University of Dar es Salaam Library Journal
Vol 15, No 2 (2020), pp 3-20
ISSN: 0856-1818

The influence of user participation attributes on e-government implementation success in developing countries: a study of Uganda

Sumaya M. Kagoya
Department of Applied Computing and Information Technology, Makerere University Business School, Uganda
Email: thumakago@gmail.com

Ulingeta O. Mbamba
Department of General Management, University of Dar es Salaam Business School, Tanzania
Email: ulingeta.mbamba@gmail.com

Abstract

This paper examined the influence of user participation attributes on e-government implementation success in Uganda. The quantitative data were collected through a survey of 277 employees from three Ministries (ICT, Finance and Works) in Uganda and was analysed using PLS-SEM aided by Smart PLS3. Using Stakeholder theory as a primary theory for addressing user participation who are key stakeholders and UTAUT to capture the technology usage of e-government users. Findings revealed that user participation attributes have a significant positive influence on e-government implementation success in Ugandan context. Findings from the Smart PLS assessment measurement model portended that user participation attributes have a statistical positive relationship on e-government implementation success in Uganda. Therefore, policy makers, managers, Information System developers, electronic service providers, and e-government implementers should consider involving end-users in active e-government implementation process. This ensures accountability, transparency, trust in electronic-services and online-information from the central government to the users, among other benefits. These findings contribute to sparse literature of user participation in e-government implementation success in developing nations hence providing empirical foundation for future academia. More so, all stakeholders of e- government implementation work towards curbing the factors affecting and hindering end-users from active participation in e-government implementation in Uganda.

Keywords: User participation attributes, e-government, e-government implementation success, developing nations, Uganda

Introduction

Information and Communication Technologies (ICTs) have played a tremendous role in the economic growth and development of various nations world over (Usman, Ozturk, Hassan, Zafar, & Ullah, 2021). In the 21st century, the digital transformation is driving all sectors including public sector where government is using electronic means to deliver services to its

citizens, business and employees (United Nations, 2019; Kagoya, Mbamba & Sichone, 2019; Kagoya & Mkwizu, 2019). Although e-government is a new interesting term with various definitions, it simply refers to the utilization of ICTs by the government to deliver services to the citizens, business and government departments (United Nations, 2018). Bouaziz (2021) argues that, digital transformation by the government can imply e-government. Similarly, United Nations (termed it as a government) defined e-government as a government that make use of ICT to alter its internal and external business relationship (Othman, Razali & Faidzul, 2020). In this study, e-government refers to the ability of the a country to incorporate ICTs in its daily operational activities without interruptions throughout the year while dealing with citizens, businesses and government itself so as to reap the overwhelming benefits. In this study, e-government implementation is defined as the utilization of information and communication technologies by the government to deliver e-services to the citizens of Uganda 24/7 without any disruption.

Some leading nations (such as: Denmark, Southern Korea, Sweden, and others), whose governments have involved their citizens in the participation of e-government implementation, have reaped voluminous benefits and vice versa for Africa, Uganda inclusive which is lagging behind (Kagoya & Gilbert, 2020; Mutula, 2013; Nabafu & Maiga, 2012). These benefits include among others; transparency, effectiveness, maximum efficiency in service delivery, trust, increased e-readiness, quick decision making, sense of ownership, reduced resistance and increased user-participation (Kagoya , Mbamba & Sichone, 2019; Mkwizu & Sichone; 2019). African countries Uganda inclusive, have tried to put a number of e-government initiatives in a bid to achieve the UN sustainable development goals (Onyango & Ondiek, 2021). Unfortunately, 70% of these initiatives have failed as results of the challenges face which may vary from nation to nation (Gottschalk, 2020; Kagoya,Maiga & Jani, 2019; Singh, Grover, Kar & Ilavarasn, 2020). More so, prior literature opined that the pressing challenge among others is the failure to user related challenges like lack of e-readiness among the citizens (Kagoya & Gilbert, 2020). On contrary, Kagoya *et al*. (2019) suggested that inadequate users' involvement (user participation) in e-government projects was among the major challenges affecting e-government in Tanzania. User participation refers to the behaviours and activities that users (active participation) or their representatives (passive participation) perform in the system development process (Barki & Hartwick, 1994; Doll & Torkzadeh, 1998).

It should be noted that despite the tremendous work done by previous researchers on e-government implementation factors and benefits, they missed out important variables, which are specific to the Ugandan context from a user participation approach, which centers on the demand side of end users of the system and they concentrated more on the supply side of technological issues. More so, most of these studies which succeeded in government implementation, were qualitative in nature and conducted in most developed nations and their findings may not be generalized to the Ugandan context, due to political, economic, social, technological and cultural differences. Therefore, to bridge this knowledge gap and attain country specific attributes, this study examined the influence of user participation attributes on e-government implementation success in Uganda. In this study, user participation in successful e-government implementation refers to the users/citizens at the lower level having a maximum degree of power (or control) which guarantee them to directly and actively participate in e-government implementation of policy and managerial aspects, and negotiate the conditions under which the government may change them. This study was supported by two theories of stakeholder as a primary theory and Unified theory of Acceptance and Use of Technology (UTAUT).

Literature review

Quite a number of authors reveal that user participation attributes like education, ICT skills, ease of use, experience, attitude; are vital in emerging issues like e-government implementation (Singh *et al.,* 2020; Guenduez, Mettler & Schedler, 2019; Al-Athmay, 2013; Abdelghaffar, 2012). In this study, user participation in successful e-government implementation refers to users/citizens at the lower level having a maximum degree of power (or control) which guarantees them to directly and actively participate in e-government implementation. This implies that, users should be in fully involved to take charge of e-government implementation policy and managerial aspects, and negotiate the conditions suitable for e-government implementation. All this, aimed at achieving successful implementation of e- government in Uganda as a developing nation, characterized with low technological innovation, less industrialization, most of her citizens are low-income earners and higher rates of unemployment, with agricultural farming highly dominated by rudimentary methods for substance usage and less for export and e-government related user participation related challenges.

It is argued that via citizen participation in e-projects, a transparent environment is established by a proactive dissemination of timely information to citizens (Ceccon, Méndez-Toribio, & Martínez-Garza, 2020; Karkin & Janssen, 2014), thus making citizens well informed and able to participate in decision-making (Scott, DeLone & Golden, 2016; Kagoya *et al.*, 2019). Information that can be disseminated, is about laws, rules and regulations, government budget (Tejedo-Romero & Araujo, 2020), financial bids, and official information beneficial for citizens (Glyptis *et al.,* 2020; Karkin & Janssen, 2014). Also, in today's dynamic environment, e-government would then support government to collaborate, or be in partnership with other public organizations or with private-sector businesses to deliver quality public services (Dhir *et al.,* 2021).

Alarabiat, Soares and Stevez (2021) and Guo, Liu, Wu, and Zhang (2021) suggested that e-Government is likely to promote e-democracy via aiding citizens to participate in real- time and in an efficient and effective mode and helps politicians becoming rest assured of being informed about public opinions. It is also argued that via e-government boosts social networking where citizens are provided a powerful tool to influence the political processes; increased citizen involvement thus being promoting transparency and accountability by the government (Khan & Krishnan, 2021; Alryalat, Rana & Dwivedi, 2020). Moreover, user participation in e-government implementation encourages the utilization of ICTs for social networking is giving citizens a powerful instrument to influence political processes; increased citizen involvement through e-government tends to be mirrored by intensified government efforts to improve transparency and accountability (Stratu-Strelet,Gil-Gómez, Oltra-Badenes & Oltra-Gutierrez, 2021; Kagoya, Mbamba, Sichone, 2019; Criado & Gil-Garcia, 2019; Chohan, Hu, Si, & Pasha, 2020).

In line with the above, user e-participation initiatives aid in paving a pathway towards sustainable e-government implementation, hence contributing significantly to democratic user participation (Manoharan, Ingrams, Kang & Zhao, 2020; Chohan *et al.,* 2020; Baxter, 2017; Kagoya *et al.,* 2019; United Nations, 2018; Karkin & Janseen, 2014; Twizeyimana & Anderson,

2019). For instance, Twizeyimana & Anderson (2019) investigated the e- government public value in developing countries and the findings exposed that enhanced public service element significantly and positively influences the rest of the elements (dimensions). These elements were; enhanced government services, upgraded administrative efficiency; smart government capabilities; improved moral behaviour plus expertise; enhanced trust plus sureness in government; and enhanced public value and social well-being. Further still, Twizeyimana & Anderson (2019) findings revealed that there was absence of e-government public value research in the developing and least developed nations and absence of a comparative study at all levels (project, regional and national level), as well as a general perspective research. However, this study examines the influence of user participation attributes on e-government implementation success and findings revealed that user-participation attributes (public value) influences e-government implementation success in the Ugandan context, hence fulfilling objective one, as well as hypothesis (H_1).

Le Blanc (2020) studied e-participation initiatives through a swift review of current qualitative academic literature trends of two decades to supplement on the e-government survey 2020. Le Blanc (2020) cited the key challenges of e-participation initiations via mapping the e-participation fields and interconnected aspects plus its relationships with extra governance key concepts. Le Blanc (2020) further echoed that, despite the increased level of e-participation platforms with the aid of recent updated technologies; their multiplication has not turned into broader active citizen participation. This might be due to absence of a clear understanding of the citizen motivating factors to participate, coupled with the hesitancy and unwillingness to empower citizens with decision-making rights and share the agenda setting roles.

More so, previous researchers (Cardullo & Kitchin, 2019) reveal that, some nations are stagnantly operating e-government implementation at just web presence (web 1.0 of the environment of e-government). This deter citizens from taking active participation in e- project development and attain the voluminous benefits that accrue with it (Cardullo & Kitchin, 2019). Similarly, some nations are still lagging behind in availing chances to the users (citizens) to participate directly online (Holzer & Manoharan, 2016). Conversely, to bridge the knowledge gap, the current study examined the influence of user participation attributes on the e-government implementation success and sighted that active user participation in e-government implementation influences e-government implementation success in the Ugandan context, being one of the developing countries.

Theoretical perspectives

This study reviewed theoretical literature to aid in identifying and clarifying the imbedded theory in a clearly defined mode and overcome biasness that may influence the study findings (Turner, Baker & Kellner, 2018). The theoretical literature also acted as a road map to align the study objective, methodology, findings and conclusion (Zina, 2021; Osanloo & Grant, 2016).

Stakeholder theory

Prior researchers have defined the concept of stakeholder differently with their own perspectives depending on different views of their roles. For instance, stakeholders have been defined as groups of constituents who have a legitimate claim on the firm (Flodén & Woxenius, 2021; García- Sánchez et al., 2021; Hill & Jones, 1992), participants in corporate affairs (Barabaschi,

2020; Ackoff, 1974; Lusinga & Fairhurst, 2020), those that will be directly impacted by the decisions (Friend & Hickling, 1987), and those who hold a stake about the decisions made by the organization (Aguerrebere, González Pacanowski & Medina, 2020; Wagner, 1993).

It should be recalled that, stakeholder theory is the primary theory supporting user participation attributes as stakeholders in successful e-government implementation. This is in line with Mumford (1983), who is one of the early researchers in supporting the active involvement of end-users as a component of effective information systems development and implementation, using essentially the stakeholder concept in this domain. It has been suggested that end users (citizens) in addition to managers are very crucial towards successful system implementation like e-government, hence, the reason to why this study used stakeholder theory which will help in establishing the role of user participation in successful e-government implementation in Uganda.

UTAUT theory

UTAUT is regarded as a reflection of an individual's internal schema of beliefs (Brown et al., 2010; Venkatesh, Thong & Xu, 2016). It has been cited in scientific papers and is considered as one of the powerful theories in contemporary IS research. It was developed by Venkatesh, Morris, Davis and Davis (2003) who examined eight competing models of technology acceptance to formulate a unified model that mixes elements from the models. The models are: Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), motivation model, Theory of Planned Behaviour (TPB), TAM/TPB combined PC utilization model, innovation diffusion theory and social cognitive theory. This theory (UTAUT) was developed to modify TAM model and to provoke some of the limitations of using multiple models posed by researchers. UTAUT theorizes that an individual's behavioural intention to use technology, is influenced by performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh, 2021; Arfi, Nasr, Khvatova & Zaied, 2021).

A number of extant studies employed UTAUT model. For example, AlAwadhi and Moris (2008) used UTAUT to explore factors that determine the adoption of e-government services in Kuwait as one of the developing countries. Yang and Lee (2007) studied ICT adoption and they stress that critical factors of adoption differ from country to country. Maruping and others (2017) are also among the proponents to the theory. Variables identified in the two theories (Stakeholder theory and UTAUT) form basis in understanding the study under review because most of the study items were interpreted from the elements of these theories. More so, in order to reduce this vacuum, this paper is supported by stakeholders' theory where users and top managers who are part of the stakeholders in the e-government projects, coupled with UTAUT theory which reflects on individual belief to participate in e-government implementation.

Methodology

The current study is supported by positivism paradigm since it is a quantitative study, which is based on scientific manner to obtain the truth (Zeng, Deschênes & Durif, 2020; Gorecka, 2020). Additionally, positivist researchers detached, stayed neutral and independent while researching on user participation approach, and e-government implementation in Uganda. More so,

quantitative data deals with numerical data whose findings can be generalized (Hair *et al.,* 2012; Mitchell & Snyder, 2020).

The current research was conducted in three Ministries in Uganda. The ministries are; Ministry of ICT and national guidance, Ministry of Finance, Planning plus Economic Development, and Ministry of Works and Transport. The justification for the choice of these specific Ministries is that they are suitable representatives of all government Ministries in Uganda based on their geographical locations, coupled with the numerous key tasks they run concerning e-government (Nakatumba, Kanagwa, Kivunike & Tuape, 2019; Kagoya *et al.,* 2019). More so, given the fact that these Ministries manage 95% of ICT related projects, e-government inclusive (Kagoya & Gilbert, 2020; Nakatumba *et al.,* 2019; Waiswa & Okello-Obura, 2014).

The study population comprised of nine hundred and one (901) individuals, identified from Human resource departments, Uganda bureau of statistics (Statistics, 2016). Using Yamane (1967) guideline plus his well-known formula, a sample size of 277 was obtained. Systematic sampling entailed selecting items using a skip or sampling interval from the given population (employees in the selected Ministries). The use of systematic sampling is more appropriate in this study compared to simple random sampling in that, e-government project's budgets for developing countries like Uganda are tight and require simplicity in execution and understanding the output of this study.

Additionally, systematic sampling provided operational convenience to the researchers as they decided on the selection steps on which one to use and skip when data does not unveil patterns and there is a low risk of data manipulation by researchers. In this study, systematic sampling method was used in such a way that the first unit of the sample selected at random and the subsequent units was selected in a systematic way. For instance, there were N units (901) in the population and n units (277) were selected, then R = N/n (the R is known as the sampling interval and in this current study it is approximately 3). The first number was selected at random from the entire population and the rest (reminder) was selected using this R (Sampling Interval/3) to the previous selected number.

Quantitative data were gathered via a survey of 277 employees (end users of e-government services) from three Ministries (of ICT and National Guidance, Ministry of Finance, Planning and Economic Development, and the Ministry of Works and Transport) in Uganda who were purposively sampled and was analysed using PLS-SEM aided by Smart PLS3. The choice for PLS-SEM instead of regression analysis lies behind its ability to examine unobserved variables, deal with indirect effects and complex models. Mores so, its ability to handle causal modeling with a large number of variables' indicators, moderators, and caters for not only small but also medium and large samples (Hair, Hollingsworth, Randolph & Chong, 2017) and also relaxation in the assumptions (Ringle *et al.,* 2020. More so, SmartPLS version 3 has no assumptions made for variables distribution while ensuring optimal prediction accuracy, robust against multicollinearity problems and recommended for Likert scale data plus sample size ranging from small to large of about 30 to 600 respectively (Pangesti, Sumertajaya & Sukmawati, 2016; Sarstedt, Ringlle, Cheah, Ting, Moisescu & Radomir, 2020). Additionally, Richter, Cepeda, Roldan and Ringle (2016) assert that PLS-SEM approximates specific constructs and descend or obtain key latent variable tallies that can be used in the following analyses. PLS- SEM also solves the numerous demerits of covariance- based SEM, especially in the complicated research model development of this kind (Zhang *et al.,* 2021; Hair, Howard & Nitzl, 2020).

Study results

Demographic characteristics

Demographic characteristics are included and finally the tested hypothesis used to obtain the results envisaged that, the majority of the respondents were male (193) marking a percentage of 69.7% and 84 were female with 30.3%. 99.3% of the respondents were Ugandans and less than one percent was none Ugandan. Out of 277 respondents, 11(4%) were managers, 64(23.1%) were supervisors and the rest (202) were the majority. This perhaps was due to the fact that, managers are usually few in numbers and too busy most of the time. For this reason therefore, they tend to delegate some tasks such as answering questionnaires to their juniors. For the age characteristic, those below 21 years were 15 (5.4%), the majority of the respondents were in the age group of 21-30 years (85 or 30.7%), followed by those between 31-40 years (88 or 31.8%). Business activities are characterized and categorized into finance and accounts (92 or 33.2%), human resources were the minority (25 or 9%) and the majority was others in 157 (56.7%). Education level first degree were the majority 106 (38.3%), followed by postgraduate (66 or 23.8%), secondary level with ordinary having the least number of (4 or 1.4%) and advanced level with (13 or 4.7%). On the issue of work experience, the majority were between 6-15 years were 130 (46.9%), followed by those below 6 years (92 or 33.1%), then 16-25 years were 26 (9.4) and the minority (12 or 4.3%) were above 35 years.

Hypothesis

H1: User participation attributes positively influence e-government implementation success
Outer Loadings for Technology, User's Attributes

Table 1: Outer loadings for e-government implementation and user participation attributes

Indicators	EGS	UPA
EGS1	0.857	
EGS2	0.912	
EGS3	0.904	
EGS4	0.823	
EGS5	0.646	
UPA1		0.782
UPA2		0.685
UPA4		0.759
UPA5		0.813
UPA6		0.714

Source: SmartPLS3 extracts of field data (2019)

Table 1 shows the indicators outer loadings findings extracted from Smart-PLS3 output results. Outer loadings represent the absolute contribution of an indicator to the definition of its latent

variable (Richer *et al.*, 2020; Garson, 2016). The manifest variables with outer loading of 0.70 or higher are considered highly satisfactory, and items with loadings less than 0.40 – unacceptable; (Hair *et al.*, 2017) suggests such items be dropped. This research aimed at obtaining best results by focusing on items, which were highly satisfactory. However, for the values between 0.5 and 0.7 can be retained in the sense that their inclusion adds the value of average variance extracted (AVE) as emphasized by Hair, Sarstedt and Ringle (2019). It should be remembered that, these retained values, visualize item reliability according to Hair *et al.* (2019), Usakli and Kuc ukergin (2018).

Table 2: Fornell-Larcker Criterion

	EGS	UPA
EGS	0.834	
UPA	0.325	0.752

Source: Data field computations using SmartPLS 3

It should be recalled that, Fornell-larcker criterion was conducted in Table 2 purposely for testing discriminant validity, which aimed at measuring and ascertaining the constructs' degree of differences between them and see the coinciding constructs (Henseler, 2018).

Collinearity Check by Variance Inflation Factor (VIF)

It is mandatory to check for collinearity issues before proceeding to structural model assessment under PLS –SEM. The rule of thumb for assessing the collinearity issues is that the variance inflation factor (VIF) value should be lower than or very close to 3 (Ringle *et al.*, 2020; Hair, Matthews, Matthews & Sarstedt, 2017). Findings as indicated in Table 3 provides an evidence that collinearity was not an issue in this study model as all VIF values were below 3 as required.

Table 3: Collinearity (Variance Inflation Factor)

EGS	Endogenous variable
UPA	1.154

Source: Field data (2019)

Table 3 for collinearity test demonstrates that the values of VIF are less than 4 or 5 and hence acceptable according to Ringle *et al.* (2020) and Sohaib (2021).

Assessment measurement model 4 bootstrapping test

Table 4: Direct relationships for bootstrapping test of user participation attributes and e-government implementation success

Hypothesis	**Relationships**	Mean	Standard Error	T Statistics	P Values	f square	**Decision**
H_1	UPA -> EGS	0.238	0.063	3.622	0.000	0.055	*

Notes: * implies significant at 1% level of significance. Source: Field data 2019 attained using SmartPLS3.0

Testing results of H_1 (significant)

The results Table 4 indicate that the latent construct variable are significant (UA, &EG), hence implying that there is a significant positive relationship (UA -> EG) between user Participation attributes and E-government implementation (PV= **0.000**), thus in compliance with H_1: User Participation attributes positively influence successful e-government implementation in Uganda

Discussion of findings

Discriminant validity is concerned about the uniqueness of a construct, whether the phenomenon captured by a construct is unique and not represented by the other constructs in the model (Hair *et al.,* 2020). A test for discriminant validity was conducted by assessing indicators' cross-loadings as indicated in Table 1. The results indicate that each indicator loads higher on its own than on the other constructs; signifying the discriminant validity as each indicator is well correlated with the construct it is connected to (Wong, 2013). Precisely, it can be comprehended that all of the indicators in Table 1 have individual indicator reliability values that are much larger than the minimum acceptable level of 0.4 and above the preferred level of 0.7. It should be noted that, the justification for performing discriminant validity was to measure the extent to which the constructs were distinct from one another by empirical standards (Chin, 2010).

Furthermore, Table 2 envisages the acceptable values above the correlations with other latent constructs for discriminant validity. This is supported by the condition for average variance exerted (AVE) indicated in the diagonals which state that, for the square root of every latent construct, AVE must possess a value higher than the correlation with the other different latent constructs (Hair, Richer, Sarstedt & Ringle, 2019; Sarstedt *et al.,* 2017; Hair *et al.,* 2014). Results are numerically presented for each latent variable and the highlighted figures are the ones considered according to the rule of thumb (Sarstedt *et al.,* 2020; Hair *et al.,* 2017).

Findings in Table 3 indicate collinearity test conducted using PLS-SEM and it was 1.154. Multicollinearity in Ordinary Least Squares (OLS) regression inflates standard errors, makes significant tests of independent variable unreliable and prevents the researcher from assessing the relative importance of one independent variable compared to another (Pati, 2020). It should be noted that a common value of problematic multicollinearity may exist when the Variance Inflation Factor (VIF) coefficient is higher than 4.0. VIF is the inverse of the tolerance coefficient, for which multicollinearity is flagged when tolerance is less than 0.25 (Hair *et al.,* 2014). It is vital to note that PLS-SEM used in this study deals with issues of multicollinearity and as well as normality issues hence the researcher does not need to worry about it, since the latter is based on the fact that PLS-SEM deals with non-normal data (Sarstedet *et al.,* 2020; Ringle *et al.,* 2020; Hair *et al.,* 2019).

More so, results in Table 4, indicate that there is a significant positive relationship (UA -> EG) between user attributes and E-government implementation (PV is less than 0.05 that is to say it is, 0.000), thus in compliance with H_1: User attributes positively influence successful e-

government implementation in Uganda. Similarly, Table 4 illustrates the bootstrapping test results plus the path coefficient display in line with T values and P value, which reveals clearly that the relationship between user-participation attributes (UA) and E- successful e-government implementation (EG), is statistically and positively significantly in the Ugandan context and this confirmed by PV of (0.000). The User participation attributes were measured by five suitable items, which achieved the intended study objective one and they entail. UA1 (Willingness = I am willing to interact with my government via e-services), UA2 (experience= I am experienced with online e-government services), UA4 (Attitude = I enjoy participating in e- government implementation projects like paying online fees, taxes, and other bills like water and electricity), UA5 (Readiness = I am ready to actively participate in e-government services), UA6 (Peer influence = My peers encourage me to use E-government services).

These results are similar to those of Kagoya, Mbamba and Sichone (2019) who contended that user-participation attributes determine e-government implementation in Tanzania and users' attributes influence Technology success in Tanzanian context (Mkwizu & Sichone, 2019). Conversely, these results differ from those of Melvin *et al*. (2009), plus Hamner and Al-Qahtani (2009) who concealed that Information success is not influenced by user-participation attributes. The variance in results might be because of differences in political, economic and technological aspects among nations.

Additionally, the endogenous variable (outcome variable) was e-government implementation success and findings of this current study obtained from field data analysed by PLS SEM as indicated in the model developed clearly shows that it was measure by six indicators in their order of priority. (EGS2 = There is increased efficiency and effectiveness if actively participate in e-services, EGS3 = Active user participation ensures trust in government, if I actively participate in e-services, EGS1 = Transparency in government is enhanced if I actively participate in e-government implementation, EGS4 = My government becomes accountable if i actively participate in its e-services implementation, EGS5 = I feel a sense of ownership if I actively participate in e-government implementation (EGS6 = I am empowered if I actively participate in e-government implementation.

The current findings imply that, in the Ugandan context, and particularly in the 3 Ministries of ICT, Finance and Works, e-government implementation will be seen to be successful if end users take active part in it and this will result into benefits like I feel a sense of ownership if I actively participate in e-government implementation, trust in government, Transparency in government, increased accountability by the government to the end users/ employees (citizens) and the end users or citizens and for our study the employees in the selected Ministries will feel a sense of ownership of the e-government system. This is supported by stakeholder theory being the primary theory and on the other hand since e-government implementation deals with technological issues, UTAUT had to supplement and complement the stakeholder theory, which is in agreement with the findings of Joseph (2015) and Kagoya *et al.* (2019).

On the contrary, some scholars like Guenduez *et al.* (2017), contended that although one of the requirements for smart e-government among others, are participants, technology, but also data, processes, product, and services, should be integrated comprehensively. The current study asserts that user attributes, Information system attributes, ICT infrastructure attributes are key influencing factors (determinants) to e-government implementation success, coupled with top management support to moderate the user participation attributes.

The current study stresses that user participation attributes where end users actively and directly get involved in e-project is paramount to e-government implementation success in the

Ugandan context. This is somewhat supported by previous studies , for instance, Manoharan *et al*. (2020) emphasized that the technological alternations are drastic and physically seen and e-government implementation is under looked when it comes to key citizen inclusion hence the need to incorporate the six aspects of great practices (such as; users participation, security and privacy aspects, e-service plus content issues).

Conclusion and limitations

This study aimed at examining the influence of users participation attributes on e-government implementation success in the Ugandan context. This study utilized quantitative methods to collect data from 277 employees from the Ministries of ICT, Finance and Works with the self-administered structured questionnaire who were chosen systematically and purposively given the expertise basing on the e-government knowledge they had. The collected data were subjected to exploratory and confirmatory tests and PLS-SEM was used for data analysis. Findings from the SmartPLS assessment measurement model predicted that user participation attributes directly and positively affect e-government implementation success in Uganda. Therefore, the policy makers, managers and all stakeholders in e-government implementation should consider working on user participation attributes. From the theoretical perspective, these statistically significant positive findings support the application of stakeholder theory and UTAUT in examining the relationship between user participation attributes and e-government implementation success in the Ugandan context. Future academia in the same subject matter should endeavour to use comparative studies, use qualitative research approaches to grasp the deep understanding of other factors out of this study scope and use longitudinal studies as opposed to cross sectional used in this study.

Study implications

This study informs the e-government policy makers particularly in Uganda and other developing nations with similar characteristics in general that, using technology alone without active user participation cannot lead to e-government implementation success (Manoharan & Ingrams, 2018; Liang, Qi, Zhang, Li, 2019). This implies that user participation attributes is the driving exogenous variable supported, crucial for successful e-government implementation which practitioners should put more emphasis on. More so, these study findings send a clear signal to the managers responsible for e-government implementation to offer facilitating conditions adopted from UTAUT theory in supporting users as stakeholders, to actively participate in e-government implementation. This will help users to perform and put in more effort during e-government implementation process, as they will be expecting to gain more from e-government services. All these are in line with the UTAUT theory and stakeholder theory supporting this study.

Recommendations

Based on the study findings, the policy makers, e-government implementation team, e-service designers and developers, to managers in the Ugandan Ministries, should consider user-participation attributes as key factors in influencing successful e-government implementation in Uganda. These attributes include (user awareness about e-government services, users' experience, users' attitude towards e-government, the peer influence on users about e-government initiatives, users' willingness to participate in e-government implementation. These stakeholders should endeavour to fully support and devise means of making the end users to be active participants in all stages of e-government implementation, to achieve all benefits associated with it.

This study also informs the Ugandan government in particular and other developing nations with similar characteristics that, using technology alone without active participation cannot lead to e-government implementation success (Manoharan & Ingrams, 2018; Baxter, 2017; Manoharan, 2015), hence the need to amalgamate technology with user- participation attributes. More so, the end-users/ citizens should have the same rights to use e-Government services, and thus the Ugandan government should improve on the existing ICT infrastructure in the Ministries and Uganda at large, in order to enable e-services delivery 24/7 with any technical interruption.

Finally, this study recommends e-government implementers in the Ugandan selected Ministries to encourage users of e-government services to participate actively in e-government implementation rather than selecting a few people to represent them in the process. This will enable them make informed decisions, reduce on the massive rate of e-project failure, achieve transparency, accountability by the government, ensure user ownership, increase user e-readiness, among other benefits, as supported by Kagoya *et al.* (2019). This is also in agreement with other prior studies, for instance, Chun *et al.* (2010) opined that users help in shaping formulation of technological related policies, which are vital in e-government implementation. Additionally, Alzahrani, Karaghouli and Weerakkody (2016), as well as Al-Hujran (2015) advocated that when users are involved in the participation in thee-government implementation projects, they gain trust and become committed to the government and help it to in the systems enhancement.

References

Abdelghaffar, H. (2012). Success Factors for Enterprise Resource Planning Implementation in Large Organizations, the Case of Egypt. *The Electronic Journal of Information Systems in Developing Countries*, *52*(4), 1-13.

Ackoff, R. L. (1974). *Redesigning the future*. New York: Wiley. *International Journal of General Systems, 2*(1). 12-25.

Aguerrebere, P.M., González Pacanowski, T., & Medina, E. (2020). Stakeholders' participation in hospitals' branding initiatives on social media: a proposal model for building collective brands. *Revista Espanola de Comunicacion en Salud*, *11*(1), 16-42.

Al-Hujran, O., Al-Debei, M., Chatfield, A., & Migdadi, M. (2015). The imperative of influencing citizen attitude toward e-government adoption and use computers in human behaviour, 53, 189– 203. Linking citizen satisfaction with e-government and trust in government. *Journal of public administration research and theory*, *15*(3), 371-391.

Alarabiat, A., Soares, D., & Estevez, E. (2021). Determinants of citizens' intention to engage in government-led electronic participation initiatives through Facebook. *Government Information Quarterly*, *38*(1), 101-117.

AlAwadhi, S., & Morris, A. (2008). The Use of the UTAUT Model in the Adoption of E-government Services in Kuwait. *41st Hawaii International Conference on System Sciences*, 1-11. UK: Loughborough University.

Al-Athmay, A. (2013). E-government in Arab Countries: Status and Challenges. *Global Journal of Business Research, 7*(5), 79- 98.

Alryalat, M. A. A., Rana, N. P., & Dwivedi, Y. K. (2020). Citizen's adoption of an E-Government system: Validating the extended theory of reasoned action (TRA). In *Open government: Concepts, methodologies, tools, and applications* (pp. 651-674). IGI Global.

Alzahrani, L., Al-Karaghouli, W., & Weerakkody, V. (2016). Developing Citizens' Trust Towards Successful Adoption of E-Government: an Empirical Study from Saudi Arabia. *Academy of Contemporary Research Journal, 2*(1), 9-15.

Arfi, W. B., Nasr, I. B., Khvatova, T., & Zaied, Y. B. (2021). Understanding acceptance of eHealthcare by IoT natives and IoT immigrants: An integrated model of UTAUT, perceived risk, and financial cost. *Technological Forecasting and Social Change*, *16*(3), 120-137.

Arayankalam, J., Khan, A., & Krishnan, S. (2020). How to deal with corruption? Examining the roles of e-government maturity, government administrative effectiveness, and virtual social networks diffusion. *International Journal of Information Management*, *58*(10), 203-218.

Barabaschi, B. (2020). Management for stakeholders approach for a socially sustainable governance of megaprojects. In *Megaproject Management* (pp. 27-41). Springer, Cham.

Barki, H., & Hartwick, J. (1994). Measuring User Participation, User Involvement and User Attitude. *MIS Quarterly*, *16*(2), 59-82

Baroudi, J. J., Olson, M. H., & Ives, B. (1986). An empirical study of the impact of user involvement on system usage and information satisfaction. *Communications of the ACM*, *29*(3), 232-238.

Baxter, D. J. (2017). E-governance and e-participation via online citizen budgets and electronic lobbying: Promises and challenges. *World Affairs*, *180*(4), 4-24.

Bouaziz, F. (2021). E-Government and Digital Transformation: A Conceptual Framework for Risk Factors Identification. *Disruptive Technology and Digital Transformation for Business and Government*, *11*(2), 67-90.

Brown, S., Dennis, A., & Venkatus, V. (2010). Predicting collaboration technology use integrating technology adoption and collaboration research. *Journal of Management Information Systems*, *27*(2), 9-53.

Cardullo, P., & Kitchin, R. (2019). Being a 'citizen'in the smart city: Up and down the scaffold of smart citizen participation in Dublin, Ireland. GeoJournal, *84*(1), 1–13.

Ceccon, E., Méndez-Toribio, M., & Martínez-Garza, C. (2020). Social participation in forest restoration projects: Insights from a national assessment in Mexico. *Human Ecology*, *48*(5), 609-617.

Chin, W. W. (2010). How to write up and report PLS analyses. In: V. Esposito Vinzi, W. W. Chin, J. Henseler, & H. Wang (Eds.), *Handbook of partial least squares: Concepts, methods and applications* (Springer Handbooks of Computational Statistics Series, II(1), (pp. 655–690). Heidelberg: Springer.

Chohan, S. R., Hu, G., Si, W., & Pasha, A. T. (2020). Synthesizing e-government maturity model: a public value paradigm towards digital Pakistan. *Transforming Government: People, Process and Policy, 14*(3), 495-522.

Chun, S., Shulman, S., Sandoval, R., & Hovy, E. (2010). Government: Making Connections Between Citizens, Data and Government. *Information Politic, 15*(3), 1-9.

Dhir, A., Sadiq, M., Talwar, S., Sakashita, M., & Kaur, P. (2021). Why do retail consumers buy green apparel? A knowledge-attitude-behaviour-context perspective. *Journal of Retailing and Consumer Services, 59*(10), 23-38.

Doll, W., & Torkzadeh, G. (1988). The Measurement of End-user Computing Satisfaction. *MIS Quarterly, 12*(2), 259-274.

Flodén, J., & Woxenius, J. (2021). A stakeholder analysis of actors and networks for land transport of dangerous goods. *Research in Transportation Business & Management, 25*(2), 100-116.

Friend, J., & Hickling, A. (1987). *Planning Under Pressure: The Strategic Choice Approach. Oxford*: Pergamon Press.

Garson, G.G. (2016), Partial Least Squares: *Regression and Structural Equation Models*, Statistical Associates Publishers, 74 Glenn Drive, Asheboro, NC 27205, USA.

García-Sánchez, I. M., Martín-Moreno, J., Khan, S. A., & Hussain, N. (2021). Socio-emotional wealth and corporate responses to environmental hostility: Are family firms more stakeholder oriented?. *Business Strategy and the Environment, 30*(2), 1003-1018.

Criado, J. I., & Gil-Garcia, J. R. (2019). Creating public value through smart technologies and strategies. *International Journal of Public Sector Management, 32*(5), 438-450.

Glyptis, L., Christofi, M., Vrontis, D., Del Giudice, M., Dimitriou, S., & Michael, P. (2020). E-Government implementation challenges in small countries: The project manager's perspective. *Technological Forecasting and Social Change, 15(2),* 119-132.

Gorecka, A. (2020). On the nature of law: The relevance of deontological natural law perspective in modern times. *International Comparative Jurisprudence*, *6*(1), 1-8.

Gottschalk, P. (2020). E-government interoperability and information resource integration: Frameworks for aligned development. *Information Systems*, *19*(3). 12-29.

Guenduez, A. A., Mettler, T., & Schedler, K. (2019). Beyond smart and connected governments: sensors and the Internet of things in the public sector. In: Ramon, G.-G. J., Pardo, T. A., & Mila, G. (eds.), *Beyond Smart and Connected Governments: Sensors and the Internet of Things in the Public Sector*. Springer, New York.

Guo, J., Liu, N., Wu, Y., & Zhang, C. (2021). Why do citizens participate on government social media accounts during crises? A civic voluntarism perspective. *Information & Management*, *58*(1), 1-12.

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research, 109(3),* 101-110.

Hair, J. F., Sarstedt, M., & Ringle, C. M. (2019). Rethinking some of the rethinking of partial least squares. *European Journal of Marketing*, *53*(4), 566-584.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2-24.

Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems*, *117*(3), 442-458.

Hair, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107-123.

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European business review, 12*(1), 30-49.

Hair, J.F., Sarstedt, M., Ringle, C.M., & Mena, J.A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, *40*(3), 414-433

Hamner, M., & Al-Qahtani, F. (2009). Enhancing the case for Electronic Government in developing nations: A people-centric study focused in Saudi Arabia. *Government Information Quarterly*, *26*(1), 137-143.

Henseler, J. (2018). Partial least squares path modeling: Quo vadis?. *Quality & Quantity*, *52*(1), 1-8.

Hill, C. W., & Jones, T. M. (1992). Stakeholder-agency theory. *Journal of management studies*, *29*(2), 131-154.

Holzer, M., & Manoharan, A. (2016). Digital governance in municipalities worldwide (2015-2016): Seventh global e-governance survey: A longitudinal assessment of municipal websites throughout the world. Newark, NJ: E-Governance Institute, NCPP, Rutgers University.

Joseph, S. R. (2015). Success Factors Influencing E-government Implementation. *International Journal of Marketing and Technology*, *5*(1), 127-135.

Kagoya. M.S., & Mkwizu, H.K. (2019). ICT Usage in Panelist Sessions to Enhance Completion of PhD Studies in Public Universities: Study of Uganda and Tanzania. *ATLAS conference proceedings:* 2019-Uganda.

Kagoya, S. M., & Gilbert, M. (2020). An E-government Readiness Assessment Framework for Ugandan Ministries. *Orsea Journal, 10*(1), 18-30.

Kagoya, M.S., Mbamba, O. U. & Sichone. (2019). User Participation Approach to E-government Implementation Success in Tanzania. *ICAESB conference Proceedings –Tanzania*

Karkin, N., & Janssen, M. (2014). Evaluating websites from a public value perspective: A review of Turkish local government websites. *International Journal of Information Management, 34*(3), 351-363.

Khan, A., & Krishnan, S. (2021). Citizen engagement in co-creation of e-government services: a process theory view from a meta-synthesis approach. *Internet Research*. *23*(4), 1-17.

Le Blanc, D. (2020). *E-participation: a quick overview of recent qualitative trends* (No. 163). Working Paper.

Liang, Y., Qi, G., Zhang, X., & Li, G. (2019). The effects of e-Government cloud assimilation on public value creation: An empirical study of China. *Government Information Quarterly*, *36*(4), 101-119

Lusinga, D. D., & Fairhurst, K. J. (2020). Role of stakeholders in business rescue. *South African Journal of Business Management*, *51*(1), 1-18.

Maruping, L. M., Bala, H., Venkatesh, V., & Brown, S. A. (2017). Going beyond intention: Integrating behavioural expectation into the unified theory of acceptance and use of

technology. *Journal of the Association for Information Science and Technology*, *68*(3), 623-637.

Melvin, A. A., Prabu, B., Nagarajan, R., & Illias, B. (2009, October). ROVI: A robot for visually impaired for collision-free navigation. In *Proceedings of the International Conference on Man-Machine Systems (ICoMMS 2009)* (pp. 3B5-1).

Mitchell, D. T., & Snyder, S. L. (2020). Disability, Neoliberal Inclusionism and Non-normative Positivism. In *Neoliberalism in Context* (pp. 177-193). Palgrave Macmillan, Cham Publisher, London.

Mkwizu, K. H., & Sichone, J. (2019). Moderating Effect of Technology on Users' Attributes and E-Government Information System Success in Tanzania. *Journal of Research Methodoology in Social Sci*ence, *5*(3), 36-46.

Manoharan, A. P., Ingrams, A., Kang, D., & Zhao, H. (2020). Globalization and Worldwide Best Practices in E-Government. *International Journal of Public Administration*, *9*(2), 1-12.

Manoharan, A. P., & Ingrams, A. (2018). Conceptualizing e-government from local government perspectives. *State and Local Government Review*, *50*(1), 56-66.

Manoharan, A. (2015). *E-government and Websites*: A Public Solutions Handbook. New York: Routledge

Mutula, S. (2013). E-government Divide: Implications for Sub-Saharan Africa. *Information Ethics for Africa*: Cross-Cutting Themes, *13*(2), 59-69.

Nabafu, R. & Maiga, G. (2012). A Model of Success Factors for Implementing Local E-government In Uganda. *Electronic Journal of e-Government*, *10*(1), 31-46.

Nakatumba-Nabende, J., Kanagwa, B., Kivunike, F. N., & Tuape, M. (2019). Evaluation of accessibility standards on Ugandan e-government websites. *Electronic Government, An International Journal*, *15*(4), 355-371.

Onyango, G., & Ondiek, J. O. (2021). Digitalization and Integration of Sustainable Development Goals (SGDs) in Public Organizations in Kenya. *Public Organization Review*, *21*(1), 1-16.

Othman, M. H., Razali, R., & Faidzul, M. (2020). Key Factors for E-Government towards Sustainable Development Goals. *Development*, *29*(6), 2864-2876.

Pangesti, R. D., Sumertajaya, I. M., & Sukmawati, A. (2016). Partial Least Square Structural Equation Modeling (PLS-SEM) with Beginners Data (Case Study: Knowledge Creation on Dairy Cooperative in Indonesia). *International Journal of Engineering and Management Research*, *6*(4), 327-332.

Pati, K. D. (2020, April). Using standard error to find the best robust regression in presence of multicollinearity and outliers. In *2020 International Conference on Computer Science and Software Engineering (CSASE)* (pp. 266-271). IEEE.

Richter, N. F., Schubring, S., Hauff, S., Ringle, C. M., & Sarstedt, M. (2020). When predictors of outcomes are necessary: guidelines for the combined use of PLS-SEM and NCA. *Industrial Management & Data Systems*, *120*(12), 2243 - 2267.

Ringle, C. M., Sarstedt, M., Mitchell, R., & Gudergan, S. P. (2020). Partial least squares structural equation modeling in HRM research. *The International Journal of Human Resource Management*, *31*(12), 1617-1643.

Sarstedt, M., Ringle, R. D., Sumertajaya, I. M., & Sukmawati, A. (2016). Partial Least Square Structural Equation Modeling (PLS-SEM) with Biner Data (Case Study: Knowledge Creation on Dairy Cooperative in Indonesia). *International Journal of Engineering and Management Research*, *6*(4), 327-332.

Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Partial least squares structural equation modeling. *Handbook of market research*, *26*(1), 1-40.

Sarstedt, M., Ringle, C. M., Cheah, J. H., Ting, H., Moisescu, O. I., & Radomir, L. (2020). Structural model robustness checks in PLS-SEM. *Tourism Economics*, *26*(4), 531-554.

Scott, M., DeLone, W., & Golden, W. (2016). Measuring eGovernment success: a public value Sarstedt, M., Ringle, Singh, H., Grover, P., Kar, A. K., & Ilavarasan, P. V. (2020). Review of performance assessment frameworks of e-government projects. *Transforming Government: People, Process and Policy*.

Sichone J., & Mbamba, U.O.L. (2017). The Influence of Administrative Aspects and Users'Attributes on E-Government Implementation Success in Tanzania. Users' Perspectives. *University of Dar es Salaam Journal, 20*(2), 39-50.

Sohaib, O. (2021). Social Networking Services and Social Trust in Social Commerce: A PLS-SEM Approach. *Journal of Global Information Management (JGIM)*, *29*(2), 23-44.

Stratu-Strelet, D., Gil-Gómez, H., Oltra-Badenes, R., & Oltra-Gutierrez, J. V. (2021). Critical factors in the institutionalization of e-participation in e-government in Europe: Technology or leadership?. *Technological Forecasting and Social Change*, *16(4)*, 120-138.

Tejedo-Romero, F., & Araujo, J. F. F. E. (2020). E-government-enabled transparency: The effect of electoral aspects and citizen's access to Internet on information disclosure. *Journal of Information Technology & Politics*, *17*(3), 268-290.

Turner, J. R., Baker, R., & Kellner, F. (2018). Theoretical literature review: Tracing the life cycle of a theory and its verified and falsified statements. *Human Resource Development Review*, *17*(1), 34-61.

Twizeyimana, J. D., & Andersson, A. (2019). The public value of E-Government–A literature review. *Government Information Quarterly*, *36*(2), 167-178.

United Nations. (2018). *Gearing e-government to support transformation towards sustainable and resilient societies*, E-Government Survey 2018, Department of Economic and Social Affairs, New York.

United Nations. (2019). *Sustainable Development Goal 16: Focus on Public institutions*, World Public Sector Report 2019, Department of Economic and Social Affairs, New York.

Usakli, A., & Kucukergin, K. G. (2018). Using partial least squares structural equation modeling in hospitality and tourism. *International Journal of Contemporary Hospitality*, *6*(1), 15-39.

Usman, A., Ozturk, I., Hassan, A., Zafar, S. M., & Ullah, S. (2021). The effect of ICT on energy consumption and economic growth in South Asian economies: an empirical analysis. *Telematics and Informatics*, *58*(10), 15-37

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 Association Information Systems*, *17*(5), 328-376.

Venkatesh, V. (2021). Adoption and use of AI tools: a research agenda grounded in UTAUT. *Annals of Operations Research*, *29*(5), 1-12.

Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). Users' Acceptanve of Information Technology: Toward a Unified View. *MIS Quarterly*, *27*(3), 287-294.

Wagner, I. (1993). A Web of Fuzzy Problems: Confronting the Ethical Issues. Communications of the ACM, *36* (4), 94-101. http://dx.doi.org/10.1145/153571.163290.

Waiswa, R., & Okello-Obura, C. (2014). To what extent have ICTs contributed to e-Governance in Uganda? *Library Philosophy and Practice*, *6*(1), 43-60.

Wong, K. K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, *24*(1), 1-32.

Zhang, G., Zhang, Y., Tian, W., Li, H., Guo, P., & Ye, F. (2021). Bridging the Intention–Behaviour Gap: Effect of Altruistic Motives on Developers' Action towards Green Re development of Industrial Brownfields. *Sustainability*, *13*(2), 1-16.

Zeng, T., Deschênes, J., & Durif, F. (2020). Eco-design packaging: An epistemological analysis and transformative research agenda. *Journal of Cleaner Production*, *17*(2), 123-138.

Zina, O. (2021). *The essential guide to doing your research project*, Sage.