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Perceived Ease of Use: Examining its Influence on Personal Use of the Tax e-Filing System

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This paper examines the influence of perceived ease of use on personal use of the tax e-filing system in South Africa. Data was collected using in-depth interviews and a structured questionnaire. The findings show that higher levels of perceived ease of use are associated with personal use as well as behavioral intentions to make use of the system. The results also indicate that computer self-efficacy and access to information have positive influence on perceived ease of use. These findings point to the need for equipping people with skills and information that can enable them to make use of the system.

Keywords: Tax e-filing; adoption behavior; perceived ease of use; computer self-efficacy; Technology Acceptance Model; South Africa.

1. Introduction

Tax authorities around the world are increasingly making use of electronic tax filing systems in their efforts to improve operational efficiency and effectiveness as well as modernize service delivery. In South Africa, tax e-filing was first introduced by the South African Revenue Services (SARS) in 2003. SARS is a government-owned institution, established by an Act of Parliament, mandated with collecting revenue and ensuring that tax and customs legislation is complied with. The SARS e-filing system allows individuals, businesses as well as tax practitioners to register free of charge and carry out a variety of transactions including submission of tax declarations and returns as well as making tax related payments.

Tax e-filing systems are known around the world to help in improving the operations of tax authorities by, inter alia, reducing the need for printing large quantities of tax forms and mailing them to tax payers, and eliminating the need for tax officials to capture tax information as is the case with paper submissions. Manly et al. [2005] notes that most e-filing systems provide for validation of information and data matching thereby making submissions less prone to error and easing tax officials of the burden of verifying and correcting information. This also helps to

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reduce problems of tax evasion. Ambali [2009] observes that e-filing systems help tax authorities to process tax files in an expeditious manner, thus preventing delays in collecting revenue while at the same time providing tax payers with the opportunity to receive tax refunds, if any, faster than is normally the case with paper-based filing. For example, SARS [2012] reports that adoption of the electronic filing system enabled it to process 98% of submitted personal income tax returns within 24 h of submission. SARS also reports that faster processing times enabled them to more rapidly issue income tax refunds with 85% of personal income tax refunds made within 72 h of the return being submitted.

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2. Problem Statement

Incentives such as faster processing and refund times have, in many countries including South Africa, resulted in large uptake of tax e-filing by individual tax payers. According to SARS [2012], over 95% of all personal income tax returns in the 2011/2012 tax year were submitted using the e-filing system. While this is so, evidence abound that most individual tax payers rely on other people, such as tax agents or family members and friends, to prepare and submit tax returns on their behalf. Such reliance often costs the tax payer their privacy as they are required to make all details related to their income available to the person/s assisting them. Furthermore, use of tax agents also comes at considerable financial cost to the individual tax payer.

Bearing in mind that the tax e-filing system is a public service that is freely available to all tax payers, and taking cognizance of the privacy risks associated with using other people in making such transactions, it is of interest in this study to find out why some tax payers are not personally adopting use of the e-filing system, and what can be done to improve such personal usage. In particular, this study aims at addressing the above concerns by examining the influence of perceived ease of use on the decision to personally prepare and submit income tax returns using the SARS efiling system. This is based on the belief that a good understanding of factors associated with acceptance of modern technologies, such as e-filing systems, from the targeted end-user's perspective is important in ensuring that authorities design effective intervention programs aimed at ensuring wide adoption of their systems. The specific objectives of this paper are thus (i) to examine levels of perceived ease of use of the electronic tax filing system among individual income tax payers, (ii) to investigate factors that impact on the perceived ease of use of the tax e-filing system and (iii) to make recommendations on efforts that can be taken to ensure wide adoption of tax e-filing systems.

3. Literature Review

Proliferation of Information and Communication Technologies in today's world has resulted in a situation where people regularly find themselves in positions where they have to make decisions about using new technologies. Most of these technologies come at a great financial cost to the organizations introducing them. These costs are better justified when there is wide acceptance among intended users. Banytė and

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Salickaitė [2008] observe that while innovation failure can happen during the process of creation, organizations experience greater losses when innovations fail during the adoption stage in the market place. This has resulted in growing interest among practitioners and researchers in understanding the factors that impact upon technology acceptance by targeted users.

A detailed analysis of literature on the adoption of innovations — especially those related to computer technologies — shows that most researchers make use of the Technology Acceptance Model (TAM) proposed by Davis [1989] to understand adoption behaviors. TAM attributes adoption failure or success of technological innovations to two main factors namely perceived usefulness of the technology and perceived ease of use. Perceived usefulness is defined as 'the degree to which a person believes that a particular system would enhance his or her job performance', while perceived ease of use is defined as 'the degree to which a person believes that using a particular system would be free from effort' [Davis (1989)]. The model suggests that these two factors influence attitudes towards new technologies which in turn influence potential users' behavioral intentions [Tanoglu et al. (2010)]. In the model, behavioral intention affects an individual's actual use of a new technology [Mak et al. (2009)]. Taylor and Todd [1995] note that Davis in proposing the two key constructs in TAM, i.e. perceived ease of use and perceived usefulness, found inspiration in part from studies on characteristics of innovations including those identified by Rogers [1983] in his studies on diffusion of innovation. These characteristics include relative advantage, compatibility, complexity, observability and trialability. Taylor and Todd [1995] specifically note that relative advantage and complexity are analogous to the TAMS's notions of perceived usefulness and perceived ease of use.

Empirical research including studies by Saleh and Abushanab [2010] as well as Habets et al. [2007] provide support for the significant role that perceived usefulness and perceived ease of use play in explaining the use of new technologies. In line with the focus of this study, the following hypotheses are thus proposed:

- **H1:** There are significant differences in levels of perceived ease of use between personal users and non-users of the tax e-filing system.
- **H2:** There is a significant positive relationship between behavioral intention to personally make use of tax e-filing and perceived ease of use.

It is important to note that while the benefits of information technologies are often easy to articulate, researchers have not been very successful in explaining the factors that impact on people's beliefs relating to the ease of use of new technologies. In the case of tax e-filing, a lot of literature exists on benefits of using the system compared to paper filing, and wide usage of the system in South Africa bears testimony to the fact that people find its use beneficial compared to paper filing. Perceived usefulness, however, does not explain why some people choose to personally use the system while others make use of third parties. Such an explanation may be provided by examining possible factors that may influence people's perceptions relating to ease of use.

According to Davis [1989], perceptions regarding ease of use can be understood by focusing on the abilities necessary for one to perform a given task. Ormrod [2006]

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refers to the measure of one's ability to complete tasks as self-efficacy. Self-efficacy is known to play an important role in determining behavior as well as behavioral intention. This is because people tend to shun tasks where their self-efficacy is weak, and take on tasks where self-efficacy is strong. Bandura [1982] notes that high self-efficacy makes people view difficult tasks as something to be mastered rather than something to be shunned. Tanoglu et al. [2010] observes that computer self-efficacy is known to enhance the individual's perceptions of ease of use of information technologies. Strong self-efficacy can thus be an important source of motivation to perform a given task. Empirical studies done in the area of information technology systems acknowledge the role of computer self-efficacy in determining individuals' acceptance or adoption decisions. For example, Adesina and Ayo [2010] as well as Reid and Levy [2008], in their studies on adoption of e-banking services, report a positive relationship between computer self-efficacy and perceived ease of use of e-banking systems. It is thus hypothesized in this study that:

- **H3:** There are significant differences in levels of computer self-efficacy between personal users and non-users of tax e-filing system.
- **H4:** There is a significant positive relationship between behavioral intention to personally make use of tax e-filing and level of computer self-efficacy.

Commenting on sources of self-efficacy in general, Bandura [1982] notes that the most common source of self-efficacy is the experience that comes with learning. At the same time, some researchers have noted that with information technologies becoming pervasive in the modern age, one does not need to have knowledge relating to a specific system in order to have a sense of ability to use new information technologies. According to Venkatesh and Davis [1996], a general sense of one's ability to use information technologies obtained through experience with other technologies is sufficient to provide an anchor for judging one's ability to use new and unfamiliar systems.

Communication is another commonly cited factor in studies on diffusion of innovations. Wright [2006] notes that communication plays an important role in facilitating the diffusion of innovations. In general, it is advised that organizations plan their communication efforts so as to ensure that people are aware of the benefits associated with using an innovation as well as details on how to make use of it. To this end, organizations need to decide on the communication channels to be used, the message and must ensure that these are oriented towards the desired behavior [Banytė and Salickaitė (2008)]. Studies by Barrot et al. [2013] as well as Zenobia and Weber [2013] provide support for the important role that information plays in influencing use of new technologies. Kim [2011] and Tanninen et al. [2008] note that individuals who are not well informed are likely to have high levels of uncertainty regarding new innovations. It is thus hypothesized in this study that:

- **H5:** There are significant differences in perceived levels of access to tax e-filing information between personal users and non-users of the system.
- **H6:** There is a significant positive relationship between access to tax e-filing information and behavioral intention to personally make use of the system.

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Studies by Chang et al. [2012] as well as Holden and Rada [2011] provide empirical evidence of the significant and direct role that computer self-efficacy plays in influencing perceived ease of use. Findings reported by Zenobia and Weber [2013], on the other hand, show the important role that information plays in influencing individuals' perceptions regarding ease of use of new technologies. In line with these findings, the following hypotheses are made in this study:

- **H7:** There is a significant positive relationship between computer self-efficacy and perceived ease of use of the tax e-filing system.
- **H8:** There is a significant positive relationship between access to tax e-filing information and perceived ease of use of the system.

4. Methodology

This study employed both qualitative and quantitative approaches in collecting the information needed to understand the role of perceived ease of use in the adoption of tax e-filing. The qualitative component of the study involved conducting in-depth interviews with current personal users and non-personal users of tax e-filing. Personal users in this study are defined as those individuals who prepare and submit their tax returns using the tax e-filing system themselves and not through the use of agents or other people including friends. A total of 10 individuals were involved in the interviews. Judgment sampling was used to identify participants. The principle guiding factor in making the judgment was to ensure that only participants who are aware of SARS' e-filing system are included. An interview protocol was prepared to guide the interviews and each interview lasted for an average of 30 min. All interviews were voice recorded and later transcribed before being subjected to thematic analysis.

The quantitative component of the study involved collection of data using a structured questionnaire. Constructs used in this paper were measured using a five point Likert scale with 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree, 5 = strongly agree. At the end of the data collection process, a total of 116 usable responses were obtained from individuals who personally file their tax returns using SARS' e-filing system and 101 from those who make use of agents, friends or family members to e-file on their behalf. All data collected during this phase were analyzed using Version 18 of Statistical Package for Social Science (SPSS). All constructs used were first subjected to reliability testing before subjecting them to further analysis. The results of the reliability analysis, as can be seen in Table 1, show that all constructs were highly reliable as they had Cronbach alpha coefficient values of greater than 0.7. According to Field [2009], Cronbach alpha coefficient values of 0.7 and above indicate constructs with high reliability.

The hypotheses in this study were tested using parametric methods of data analysis including the independent sample t-test, Pearson's correlation and multiple regression analysis. The underlying assumptions associated with these methods were considered in deciding on their respective suitability in analyzing the data. This included the assumptions of homoscedasticity, linearity and lack of multicollinearity.

Table 1.	Construct	${\it reliability}$	analysis.
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Construct*	Items	
Perceived ease of use	 I think it is easy to learn how to use tax e-filing I think it is easy to get tax e-filing to do what one wants it to do I think it is easy for one to become skilful at using tax e-filing Overall, I think tax e-filing is easy to use Source: Adapted from Hendrickson et al. [1993]. 	
Computer Self-efficacy	 I feel confident using a computer I feel confident using the help menu when help is needed I feel confident making selections from an on-screen menu I feel confident moving the cursor around the monitor screen I feel confident understanding the three stages of data processing namely input, processing and output Source: Adapted from Murphy et al. [1989]. 	0.915
Access to information	 I receive enough information about tax e-filing in general I receive enough information about the benefits of tax e-filing I receive enough information on how to use tax e-filing I receive information about tax e-filing Source: Adapted from Al-Somali et al. [2009]. 	0.969
Behavioral Intention	 I intend to start personally using e-filing to file for my tax returns I suspect that I will personally use e-filing to file my tax returns in the future I will most probably personally use e-filing to file my tax returns in the future I will likely personally use e-filing to file my tax returns in the future Source: Adapted from Pavlou [2003] 	0.947

Laerd Statistics [2013] and Field [2009] both recommend that variables be tested for homoscedasticity (equality of variance) before being used in the parametric methods used in this study. They further recommend assessment of the assumption of linearity when using Pearson's correlation and regression analysis, as well as testing for possible multicollinearity problems, that is, the existence of strong relationship between predictor variables, before using regression analysis.

Levene's test for homogeneity of variance was used to test assumptions of homoscedasticity. According to the results, the p-values were greater than 0.05 which indicates that the assumptions of homogeneity in the variables used in the analysis were met. According to Field [2009], p-values of greater than 0.5 in Levene's test for homogeneity of variance indicate that the assumption of homogeneity is not violated. Linearity was, in accordance with recommendations made by Hair et al. [2010], assessed using residual plots. The results did not suggest violations of this assumption. Multicollinearity, on the other hand, was assessed using the Variance Inflation Factor (VIF). These results showed that none of the factors had a VIF of greater than 5, indicating no multicollinearity problems with the data. According to Hair et al. [2010] and Field [2009], a VIF value of 10 is considered the common cut-off threshold.

5. Results and Discussion

The first line of analysis aimed at examining levels of perceived ease of use of the SARS e-filing system among individual income tax payers as well as test for a relationship between perceived ease of use and behavioral intention to personally make use of the system. Mean values of perceived ease of use as presented in Table 2 show that personal users of the tax e-filing system had a more favorable perception of the system in terms of its ease of use (mean value = 3.96) compared to non-personal users (3.49). An independent sample t-test showed that the differences in mean values were statistically significant: t(215) = 3.936, p < 0.05. Hypothesis one (H1) of the study is thus hereby accepted. The results confirm the notion that people shun away from tasks that they feel they are unable to perform.

In examining the mean values of the two groups, it is important to note that while non-personal users of the system had a significantly lower mean value than personal users, their perceptions of ease of use of the tax e-filing system were not negative but were in fact marginally positive. Comments received during the in-depth interviews confirmed this sentiment. One comment received which summarizes many common responses was as follows:

"I do not think that the system per se is complicated to use otherwise they would not have been targeting it towards members of the public in general. To me it is the language of tax that I find intimidating. I would therefore rather use someone who understands the language to do the e-filing for me."

Results of the Pearson correlation run on non-personal users to test for a relationship between perceived ease of use and behavioral intention to personally make use of the tax e-filing system are presented in Table 3. According to the results, there is a significant positive relationship between the two constructs: r = 0.739, p < 0.001. Hypothesis 2 (H2) of the study is thus accepted. During the in-depth interviews it was clear that although some people were comfortable with using

Table 2. Differences between personal users and non-users of tax e-filing system.

			t-Test for equality of means					
					Sig	Mean	95% Confidence interval	
Variable	Group	Mean	t	df	(two tailed)	difference	Lower	Upper
Perceived ease of use (H1– accepted)	Personal - Users - Non-users	3.96 3.47	3.936	215	0.000	0.491	0.245	0.737
Computer Self- efficacy (H3– not accepted)	Personal - Users - Non-users	4.31 4.26	0.427	215	0.670	0.042	-0.150	0.234
Access to Information (H5–accepted)	Personal - Users - Non-users	3.67 3.31	2.388	215	0.018	0.340	0.063	0.656

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Table 3. Correlation analysis.

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	Perceived ease of use	Computer self-efficacy	Access to information
Pearson correlation	0.739**	0.366**	0.596**
Sig. (2-tailed)	0.000	0.000	0.000
N	217	217	217
Pearson correlation	0.407**	_	_
Sig. (2-tailed)	0.000		
N	217		
Pearson correlation	0.621**	_	_
Sig. (2-tailed)	0.000		
N	217		
	Sig. (2-tailed) N Pearson correlation Sig. (2-tailed) N Pearson correlation Sig. (2-tailed)	$\begin{array}{cccc} & & ease \ of \ use \\ \hline Pearson \ correlation & 0.739^{**} \\ Sig. \ (2\text{-tailed}) & 0.000 \\ N & 217 \\ \hline Pearson \ correlation & 0.407^{**} \\ Sig. \ (2\text{-tailed}) & 0.000 \\ N & 217 \\ \hline Pearson \ correlation & 0.621^{**} \\ Sig. \ (2\text{-tailed}) & 0.000 \\ \hline Sig. \ (2\text{-tailed}) & 0.000 \\ \hline \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

agents and friends to help with tax filing, there were others who held intentions to personally make use of the system in the future.

The second line of analysis focused on levels of computer self-efficacy, including its relationship with behavioral intention to personally make use of tax e-filing. Since the tax e-filing system is a computer-based system, having a good command of computers is important for one to be able to use the system. To this end, an independent sample t-test was run in order to find out if non-personal usage of the SARS e-filing system is associated with significantly low levels of computer self-efficacy, as compared with personal usage. The results, as can be seen in Table 2, show no significant differences between individuals who personally use the system for tax filing and those that do not: t(215) = 0.427, p > 0.05. Hypothesis 3 (H3) of the study is thus not accepted. At 4.31 and 4.26, respectively, the mean values show that both personal and non-personal users of the system consider themselves to be computer self-efficacious. Findings from the in-depth interviews showed that while computer self-efficacy is a recognized pre-requisite for one to be able to personally make use of computer-based information technologies, the presence of such ability is not enough to give one the confidence to make use of the tax e-filing system. One of the common comments received during the interviews was as follows:

> "Helping people acquire computer skills is important but one needs more than such skills to use the e-filing system. I think one needs tax-related knowledge as well."

A correlation analysis aimed at examining the relationship between computer self-efficacy and behavioral intention to personally make use of e-filing (refer to Table 3) showed a significant positive relationship between the two constructs: r = 0.366, p < 0.001. Hypothesis 4 (H4) of the study is thus accepted. In examining these results, it is important to note that although computer self-efficacy was found to be significantly correlated to behavioral intention, at 0.366, the correlation coefficient was low. This is mainly due to the fact that computer self-efficacy was not found to be a problem among non-personal users of the system. As a result, computer self-efficacy offers limited explanation of the behavioral intentions of respondents to make use of e-filing.

The third line of enquiry in this study focused on access to information. An independent sample t-test was run to examine if there were significant differences between those who personally made use of tax e-filing system and those that did not — with regard to access to information. The results of this analysis, as presented in Table 2, showed that there were statistically significant differences between the two groups with respect to their perceptions of whether they received enough information or not: t(215) = 2.388, p < 0.05. Hypothesis 5 (H5) of the study is thus hereby accepted. It is, however, important to note that although significant differences were found between the two groups, a mean value of 3.67 for personal users of the system shows marginal agreement with the fact that enough information was received. Non-personal users, on the other hand, did not disagree with receiving enough information but were rather more neutral about it. What came out clearly from the in-depth interviews was the fact that while respondents acknowledged that SARS has publicity initiatives in place around e-filing, the information available does not properly address the 'how to' question. Some common comments received from personal users and non-users of the system included: "SARS tries hard to make people feel that tax e-filing is easy and anyone can do it but I do not think that they are being successful with

this message. What they need is to focus on educating people on how to use the system."

"I wish SARS considered streaming a video on their website showing how one can use the e-filing system. For most people like me, our tax details do not change much from year to year such that one only needs to learn once how to use the system then you are sorted for years."

The important role that access to sufficient information plays in the decision to personally use a system that one is not familiar with is also evidenced by findings reported in Table 3 which show a significant correlation between access to information and behavioral intention to personally make use of e-filing: $r = 0.596^{**}$, p < 0.001. Hypothesis 6 (H6) of the study is thus hereby accepted.

The final line of analysis involved running a regression analysis in order to examine the extent to which access to information and computer self-efficacy are together able to predict perceived ease of use. The results, as presented in Table 4,

Table 4. Perceived ease of use — Regression analysis.

Model	R	R	square	Adjusted R square	Std. error of the estimate	
1	0.660	0.660 0.435 0.430		0.715		
		Unstand	ardized coefficients	Standardized coefficients	5	
Model	Independent variable	В	Standard error	Beta	t	Sig.
1	(Constant)	0.772	0.303		2.551	0.011
	Computer self-efficacy	0.311	0.072	0.235	4.336	0.000
	Access to information	0.463	0.046	0.547	10.110	0.000

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show that computer self-efficacy and access to information accounted for 43.5% of the variance in perceived ease of use $(R^2 = 0.435)$. This indicates that, apart from these two factors investigated in this study, there are other factors that can help explain people's perceptions relating to ease of use; future studies can explore these additional factors. In terms of which of the two factors contribute most to perceived ease of use, the standardized beta coefficient values show that access to information had a higher explanatory power than computer self-efficacy.

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6. Implications

Efforts aimed at encouraging tax payers to personally make use of tax e-filing systems need to take cognizance of the important role that perceived ease of use plays in such decisions. The results of this study show that perceived ease of use is an important factor in explaining behavioral intention to personally make use of the tax efiling system. As a free public service, tax e-filing needs to be accessible to all members of the public. By making sure that the system is easy to use, government will help reduce the need for tax payers to feel forced to hire consultants and pay significant sums of money. Using other people to do tax filing on one's behalf has the added disadvantage of denying people the privacy often desired on matters relating to earnings and wealth.

The findings of this study show that efforts aimed at improving perceived ease of use need to focus on individual's ability to work with computers as well as ensuring availability of adequate information, especially information relating to how to make use the system. Tax officials need to be aware that although computers are becoming more pervasive in today's society, there will always be people whose computer skills are basic while others may have more advanced computer skills. It is advisable to ensure that the tax e-filing system is set up in such a way that one does not need to have specialist computer skills in order to use it. This can be done by paying attention to the way the system is designed particularly by making sure that it works with simple commands. While issues relating to computer self-efficacy need to be taken into consideration in trying to influence perceived ease of use, the findings of this study show that access to information requires special attention as it plays a bigger role in influencing perceived ease of use.

In terms of access to information, tax officials need to take cognizance of the need for information that will enable people to acquire the knowledge needed to make use of the system. This study recommends that attention needs to be paid to making sure that clear steps are given regarding what is involved from log in, through the various sections that need to be filled in, to the final submission. It is also important to ensure use of consumer-friendly terminology in providing information relating to the various sections that need to be filled in. Language that is highly technical should be avoided as much as possible as this often becomes a barrier to perceived ease of use. Where it is not possible to avoid use of technical terms, bearing in mind that tax is by its nature technical, officials have to ensure that such terms are explained within the e-filing or wider organizational online space.

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7. Conclusion

The findings in this study show that perceived ease of use is very important in understanding adoption behavior including behavioral intention towards new information technologies. According to the findings, it can be concluded that individuals who make personal use of tax e-filing systems have significantly higher levels of perceived ease of use of the system than those that do not. Perceived ease of use is also significantly related to behavioral intention to personally make use of the system in future. Access to information as well as computer self-efficacy are important factors that influence perceived ease of use. In terms of access to information, the findings of the study show that, for technologies that can be adopted either through personal use or non-personal use as is the case with e-filing, one needs to carefully consider provision of information that addresses the 'how to' question in order to effectively influence personal usage. While computer self-efficacy positively influences perceived ease of use, its level of influence is limited in cases where the targeted population has relatively good computer skills as was the case in this study. Efforts aimed at promoting increased personal usage of new information technologies in such cases need to pay more attention to ensure that people can easily acquire specific knowledge and skills required to make use of the system in question.

As more and more governments in Africa and beyond make use of information technologies in administering tax services, there is a need to have the user of the services in mind when planning and implementing such services. This study makes significant practical contributions to understanding personal usage of tax e-filing systems. The findings point to the need for governments to ensure that they put in place systems that are as user friendly as possible and also that people are provided with information on how to make use of the system. Public officials need to realize that although citizens may be convinced of the benefits associated with e-filing, they are unlikely to personally make use of the system if they do not know how to do so. A clear understanding of perceived ease of use and the factors that influence it may provide public officials with important insight into the types of systems that may be appropriate within their context as well as in assessing the forms of support that citizens may need so as to ensure personal usage of the system.

Finally, it is important to note that while the findings in this paper are useful in understanding personal usage of tax e-filing, the study was based on respondents' perceptions of one system namely the South African e-filing system. There is thus need to further test the importance of the constructs investigated in this study by studying tax e-filing in other countries. Future studies can also examine additional factors that may help explain perceptions regarding ease of use. Such studies can help enrich our understanding of the role of perceived ease of use and other constructs associated with adoption behavior.

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