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AUTHORS	Willard Munyoka Manoj Maharaj

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Willard Munyoka (South Africa), Manoj Maharaj (South Africa)

The effect of UTAUT2 moderator factors on citizens' intention to adopt e-government: the case of two SADC countries

Abstract

E-government is widely believed to play a significant role in improving the public service delivery system in developing countries. Yet, its adoption and utilization amongst citizens remain a subject of concern amongst government policy makers. This study aims to investigate moderating factors that influence citizens' decisions to adopt and utilize e-government services in the SADC region. The study adopts the extended UTAUT2 model as a theoretical underpinning, backed by recent literature on e-government adoption to advance and test an e-government adoption model. Empirical quantitative data for validating the proposed model was collected from 247 participants using self-administered questionnaires.

In analyzing the empirical data, five moderating demographic factors affecting citizens' behavioral intention to adopt e-government services were tested and confirmed. The study found that only four moderating factors (age, level of education, the location of residence, and vernacular language) positively influenced citizens' intention to adopt e-government. The study concludes by drawing attention to insights on moderating factors affecting e-government adoption, thereby casting more light to success factors and gray areas for failed adoption.

Keywords: adoption, e-government, UTAUT2, Zambia, Zimbabwe, SADC.
JEL Classification: O33.

Introduction

The World over, many governments are advocating for the incorporation of information and communication technologies (ICTs) in the auspices of e-government into its daily public service delivery systems. In today's competitive global economy, e-government reforms are aimed at improving the efficiency of service delivery, communication with all government stakeholders, decision-making process, ensure accountability and transparency of government officials (Dombeu and Rannyai, 2014), and fostering sustainable development and eliminating poverty through good governance (United Nations, 2016a). The ever growing number of e-government projects being adopted by government agencies across the world is a real testimony to its perceived significance as a crucial tool for transforming public service delivery system (Venkatesh, Thong, Chan and Hu, 2016). Such arguments and the perceived long-term benefits of e-government adoption have led numerous SADC countries (Dombeu and Rannyai, 2014), Zimbabwe and Zambia included, to embark on e-government projects. However, whilst the benefits of e-government adoption are well documented in literature, its ambiguity as a concept of governance, rather than simply the harnessing of ICTs and the internet into public service delivery system, is somewhat attributed to the failure by policy makers in government to understand the interplay of major factors affecting its adoption and utilization by citizens (Ruhode, 2016; Ochara, 2008)

This study seeks to theoretically understand the significance of moderating factors in influencing citizens' behavioral intention to adopt e-government services in the context of SADC region. Drawing from the UTAUT2 model of technology acceptance and adoption, this study proposes an e-government adoption model comprised of five moderating factors that are then mathematically tested for significance in influencing one's decision to adopt e-government. Therefore, this study adds value to the field of ICT for development (ICT4D) by contributing to e-government adoption theory building relevant to the SADC region and many developing countries with similar political and economic terrain.

Macueve (2008:p. 2) argues that e-government is "a very complex concept," involving not only ICT solutions; but also "driven by political agendas" in search of good governance. It, therefore, follows that e-government solutions can either be government (supply) driven or people-driven. Within the supply-driven initiative, governments seek to provide comprehensive one-stop e-government services without consulting with citizens regarding demanded e-services. Contrary, in people-driven e-government service, the government adopts liaises fair style of open consultative forum with citizens on e-government-related matters. Additionally, people-driven e-government initiative values citizens' inputs and ideas most before rolling out any e-service to ensure ownership, adoption, and utilization.

The rest of the article is presented as follows. The next section outlines the extended UTAUT2 model as applied to e-government adoption followed by

© Willard Munyoka, Manoj Maharaj, 2017.
Willard Munyoka, M.Sc., B.Sc. (Hons), PGDHE, PGCHE, Lecturer, Department of Business Information Systems, University of Venda, South Africa.
Manoj Maharaj, Ph.D., M.Sc., B.Sc. (Hons), Professor, School of Management, IT & Governance, University of KwaZulu-Natal, Durban, South Africa.

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the research hypotheses and research methodology. Following this are the results, structural model, discussion, implications, limitations and conclusion of the study.

1. UTAUT2 model of e-government adoption

The extended unified theory of acceptance and use of technology (UTAUT2) (Venkatesh, Thong, and Xu, 2012) model underpins this study. UTAUT2 is an extension of the original UTAUT (Venkatesh, Morris, Davis, and Davis, 2003) model which advances seven direct determinants (construct variables) that directly influence citizens' behavioral intention to adopt technological innovations: effort expectancy, facilitating conditions, performance expectancy, price value, hedonic motivation, social influence and habits. Venkatesh et al. (2012) have suggested three moderator variable of behavioral intention to adopt, which are relevant to the ICT consumer industry; namely, age, gender and experience in using a specific e-service. Venkatesh et al. (2003) posit that the situation and context of ICT acceptance and use differ widely from organizational setup to consumer setup; and as such, researchers are allowed to add and remove determinants and moderator variables to suit different circumstances. For this reason, the UTAUT2 model, as outlined in Figure 1 was chosen in this study to assess the relevance and effect of five moderator variables (age, gender, level of education, location of citizen's residence, and vernacular language options on e-government websites) on citizens' behavioral intention to adopt e-government services. Furthermore, the UTAUT2 is the most comprehensive model (Tavares, and Oliveira, 2016; Mahfuz, Khanam, and Hu, 2016) that has been extensively used in many contemporary empirical studies on ICT adoption and utilization (Al-Mamary, Alnashmi, Hassan and Shamsuddin, 2016; Venkatesh and Bala, 2008) – hence the same reason for the researchers to adopt it in this study. Moreover, in the context of the SADC region, specifically focusing on the Zimbabwean and Zambian case, the researcher found that empirical research on e-government adoption and utilization using the UTAUT2 model are lacking (with the exception of Bwalya and Healy, 2010).

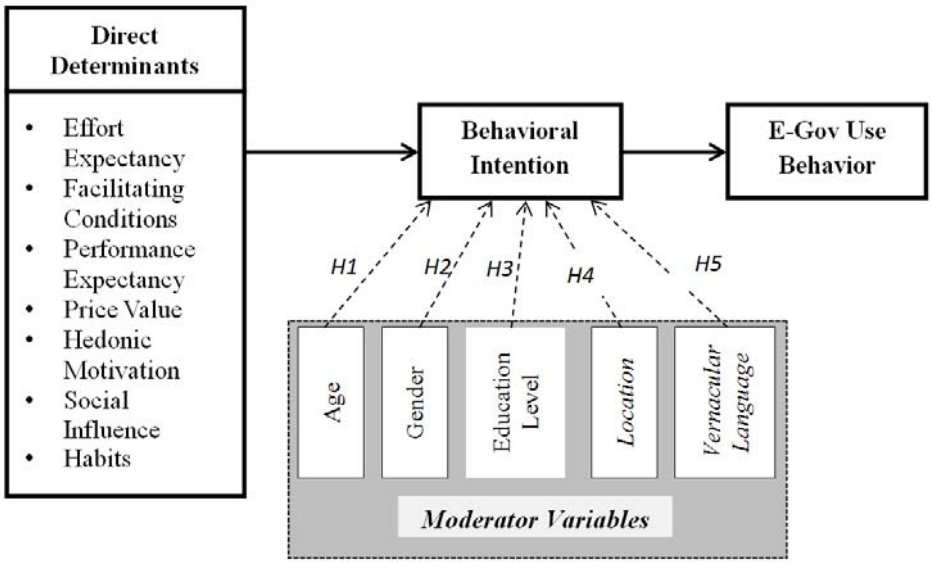


Fig. 2. E-government adoption research model for the study

2. Research model and hypotheses

Figure 1 outlines the modified UTAUT research model adopted for this study to investigate the effect of the five moderator variables on citizens' intention to adopt e-government services in the context of the SADC region. The UTAUT research model hypothesizes that citizens' behavioral intention to adopt e-government services can be explained by five moderator variables (see Figure 1). Furthermore, in this study, each moderator variable constitutes a hypothetical statement that should then be tested using suitable and standard mathematical models as outlined in the methodology section below. In investigating the adoption of e-government in Zambia and Zimbabwe, the ensuing hypotheses were established:

- ***H1****: Differences in ages of citizens have a significant effect on e-government adoption.*
- ***H2****: The gender of respondents has a significant effect on their adoption of e-Government.*
- ***H3****: The level of education of citizens has asignificant effect on adoption of e-Government; such that the behavioral intention and usage behavior is much higher with citizens with higher educational qualifications.*
- ***H4****: The location that one resides in significantly*

affects their adoption of e-Government; such that the behavioral intention and usage behavior is much higher with citizens within a nation.

- ***H5****: The availability of vernacular language option on e-Government websites significantly influences the behavioral intention of citizens to adopt and utilize e-Government more than it does for their usage behavior.*

3. Research methodology

This study adopts a quantitative research approach aimed at validating the adopted research model to establish the effect of various moderator variables on e-government adoption. According to Creswell (2014) the coding of such quantitative variables within the measurement instruments, in this instance, questionnaires, should be such that they facilitate statistical data analysis, either as descriptive or inferential. The researchers used a self-administered questionnaire to gather primary data for the study. The variables were presented in the first section of the questionnaire and were measured either as nominal or scale variables, with two-point (gender), six-point (age), ten-point (vernacular language), six-point (level of education) and eight-point (geographical location of residence) Likert-scales. Prior to the full-scale data gathering process, the questionnaire was piloted with ten randomly selected citizens to ensure that the data collection instrument really measured what it was intended to measure and that its wording did not create any confusion amongst respondents. The final questionnaire was then administered to 300 participants (150 participants from each country) over a period of eight weeks. Only 247 questionnaires were fit and used for final data analysis.

Within the quantitative methods spectrum, there are several measures of fitness that could be used to establish the extent to which the established hypothetic-model fits the collected data. According to Kenny (2015), measures of the overall fit of the model can be classified into two categories: absolute fit and incremental fit. An absolute-fit measure holds that the best-fit value of a model is zero and then determines 'how far' the obtained values for the model from that best fit are. Kenny (2015) posits that the closer the absolute fit index is to zero (i.e. $p \leq 0.05$); more significant is the fit to the model. The researchers used Pearson's Chi-square test (χ^2) for this purpose.

Since the Pearson's Chi-square test (χ^2) is a significance statistic for hypothesis testing in nominal variables, McHugh (2013) recommend that it should be used in conjunction with other strength statistic measures. Following McHugh's (2013) suggestion, the strength of association between behavioral intention to adopt e-government and moderator variables were tested using *Phi* and *Cramer's V*.According to Kotrlik et al. (2011), the *Phi* measurement should be used to approximate the degree of association in a dichotomous relationship, in which the variables have been coded as either 0 or 1 (alternatively as yes or no). In addition Kotrlik et al (2011, p.137) posit that the *Cramer's V* coefficient describes the extent of relationship amid categorical variables for any "contingency table larger than 2 by 2". For this study, both *Phi* and *Cramer's V* coefficient measurement of association are relevant since both dichotomous relationships and contingency tables greater than 2 by 2 exist for associativity evaluation.

Kotrlik et al (2011, p. 138) proposed six-degrees of descriptors for measuring and interpreting the *Phi* and *Cramer's V* coefficient scales: negligible-association (0.00 and below 0.10); weak-association (above 0.10 and below 0.20); moderate-association (above 0.20 and below 0.40); relatively-strong-association (above 0.40 and below 0.60); strong-association (above 0.60 and below 0.80) and very-strong-association (above 0.80 and below 1.00). All *Phi* and *Cramer's V* values that fall below 0.20 (negligible to weak associations) in this study were dropped as an insignificant association. The next section uses Pearson's Chi-square, *Phi* and *Cramer's V* tests to establish the extent, to which the established hypothetical-model fits the collected data.

4. Results: effects of moderator factors on e-Government adoption

The study hypothesized that the intention to adopt e-government services was moderated by demographic differences characterizing the potential users. In this study, access and frequency of use of smartphone technology were used as proxy measures for intention to use e-government over computer usage for one main reason. In the developing world, there is ample evidence to suggest that smartphone access, ownership, and usage is high among citizens, when in relative terms compared with computer access, ownership and usage (ZICTA, 2015). The proportion of households in Zambia that had access to a computer rose from 4.9% in 2013 to 7.1% in 2015; with the majority of access skewed towards urban dwellers. Similarly, ZICTA (2015) reported that 49.7% of households that use computers had access to the internet in 2015. In contrast to computer ownership, ZICTA (2015, p.10) posits that 13.5% of households own a smartphone and 71% of that population uses their smartphones to internet accesses. Given this background, the next sections outline the findings on the

several demographic factors moderating citizens' intention to use e-government services in SADC.

5. Gender versus intention to use e-Government

Table 1. Chi-square test results for gender versus intention to use e-government

	Value	df	Asymp. sig. (2-sided)
Pearson Chi-square	3.495[a]	5	.624
Likelihood ratio	3.521	5	.620
N of valid cases	247		

Sourse: a. 2 cells (16.7%) have expected count less than 5. The minimum expected count is 3.85.

Table 2. Phi and Cramer's V tests for association between gender and intention to use e-government

		Value	Approx. sig.
Nominal by nominal	Phi	.119	.624
	Cramer's V	.119	.624
N of valid cases		247	

Source: a. Not assuming the null hypothesis. b. Using the asymptotic standard error assuming the null hypothesis.

In Table 1, Pearson's Chi-square tests results from SPSS shows that '2 cells have expected count less than 5 and the minimum expected count is 3.85'. The sample size requirement for the chi-square test of independence is satisfied.The probability of the chi-square test statistic (χ^2 = 3.495) was p = 0.624, more than the alpha level of significance of 0.05 (Howell, 2009). Values for both *Phi* and *Cramer's V* are relatively small (0.119) and not significant (p-values > 0.05) suggesting a low strength of association if any. See Table 2.

6. Age versus citizen's intention to use e-government

Table 3. Chi-square test results for age versus intention to use e-government

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	38.507[a]	25	.041
Likelihood ratio	40.695	25	.025
Linear-by-linear association	2.638	1	.104
N of valid cases	247		

Sourse: a. 18 cells (50.0%) have expected count less than 5. The minimum expected count is .16.

Table 4. Phi and Cramer's V Tests for Association between age and intention to use e-Government

		Value	Approx. sig.
Nominal by nominal	Phi	.395	.041
	Cramer's V	.177	.041
N of valid cases		247	

Sourse: a. Not assuming the null hypothesis. b. Using the asymptotic standard error assuming the null hypothesis.

In Table 3 results shows that '18 cells have expected count less than 5 and the minimum expected count is 0.16'. In addition, the probability of the chi-square test statistic (χ^2 = 38.507) was p = 0.041, less than the alpha level of significance of 0.05. As shown in Table 4 values for both *Phi* and *Cramer's V* are relatively large and significant (p-values < 0.05) suggesting a high strength of association between the age of citizens and their intention to use e-government.

7. Level of education versus intention to use e-Government

Table 5. Chi-Square Test results for level of education versus intention to use e-Government

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	92.902[a]	25	.000
Likelihood Ratio	88.615	25	.000
Linear-by-Linear Association	58.693	1	.000
N of Valid Cases	247		

Sourse: a. 19 cells (52.8%) have expected count less than 5. The minimum expected count is .03.

Table 6. Phi and Cramer's V tests for association between levels of education and intention to use e-government

		Value	Approx. Sig.
Nominal by nominal	Phi	.613	.000
	Cramer's V	.274	.000
N of valid cases		247	

Sourse: a. Not assuming the null hypothesis. b. Using the asymptotic standard error assuming the null hypothesis.

Table 5 provides Pearson's Chi-square test result for the effect of one's level of education on his/her intention to adopt e-government. The probability of the chi-square test statistic (χ^2 = 92.902) was p = 0.000, less than the alpha level of significance of 0.05. Moreover, values for both *Phi* and *Cramer's V* as shown in Table 6 are relatively large and significant (p-values < 0.05) suggesting a high strength of association between the level of education and intention to use e-government.

8. Availability of vernacular language options versus intention to use e-government.

Table 7. Chi-square test results for availability of vernacular language options versus intention to use e-government

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	81.817[a]	15	.000
Likelihood ratio	64.335	15	.000
Linear-by-linear association	32.196	1	.000
N of valid cases	247		

Sourse: a. 14 cells (58.3%) have expected count less than 5. The minimum expected count is .29.

Table 8. Phi and Cramer's V - availability of vernacular language options versus intention to use e-government

		Value	Approx. Sig.
Nominal by Nominal	Phi	.576	.000
	Cramer's V	.332	.000
N of Valid Cases		247	

Sourse: a. Not assuming the null hypothesis. b. Using the asymptotic standard error assuming the null hypothesis.

Table 7 provides the Chi-square test results for the effect of the availability of vernacular language options on e-government websites on citizens' intention to adopt e-government services. The probability of the chi-square test statistic as presented in Table 7 shows that $\chi^2 = 81.817$ and was p = 0.000, less than the alpha level of significance of 0.05. Moreover, the values for both *Phi* and *Cramer's V* are relatively large and significant (*p*-values < 0.05), thus suggesting a high strength of association between availability of vernacular language options and citizens' intention to use e-government, as shown in Table 8.

9. Geographic location of users (within nations) versus intention to use e-government

Table 9. Chi-square test results for geographic location of users (within nations) versus intention to use e-government

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	58.677[a]	15	.000
Likelihood ratio	60.086	15	.000
Linear-by-linear association	39.551	1	.000
N of valid cases	247		

Sourse: a. 10 cells (41.7%) have expected count less than 5. The minimum expected count is .65.

Table 10. Phi and Cramer's V - geographic location of users (within nations) versus intention to use e-government

		Value	Approx. Sig.
Nominal by nominal	Phi	.487	.000
	Cramer's V	.281	.000
N of valid cases		247	

Sourse: a. Not assuming the null hypothesis. b. Using the asymptotic standard error assuming the null hypothesis.

Table 9 shows the chi-square test results, value ($\chi^2 = 58.6770$) was p = 0.000, less than the alpha level of significance of 0.05. In addition, Table 10 indicate that the values for both *Phi* and *Cramer's V* are relatively large and significant (*p*-values < 0.05), suggesting a high strength of association between the geographic location of citizens within nations and intention to use e-government.

10. Geographic location of users (between nations) versus intention to use e-government

Table 11. Chi-square test results for geographic location of users (between nations) versus intention to use e-government

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.501[a]	10	.485
Likelihood Ratio	10.994	10	.358
N of Valid Cases	247		

Sourse: a. 8 cells (44.4%) have expected count less than 5. The minimum expected count is .13.

Table 12. Phi and Cramer's V – geographic location of users (between nations) versus intention to use e-government

		Value	Approx. Sig.
Nominal by Nominal	Phi	.196	.485
	Cramer's V	.139	.485
N of Valid Cases		247	

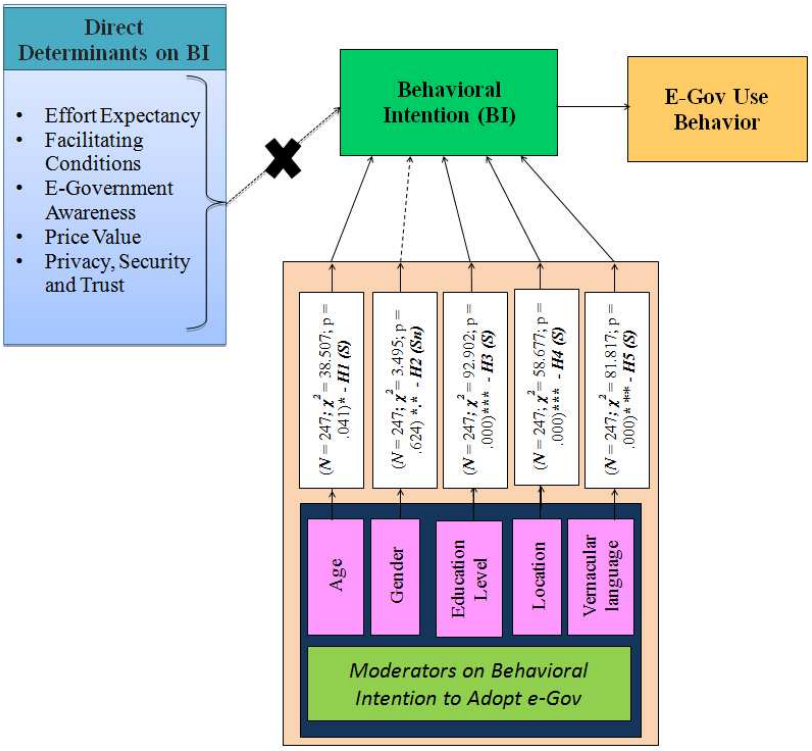
Sourse: a. Not assuming the null hypothesis. b. Using the asymptotic standard error assuming the null hypothesis.

Table 11 presents the Chi-square test results for the effect that the geographic location of users (across nations) had on respondents' intention to use e-Government. Results tell us that the probability of the chi-square test statistic ($\chi^2 = 9.501$) was p = 0.485, more than the alpha level of significance of 0.05. Furthermore, values for both *Phi* and *Cramer's V* as illustrated in Table 12 are relatively small and not significant (*p*-values > 0.05) suggesting a low strength of association if any. Finally, no significant differences in citizens' intention to adopt and accept e-government could be established across nations for the case study.

11. Structural model

Figure 2 outlines a summary of the validated structural model built after hypotheses testing above using Pearson's Chi-Square, *Phi* and *Cramer's V* tests. The tests indicate the strength (significance) of associations between independent variables (moderator variables) and the dependent variable (behavioral intention to adopt) for the study.As explained in the above section and outlined in Figure 2 regarding the effect of citizens' gender on their behavioralintention to adopt e-government services; hypothesis *H2* is not supported by this analysis as such results were found not to be statistically significant.In-line with the moderating effect of one's age on their intention to adopt e-government services, results findings support the research hypothesis (*H1*) that differences in 'intention to use e-government' are significantly influenced by differences in citizens' ages. Regarding the influence of a citizen's level of education on their behavioral intention to use e-government (hypothesis *H3*), a strong significant relationship (*p*-value of 0.000) was between the two was substantiated by this analysis. Pearson's

χ^2value (81.817) of associativity between the effects of the availability of vernacular language options on e-government websites and their intention to use such e-government services was found to be significant at *p*-value = 0.000 for both *Phi* and *Cramer's V* tests – thus supporting hypothesis *H5*.



Sourse: * Significant at (p-value < 0.05)
** Significant at (p-value < 0.01)
*** Significant at (p-value < 0.001)
. Not Significant at any of the above values
X – Determinant factors not investigated in this study
H(S) – Hypothesis supported by this study
H(Sn) – Hypothesis not supported by this study
Solid-lines exhibit supported/ significant relationships

Fig. 3. Structural model result findings

In-line with the topic of digital and e-service utilization divide, the study also investigated, whether the geographic location of residence of a citizen (both within a nation and across the studied nations) will play any significant effect on their behavioral intention to adopt e-government services. Hypothesis *H4* is supported by findings of this study which revealed that citizens' behavioral intention to adopt and use e-government is more pertinent within a single nation (χ^2 = 58.677 and *p*-value = 0.000) as opposed to cross-national (χ^2 = 9.501 and *p*-value = 0.485) comparison.

12. Discussion

This study was aimed at investigating the effect of moderating variables (demographic factors) on citizens' behavioral intention to adopt e-government services in the SADC region, using Zimbabwe and Zambia as case studies. Using UTAUT2 as a theoretical underpinning, the researchers focused on five moderators of age, gender, one's level of education, the location of participant's residence and the availability of vernacular language options on e-government websites.

Consistent with prior studies on e-government adoption (Venkatesh et al., 2003; Touray, Salminen and Mursu, 2013; Venkatesh, Thong, and Xu, 2012; ALotaibi, Ramachandran, Korand Hosseinian-Far, 2016); this study found that the age of citizens has a positive significant influence on their behavioral intention to adopt e-government services. Alzahrani, Al-Karaghouli, and Weerakkody (2016) posit that citizens' preferences (demand) for and trust on e-government services tends to vary according to different age groups. As such, governments rolling out e-government should consider age differences in their market segmentation. Uniquely, gender differences amongst participants were found to have no significant influence on behavior intention to adopt e-government services amongst citizens in the context of Zimbabwe and Zambia. This is uncharacteristic and contradicts with most previous studies, where gender divide was reported to be rampant and significantly influencing citizens' intention to adopt e-government (Chinyamurindi and Shava, 2015; United Nations, 2016a). Traditionally, e-government services are targeted at the general public, and as such, findings of

this study concur. However, since gender equity (Pankan and Radhakrishnan, 2016) features prominently on the United Nations Sustainable Development Goals (United Nations, 2016b), the researchers suggest that caution is taken, when addressing e-government adoption in gender sensitive circumstances like woman-targeted community-based projects for sustainable development.

The results of this study revealed a positive significant relationship between citizens' level of education and their behavior intention to adopt e-government services. Our findings oncitizens' level of education concur with findings of previous studies (Yusuf and Xiaoyun, 2016; Rabaa'i, Zogheib, AlShatti and Al Jamal, 2016; Alshehri, Drew, and Alghamdi, 2012) on e-government adoption in developing countries. The implication for decision makers on e-government related issues is that the level of education of citizens affects their awareness of the availability of e-government services and the effort expectancy to use such e-services. As such, the government should devise mechanisms to raise awareness amongst citizens with varying educational backgrounds to encourage e-service uptake.

The effect of vernacular language options on e-government websites on citizens' intention to adopt such e-services was examined by hypothesis five and was found to be positively related and significant in the context of Zimbabwe and Zambia. Our findings are consistent with contemporary studies (Otieno, Liyala, Odongo and Abeka, 2016; Perucca and Sonntagbauer, 2014) that were underpinned by the UTAUT model. The implications of the findings of this study to policy makers are that e-government websites should be designed with many language options, relevant to the targeted audience in order to increase accessibility and utilization. This is even more pertinent to the SADC region, where the majority of citizens live in rural areas (United Nations Economic Commission for Africa, 2006; Kimuna, 2009) and are well conversant with their vernacular languages, as opposed to the widely used English language on most e-government websites.

Hypothesis 4 investigated the effect that one's geographical location of residence have on their intention to adopt e-government services within a nation and across nations. The empirical findings of this study found that one's location of residence has a positive significant effect on behavior intention to adopt e-government services within a single nation as opposed to the inter-country comparison.Such findings are unusual and inconsistent with most previous studies which uphold that e-government adoption varies greatly within and across countries (United Nations, 2016a, p.242; OECD, 2016, p.14). The implication of our findings to decision and policy makers on e-government related matters within the SADC region is that e-government efforts on adoption and utilization should be focused first at national-level (within a country) with a long term vision of attaining broader regional SADC strategic set goals.

13. Implications

In the context of the SADC region, focusing specifically on Zimbabwe and Zambia, this study represents one of the limited empirical studies investigating the effect of moderator factors that affect citizens' behavioral intention to adopt and utilize e-government services in the G2C domain guided by the extended UTAUT2 (Venkatesh et al., 2012) model for technology acceptance and adoption. Furthermore, this study adds value to the field of e-government adoption and utilization in the context of developing nations by modifying the UTAUT2 model through adding moderator variables (vernacular language and geographical location) deemed pertinent to most countries in the SADC region. Whilst most of the studies done on testing the relevance of the UTAUT2 model tended to concentrate more on e-service adoption in the G2B and e-commerce domains in the developed, Western countries, the present study presents unique empirical findings from most previous research by focusing on the G2C domain within the Zimbabwean and Zambian context. Since the original UTAUT (Venkatesh et al., 2003) model was designed to test employees' behavioral intention to accept and use technological innovations in the context of employees in organizations, they recommended researchers to adapt both direct determinants and moderator variables to suit specific scenarios (Venkatesh and Bala, 2008). In this regard, the e-government adoption and utilization model formulated and empirically tested for its significance and relevance to the SADC region will be of profound interest to government entities and policy makers considering to adopt and increase adoption and utilization of e-government services by citizens. Equipped with such a decision-making tool, influential decision makers on public service delivery systems can make practical implementation use of this proposed model in determining how to allocate resources to most pertinent demographical and determinant factors influencing citizens in their decisions to adopt e-government. For instance, identifying and allocating financial resources to promote e-government utilization amongst targeted groups like old-aged, working class and students. Finally, this study sheds more light on all people with decision-making role to be proactive in consultative with citizens and to better understand the pitfalls engulfing reported failed (Yonazi, Sol and Boonstra, 2010; Nkohkwo and Islam, 2013) e-government adoption and thwarted utilization in the context of developing countries.

14. Limitations

Outlined below are some of the limitations of this study. Firstly, the study focused on citizens' behavioral intention to adopt e-government services

in the context of SADC region, using Zimbabwe and Zambia as a case study. Subsequently, the researchers draw readers' attention to adopting caution when generalizing the findings of this study to the entire SADC region. Secondly, the study only investigated moderator variables of the extended UTAUT2 (Venkatesh, Thong, and Xu, 2012) model. Although the second point is a limitation in this study, it creates an opportunity and new avenue for further research direction by investigating the effect of direct determinants on both behavioral intentions and use behavior of e-government services by citizens.

Conclusion

The aim of this study was to investigate the significant role played by five UTAUT2 moderating factors on influencing citizens' behavioral intention to adopt e-government services in the context of SADC region, using Zimbabwe and Zambia as acase study. This study proposed an E-government adoption research modelconsidered relevant to the SADC context based upon the extended UTAUT2 model (Venkatesh et al., 2012). Empirical data to test and validate the model was collected from 247 respondents using questionnaires and analyzed using IBM SPSS Statistics version 23. Findings of this study draw attention to several aspects relating to factors affecting citizens' intention to adopt e-government services in the SADC region. Firstly, empirical findings substantiate a positive significant influence of four moderator factors (age, level of education, the location of residence, and availability of vernacular language option) on citizens' intention to adopt e-government services. Secondly, the results did not found any significant relationship between gender of the citizen and behavioral intention to adopt e-government. However, the researchers remind readers that although our empirical findings did not support the gender factor in e-government adoption efforts; gender equity remains one of the seventeen corner pillars of the United Nations Sustainable Development Goals (United Nations, 2016b). Overall, empirical findings of this study provided a basis for validating moderator factors of the proposed e-government adoption research model. Moreover, the study sheds more light to policymakers on e-government adoption and utilization, drawing their attention to key demographic variables considered relevant to the SADC context. As a result, this study has contributed new insights into key factors affecting citizens' intentions to adopt e-government and generally, to the evolving body of literature on e-government adoption and utilization in developing countries. For future research work, the focus should be placed on investigating the correlation of determinant and moderating factors on e-government adoption and utilization in the context of SADC region.

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