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Is Awareness Needed Amongst People toward the use of E-Government Services?

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ABSTRACT

E-government initiatives were started since 2002 in Sri Lanka with an idea to improve the government service delivery and greater access to government information. Improving the quality of government services is expected through these e-channels. However, still people's awareness is less on these available e-services; hence usage also is below the expected level. People's awareness on use of e-government services is inspected through this study. The theoretical base is supported by Technology Acceptance Model (TAM) and TAM was extended with the construct of awareness. The extended model is validated with 898 responses collected from six categories of people residing in five provinces. The Structural Equation Modelling (SEM) was applied for the analysis; results suggested that awareness of people is positively correlated with use of e-government services while attitudes of people are influenced by awareness. The proposed model explains that the people's awareness is crucial and it exposes that if people's awareness regarding e-government initiatives is high, the use of e-services also would be increased. Accordingly, the findings of this study are promising and put forward to relevant authorities to apply suitable strategies to improve the awareness amongst people in Sri Lanka.

Key words – e-government, TAM, Structural Equation Modeling, Awareness, Sri Lanka

1. BACKGROUND OF THE STUDY

With the rapid development of Information and Communication Technologies (ICT), almost all of the governments in the world use ICT applications and web based facilities to improve the quality of government services and make more accessibility for government services remotely. By doing so, it is expected to improve efficiency (Simintiras et al. 2014; Seifert, 2008), transparency (Alshehri and Drew, 2010) and accountability (Deleon, 1998) of the government services delivery. In addition, convenience (Gilbert and Balestrini, 2004), improved customer services (Chandraguptha, 2012; Ahmad, 2007), less room for corruption (NOIE, 2003), lower cost for operations (Alshehri and Drew, 2010; Bertot et al. 2008) improved access to information are amongst the benefits for government, people and the stakeholders in e-government initiatives. Though the investments on e-government initiatives give numerous benefits for government as well as citizens, many studies have conducted to address the adoption and low usage of e-government services not only in developing nations but also developed nations (Akkaya et al. 2012; Shajari and Ismail 2013; Carter and Weerakkody, 2008). However, there are imperative factors are yet to be explored (Rana et al. 2015). Less awareness about the availability of e-government services is a one of issues on adoption and low usage of e-services. If people have less awareness on existing e-government services people might not use e-services even though it provides more values and they often tend to go for traditional channels expecting face to face services.

Prior studies have emphasized the significance of the people's awareness on technology adoption and use (Simtowe, 2012) such as e-commerce (Yaseen et al. 2015), e-government services (Jait, 2012; Kharade and Sharma, 2013; Shareef et al., 2011). Furthermore, it was noticed that marketing strategies or else awareness campaigns have been conducted time to time since less awareness amongst citizens, business users and members of government will affect to decrease the use of online services (Simintiras et al. 2014). The purpose of conducting awareness campaign is to educate, encourage, teach them how to use, which kind of benefits available from e-government services etc.

Accordingly, they hope to increase the usage of e-government services among the stakeholders. Strengthening above argument, Carter and Belanger (2004) noted that government authorities should take appropriate strategies to publicize the benefits of e-government. With above literature evidences, in this study researcher tries to explore the extent of people's awareness on use of e-government services from the Sri Lankan context. Thus, the objective of this study is to identify the need of awareness toward the use of e-government services and findings of this study would be valuable for authorities in e-government agencies to take strategic awareness campaigns to improve the level of awareness toward the e-services.

2. RESEARCH MODEL WITH LITERATURE SUPPORTS

People's behavior patterns are determined by particular information sources such as interpersonal links, mass media and government sources. It is apparent that people are willing to get to know pertinent information regarding product or services which they like to buy, particular situations, objects or even particular events. According to human nature, people behave or work after getting familiar, knowing or aware about new things such as new innovations like e-services. If they do not have firsthand experience, they would make decisions considering second hand information which have taken from word of mouth or any kind of social channels (Bhattacherjee, 2000). The usage of e-services is encouraged by awareness and awareness about the e-government services is not come up to the expected level yet (Al-Yaseen et al. 2013). People choose either traditional or digital channels to get government services through their peer experience, suggestions, approvals or any other gathered information. Accordingly, people want to get familiar about the new innovations like e-government before using them. Afterwards, they will embrace e-services and decide to continuous use. With supporting above noted argument, Simintiras et al. (2014) also have ensured the importance of awareness; further their findings suggest that proper marketing strategies should be carried out to aware people about the e-government services to enhance the adoption and use of e-government services. Thus, it is vital to understand people's awareness to enhance the adoption and use of e-government services in a country.

An attitude can be defined as "the degree to which a person has a favorable or unfavorable evaluation of the particular behavior" (Ajzen, 1991). Individual's attitudes can be influenced by awareness based on information in their hand. With awareness, attitudes of people would be changed and positive attitudes motivate individuals to adopt and use of e-government services. Persaud and Persaud (2013) have posited the importance of awareness and defined it as the extent to which users know what type of information and services are available through e-government. Further, they pointed out that people are demotivated by lack of awareness to be used e-government services actively. Thus, if people have awareness about the e-services, then their tendency to use of e-government services is high (AlAwadhi and Morris, 2009). With agreeing above argument, Mofleh and Wanous, (2008) stated that previous experience and people's awareness make needs for e-government services. Then, lack of awareness would be a hindrance for high failure rate of e-government initiatives (Kharade and Sharma, 2013; AlShihi, 2005). Thus, it is palpable that many studies have pointed out the significance of awareness for the use of e-government services (Shareef et al. 2011; Charbaji and Mikdashi, 2003; AlAwadhi and Morris, 2008; Mitrovic and Bytheway, 2009). Furthermore, findings of Belwal and Al-Zoubi, (2008) exposed that awareness positively influence on adoption of e-government and ensured educated people are aware than uneducated. It was found that lack of awareness about the e-government services exists and acts as a barrier (Karunasena and Deng, 2009). Theoretical background for the present study was supported by well known Technology Acceptance Model (TAM) introduced by Davis (1989). Among the technology adoption theories TAM is the model which has received more citations in the Social Science Citation Index (SSCI) (Abbasi et al. 2015). Further, it has more than 40 per cent explanatory power (Zhang et al. 2011; Park, 2009) and TAM is more parsimonious and suitable enough to apply in the research field of technology adoption and use (Sharma et al. 2014). Accordingly, with the TAM constructs of perceived usefulness, perceived ease of use, attitudes and use of e-government services, following model is proposed by adding awareness construct to TAM. Use of e-government services is considered as dependent variable and others are independent variables. With above literature supports following two hypotheses are suggested.

H_1 – *Awareness significantly influences the use of e-government services.*

H_2 – *Awareness significantly influences the attitude toward the use of e-government services*

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ISSN (Online) 2249 –5444 , ISSN (Print) 2249 –8168

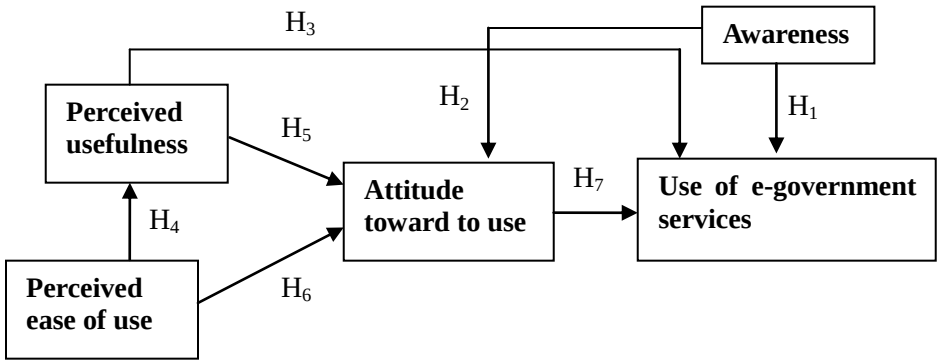

Figure 01 – Proposed research model

3. RESEARCH METHODOLOGY AND ANALYSIS

The methodology used for the present study is based on primary data collected from 898 respondents. Deductive reasoning approach was applied by following survey strategy. Saunders et al. (2009) state that survey strategy is suitable enough to capture quantitative data in a large scale. Quantitative data is more suitable to apply statistical techniques and make the inferences (Shajari and Ismail, 2013).Thus, structured questionnaire was administered among the six categories of people namely university undergraduates, university teachers, government employees, private sector employees, businessmen and civilians who are residing in five provinces in Sri Lanka. Suitable sample size is essential to maintain the confidence of the outcome and to go for better generalization. Keeping this in mind, 1600 questionnaires were circulated and collecting was ended with 898 valid questionnaires for the analysis recording 56 per cent response rate. Then all data was feed to SPSS 16.0 data sheet for scrutinizing and AMOS 20.0 was used for the analysis.

Structural Equation Modeling (SEM) which is well known, well established and use in many research fields (Khine, 2013; Lei and Wu, 2007; Anderson and Gerbing, 1988) is used for the analysis purpose. The goal of the SEM is to test the structural relationships hypothesized based on literature evidences. SEM is considered as one of the modern statistical approach to evaluate the model fit and can be handled multiple variables simultaneously with more confidence and efficiencies (Byrne, 2010). There are two model approaches in SEM named as measurement model and structural model when perform the analysis (Anderson and Gerbing, 1988). Confirmatory Factor Analysis (CFA) is used to assess the measurement model and model fit indices generated from CFA assist to determine the model fit Comparing with the cut-off values suggested by (Hair et al. 2006; Anderson and Gerbing, 1988). After knowing model is well fit can go for further analysis. The fit indices generated through CFA of this study are summarized in Table 01 .

Table 01 – Values of fit indices in CFA

	Chi-square	GFI	AGFI	CFI	NFI	TLI	RMSEA	RMR	p-value
Measurement model	2.731	0.899	0.882	0.931	0.887	0.917	0.044	0.037	0.000

In SEM, there are key indices to be observed to decide the particular model fit or not. Model fit can be decided in three ways which are absolute fit, incremental fit and parsimonious fit. However, absolute fit is the better way to evaluate a model and if a model is not fit with absolute fit indices then can go for other two to assess the model. Normalized Chi-square, Root Mean Square Error of Approximation (RMSEA) and Goodness of Fit Index (GFI) are treated as absolute fit indices and these indices are the most significant as well as show goodness of fit (Hair et al. 2006). Incremental fit indices are Adjusted Goodness of Fit Index (AGFI), Comparative Fit Index (CFI), Normed Fit Index (NFI) and Trucker Lewis Index (TLI) and parsimonious fit index is Normalized Chi-square. According to Table 01, it seems that this particular model is fit showing good fit under absolute fit criteria since chi-square value (2.731) is less than 5 which is accepted as cut-off (Hair et al. 2006), RMSEA (0.044) is below the accepted cut-off value of 0.08 and GFI (0.899) also is very closer to cut-

off value of 0.9. The values of other fit indices (AGFI, CFI, NFI and TLI) also show a good fit of the model, because values are very closer or match with cut-off value 0.9. Furthermore, RMR value (0.037) is below the 0.08 (Cut-off) showing good fit. Thus, as a whole, it seems that this particular proposed model has a good fit and model is validated for next step which is structural analysis.

Table 02 – Values of fit indices of Structural analysis

	Chi-square	GFI	AGFI	CFI	NFI	TLI	RMSEA	RMR	p-value
Structural model	3.170	0.899	0.872	0.905	0.868	0.896	0.049	0.048	0.000

After ensuring the goodness of fit of the measurement model through CFA, next approach is to run the structural analysis (Anderson and Gerbing, 1988). Same as to measurement model, above noted fit indices are generated when structural analysis is executed. Thus, values of the fit indices of the structural analysis are summarized in Table 02. The results indicate that model has a good fit since fit indices come under absolute fit are consistent with above mentioned cut-offs. For instance, values are Chi-square (3.170>5), GFI (0.899 very much closer to .09) and RMSEA (0.049>0.08). The figures of the Table 02 show that other incremental and parsimonious fit indices also are accepted with cut-offs. Accordingly, structural model is well fitted and path values or the Standardized Regression Weights (SRW) of the path diagram which was used for the structural analysis by connecting structural paths between concerned variables of the research model are shown in Table 03.

Table 03 – Standardized Regression Weights and results of the hypotheses

Direct paths/Hypotheses				SRW	P value	Supports or not
Use of e-gov. services	<---	Awareness	H_1	.185	***	supported
Attitudes	<---	Awareness	H_2	.249	***	supported
Use of e-gov. services	<---	Perceived Usefulness	H_3	.311	***	supported
Perceived Usefulness	<---	Perceived ease of use	H_4	.782	***	supported
Attitudes	<---	Perceived Usefulness	H_5	.296	***	supported
Attitudes	<---	Perceived ease of use	H_6	.280	***	supported
Use of e-gov. services	<---	Attitudes	H_7	.348	***	supported

*Note: *** represent p<0.001*

The P values appear in the Table 03 suggest that the main hypotheses developed with the construct of awareness are accepted meanwhile TAM constructs prove the validity in the Sri Lankan context too. The detailed discussions with derived results are presented in coming section.

4. RESULT AND DISCUSSION

As intimated in the above Table 03, SRWs and P values for all paths of the path diagram give evidences that all the paths are statistically significant and positively related. Thus, the first hypothesis (H_1) developed between people's awareness and the use of e-government services is accepted and supported. The reported SRW is 0.185. It implies that people's awareness make influences on use of e-government services positively. However, the impact is somewhat low compared to second hypothesis (H_2) which lays the path between people's awareness and attitude toward to use. Figures of the Table 03 prove that this hypothesis is accepted and supported saying that people's awareness make significant influences on people's attitudes positively. Regression weight of the path is 0.249, so that extend of the impact is considerably high than the first hypothesis. This finding gives insights to think of more strategic awareness campaigns to motivate people and educate them towards the use of e-government services and this will cause to change their attitudes as well. The hypotheses developed using TAM constructs; H_3, H_4, H_5, H_6 and H_7 are statistically significant and reported positive relationships between constructs. The reported R^2 for the entire model is 0.39. Thus, this implies that 40 per cent of the use of e-government services is explained by the TAM constructs along with the awareness construct. Accordingly, TAM is validated in the context of Sri Lanka.

People's awareness is a one of determinant which cause for behavior of people as well as their decision making. People behave, take decisions and act according to their level of awareness. Hence, people's awareness on new

things is significant before they are ready to take the experience new innovations like e-services. On the other hand, people's attitudes are influenced by their level of awareness and changed attitudes make some influences on the use of e-government services. Accordingly, less awareness makes people discourage to use e-services actively (Persaud and Persaud, 2013). Therefore, the importance of this construct is clear. With the awareness; that means knowing about the advantages and experiences, people will be encouraged and tend to use e-government services more (AlAwadhi and Morris, 2009; Mofleh and Wanous, 2008; Kharade and Sharma, 2013; Alshihi, 2005; AlAwadhi and Morris, 2008; Shareef et al., 2011; Belwal and Al-Zouhi, 2008). Accordingly, the findings of this study are consistent with above noted literature evidences. This implies that there is a significant influence from people's awareness about the e-government services for the adoption and use of e-government services in Sri Lanka.

The second hypothesis (H_2) developed related to awareness links with attitudes towards to use. Based on the reported statistical evidences, it is exposed that the attitudes of people towards to use is explained by 24.9 per cent of awareness regarding e-government services. Consequently, these findings give evidences about the significant of the people's awareness of e-government services and awareness makes people motivate to get adopted and use of e-services such as e-government services, meanwhile well awareness change people's mind and make influences for creating positive attitudes towards the new technologies.

5. LIMITATION AND FUTURE RESEARCH DIRECTIONS

There may be some biasness as respondents were selected only from five provinces and they who have basic knowledge on ICT and use of e-government services directly or indirectly. So that others views could not be addressed through this study and it is a limitation of the present study. Hence, future studies can be used to address the less social active people and can be selected more geographically covered provinces. This study considered only one aspect which is awareness from demand side. Future studies can consider other aspects like trust, culture etc. Hence, results may not be generalized to all developing countries.

6. CONCLUSION

Many studies in the research area of e-government have paid their attention on service supply side or in other words technical side and there are few studies which have addressed on demand side or non-technical side (people's perspective). Thus, this research focuses to explore the people's awareness which is one of issues from the demand side. According to above noted literature evidences as well as the research findings of this study, it is understood that people's awareness is significant toward people's attitudes and the use of e-government services. The less awareness exists not only in Sri Lanka but also in all developing countries and developed countries well. However, the countries which belong to above categories are not homogenous as their economic, political and even culture is different from each other. Accordingly, there is an immediate need to raise people's awareness on e-government services by following awareness raising campaigns among people. Since there are different ethnic groups and social categories in Sri Lanka, homogenous campaign is not enough. By targeting different social groups and ethnic groups, it needs to be initiated well organized promotions, demonstrations, educational discussions and other suitable marketing strategies. These types of strategies should be initiated from government side relevant authoritative body. If not, people may not trust and do not pay more attention and do not keep confidence on use of e-government services. However, finding of this study may provide useful insights to rethink and rearrange the planning and organizing e-government initiatives to be utilized maximally by people. Thus, outcome of this study will be worth for policy makers and e-government initiative authorities to pay more attention to rethink and rearrange suitable strategic plans on e-government initiative projects.

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