.togocel.tg/
Togo Telecom	http://www.togotelecom.tg/
Energy and electricity company	http://www.ceet.tg/fr/index.php
Postal service	https://www.laposte.tg/
Togolese water company	http://tde.tg/

Findings

Descriptive Analysis

A descriptive analysis is provided in terms of age, gender and education (Table 3). 61.1% of the respondents are males and 38.9% females. From the 460 responses, 61.1% were collected from individuals aged 16-25, 28.7% from individuals aged 26-35, 3.9% aged 36-45, 2.4% aged 46-55, 2.6% aged 56-65 and 1.3% aged 66-74. In total 354 respondents have a University background, 92 respondents at the secondary education level and 14 at the primary level.

Table 3
Descriptive analysis for demographics

Variables	Valid	Frequency	Percent
Age	16-25	281	61.1
	26-35	132	28.7
	36-45	18	3.9
	46-55	11	2.4
	56-65	12	2.6
	66-74	6	1.3
Gender	Male	281	61.1
	Female	179	38.9
Education	Primary	14	3.0
	Secondary	92	20.0
	University	354	77.0

Factor Analysis

Factor analysis was used to evaluate construct validity. Farrell and Rudd (2009) suggest that measurement scales used in research and relationships between constructs may be incorrect if the factor analysis is misinterpreted and the discriminant validity is not established. Factor Analysis is used to regroup variables into a set of clusters based on shared variance and serves as summarizing data for easy interpretation and understanding of relationships and patterns (Yong and Pearce, 2013).

Exploratory Factor Analysis

The Exploratory Factor Analysis by Principal Components with Varimax Rotation (Table 4) shows that most items loaded on their expected factors. Cross loading items IA2 and SI1 were dropped from further analysis.

Table 4
Exploratory Factor Analysis results

Rotated Component Matrix[a]

	Component								
	1	2	3	4	5	6	7	8	9
AEG1							.864		
AEG2							.825		
AEG3							.731		
IE1					.839				
IE2					.817				
IE3					.768				
DOEG1						.800			
DOEG2						.842			
DOEG3						.742			
PR1			.820						
PR2			.893						
PR3			.860						
IA1									.783
IA3									.839
PEGB1	.695								
PEGB2	.798								
PEGB3	.811								
PEGB4	.739								
PEGB5	.697								
TPA1		.887							
TPA2		.882							
TPA3		.822							
TPA4		.866							
SI2								.863	
SI3								.886	
IUEG1				.827					
IUEG2				.858					
IUEG3				.798					

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Reliability and convergent validity are estimated for each construct using Average Variance Extracted (AVE) and Composite Reliability (CR) calculated using Equations (1) and (2)

$$AVE = \frac{\sum_{i=1}^{n} \lambda_i^2}{n} \quad (1)$$

AVE =Average variance extracted
λ_i = The standardized factor loading
n = The number of items

$$CR = \frac{\left(\sum_{i=1}^{n} \lambda_{yi}\right)^2}{\left(\sum_{i=1}^{n} \lambda_{yi}\right)^2 + \left(\sum_{i=1}^{\rho} Var(\varepsilon_i)\right)} \quad (2)$$

CR=Composite Reliability
λ_y=The standardized factor loading
Var(ε_i)=The variance due to the measurement error
All the AVEs are above the recommended level of 0.50 (Fornell and Larcker, 1981) and the CRs above the threshold of 0.7 (Zafiropoulos, Karavasilis and Vrana, 2012) (Table 5). The Cronbach's alpha for all the data set is 0.867.

Table 5
Average Variance Extracted (AVE) and Composite Reliability (CR)

	AVE	CR
Awareness on E-Government	0.654	0.844
Internet Experience	0.654	0.845
Degree of Openness on E-Government	0.633	0.824
Perceived Risk	0.736	0.914
Internet Access	0.658	0.849
Perceived E-Government Benefits	0.562	0.745
Trust in Public Authorities	0.748	0.921
Social Influence	0.765	0.933
Intention to Use E-Government	0.686	0.874

According to Fornell and Larcker (1981), to fully satisfy the requirements for discriminant validity for any two constructs, the AVE estimates of the two constructs have to be greater than the shared variance estimate (squared correlations). Results (Table 6) indicate discriminant validity as the AVE values are greater than the squared correlations.

Table 6
Average Variance Extracted and Squared correlations

	IUEG	SI	TPA	PEGB	IA	PR	DOEG	IE	AEG
IUEG	0.686*								
SI	0.080089	0.765*							
TPA	0.000036	0.0025	0.748*						
PEGB	0.315844	0.190096	0.031684	0.562*					
IA	0.139129	0.001296	0.026569	0.095481	0.658*				
PR	0.000324	0.036481	0.026896	0.000144	0.042849	0.736*			
DOEG	0.261121	0.043681	0.011881	0.252004	0.182329	0.000225	0.633*		
IE	0.219024	0.022801	0.010201	0.239121	0.1681	0.003025	0.300304	0.654*	
AEG	0.099856	0.009604	0.072361	0.145924	0.127449	0.097969	0.099856	0.139129	0.654*

*Average Variance Extracted values

Confirmatory Factor Analysis

The Confirmatory Factor Analysis was used to confirm the construct validity of the items (Figure 2). The goodness-of-fit was estimated using the Comparative Fit Index (CFI), Goodness of Fit Index (GFI), Normed Fit Index (NFI) and Root Mean Square Error of Approximation (RMSEA).

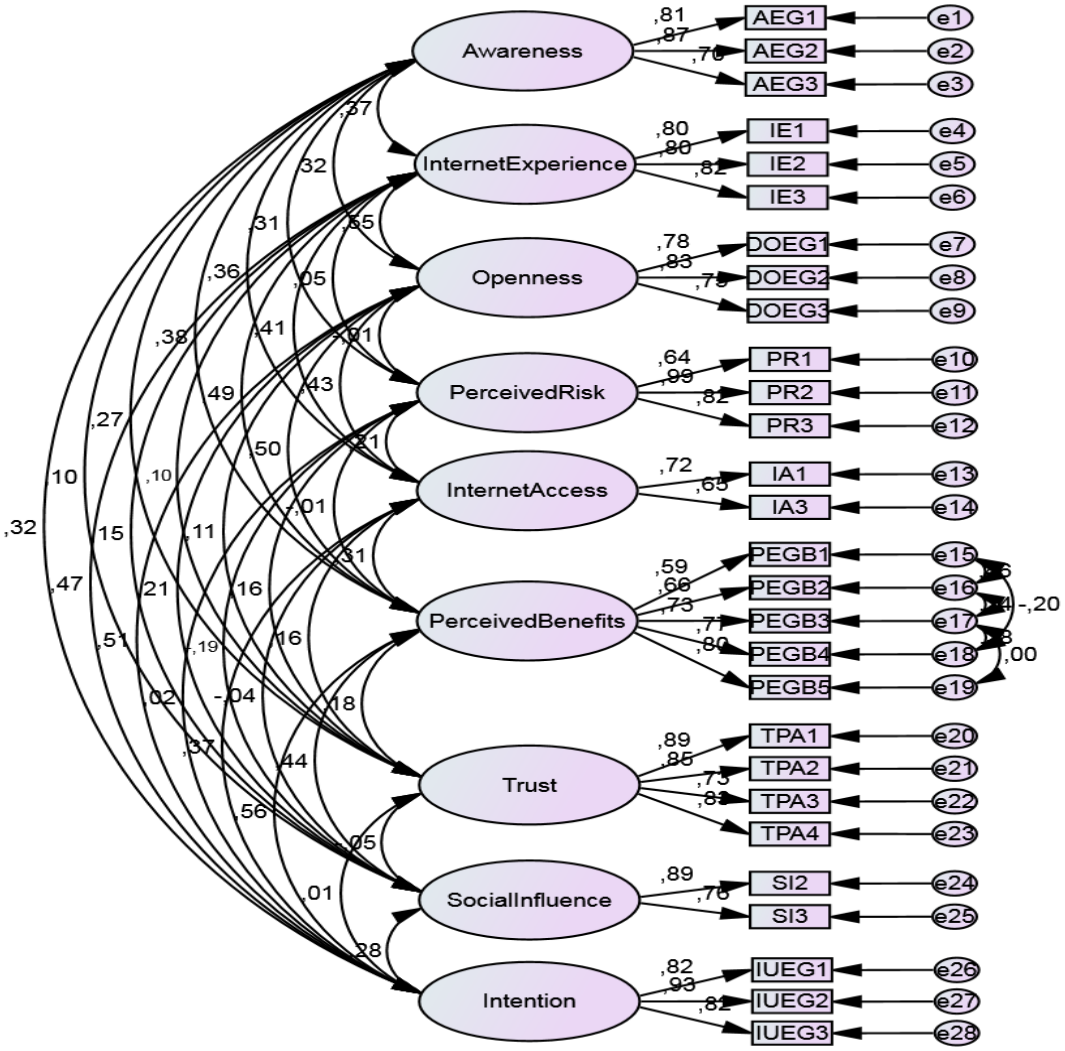

Figure 2: Confirmatory Factor Analysis model in Amos

The chi-square test being too sensitive to sample sizes, consideration was rather given to the ratio of the minimum discrepancy to its degree of freedom, CMIN/df = 2.633; by rules of thumb a value between 1 - 3 indicate acceptable fit. The CFI value should range between 0 - 1 (Chen, 2007) with values of CFI close to 1 indicating a good fit; CFI = .928 in this case. The root mean square of approximation RMSEA = .060 is indicative of a good fit. RMSEA producing a value less than 0.08 indicates a good fit (Cangur and Ercan, 2015). The other fit indicators GFI = .884 and NFI = .890 are also close to 1, suggesting a good fit of the model to the data.

Model Testing and Results

Multiple regression analysis was performed and results (Table 7) used to test the proposed model. The mean scores of the items under the same construct were computed to represent the model variables. Demographics (Age, Gender and Education) were not included as covariates in the final analyses because the regression analysis performed to assess their significance on Intention to use e-Government showed no significance.

Table 7
Regression analysis results in SPSS
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.606[a]	.368	.357	.71280

a. Predictors: (Constant), PEGB, PR, TPA, IA, SI, IE, AEG, DOEG
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	133.308	8	16.664	32.796	.000[b]
	Residual	229.149	451	.508		
	Total	362.457	459			

a. Dependent Variable: IUEG
b. Predictors: (Constant), PEGB, PR, TPA, IA, SI, IE, AEG, DOEG

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.321	.278		1.157	.248		
	AEG	.047	.039	.053	1.215	.225	.744	1.345
	IE	.197	.057	.155	3.463	.001	.696	1.437
	DOEG	.236	.049	.216	4.791	.000	.689	1.452
	PR	.052	.035	.060	1.497	.135	.870	1.149
	IA	.104	.048	.090	2.187	.029	.825	1.212
	PEGB	.294	.048	.283	6.165	.000	.667	1.499
	TPA	-.075	.032	-.092	-2.353	.019	.923	1.083
	SI	.071	.031	.093	2.286	.023	.840	1.191

a. Dependent Variable: IUEG

For the main effect Regression Model, the Variance Inflation Factor (VIF) ranges from 1.083 to 1.499, proving no concern for Multicollinearity. The ANOVA test was significant (F= 32.796, P = 0.000) and the research model explains 36.8% (Adjusted R^2) of the variance in citizens intention to use e-Government services in Togo. The independent variables Perceived E-Government Benefits (PEGB), Social Influence (SI), Degree of Openness to E-Government (DOEG), Trust in Public Authorities (TPA), Internet Experience (IE) and Internet Access (IA) are all significant (Table 8).

Table 8
Hypothesis testing

	Variables	Beta Coefficients	T-value	Significance	Support
H1	Awareness on E-Government	.053	1.215	.225	NO
H2	Perceived E-Government Benefits	.283	6.165	.000	YES
H3	Social Influence	.093	2.286	.023	YES
H4	Degree of Openness on E-Government	.216	4.791	.000	YES
H5	Trust in Public Authorities	-.092	-2.353	.019	YES
H6	Internet Experience	.155	3.463	.001	YES
H7	Internet Access	.090	2.187	.029	YES
H8	Perceived Risk	.060	1.497	.135	NO

Discussion and Research Implications

This research presents a framework on citizens' intention to use e-Government services which incorporates constructs from existing models. The data used in this study, collected from a diverse pool of citizens in the Capital city, provides an insight into the demand-side of e-Government services in Togo.

Perceived E-Government Benefits

Citizens perception on e-Government benefits has a significant influence on their intention to use e-Government services. Hypothesis 2 is supported. This finding is an indication that citizens will be more willing to use e-Government services if they can reap the possible benefits. In terms of age, gender and education, a larger percentage of the respondents perceived the benefits of e-Government; except respondents who have a primary education level, as they are either neutral or disagreed to the construct's questions. E-Government services should and ought to be apparent to the users in terms of time and convenience. 62.6 % of respondents perceive e-government beneficial in terms of time and 67.6% of them perceive it more convenient. Public institutions web portals ought to portray a high level of transparency and accountability in public services delivery. According to Aman, Al-Shbail, and Mohammed (2013), accountability means that an organization is answerable to its stakeholders, by revealing its performance to them, meeting their expectations, achieving goals and facing consequences accordingly. 62.6%of the respondents agree and strongly agree that using e-Government portals to access government services increases government accountability. The resulting benefit of e-government is actually less corruption and an increased transparency in public sector. 65.87%of the respondents agree and strongly agree that using e-Government portals to access government services increases government transparency. This dimension has the highest beta value and one of the highest significance level and as such reflect the importance e-Government service providers should place on the

benefits they provide to users. For a developing country like Togo more efforts should be placed on educating the citizenry on the benefits of using e-Government services in order to increase the uptake of e-Government services by citizens.

Social Influence

Hypothesis 3 is supported. Social Influence has a significant influence on citizens' intention to use e-Government services. Originally designed with 3 items this construct had one cross-loading item in the factor analysis dropped. Citizens will be more willing to use e-Government services if people important to them also do. This suggests that society and social spheres play an important role in Togolese citizenry usage of e-Government services. 17.6% of the respondents strongly agree as being influenced by people important to them. Citizens using e-Government services might influence others in doing so as such it is important that users of e-Government services have a positive experience with e-Government. And to increase adoption by citizens, society leaders and influential people should play a role in the promotion of e-government.

Degree of Openness to E-Government

The influence of Degree of Openness to e-Government on intention to use e-Government services is highly significant. H4 is supported. How open citizens are to technological innovations highly impact their behavior to use e-government services. This indicates that government should put a great deal of effort in exposing the citizenry to technologies through training and education. More than 73% of the respondents approve the use of internet in public services delivery, suggesting than e-government is more than a necessity for the government to pursue. However the percentage of respondents having a primary education level who are open to the internet is less than those who do not. Citizens will be more open to e-government services if they know and experience the potential of the internet. As such government ought to promote internet from the primary education level.

Trust in Public Authorities

Trust plays a significant role in citizens intention to use e-Government services. H5 is supported. However the negative value of the beta coefficient for Trust in Public Authorities indicates that Trust in Public Authorities is negatively related to Intention to use e-Government services. Actually, more than 62.39% of the respondents do not trust public authorities but more than 79.78% intend to use e-government services. This explains the negative value of the beta coefficient. Citizens are willing to use e-government services irrespective of the fact that they do not trust the government. The significance of Trust in Public Authorities still indicate the importance of the construct for Intention to use e-government. Future research should further investigate and clarify the role of Trust in Public Authorities as a predictor of citizens' intention to use e-Government services. Tolbert and Mossberger (2006) argues that more generally the use of government websites lead to positive attitudes toward e-government and e-government in turn encourages improved trust in government.

Internet Experience

Citizen's intention to use e-Government services will increase if citizens have positive internet experience. H6 is supported. Internet experience is a significant predictor of Intention to use

e-Government services. Around 94.78% of the respondents use the internet and have a positive experience with the internet. As such, they are really determined to adopt e-government services. Citizens who use the internet will be more willing to use e-Government services; especially if they have a positive experience with the internet. Citizens who have a positive experience with the internet are obviously aware of its benefits and as such would adopt e-Government services.

Internet Access

H7 is supported. The items of this construct were reduced to 2 due to the presence of a cross-loading item. When the conditions are gathered, Citizens are more willing to adopt e-Government services. Such conditions include the existence of technological infrastructure such as internet access points or locations and the accessibility to the internet. Irrespective of their age, gender and education level citizens who agree and strongly agree on the internet access in Togo are in general willing to use e-government services. This suggests that digital divide hamper e-Government uptake by citizens. It is therefore imperative that government make internet accessible to their citizenry as such increasing the adoption of e-Government services. Layne and Lee (2001) in that regards insist that as part of universal access efforts, Governments ought to provide Internet access for all

Non-significant Results

Two of the research hypothesis were not significant. Hypothesis 1 and Hypothesis 8 were not supported.

Citizen's awareness on e-Government refers to their knowledge of the term e-Government and existence of online government services. This construct even though not a significant predictor of intention to use e-Government remains an important factor. The result of the investigation on awareness as a direct predictor of intention to use suggest that citizens may decide not to use e-government services even if they are aware of its existence.

Perceived risk as a construct should be negatively related to intention to use e-Government services. Because the more citizens perceive e-Government as risky, the less willing they should be to use it. In this case, a larger percentage of citizens believe e-government presents risk however, they still use it, suggesting that they might be more influenced by the benefits they could get from e-government usage than the perception of risk. Perceived risk is not a significant factor in citizen's intention to use e-Government services in this study. However, the results on Awareness on e-Government and Perceived risk might suggest the possibility of an indirect effect, which should be further investigated and clarified. Especially because the two constructs seem to be important factors to consider in the adoption of e-Government.

Conclusions and Policy implications

Conclusion

This study provides a framework on citizen's intention to use e-Government services by integrating constructs from existing models and other additional constructs used in previous researches. The present research has implications for public administration research on e-government acceptance and adoption. The proposed framework has been subject to validity and reliability test through factor analysis and hypothesis test through regression analysis.

The proposed model explains 36.8% of changes in Citizens intention to use e-Government services in Togo. Additionally it is important to note that based on the data used for the analysis of this research, 72.39 of the respondents agree and strongly agree to consult state websites, 77.83 agree and strongly agree to access public services online. This indicates that more efforts are needed from the government in order to achieve 100 percent uptake by the citizenry. (1) The results show that Perceived E-Government Benefits, Social Influence, Degree of Openness to E-Government, Trust in Public Authorities, Internet Experience and Internet Access, are all significant predictors of Citizens' intention to use e-Government services in Togo. This study also revealed (2) how the Citizens' intention can be used to appreciate the use of e-government services in Togo. The findings of this research will enable policy makers and government agencies to develop e-Government services with a focus on these significant factors to promote satisfaction to the e-Government user, usability of the e-services and high uptake by citizens.

Policy Implications

The findings of this research have implications for government and e-government practitioners in designing and promoting e-government services in Togo. (1) The main determinants leading to citizen' intention to use e-government services have been identified. These findings are expected to (2) help in the design and deployment of e-government services with a focus on the factors influencing Citizens' intention to use e-Government services. To ensure the use of e-government services, the above mentioned factors ought to be considered. The high cost associated with e-government implementation in a developing country context where financial resources are limited, necessitates that citizens use the online services implemented. The implications of the research findings could also be relevant to other developing countries.

Theoretically, it builds on established models like the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to develop a conceptual framework tailored to the unique context of Togo. By identifying and analyzing specific factors such as perceived ease of use, trust, awareness, infrastructure, and government support, the study extends existing theories to encompass socio-economic and cultural nuances found in developing countries. Contextually, it provides valuable insights into the adoption challenges and opportunities of e-government services within Togo's specific environment, characterized by limited infrastructure, varying levels of digital literacy, and trust issues with government entities. This context-specific analysis is crucial as it highlights the need for localized strategies and policies to enhance e-government adoption, thereby contributing to the broader discourse on implementing digital government services in similar developing contexts.

References

Abu-Dalbouh, H. M. (2013). A questionnaire approach based on the technology acceptance model for mobile tracking on patient progress applications. *Journal of Computer Science, 9*(6), 763-770.

Algharibi, A. J., & Arvanitis, T. N. (2011). Adapting the Unified Theory of Acceptance and Use of Technology (UTAUT) as a tool for validating user needs on the implementation of e-Trial software systems. In *Proceedings of the 25th BCS Conference on Human-Computer Interaction* (pp. 526-530). British Computer Society.

Al-Hashmi, A., & Suresha. (2013). Evaluating the awareness of e-government in the Republic of Yemen. *International Journal of Computer Applications, 67*(16), 41-45.

Al-Jaghoub, S., Al-Yaseen, H., & Al-Hourani, M. (2010). Evaluation of awareness and acceptability of using e-government services in developing countries: The case of Jordan. *The Electronic Journal Information Systems Evaluation, 13*(1), 1-8.

Al-Khattab, A., Al-Shalabi, H., Al-Rawad, M., Al-Khattab, K., & Hamad, F. (2015). The effect of trust and risk perception on citizen's intention to adopt and use e-government services in Jordan. *Journal of Service Science and Management, 8*(3), 279-290.

Aman, A., Al-Shbail, T. A., & Mohammed, Z. (2013). Enhancing public organizations' accountability through e-government systems. *International Journal of Conceptions on Management and Social Science, 1*(1), 15-21.

Basu, S. (2004). E-government and developing countries: An overview. *International Review of Law Computers & Technology, 18*(1), 109–132.

Bertot, J. C., Jaeger, P. T., & McClure, C. R. (2008). Citizen-centered e-government services: Benefits, costs, and research needs. In *Proceedings of the International Conference on Digital Government Research* (pp. 137-142). Digital Government Society of North America.

Bhatnagar, S., & Deane, A. (2004). *Building blocks of e-government: Lessons from developing countries* (No. 11261). The World Bank.

Bonsón, E., Torres, L., Royo, S., & Flores, F. (2012). Local e-government 2.0: Social media and corporate transparency in municipalities. *Government Information Quarterly, 29*(2), 123-132.

Cangur, S., & Ercan, I. (2015). Comparison of model fit indices used in structural equation modeling under multivariate normality. *Journal of Modern Applied Statistical Methods, 14*(1), 152-167.

Carter, L., & Bélanger, F. (2005). The utilization of e-government services: Citizen trust, innovation and acceptance factors. *Information Systems Journal, 15*(1), 5-25.

Carter, L., & Weerakkody, V. (2008). E-government adoption: A cultural comparison. *Information Systems Frontiers, 10*(4), 473–482.

Chang, M. K. (1998). Predicting unethical behavior: A comparison of the theory of reasoned action and the theory of planned behavior. *Journal of Business Ethics, 17*(16), 1825-1834.

Chen, Y. N., Chen, H. M., Huang, W., & Ching, R. K. H. (2006). E-government strategies in developed and developing countries: An implementation framework and case study. *Journal of Global Information Management, 14*(1), 23-46.

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(3), 464-504.

Da Silva, I. S. (2015, February 1). Togo trains staff to manage e-government network. *Biztech Africa*.

Dumitrache, V. M., Năstase, M., Lazăr, V., Andreica, C., & Vasilache, P. C. (2021). EU28 countries performance in eGovernment in 2019-2020. *Revista de Management Comparat International, 22*(1), 102-109.

Farouk, F. M., & Kalid, K. S. (2005, December). The awareness of electronic government from the Malaysian perspectives. Paper presented at the Seminar Kebangsaan E-Komuniti, Putrajaya.

Farrell, A., & Rudd, J. (2009). Factor analysis and discriminant validity: A brief review of some practical issues. *ANZMAC*.

Featherman, M. S., & Pavlou, P. A. (2003). Predicting e-services adoption: A perceived risk facets perspective. *International Journal of Human-Computer Studies, 59*(4), 451-474.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Holliday, I., & Yep, R. (2005). E-government in China. *Public Administration and Development, 25*(3), 239–249.

Horst, M., Kuttschreuter, M., & Gutteling, J. M. (2007). Perceived usefulness, personal experiences, risk perception, and trust as determinants of adoption of e-government services in the Netherlands. *Computers in Human Behavior, 23*(4), 1838–1852.

Koenderink, P. M. (2013). Understanding intention and initial usage of e-government services at the Gemeente Wierden: Factors influencing the intention to do online transactions with the Gemeente Wierden (Bachelor's thesis, University of Twente).

Layne, K., & Lee, J. (2001). Developing fully functional e-government: A four-stage model. *Government Information Quarterly, 18*(2), 122–136.

Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management, 40*(3), 191-204.

Moon, M. J. (2002). The evolution of e-government among municipalities: Rhetoric or reality? *Public Administration Review, 62*(4), 424-433.

Ndou, V. (2004). E-government for developing countries: Opportunities and challenges. *The Electronic Journal of Information Systems in Developing Countries, 18*(1), 1-24.

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce, 7*(3), 101-134.

Rogers, E. M. (1983). *Diffusion of Innovations* (3rd ed.). New York, NY: The Free Press, A Division of Macmillan Publishing Co.

Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *TOJET: The Turkish Online Journal of Educational Technology, 5*(2).

Tat-Kei Ho, A. (2002). Reinventing local governments and the e-government initiative. *Public Administration Review, 62*(4), 434-444.

Thomas, C. A., Mbarika, V. W., Nwogu, R., Musa, P. F., & Meso, P. (2009). Facilitating better governance through e-government initiatives: Successful case in Sub-Saharan Africa.

Tolbert, C. J., & Mossberger, K. (2006). The effects of e-government on trust and confidence in government. *Public Administration Review, 66*(3), 354-369.

United Nations. (2014). *United Nations E-Government Survey 2014: E-Government for the Future We Want.* United Nations Department of Economic and Social Affairs.

United Nations. (2016). *United Nations E-Government Survey 2016: E-Government in Support of Sustainable Development.* United Nations Department of Economic and Social Affairs.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478.

Venkatesh, V., Thong, J. Y. L., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems, 17*(5), 328-376.

Welch, E. W., Hinnant, C. C., & Moon, M. J. (2004). Linking citizen satisfaction with e-government and trust in government. *Journal of Public Administration Research and Theory, 15*(3), 371-391.

Yonazi, J., Sol, H., & Boonstra, A. (2010). Exploring issues underlying citizen adoption of e-government initiatives in developing countries: The case of Tanzania. *The Electronic Journal of e-Government, 8*(2), 176-188.

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology, 9*(2), 79-94.

Zafiropoulos, K., Karavasilis, I., & Vrana, V. (2012). Assessing the adoption of e-government services by teachers in Greece. *Future Internet, 4*(2), 528-544.

Zhang, C., & Zhang, M. (2001, March 10-13 & March 19-April 1). Public administration and administrative reform in China for the 21st century. Paper presented at the annual conference and online virtual conference of the American Society for Public Administration.