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The Influence of Relative Advantage Towards e-Procurement Adoption Model in Developing Countries: Tanzania Context

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Abstract

The aim of this study was to fill the knowledge gap through assessing the influence of relative advantage towards e-procurement adoption in developing countries, Tanzania in particular. The study adopted positivism philosophy and cross-sectional survey research design. The study also used stratified sampling technique. Sample size was 157. Questionnaires and documentary review were used for data collection. The collected data were analysed by using Partial Least Squares Structural Equation Modelling with the help of SmartPLS 3 software. Findings reveal that in the presence of attitude, relative advantage has direct and indirect influences towards e-procurement adoption. Grounding on the theoretical and empirical gaps, the hypothesized relationships of the determinants of new technology (relative advantage and attitude) have therefore filled these gaps which leads to the theoretical, empirical and practical contributions.The study recommends attention to be paid for relative advantage towards e-procurement adoption in Tanzania and in all developing countries which intend to adopt new technologies in public sector.

Keywords: e-Procurement, Adoption, Model.

Introduction

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Background of Study

Relative advantage is the extent to which the innovation is viewed by users to be better than the existing idea; i.e. perceived cost and benefits (Rogers, 2003). However, perceived benefits include 'direct benefits' like reduction in transaction errors and transaction costs, improved data accuracy and faster tendering process (Suleiman, 2015).

The main weakness of many studies concerning e-procurement adoption is failure to address the indirect influence of relative advantage through attitude towards e-procurement adoption. For example, Ibem et al. (2016) aimed to fill the knowledge gap through investigating the factors influencing e-procurement adoption based on the data sourced in a questionnaire survey involving 213 organizations.

The survey was conducted between June and November 2015. Descriptive statistics, factor and categorical regression analyses were used to analyse the data and the results showed that, three most important factors influencing the adoption of e-procurement were: the benefits of e-procurement in enhancing efficiency in project delivery; effective communication among project team members and eliminating geographic barriers. In addition, twenty-nine factors were investigated in seven different dimensions of which the benefits of e-Procurement use; level of awareness on e-Procurement in construction; and the availability and cost of e-Procurement applications emerged as the three most significant predictors of e-Procurement adoption in the survey. This study failed to consider the indirect influence of the benefits of e-procurement by linking with the level of awareness.

In connection to that, Malekia (2018) carried out the study whose aim was to understand advantages of e-procurement. Questionnaires were administered to 155 public officials already using e-procurement and data were processed using SPSS software. The findings revealed that e-procurement results into reduction of corruption, improves monitoring and accountability. This study does not take into account the indirect influences of these benefits towards e-procurement adoption.

Watuleke (2017) aimed to understand the concept of e-procurement, its evolution and adoption in the market economy as well as higher education. The findings revealed that successful implementation of e-procurement would require the following critical success factors: top management support; user acceptance of e-procurement systems; employees and management commitment to success of adoption; reliability of information technology and supplier performance; monitoring the performance of e-procurement systems; Other critical success factors identified were: training of staff in procurement practices; risk perception

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and continuous measurement of the key benefits, best practices and actual selection of the system.

The study by Intharaksa (2009) aimed to explain the use of interactive whiteboards by English female teachers in Modern Systems School. The study employed the qualitative case study approach and the data were collected through semi-structured interviews, document reviews, and participatory observations. The study findings revealed that the extent of teachers' use of interactive whiteboards is related to their perceptions of the five major attributes which included: Relative advantages, compatibility, simplicity, trialability, and observability. The study finally recommended giving more attention to training workshops regarding how to integrate interactive whiteboards into the educational process. Studies by Intharaksa (2009), Ibem et al. (2016), Watuleke (2017) and Malekia (2018) would have been more interesting if the authors had explained the indirect influences of the relative advantage (key perceived benefits) towards new technology adoption.

With regard to the paradigm shift towards the adoption of e-procurement in the Tanzanian public sector, it is important for the government leaders and policy makers to have a framework of analysis for decision making regarding buyers' and suppliers' perception on influence of relative advantage towards Tanzania National e-Procurement System (TANePS) adoption. This is due to the fact that in experimenting with new procurement system (for example TANePS), Government leaders and policy makers need a framework of analysis for decision making pertaining to stakeholders' interests and stakeholders' interests should play role in decision making in terms of public procurement system design, development, and reform (Schooner et al., 2008). With that note, this study adopted the Technology, Organization and Environment model (TOE) by Tornatzky and Fleischer (1990) of which relative advantage (perceived benefits) and attitude were derived.

Literature Review

Critical Success Factors Influencing New Technologies Adoption

The debate of authors on critical success factors influencing new technologies adoption has led to variations of the overall explanatory power of research models intending to use new technologies (Abomeh & Blessing, 2013; Adjei-Bamfo et al., 2020; Achuora et al., 2012; Baithili et al., 2019; Kassim & Hussin, 2013; Klabi et al., 2016; Licenji, 2015; Marianna, 2012; Masele, 2014; Passaro, 2017; Shatta et al., 2020a; Taluka, 2016). Likewise, the differing views of authors on the critical success factors influencing new technologies adoption have led to similarities of the overall explanatory

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power of research models for intention to use new technologies (Aboelmaged, 2010; Zhang et al.,2020).

Nevertheless, studies in most developing countries particularly in Africa have revealed common challenges and barriers of e-procurement adoption (Bawole & Adjei-Bamfo, 2019; Pitso et al., 2018). The common challenges and barriers include lack of perceived benefits of e-procurement system among users and diverse attitude of users towards e-procurement adoption (Adjei-Bamfo & Maloreh-Nyamekye, 2019; Ibrahim et al., 2017; Latif, 2014; Pitso et al., 2018; Shatta, et al., 2020b; Suleiman, 2015; Tutu et al., 2019).

Taking into account the debate of researchers on critical success factors influencing e-procurement adoption worldwide, the differences and similarities of the overall explanatory power of research models for intention to use new technologies, the common challenges and barriers of adopting e-procurement in African countries and the paradigm shift towards TANePS adoption, it was valuable to address the specific critical success factors of e-procurement adoption in the public sector in Tanzania by using theorizing procedures (Zhou, Shafiq, Adeel, Nawaz, & Kumar, 2017). This study provides a conceptual framework for examining the perceived relative advantage and attitude as critical success factors influencing TANePS adoption in the public sector by using Technology, Organization, and Environment (TOE) model by Tornatzky and Fleischer (1990) as school of thought.

TOE model by Tornatzky and Fleischer (1990) suggests various elements including relative advantage and attitude which are thought to influence new technologies adoption. However, value addition for new technologies adoption (i.e, e-procurement adoption) includes paperwork reduction, better compliance, reduction of errors, reduction of ordering cost, reduction of cycle time, standardized procedures, achieve competitive bids, increased transparency and increased fairness (Suleiman, 2015; Tornatzky &Fleischer, 1990).

The element of relative advantage to influence the new technologies adoption is supported by Rogers (2003). In addition, Aboelmaged (2010) asserted that the easier it is to use technology, the greater the expected benefits (relative advantage) from the new technology adoption. Nonetheless, there are insufficient empirical studies in the context of new technologies adoption habitually e-procurement adoption which hypothesized relative advantage to influence both, directly and indirectly, behavioural intention to use a new technology system in public and private sectors. On the other hand, attitude is believed to influence the new technologies adoption and is a major determinant of the intention to use new technologies adoption (Tornatzky & Fleischer, 1990). However, there are insufficient empirical

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studies in the context of new technologies adoption routinely e-procurement adoption which hypothesized attitude to influence behavioural intention to use a new technology system in public and private sectors (Kassim &Hussin, 2013; Shatta et al., 2020b)

Objective of the Study

The objective of this study was to assess the influence of relative advantage towards TANePS adoption in the presence of attitude as important critical success factors which influence new technology adoption in organizational context.

Model Construct and Hypotheses Formulation

Model Construct

The study involved two endogenous constructs and one exogenous construct. Endogenous constructs included attitude from TOE model by Tornatzky and Fleischer (1990) as well as TANePS adoption. The exogenous construct was relative advantage (perceived benefits) from TOE because this study supports the argument that e-procurement system has gained a reputation of being one of the most effective way in attaining sustainable procurement, efficiency and transparency in terms of its performance and benefits it brings to the public procurement processes (URT, 2016; Iles, 2017). In addition, this study supports the argument that despite the performance and benefits of e-procurement, some buyers and suppliers do hesitate to use the system due to diverse (attitude) perceptions (Latif, 2014; URT, 2018). Whether these assertions are valid or not valid in relation to paradigm shift to e-procurement adoption in public sector, it was something valuable and worth testing their validity in real life and in relation to the concepts from theorical and empirical studies. Therefore, direct and indirect influences of relative advantage were conceptualised as depicted in the conceptual model Figure 1.

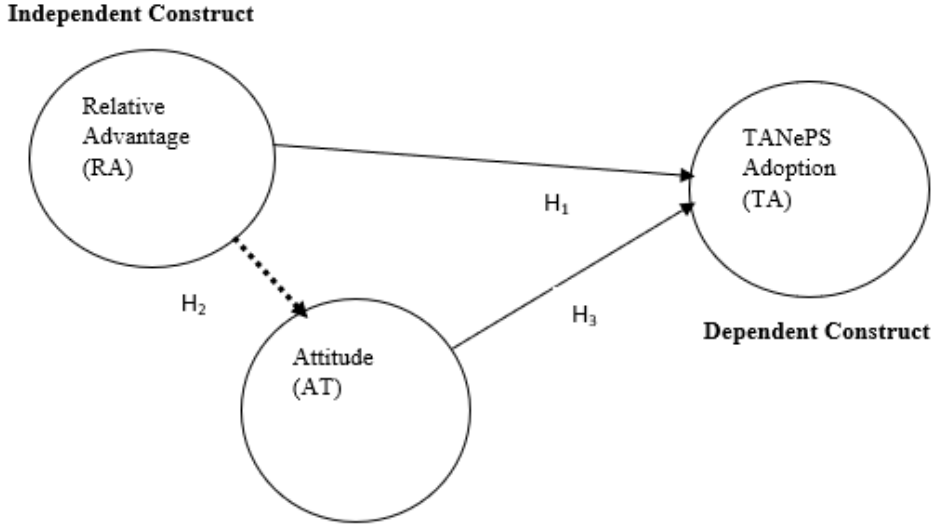

Figure 1: Theoretical Model Based on Relative Advantage Influences

Towards TANePS Adoption

Key:

Direct Relationships (Existing relationships in Literature)

Indirect Relationship (Gap in literature)

Source: Conceptualized from Literature Review, 2020

Hypotheses Formulation

In this study, relative advantage was postulated to positively influence TANePS adoption in the public sector.

H_{1a}: Relative Advantage (RA) positively and directly influences TANePS adoption in the public sector.

H_{1b}: In the presence of Attitude (AT) Relative Advantage (RA) positively and indirectly influences TANePS adoption in the public sector.

Table 1: Hypotheses Generated from the Theoretical Model

Hypothesis	Path	Influence
H_{1a}	RA -> TA H_1	Direct
H_{1b}	RA -> AT-> TA H_2,H_3	Indirect

Key: RA=Relative Advantage, AT= Attitude and TA= TANePS Adoption

Source: Conceptualized from the Theoretical Model, 2020

Research Methodology

Research philosophy, Research Design, Sampling Procedure, Target population and Sample Size

This study adopted positivism philosophy and cross-sectional survey research design. The study also used probability (stratified) sampling technique. A questionnaire with closed ended questions and documentary review were used for data collection. The collected data were analyzed by using Partial Least Squares Structural Equation Modelling with the help of SmartPLS 3 software. Targeted population was 987 of whom 730 were trained suppliers who and were registered in TANePS, 257 were procurement experts who were trained with regard to TANePS application (URT, 2019).

The study used one hundred fifty-seven (157) respondents for data analysis from whom 100 were procurement experts and 57 were suppliers. Justification of the sample size used based on the rule of thumb suggested by Hair et al. (2018) for applying PLS-SEM and SmartPLS 3 software in data analysis which requires number of indicators of the exogenous latent construct (with maximum indicators) times ten equals to be the minimum

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number of the sample size for the research model to be tested its relationships of constructs and indicators. In this study, only 40 respondents were required to fulfil the minimum requirement for data analysis by using PLS-SEM with the help of Smart PLS 3 software because the exogeneous latent construct of the research model (legal framework) had four indicators. The number of procurement experts and suppliers used in this study exceeded the minimum number of respondents required in each case per rule of thumb suggested by Hair et al. (2014). However, PLS-SEM offers extensive potential for analyzing large datasets, therefore, respondents more than 40 in each case was considered as potential for data analysis in this study.

Internal Consistency Reliability

The PLS algorithm report revealed that all constructs of the research model were above 0.7 value of internal consistent reliability and less than 0.95 as recommended by Hair et al. (2018) which implied that the data collected were reliable. Figure 2 shows the value of internal consistent reliability in each construct.

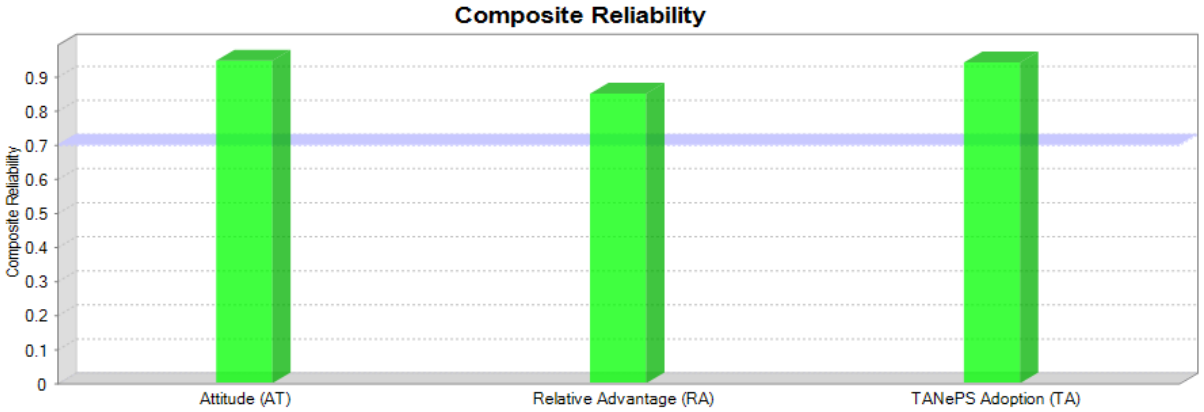

Figure 2: Internal Consistency Reliability Results

Convergent Validity

The PLS algorithm report revealed that the AVE was above 0.50 in each construct which indicated that each construct of the research model explained 50 percent or more of the variance of the items that make up the construct. Figure 3 shows the internal consistent reliability and constructs convergent validity of the reflective research model.

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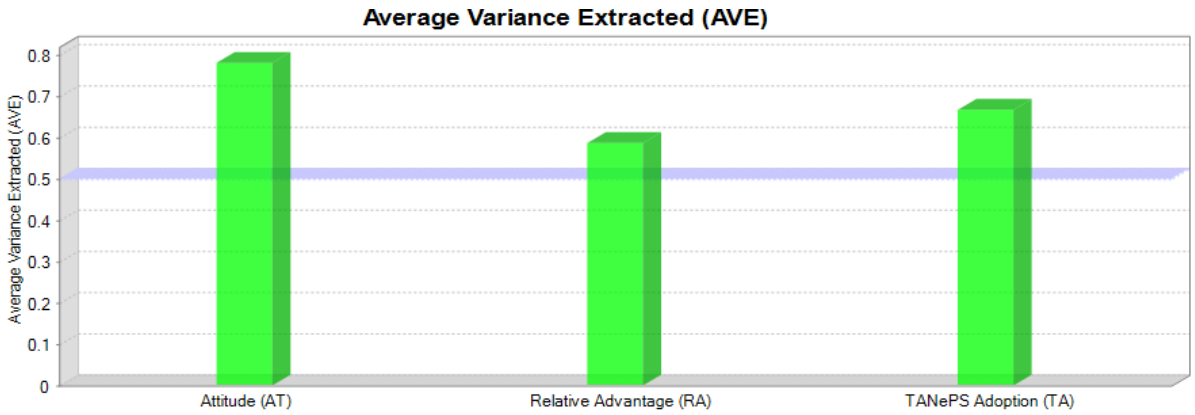

Figure 3: Convergent Validity Results

Discriminant Validity

The PLS algorithm report revealed that HTMT was less than 0.9 in each construct as recommended for structural models with constructs that were conceptually very similar (i.e, performance expectancy and relative advantage). The discriminant validity results by using HTMT of value less than 0.90 in this study would suggest that discriminant validity was present among relationships of the constructs. Figure 4 shows the results of discriminant validity in each construct.

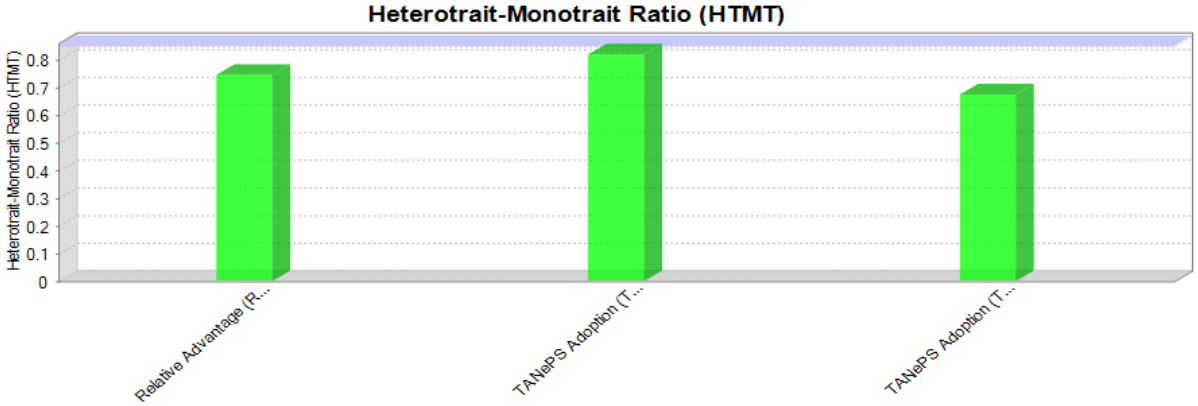

Figure 4: Discriminant Validity Results

Assessing R^2 Value of the Endogenous Constructs

In this study, each endogenous construct had value more than 0.25 as recommended by Hair et al. (2018). These results meant that over 25 per cent of the variation of each endogenous construct (attitude (AT) and TANePS adoption (TA)) was influenced by the exogeneous construct relative advantage (RA). Figure 5 shows the value R^2 in each endogenous construct.

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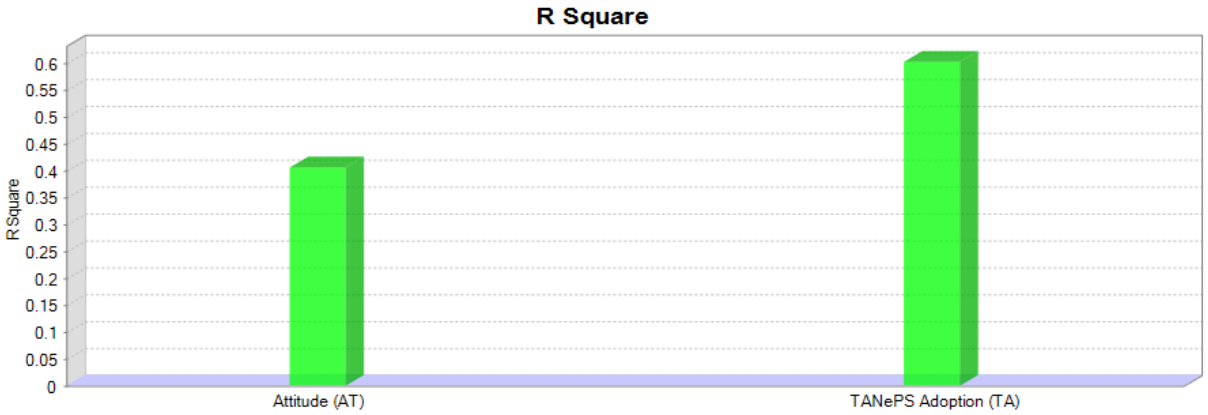

Figure 5: R^2 Value of the Endogenous Constructs

Research Findings

Demographic Characteristics of the Respondents

Sex of the respondents were analyzed and the finding revealed that about three quarter of the respondents of this study were male and about one quarter of the respondents were female. However, these findings are similar to the previous studies' findings for example the study by Shale (2014) revealed that 68 per cent were male while the rest 32 per cent were female. In addition, the study by Masele (2014) revealed that respondents by gender to a great extent were imbalanced that 108 out of all respondents (73 per cent) were males and the remaining 40 (27 per cent) were female. According to Masele (2014) respondents were from top management cadres, it means that, most of top positions were headed by men than women. In this study the findings also depict unfair balance of sex as the procurement experts' and suppliers' posts were dominated by men. Table 2 shows the sex analysis of the respondents of the study.

On the other hand, the age analysis of the respondents of the study revealed that most of the respondents who responded were below 50 years but were not below 21 years. This finding implied that the data of this study were provided by matured respondents and therefore, the information of this study was regarded to be very comprehensive and genuine. Table 2 presents the age analysis of the respondents of the study.

In addition to that education level of the respondents of the study revealed that 97.5 per cent of the respondents were at least form four leavers. The implication of this finding is that the information and data provided by the respondents in this study were genuine and comprehensive. Table 2 shows the education level of the respondents of the study.

However, the findings with regard to type of respondents revealed that about two third of the respondents of this study were from public sector (procurement experts) and about one third of the respondents were from

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private sector (suppliers). These findings are similar to the previous studies for example the study by Gupta and Narain (2012) on a survey on adoption of e-procurement in Indian organizations revealed that 52.78 per cent of the respondent organizations were from public sector, 41.67 per cent were from private sector. These findings imply that many studies which involve respondents from public and private sector, the responses rate from private sector always is less than responses rate from public sector. The evidence is revealed in this study that many suppliers were reluctant to respond with regard to the questionnaires which were sent by the researcher. Table 2 shows the analysis of the type of respondents of the study.

Furthermore, the finding regarding experience analysis of the respondents of the study in their fields revealed that the respondents had a mean experience of 10 years and 14 days in their particular fields and they had a range of one year to thirty-eight years working experience. This finding implies that the information and data provided by the respondents for this study with regard to TANePS adoption were actual and comprehensive. Table 2 shows the experience analysis of the respondents of the study in their fields.

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Table 2: Demographic Characteristics of the Respondents (n=157)

Characteristics		Frequency	Percentage (%)
Sex	Male	115	73.2
	Female	42	26.8
Age Group	21-30	29	18.5
	31-40	58	36.9
	41-50	39	24.8
	51-60	25	15.9
	61+	6	3.8
	Primary Education	4	2.5
	Secondary Education	15	9.6
Education	Certificate Level	5	3.2
	Diploma Level	22	14.0
	Bachelor Degree	65	41.4
	Master's Degree	45	28.7
	PhD Degree	1	0.6
Respondent	Procurement Expert	100	63.7
	Supplier	57	36.3
Experience	1-10	109	69.4
	11-20	34	21.7
	21-30	8	5.1
	31+	6	3.8

Source: Survey Results, 2020

Relevance of the Path Coefficients

The PLS algorithm report revealed that there were positive path coefficients of the hypothesized relationships of the influence of relative advantage in particular. These results meant that an increase in one standard deviation of the relative advantage translated into increase of the rate of TANePS adoption. Figure 6 shows the relevance of the path coefficients as it was hypothesized in theoretical model.

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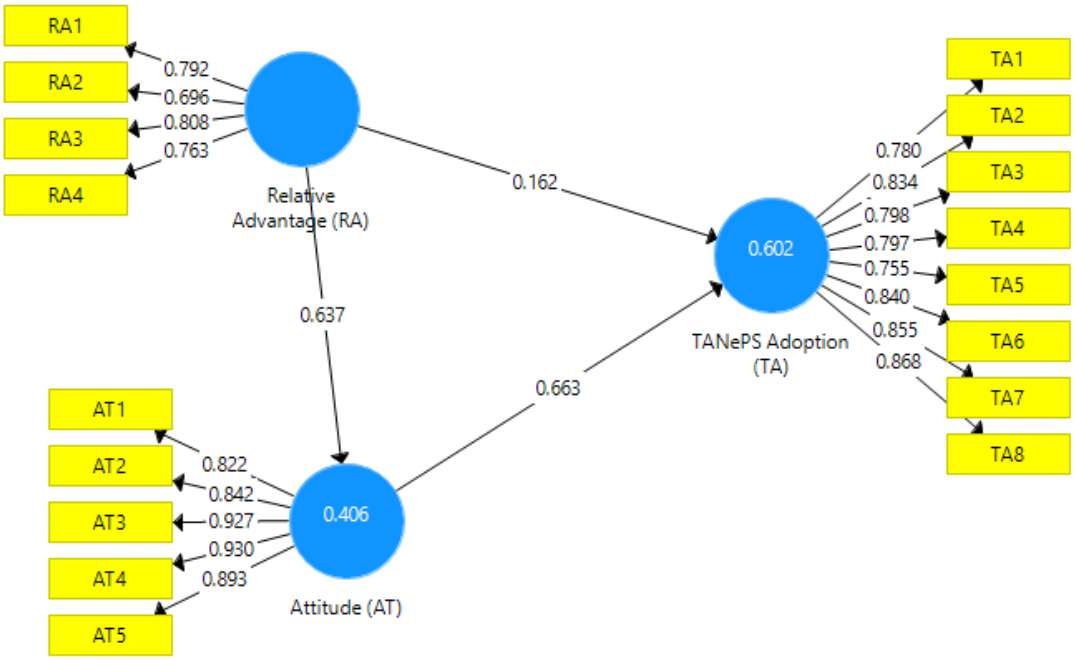

Figure 6: Relevance of the Path Coefficients

Statistical Significance of the Hypothesized Relationships

The results of the statistical significance showed that all hypothesized relationships of relative advantage were supported. These results indicated that the relative advantage had both direct and indirect influences towards TANePS adoption in the public sector and the hypothesized relationship appeared to exist in real life. Figure 7 shows the statistical significance of the hypothesized relationships from the theoretical model tested.

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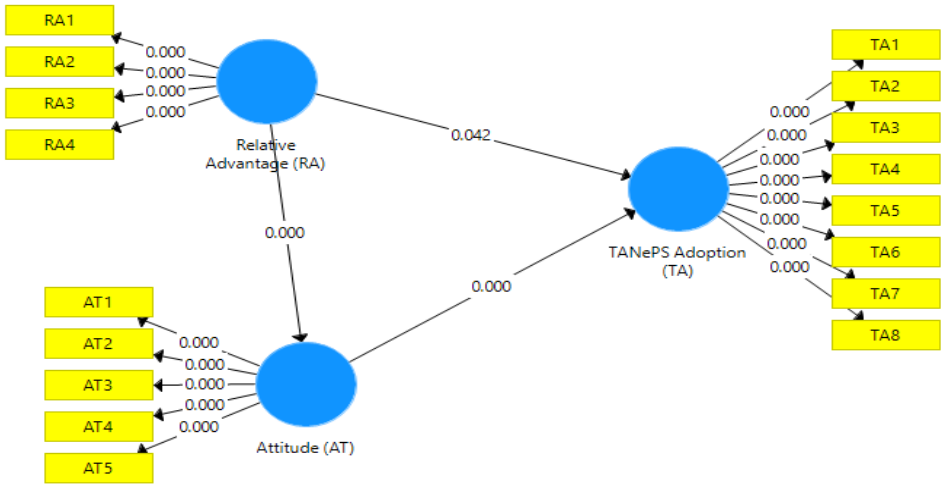

Figure 7: Statistical Significance of the Hypothesized Relationships

The hypotheses tested results from theoretical model are shown in Table 3

Table 3: Findings of Hypotheses from the Proposed Theoretical Model

Hypothesis	Path	Influence	P-value	Remark
H_{1a}	RA -> TA H_1	Direct	0.042	Supported
H_{1b}	RA -> AT-> TA H_2H_3	Indirect	0.000	Supported

Discussion of Findings

The Direct Influence of Relative Advantage Towards TANePS Application

In this study relative advantage was postulated to positively, directly influence TANePS adoption in the public sector. The findings revealed that there was positive path coefficient for the direct influence. This result meant that an increase in one standard deviation of relative advantage translated into increase of the rate of TANePS adoption. In addition, the direct relationship was found statistically significant because p-value was less than 0.05 which implied the relationship exists in real life. For relative advantage being statistically significant for the direct influence could suggest existence of partial mediation. That means that procurement experts and suppliers need awareness of the relative advantage (perceived benefits) of TANePS in order to adopt and use the system, hence factor influences procurement experts'

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and suppliers' decisions to adopt the system directly. This fact also meant that understanding of the advantages of new technology can change the mindset (attitude) of stakeholders' decisions to adopt the new technology.

These findings correspond to the previous studies' findings for example the study by Ibem et al. (2016) revealed that the perceived benefits of e-procurement were the reason why most organizations in the construction industry use it in Nigeria. The study by Ibem et al. (2016) suggests that the decision to adopt e-procurement by organizations in the Nigerian construction industry was partly influenced by the associated benefits (relative advantage) in enhancing efficiency in project delivery, eliminating geographic barrier to participation in procurement activities and improving effective communication among project team member. In addition, the study by Intharaksa (2009) revealed that one of the basic attributes of innovation perceived to speed up web-based instruction rate of adoption was relative advantage. was substantial missing in the current literature because studies on buyer-supplier perspective are currently inadequate.

The Indirect Influence of Relative Advantage Towards TANePS Application

The critical success factor "attitude" from TOE model has been shown in this study as a link of relative advantage in the process of adopting new technology for public and private gains. This kind of linkage is considerably missing in the existing literature because studies which focus on buyer-supplier perspectives with indirect relationships of the critical success factors influencing e-procurement adoption are currently insufficient. In order to form the linkage, relative advantage was postulated to positively, directly influence attitude and attitude was postulated to positively and directly influence TANePS adoption in the public sector. The findings revealed positive path coefficients which meant that an increase in one standard deviation of relative advantage and attitude translated into increase of the rate of TANePS adoption and both relationships were found statistically significant (p-value < 0.05) which meant that the relationships exist in real life. If attitude is significant in a direct relationship and it mediates relative advantage, this suggests that procurement experts and suppliers may not only rely on change of their attitude in order to adopt and use TANePS, hence these two factors influence directly procurement experts' and suppliers' decisions to adopt and use the new procurement system.

These findings are similar to those of Aboelmaged (2010), Chen *et al.* (2011), Kassim and Hussin (2013), Ombat (2015) and Dwivedi *et al.* (2017) that revealed user attitude has always been found to have a strong, direct and positive effect on behaviour and there is link between attitude and behaviour. In fact, user attitude is the fundamental attribute in attitudinal

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research and has been supported in a wide variety of settings. In addition, Kassim and Hussin (2013) assert that attitude is still significant in determining the public e-procurement system use among the agencies and this can be clarified by feelings of the top management as one of the users, and the perception from other users on the system like suppliers that are accumulated to form a cumulative decision that either accelerate or hold up the user decision. On the other hand, there studies which have shown that attitude has insignificantly influenced behavioural intention to use new technologies adoption (Masele, 2014).

Although these findings of the current study are similar with some other studies on technology adoption for public benefits, the TOE postulated top management attitude as part of organizational factor which influences new technologies adoption in the public sector. Therefore, this study has contributed new knowledge with regard to the influence of attitude on new technology (TANePS) adoption in two perspectives; public and private sector of which the existing theories and empirical studies are informative indecisively.

Conclusion

For relative advantage being statistically significant for the direct and indirect relationships toward new technology adoption, it is therefore concluded that partial mediation exists in the final model of this study the identified gaps have been filled which leads to the theoretical, empirical and practical implications.

Theoretical Contribution of the Study

Despite the fact that these discoveries of the study are like to some previous studies on innovation reception for open and private advantages, the TOE model hypothesized relative advantage as a feature of mechanical factor which impacts new advancements adoption in the organizational context. Along these lines, the current study has contributed new information with respect to the impact of relative advantage on new innovation (TANePS) adoption in two viewpoints; open and private divisions of which the current theories are enlightening ineffectively. The determinant relative advantage from TOE model to impact definitely and in a roundabout way the adoption of new innovation (TANePS) in the open segment in the wake of interfacing with attitude from TOE is significant missing in current writing since concentrates on buyer-supplier point of view are as of now insufficient. The indirect relationship of relative advantage and attitude from TOE has been sufficiently comprehended in this study a substance that the existing theoretical model was missing. Figure 8 shows the final model with indirect relationship of attitude and relative advantage (perceived benefits)

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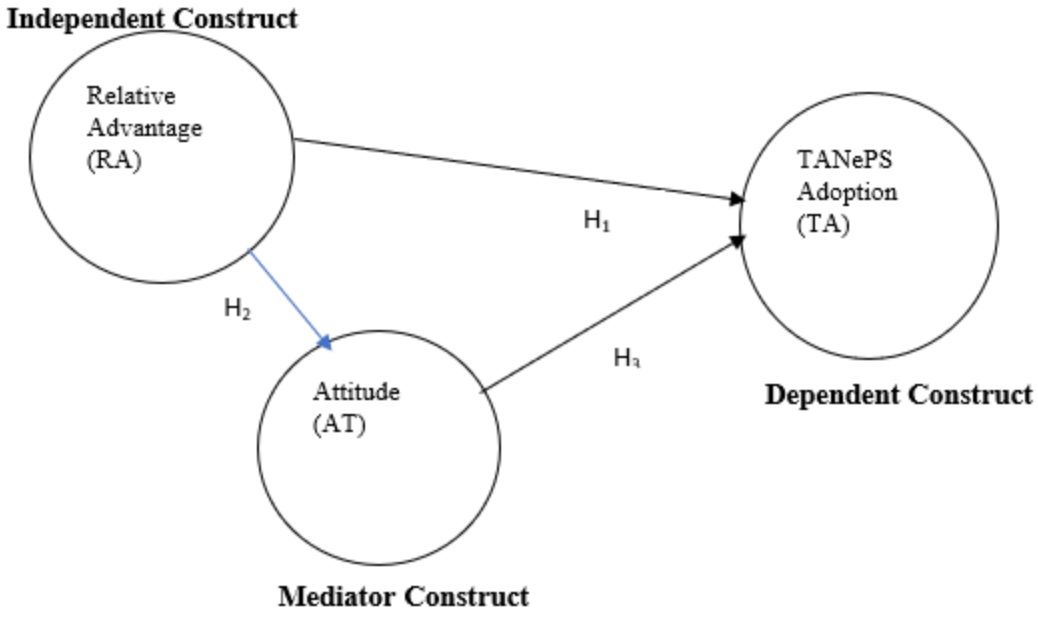

Figure 8: The Final Model with Indirect Relationship
Source**:** Source: Validated Theoretical Model, 2020

Key:

Direct Relationships (Existing Relationships)
Indirect Relationship (Theoretical contribution)

Empirical Contribution of the Study

The empirical gap which was existing has been filled due to the fact that, this study has included both the perception of buyers (procurement experts from public organization) and suppliers (individualism) on new technology (TANePS) adoption a substance that the existing empirical literature was explaining inadequately. Additionally, the use of deduction approach and PLS-SEM with the help of SmartPLS 3 have been sufficiently comprehended in this study substances that were missing in the existing empirical literature for methodological context.

Practical Implications of the Study

Basing on the relationship of the relative advantage with attitude towards TANePS adoption, the final integrated model (figure 8) of this study suggests that, buyers and suppliers do not rely only on understanding the relative advantage of the system but changing their mindset first is paramount. The significant change of the mindset can be done through training with regard to the relative advantage (benefits) of TANePS it brings to the supplier community, buyers and also to the Government at large.

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Recommendations of the Study

Recommendations to the Government, Policymakers, Suppliers and Procurement Experts

The Government of Tanzania must have a clear strategy to consider the relative advantage and must have greatest commitment towards the adoption of TANePS in all procuring entities of the country. Part of the strategy is to train users of the system with regard to relative advantage of the TANePS adoption. Policymakers need to restructure the ICT policy in line with e-procurement implementation using the final model developed in this study. Furthermore, procurement experts and suppliers are required to have a commitment to learning the application of TANePS.

Recommendations to Future Researchers (Areas for Further Research)

In this study, attention has been paid to the application of reflective model with constructs inducing the indicators. It is therefore recommended that further research would be necessary to apply formative model with specified constructs which are induced by the indicators and have received considerable attention in the recent. Lastly, the data of this study were limited to procurement experts and suppliers from one country implementing the new public procurement system. Therefore, the model of this study is recommended to be tested to other developing countries implementing the new public procurement systems to see its applicability and if it can be generalized for e-procurement adoption in the public sector.

References:

1. Aboelmaged, M. G. (2010). Predicting e-procurement adoption in a developing country, an empirical integration of technology acceptance model and theory of planned behaviour. *Industrial Management & Data Systems, 110 (3),* 2392-414, Emerald Group Publishing Limited, DOI 10.1108/02635571011030042
2. Abomeh, O. S., & Blessing C., I. O. (2013). Assessment of recruitment practice on organisation performance: empirical study of hospitality businesses in Abuja. *European Scientific Journal, ESJ*, *9*(29). https://doi.org/10.19044/esj.2013.v9n29p%p
3. Achuora, J., Arasa, R., & Ochriri, G. (2012). Precursors to effectiveness of public procurement audits for constituency development funds (CDF) in Kenya. *European Scientific Journal, ESJ*, *8*(25). https://doi.org/10.19044/esj.2012.v8n25p%p
4. Adjei-Bamfo, P., & Maloreh-Nyamekye, T. (2019). The 'baby steps' in mainstreaming sustainable public procurement in Ghana: A double-agency perspective. *Journal of Public A□airs, e1902,* https://doi.org/10.1002/pa.1902

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

5. Adjei-Bamfo, P., Domfeh, K., A., Nyigmah-Bawole, J., Ahenkan, A., Maloreh-Nyamekye, T., Adjei-Bamfo, S., & Darkwah, S. A. (2020). An e-government framework for assessing readiness for public sector e-procurement in a lower-middle income country. *Journal of Information Technology for Development,* DOI: 10.1080/02681102.2020.1769542
6. Baithili, M. K., Mburugu, K. N., & Njeru, D. M. (2019). Political Environment and Implementation of Public Private Partnership Infrastructure Development in Kenya. *European Scientific Journal, ESJ*, *15*(19), 282. https://doi.org/10.19044/esj.2019.v15n19p282
7. Hair, J. F., Ringle, C. M. and Sarstedt, M. (2014). PLS-SEM: Indeed a silver bullet. *The Journal of Marketing Theory and Practice, 19* (2), 139–152.
8. Hair, J.F., Risher,J.J., Sarstedt, M. & Ringle, C.M. (2018). When to use and how to report the results of PLS-SEM. *European Business Review, Permanent link to this document: https://doi.org/10.1108/EBR-11-2018-0203*
9. Gupta, M. & Narain, R. (2012). A survey on adoption of e-procurement in Indian Organizations, *International Journal of Indian Culture and Business Management, 5 (1).*
10. Ibem, E.O., Aduwo, E.B., Tunji-Olayeni, P., Ayo-Vaughan, E.K. & Uwakonye, O.U. (2016). Factors influencing e-procurement adoption in the Nigerian building industry. *Journal of Construction Economics and Building, 16 (4),* 54-67.
11. Ibrahim, M., Bawole, J. N., Obuobisa-Darko, T., Abubakar, A., Kumasey, A. S. (2017). The legal regime and the compliance façade in public procurement in Ghana, *International Journal of Public Sector Management, 30 (4),* doi: 10.1108/IJPSM-09-2016-0156.
12. Iles, J. (2017). *How is e-procurement related to the success of U.S. Cities' Sustainable Purchasing Policies?* Arizona State University, ASU School of Sustainability
13. Intharaksa, U. (2009). Using Diffusion of Innovation Theory to Explain the Degree of Faculty Adoption of Web-Based Instruction in A Thai University. *A Thesis Submitted to the Faculty of the Graduate College of the Oklahoma State University in partial fulfillment of the requirements for the Degree of Doctor of Education*
14. Kassim, E. S. & Hussin, H. (2013). A success model for the Malaysian Government e-procurement system: the buyer perspective. *International Journal of Electronic Government Research (IJEGR), 9(1).*

15. Klabi, H., Mellouli, S., & Rekik, M. (2016). A reputation based electronic government procurement model. *Government Information Quarterly,* http://dx.doi.org/10.1016/j.giq.2016.01.001.
16. Latif, F. B. (2014). The Adoption of Electronic Procurement in Turkey. *Advances in Economics and Business,* 2, (2), 85-91.
17. Licenji, A. (2015). Standards and challenges of public procurement. *European Scientific Journal, ESJ*, *11*(25). Retrieved from http://eujournal.org/index.php/esj/article/view/6216
18. Malekia, D**.** (2018). E-Procurement as anti-corruption tool in public procurement in Tanzania. *European Journal of Business and Management, 7 (14).*
19. Marianna, H. (2012). Crisis and procurement in Hungarian independent retailing. *European Scientific Journal, ESJ, 8(25). https://doi.org/10.19044/esj.2012.v8n25p%p*
20. Masele, J. J. (2014). Adoption of green e-business applications for sustainable tourism development in developing countries the case of Tanzania, *(PhD Thesis), Department of Business Informatics I, VLBA-University of Oldenburg*
21. Passaro, P. (2017). Business Model in Air Transport: Evolution of Innovation Concept. *European Scientific Journal, ESJ*, *13*(31), 455. https://doi.org/10.19044/esj.2017.v13n31p455
22. Pitso, N., Kabanda, S., & Kapepo, M. (2018). Exploring e-procurement adoption in the context of a developing country: the case of Lesotho, e-infrastructure and e-services for developing countries. AFRICOMM 2017. *Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering (250), pp. 315–326).* Springer. https://doi.org/10.1007/978-3-319-98827-6_30
23. Rogers, E.M. (2003). *Diffusion of Innovations* (5th edition), Free Press, New York.
24. Schooner, L. S., Gordon, I. D. & Clark, L. J. (2008). "Public Procurement Systems: Unpacking Stakeholder Aspirations and Expectations". *GW Law Faculty Publications and Other Works.* Paper 111
25. Shale, N. I. (2014). Role of e-procurement strategy on the performance of state corporations in Kenya, *(PhD Thesis) College of Human Resource Development, Jomo Kenyatta University of Agriculture and Technology*
26. Shatta, D. N., Shayo, F. A. & Layaa, J. N. (2020a). Determinants of e-procurement adoption model for green procurement in developing countries: experience from Tanzania*. International Academic Journal*

 ISSN: 1857-7881 (Print) e - ISSN 1857-7431

of Procurement and Supply Chain Management, 3(2), 1-18. Retrieved from http://www.iajournals.org/articles/iajpscm_v3_i2_1_18.pdf.

27. Shatta, D. N., Shayo, F. A. & Layaa, J. N. (2020b). Influence and linkage of buyers'-suppliers' attitude towards e-procurement adoption in developing countries: Tanzania context*. International Journal of Applied Research in Management and Economics, https://doi.org/10.33422/ijarme.v3i1.282* .

28. Suleiman, M. (2015). Adoption of e-procurement and value addition: Tanzanian context. *European Journal of Business and Management*, 7, (14).

29. Taluka, E.A. (2016). *Understanding factors influencing consumer behavioural intention to use mobile payment services in rural Tanzania: a case of Pwani region* (Masters dissertation). University of Dar es Salaam, Tanzania.

30. Tornatzky, L. & Fleischer, M. (1990). *The Process of Technology Innovation*, Lexington, MA, Lexington Books

31. Tutu, S. O., Kissi, E., Osei-Tutu, E. & Desmond, A. (2019). Evaluating critical factors for the implementation of e-procurement in Ghana, *Int. J. Procurement Management, 12 (1),* 1-14.

32. United Republic of Tanzania (2019). *Public Procurement Regulatory Authority Annual performance evaluation report* for 2018/2019 financial year

33. United Republic of Tanzania (2018). *Public Procurement Regulatory Authority Annual performance evaluation report* for 2017/2018 financial year

34. United Republic of Tanzania (2016). *National Information and Communications Technology Policy*, Government Printers, Dar es Salaam.

35. Watuleke, J. (2017). E-procurement: evolution and adoption. a review of literature, *IJRDO-Journal of Educational Research*: 2456-2947.

36. Zhang, Y., Sun, J., Yang, Z. & Wang, Y. (2020). Critical success factors of green innovation: Technology, organization and environment readiness. *Journal of Cleaner Production,* doi: https:// doi.org/10.1016/j.jclepro.2020.121701.

37. Zhou, J., Shafiq, M.N., Adeel, A., Nawaz, S., &Kumar, P. (2017). What is Theoretical Contribution? A Narrative Review.