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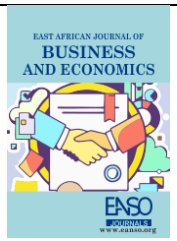

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Original Article

Factors Affecting the Adoption of Electronic Procurement in the Public Sector: The Case of Songwe District Council

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ABSTRACT

The study aimed to determine the factors affecting the adoption of electronic procurement in the public sector: the case of Songwe District Council. The specific objectives were to determine effects of relative advantage on the adoption of electronic procurement system in Songwe District Council, determine the effects of complexity on using electronic procurement system and to determine the effects of trialability on using electronic procurement system. The research employed a quantitative approach. The target population was 56 respondents from the selected departments. Data was analysed descriptively, 32(57%) agreed that relative advantage had effect on electronic procurement system adoption, 14(25%) disagreed while 10(18%) were neutral. of complexity effects on electronic procurement system adoption, 25(45%) agreed on the statements that, the electronic procurement system was difficult to understand, the organization provided training to departments on the use of electronic procurement system and staffs knew how to evaluate tenders by using the electronic procurement system, 20(35%) disagreed and 11(20%) were neutral. Thus, the findings revealed that complexity had effect on electronic procurements system adoption. 26(46%) agreed on the statements that, electronic procurement system adoption had been experimented with limited basis and the Songwe District Council had available network connections whereas 15(28%) disagree and 15(26%) neutral. The study recommends that the Songwe District council should employ more trialability in using electronic system since they have positive and significant results especially when more training will be engaged on the adoption of electronic procurement system. The findings of this study can be adopted in other districts councils with similar administrative and development characteristics as well as among other government institutions.

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INTRODUCTION

Electronic procurement is the use of electronic methods over the internet to conduct procurement functions such as identification of requirements, tendering processes, payments, evaluation, and contracts management (Corsi, 2006). The aim of adopting electronic procurement is to enhance effectiveness, transparency, and accountability in the public procurement process.

In Tanzania, some scholars including Suleiman (2015), Tegambwage (2017) and Lilian (2015) found that the adoption of E-procurement in Tanzania is still at an infant stage whereby some initiatives in large part have already been implemented by few private companies especially those owned by foreign investors. Faced with competitive environment and economic pressure, some of the Tanzania public organizations and companies have implemented electronic procurements systems in order to improve operational efficiency and enhance core competencies.

According to Florea et al. (2016) the adoption of E-Procurement is not a straight forward task and can always result in significant impact to all business divisions in operational, managerial, and strategic levels of the company. Implementing electronic procurement system project is a difficult and high-cost proposition as it places tremendous demands on the organizations' time and resources. Many organizations do not achieve success in the implementation of electronic procurement since companies are faced with a number of complexities when implementing these systems such as financial issues, expertise, and infrastructures.

Danga1 et al. (2021) point out that electronic public procurement system is important for increasing the government's performance. Despite the importance of adopting public procurement system, the most highlighted challenges were lack of trustiness and system security, lack of ICT and inadequate information communication technology (ICT) facilities. Likewise, Suhery et al. (2019) avers that electronic procurement has positive effects on the public sector performance since the system provides transparency, efficiency, fairness, enhances effective competition and reduces corruption in the procurement activities.

Empirical evidence confirms the importance of using electronic procurement for increasing performance. For instance, Yano and Nondi (2018) conducted a study on factors affecting the implementation of electronic procurement in Kenya Ports Authority at Mombasa. The findings revealed that the electronic procurement system was affected by various factors which include budgetary allocation, level of technological infrastructures, and top management support and staff proficiency in ICT skills. In addition, Alphonce (2020) conducted a study on the effectiveness of implementation of electronic procurements in Tanzania. The findings from the study revealed that electronic procurement was important to increase performance in the public sector.

Realizing the importance of electronic procurement, globally, electronic procurement has gained popularity especially with the advent of technology. Since 1960s, many governments in the world have been struggling to promote transparency, accountability, efficiency and

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reduce corruption in public procurement through electronic adoption. For instance, in the United States of America, rapid development of electronic procurement was reported in early 2000 whereby online bidding was conducted (Reddick, 2004). This system increased the performance of governments in USA. Similarly, a review conducted by the Commonwealth of Australia indicates that the national governments of Italy, New Zeeland, Scotland, New South Wales, and Western Australia in 2005 revealed that these countries were already using electronic procurement systems for public procurement activities and the systems increased organizational performance. The arrival of electronic commerce (e-commerce) via the internet in 1990 has led to the beginning of internet-enabled procurement. World literature shows a high percentage of organizations adopting e-commerce in their daily activities. In Singapore, it is indicated that 61.7% of the organizations are electronic procurement adopters. It has also been indicated that firm size, top management support, business partners and perceived indirect benefits are among the positive influencers of electronic procurement adoption (Teo et al., 2009).

In Malaysia, the government ordered all the governments' organizations to use the electronic procurement system. According to Yossuf et al. (2011) the Malaysian public sector had rapid changes in terms of performance after adopting the use of public procurement system. It was pointed out that the adoption of electronic government and particularly e-procurement was inevitable for the government because it was found to increase effectiveness and efficiency in the delivery of services to the people.

In Africa, the concept of electronic procurement is just gaining popularity especially in the public sector. The aim is to increase accountability and transparency in procurement activities in the public sector. According to the World Bank (2018), in Africa, electronic procurement started in 1980s and Rwanda is one of the countries in Africa to implement e-procurement after passing a new procurement law in 2007 and later establishing the Rwanda public procurement authority. These initiatives show that the use of electronic procurements was important on transforming performance.

The Tanzanian government adopted the use of electronic procurement system by developing the Tanzania national electronic procurement system which was piloted in 2018. As per the government policy, by December 2020, all procuring entities using public funds were trained and started using electronic procurement (URT, 2020). The introduction of electronic procurement system was aimed at improving the public sector's performance by providing improved services to the people. According to Public Procurement Appeal Authority PPRA (2020), the Tanzania national electronic procurement system was crucial to transform the public sector's performance aiming at increasing effective services delivery to the people. The introduction of electronic procurements was due to the fact that public procurement occupies more than 75% of government budget (CAG, 2019). In Tanzania, public procurement involves buying, leasing, or acquiring public goods, works and services by the procuring entities (the government agencies). For increasing public transparency, the use of electronic system is important in all public sectors including the district councils found in Tanzania (PPRA, 2020).

Despite the electronic procurement benefits to organizations, the rate of its use is still low, especially in the developing countries like Kenya and Tanzania (Makoba et al., 2017). The study conducted by Koech et al. (2016) in Kenya found that electronic procurement adoption in any organization must be supported by individual factors especially technical skills and the employees' ages. In the study, it was observed that elder people were late adopters of information and communication technology compared to younger people. In the view of Tanzania, Mohammed (2013) indicated that the successful electronic procurement adoption needs various drive forces such as: compatibility, observability, and limited basis, unambiguous and technological factors in terms of technological infrastructure, awareness,

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and resources. The same study found that private organizations were better adopters than public organizations.

Despite the presence of electronic public sector procurement, there are some factors which decrease its effectiveness. Most studies reviewed have been conducted concerning factors affecting e-procurement use which include: Teo et al. (2019), Nasidai (2016), Daud, et al. (2013), Shayo et al. (2020) and others. However, all the studies did not show why procurement processes have a little response on the use of e-procurement and why procurement is still done manually for instance in notification of error to contractors and tender board signature. In addition, most of the studies which have been conducted in relation to electronic procurements have been done outside of Songwe District Council; for example, Omorodion et al. (2020) conducted a study in Edo State in relation to employees' perceptions of the electronic procurement System (EPS) and the rate of adoption. Also, Orina (2013) did a study on electronic procurement readiness factors in Kenya's public sector to determine the extent of electronic procurement levels in public institutions. These findings were done outside the Songwe district council.

In the Songwe District, there are limited research findings showing the significant effects of each factor on its performance (Mohammed, 2011). This study aimed to determine the factors affecting the adoption of electronic procurement system in Songwe District council public sector Tanzania. Hence, it was important to conduct this study since empirically little has been articulated in Songwe in relation to e-procurement practices

The Role of Public procurement regulation act (PPRA) on Building Users' Procurement Capacities through TANePS

Fundamentally, PPRA has the mandate of building procurement capacities for users or bidders across the country. However, both PPRA training report and regional tender assessment reports displays the fact that, of all tender bidders that applied for the provision of services, and worked in southern regions including Iringa, Mbeya, Songwe and Songea from 2019 to 2023 only 30% had successfully attended training on TANePS (PPRA Training Reports, 2023). This infers that even though most tenders were applied through the TANePS system, the competency level for managing applications through electronic procurement system for the majority of applicants was too low. Most of the applicants were unable to apply for themselves without the assistance of other parties. This underlines high levels of complexity amongst the contractors. Given that, the study realized that, if such trends shall continue, the adoption of electronic procurement system in procurement processes will be very difficult not only in the Songwe District Council but also in the larger part of the country.

Table 1: PPRA Stages and Procedures for EPS Installation framework

Stages in EPS installation	Remarks
Planning Stage	Conducted at large scale
Requirement of Analysis	Conducted at large scale
Designing and Prototyping stage	Designed for large scale
Software Development stage	Developed for large scale
Software Testing	Not tested in a locality
Implementation and integration	Implemented countrywide
Operations and Maintenance	Operated countrywide

Source: PPRA Operation report, 2020

Challenges of Tanzania national electronic procurement system

One of the challenges that presents a complexity and affects bidders is the computer illiteracy that hinders smooth and direct applications for tender request by tender applicants (Contractors). Due to this challenge, most contractors do engage other parties for the applications at a cost of. Tsh 100,000 and 150,000 per tender. Indeed, the level

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of illiteracy has been noticed among most employees such that, most activities related to procurement were being done outside TANePS system. For example, prior to the notifications of awards, most contractors were not registered in the system, and since some of the works advertised required local artisans that were unable to channel their applications through a system, and that many employees being unable to master the web-system, an alternative manual system was to be solicited to engage contractors at work for the provision of services. This therefore led to system procedures such as approval of tenders, approval recommendations, evaluations and contract signing being held outside TANePS system.

THEORETICAL FRAMEWORK

This study was guided by three theories as follows.

The Innovation Diffusion Theory (IDT)

Even though different theories have been used in predicting behavioural intentions to adopt technology, research has shown that the influence of some factors on the intention to use the information system (IS) varies at different stages in the IS implementation process (Rahayu &and Day, 2015). To address this limitation of the behavioural theory, Rogers (2003) developed a theory known as the diffusion of innovation which was used to explain changes in technological acceptance over time as individuals gained experience in using the targeted technology. He argued that diffusion is a process by which an innovation is communicated through certain channels over a period of time among the members of a social system. Therefore, the process of innovation diffusion is determined by five attributes which include: relative advantage, compatibility, complexity, trialability and observability (Rogers, 2003).

In this study, the adoption of electronic procurements in the public sectors is influenced by technology attributes such as relative advantage, compatibility, complexity, trialability and observability. The suitability of using the diffusion of innovation theory in the adoption of electronic system has been observed in a number of empirical studies. For example, Tan and Eze (2008) adopted the diffusion of innovation theory in the study of internet-based ICT adoption where the findings revealed that relative advantage, compatibility, complexity, observability, and security were significant factors that influenced Internet-based ICT adoption in Malaysia. Furthermore, Al-Ajam and Nor (2013) confirmed the usefulness of the diffusion of innovation theory in the internet banking service adoption in Yemen. The findings from this study indicated that perceived relative advantage, perceived ease of use, perceived compatibility, perceived trialability, and trust were salient determinants of the adoption of internet banking. Given this evidence, it is justified that the innovation of diffusion theory is suitable for studying the adoption of technology. There are several limitations of the diffusion of innovation theory which include the following: much of the evidence for this theory, including the adopter categories did not originate in public organizations, it does not foster a participatory approach in its adoption to public organizations; and it does not take into account an individual's resources or social support to adopt the new behaviour (or innovation).

Despite the applicability of the innovation of diffusion theory, it has focused on technology attributes only and fails to account for social-environmental factors such as capability on operating with the technology (Arpaci et al., 2012). To address this weakness, prior empirical studies have integrated the diffusion of innovation theories with other theories and constructs to help to accommodate the social-environmental factor. For instance, Gherib (2015) integrated the theory of reasoned action, technology acceptance model and diffusion of innovation to improve explanatory. The result of the qualitative study indicated that relative advantage, perceived ease of use, compatibility and perceived risk from both theories influenced the attitude of the top management towards the adoption of internet banking. Based on the integration, the following

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factors were found as the bases for electronic adoption namely: compatibility, relative advantage, Observability, Trialability and Complexity (Gherib, 2015). However, expanding the notion of these variables, this study has also reviewed the technology acceptance model as an alternative theory that details more on how electronic procurement system as a new technology can be adopted.

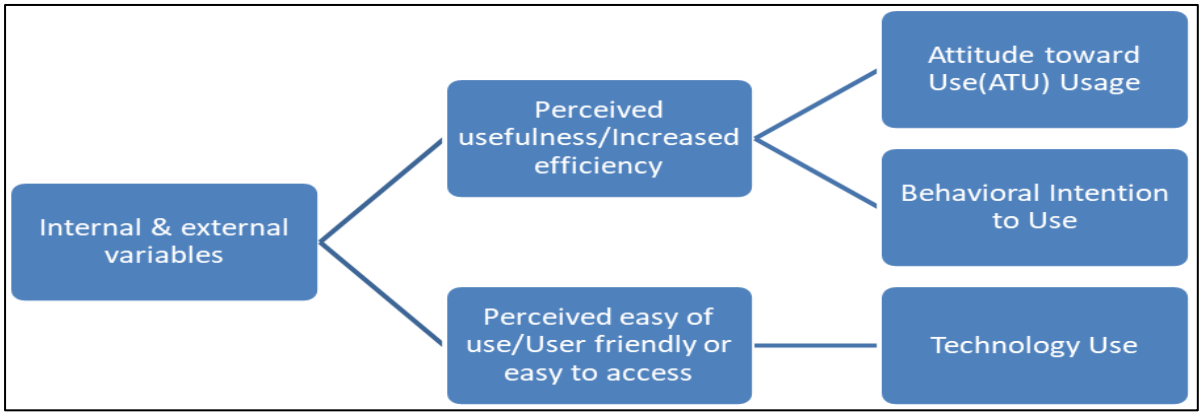
The Technology Acceptance Theory

The determinants of technology acceptance and utilization have been widely interrogated in literature. Shroff et al. (2011) discusses the various frameworks used to measure the determinants of technology acceptance and utilization. Among the frameworks include the Diffusion of Innovation Model by Rogers, the Technology Acceptance Model (TAM) by Davis and the Theory of Reasoned Action (TRA) by Aizen and Eishbein. Saga and Zmud in Kurnia et al. (2005) suggest that amongst other models, the Technology Acceptance Model (TAM) has been the most influential and widely adopted to predict the acceptance and use of various technologies for financial transactions. This is because the model has a strong theoretical basis and enjoys sufficient empirical support. When used effectively, the model can save financial institutions the risk of investing in a technology that may remain abandoned or grossly underutilized.

In this model, the technology acceptance model as proposed by Davis has been explored. Chuttur (2009) argues that the wide acceptance of TAM is based on the fact that the model has a sound theoretical assumption and practical effectiveness. From the time it was proposed in 1985, the model has been refined so as to incorporate variables and relationships obtained from Mugo et al. (2017). The output from the adjustments was a more refined model essential for anyone willing to integrate the theory around technology acceptance and its utilization in various aspects. The model has been designed to show how users come to accept and use a technology. The theoretical basis is built on the premise that when users are presented with a new technology, three major factors influence their decisions on how and when they will use it. The first determinant is its perceived usefulness (PU), the second is the perceived ease of use (PEOU), while the third determinant is user attitude towards usage (ATU).

According to Davis (1989), perceived usefulness (PU) is the degree to which a user believes that using a particular system would enhance his or her job performance. On the other hand, perceived ease-of-use (PEOU) is the degree to which a user believes that using a particular technology would be free from effort. In other words, it is the degree to which consumers perceive a technology as better than its substitutes. Commenting on the model, Chen et al (2007) extends the argument that perceived usefulness (PU) and perceived ease of use (PEOU) positively affects the attitudes toward usage (ATU) of a technology. The relationship between these determinants can be illustrated by the model in *Figure 1* as suggested by Davis.

Figure 1: The Technology Acceptance Model



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In addition, both perceived ease of use and perceived usefulness are influenced by some critical variables. Different scholars have given their suggestions on the variables that determine the usefulness and ease of use of a technology. While investigating the implementation of electronic Learning Management Systems at the University of Saudi Arabia, Asiri et al. (2014), proposed two categories of such variables: internal variables and external variables. Internal variables consist of factors such as the attitude of the user, their pedagogical beliefs towards the technology and level of competency. The authors confirmed that a positive attitude towards technology will likely motivate a user to utilize the technology. Further, along similar lines with other studies, beliefs about e-learning were found to be important in determining the use of a technology. The study noted that the use of technology could be predicted by competency levels, meaning that having the skills and knowledge to use a system will affect its utilization. On the other hand, external variables include those external barriers faced by users during utilization. Such factors include organizational barriers, technological barriers, and social barriers.

Demographical factors such as gender, computer self-efficacy and levels of training (competency) are also used to predict technological usage. Internal and external technology variables include: Perceived ease of Use, User friendliness, Ease of access to information, Behavioural Intention to use Technology, Usage, Perceived Usefulness, Attitudes toward Usage (ATU) and Increased efficiency (Mugo et al. 2017). Practical Application of TAM has been applied in various information technology and information system areas. Researchers have identified specific areas where the model has been adopted. Moon and Kin (2001) used the model to explain the users' acceptance of World-Wide-Web in an electronic learning context; Lin et al. (2007) in Chen and Chen et al. (2007) used the model in clarifying e-stock users' behavioural intentions. Chen and Chen et al. (2007) adopted the model while investigating automotive telematics users' intention while Stern et al. (2008) used the model in their studies on consumers' acceptance of online auctions.

Other researchers, Serenko et al. (2007) used the model to assess user acceptance of interface agents in daily work applications whereas Muller-Seitz et al. (2009) used the same model to determine customers' acceptance of Radio Frequency Identification (RFID). Almasri (2004) argues that the TAM is an acceptable model and has been employed in many information technology and information system areas such as e-learning, World-Wide-Web, online auctions, Radio Frequency Identification (RFID), e-portfolio systems, wireless LAN, E-government, E-commerce, internet banking, and mobile learning. In this regard therefore, TAM is a model that can inform technology designers on the impact of the system to the user's behaviour. Alharbi and Steve (2014) supports that the TAM has been adopted and tested as a useful framework in the field of information science and electronic procurement Systems. Many others scholars such as Seyal et al. (2015) also attests that the TAM is a sufficiently influential research model, whose tools have provided statistically reliable results. Information Communication Technologies (ICT) can enable procurement industry to perform its functions in a much-improved way. However, owing to the affordance and conveniences provided by mobile technologies, consumers are shifting their preferences from fixed technologies towards technologies that are mobile. This has resulted to ready acceptance and adoption of the mobile technologies across the various sectors of human endeavours, including procurement. Consequently, the use of mobile technologies for financial and procurement purposes is becoming a common practice and expectation amongst the users. Rueckert et al. (2013) arguments are that that users (particularly those in peripheral areas) are demonstrating eagerness to use technologies as tools that can extend beyond communication.

For the purpose of this study, three variables namely: relative advantage, Trialability and Complexity were adopted to assess the effects of technology on electronic procurements in Songwe

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district council. The variable instruments were supported by two theoretical structures referred to as innovation diffusion theory and the technology acceptance framework.

The Organizational Adoption Theories

Organizational adoption decisions were concerned with not only the adopted innovation but also the adopting organization. The factor model suggests that when making adoption decisions, an organization needs to straddle simultaneously innovation and organization dimensions because the equality of technological superiority and fit with the adopting organization was not automatically guaranteed. Structured members' attitudes toward technology and decision-making practice are important organizational characteristics of adoption decision making (Frambach, 1999). This theory is very import in this study as it explains to the organization the way to adopt the E-procurement in the organization as much as the staff's attitudes toward the technology adoption are important.

EMPIRICAL LITERATURE REVIEW

Many countries are changing their procurement and financial transaction systems by augmenting them with information, communication, and technology components Kayungi (2013) (The investment is directed towards policy, training, and technology adoption. The policies, training and technology adoption programs are directed towards efforts that promote the acceptance of the technology. Attempts to include technologies in the electronic procurement system have been with educationist for quite some time. Literature indicates that the electronic industry has always exerted pressure on the financial transaction systems to accept and utilize technologies not only in procurement, but in the support of other services within the public organization system.

However, a great challenge to the inclusion of technology in procurement is predicting its acceptance and eventually its utilizations, especially for transaction purpose. Bowen in Davis observes that sufficient utilization of any technology in the day to day-to-day transactions is often obstructed by the unwillingness of the users to accept and adopt that technology. The unwillingness to accept and adopt technology can be referred as resistance to technology. Resistance to technology has been persistent in various sectors for quite some time. For instance, Makau (1988) argued that the education systems for example resisted biro pens, slide rules, electronic calculators as well as computers. Other areas such as the e-learning concept also experienced an equal measure of resistance despite efforts to popularize it Park observes that achieving success in programs that propose to include technologies in financial transactions is often quite challenging. Consequently, innovators and designers of electronic products (such as IBM and Xerox) have often preferred to measure user perceptions before introducing any technology anywhere, including the procurement area. According to Davis such measures are helpful in informing industry to design, build and implement products that respond to user reactions, tastes, and preferences. This point of view is also held by Park (2009) who argued that measuring user perceptions is important in gauging how the user perceive and react to the elements of any technology. The outcomes of the measurements are equally useful to administrators and managers, who use such results to create mechanisms for attracting more users to adopt the technology. So, for a long time now, industry players have been relying on instruments, which have received acceptance and validation by researchers in the electronic industry.

Electronic Procurement System

The concept of electronic procurement system some time is referred as e-payment system and it has been defined by Parker and Swatman (2002) to mean a computerized system thatpermits payments between parties to occur online or electronically relatively than using customary payment systems such as manual requests, cash, and cheques. When buying and selling goods and services the mode that use electronic system in making payment or transaction of goods and services is what regarded as e-payment system. This implies that information and communication

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technology development has developed a system that allows transaction in public procurement systems or other industry to make payments and request through electronic system. Thus, to tender services providers, the deployment of advanced technologies in the market is essential to achieve competitive advantage (Hassan et al, 2019).

Effects of Relative Advantage on the Adoption of Electronic Procurement

Shatta, (2020) conducted a study on ‘’The Influence of Relative Advantage Towards e-Procurement Adoption Model in Developing Countries: The Tanzania Context’ ’the stratified random sampling technique was used to select a sample size of 157 respondents. The study adopted the positivism philosophy and cross-sectional survey research design. 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. Finding revealed that in the presence of attitude, relative advantage has direct and indirect influences towards e-procurement adoption.

Wahid (2016) conducted a study on Examining Adoption of e-Procurement in Public Sector Using the Perceived Characteristics of Innovating: Indonesian Perspective. This study aims to examine factors affecting adoption of e-procurement in public sector with special reference to Indonesian context. The study based on a survey to 87 contractors/suppliers in the city of Yogyakarta and the survey conducted in the early stage of electronic procurement implementation is of the possible explanations. This study is considered as quantitative in nature. A questionnaire was developed as the main research instrument. The study finds that only trialability that affects use intention of electronic procurement among the contractors/suppliers. The survey conducted in the early stage of electronic procurement implementation is of the possible explanations.

Jesuorobo et al. (2020) conducted a study on Employee Perceptions of the Electronic Procurement System (EPS) and Rate of Adoption of EPS by the Federal Public Hospitals in Edo State of Nigeria Based on the Diffusion of Innovations Theory. This study investigated the perception of electronic procurement (e-procurement) system and rate of adoption in the federal public hospitals in Edo State of Nigeria. The rate of adoption is premised on Rogers’ diffusion of innovations approach using the process of innovation characteristics: relative advantage, trialability, compatibility, observability, and complexity of e-procurement system to evaluate the rate at which organizations adopt new innovations. The study used convenience sampling technique to select 45 management staff of procurement departments of three federal public hospitals spread across Edo State. The Ordinary Least Squares (OLS) technique was used to estimate the model that was developed. The findings showed that the greatest challenge faced by the hospitals in the adoption of EPS was the lack of electronic procurement system infrastructure due to inadequate funding. The regression results demonstrated that all the exogenous variables were significant and positively influenced the rate of adoption in the federal public hospitals in Edo State, except complexity of e-procurement system that had a significant negative predictor on management of the hospitals’ policy decision to adopt electronic procurement system.

Effects of Complexity on the Adoption of Electronic Procurement

Okello (2015) conducted a study on “The analysis of the Use of electronic procurement on the performance of the procurement functions of county governments in Kenya’’. This study aimed at examining the relationship between e-procurement and procurement performance of County Governments in Kenya and data was collected in Kericho County. The study adopted a correlational research design and a sampling frame was purposively selected to constitute 120 employees working in procurement, finance and accounts and IT departments of Kericho County using stratified random sampling. Data was collected by the use of structured questionnaires.

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Both descriptive analysis as well as inferential analysis (correlation analysis) were used. The findings revealed that e-procurement was positively related with the performance of supply chain function of County Governments in Kenya. The study therefore recommended that the Government should come up with policies on the adoption of e-procurement practices and provide critical resources and leadership in the adoption of e-procurement.

Yifan et al. (2021) conducted a study on electronic procurement system adoption in local governments: the role of procurement complexity and organizational structure. The article examines how local governments' procurement complexity and structure interact to influence electronic procurement adoption. Drawing on the survey data of over 400 cities, the findings revealed is that, a centralized structure enhances the likelihood that local governments adopt an e-procurement system to cope with the increasing procurement complexity; while governments with a coordinated structure are less likely to adopt e-procurement as they can rely on the intra-organizational collaboration and information-sharing embedded in the structure to accommodate complex procurements. The findings shed insights on how local governments with different structures can best deal with complex managerial activities and facilitate electronic procurement adoption.

Daud, et al (2013) conducted a study on ''factors influencing the usage of e-procurement among contractor companies in Malaysia''. Based on the preceding hypotheses, the research model was developed and illustrated. The model involved 5 constructs, which were perceived ease of use, perceived usefulness, attitudes towards e-procurement, intention to use e-procurement and e-procurement usage as the dependent variable. The population for this study was Grade 7 contractors in Klang valley the total grade 7 contractors‟ in Malaysia were 1423. For contractors' grade 7 were located in the Klang Valley area were 276 based on the data provided by CIDB directory. The sampling technique that was used in this study was simple random sampling. The findings showed that intentions to use e-procurement supported the hypotheses thus it is a factor that influence the usage of e-procurement.

Effects of trialability on the Adoption of Electronic Procurement

Omorodion et al (2020) conducted a study on ''Employee Perceptions of the Electronic Procurement System (EPS) and Rate of Adoption of EPS by the Federal Public Hospitals in Edo State of Nigeria Based on the Diffusion of Innovations Theory''. This study investigated the perceptions of electronic procurement system and rate of adoption in the federal public hospitals in Edo State of Nigeria. The study used a convenience sampling technique to select 45 management staff of procurement departments of three federal public hospitals spread across Edo State. The Ordinary Least Squares (OLS) technique was used to estimate the model that was developed. The findings showed that the greatest challenge faced by the hospitals in the adoption of EPS was the lack of electronic procurement system infrastructure due to inadequate funding. The rate of adoption was premised on the Rogers' diffusion of innovations approach using the process of innovation characteristics: relative advantage, trialability, compatibility, observability, and complexity of electronic procurement system to evaluate the rate at which organizations adopt new innovations.

Teo et al (2019) conducted a study on ''Usage and Performance Impact of Electronic Procurement''. This study examined the relationship between the extent of electronic procurement (e-procurement) usage, measured in different dimensions on volume, diversity, breadth, and depth, and the performance gains with respect to operations and financial performance. A survey of companies in Singapore resulted in 141 usable responses for data analyses. The findings revealed that different dimensions of e-procurement usage had different relationships with performance.

Masudin (2021) conducted study on Impact of E-Procurement Adoption on Company

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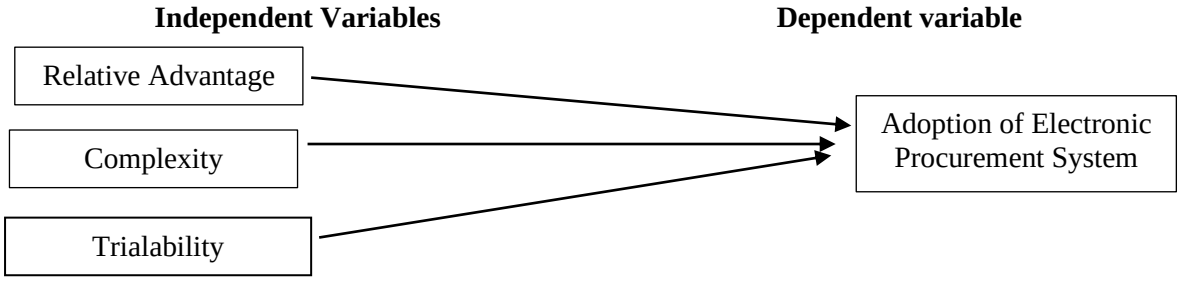
Performance: Evidence from Indonesian Manufacturing Industry. Pilot testing questionnaires were used to test whether the respondents understood the questions given by the researcher. After conducting the pilot test, the final questionnaire was distributed to respondents. The pilot test results and the final questionnaire were analysed using Statistical Package for Social Science (SPSS) version 21 and Smart PLS v3.0 software to determine the relationship between variables. The results of this study support the acceptance of three hypotheses. Findings of this article, recommendations from a management perspective are discussed to increase management awareness in adopting electronic procurement.

Conceptual Framework

The relationship between the dependent and independent variables of this study is depicted by the conceptual framework represented in Figure 1. The independent variables are presented with relative advantage, complexity and trialability while the dependent variable represents the use of electronic procurement system.

Figure 2: Conceptual framework on the factors affecting the adoption of electronic procurement system in the public sector



Source: Constructed by Researcher, (2023).

RESEARCH METHODOLOGY

Research Approach and Design

This study was conducted in Songwe District Council in Tanzania. The study employed a quantitative research approach. The purposes of quantitative research are to attain greater knowledge and understanding of the social world. According to Williams (2021), quantitative study is used to test the cause-and-effect relationship of variables. Quantitative techniques were used in this research to explain the relationship between the independent and dependent variable. This study employed the descriptive research design to describe the way things are without manipulating them.

Population and Sampling Techniques

The target population for a study is the entire set of units for which the survey data are to be used to make a conclusion. This study targeted a population of 56 employees from selected departments including IT, Finance, Education, planning and building departments at the headquarter in Songwe District Council

Sampling Techniques and Sample Size

Sampling techniques included non-probability sampling particularly purposive sampling which was used to select all 56 employees involved during this study. The purpose of using purposive sampling was to select employees based on their knowledge concerning the information on electronic procurement system and the use of computers.

Source of Data

Data are facts, figures, and other relevant materials past and present serving as a base for the study and analysis Ajayi (2023) This study involved both primary and secondary data. Primary data was collected from the employees by using closed-ended questionnaires. Secondary data was obtained through issue voucher, store ledge, LPO, contract manual and reports from various meeting that had been done. The LPO and the registration report of contractors entered the

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electronic procurement system with the account number and procurements reports enabled to understand the procurement picture of Songwe District Council and the factors affecting the use of electronic procurement system. Secondary data were only used to support the literature part and to compare the results with this study and build the discussion from articles, published and unpublished materials, for the factors affecting the use of electronic procurement system in the public sectors.

Data Collection Methods

In this study, questionnaires and documentary review were used to collect data.

Questionnaires

Data from the study was collected through well-structured questionnaires which allowed respondents to give out the intended information as per the study objective. Closed-ended questionnaires were preferred for primary data collection because employees provided fixed answers by choosing suitable answers and it was advantageous in terms of time-consuming during filling of them.

Documentary Review

Documentary methods refer to the analysis of documents that contain information about the phenomenon under study Hassan (2023). The documents may be hard copy or electronic. In this study, information obtained from the reviewed documents helped the study in data interpretation, supporting findings, comparing, and giving evidence of survey data. They study used issue voucher, store ledge, LPO, internal auditor's report, external auditor's (CAG) report, contract documents, registration of suppliers and contractors in electronic procurement system and reports from various meetings that had been done to understand the procurement picture of Songwe District Council in using electronic procurement system.

Data Analysis

Data Analysis refers to the computation of certain measures along with searching for patterns of relationship that exist among data groups (Kothari, 2014) In this study, The data was analysed though descriptive analysis. Descriptive analysis was applied in order to profile and describe the respondents' characteristics where frequencies, percentage and graphs served as tools to profile the nature of the respondents. The tool which was used for data analysis was the Statistical Packages for Social Sciences (SPSS-version 22).

Validity and Reliability

Validity

Validity of a research study refers to how well the results among the study participants represent true findings among similar individuals outside the study. It is concerned with whether the findings are really about what they appear to be about (Saunder et al., 2009). According to *Table 2* , the Bartlett's Test of Sphericity showed that the data variables obtained after the data reduction process were significant (0.000) to measure the dependent variable with a Kaiser-Meyer-Olkin value of 0.785 in accordance to Kaiser who states that the results from factor analysis can be considered acceptable if the Kaiser-Meyer-Olkin value (KMO) is 0.5 or greater, and the Bartlett's test of sphericity is statistically significant, $p < 0.05$ therefore the Factor Analysis is valid, hence the researcher was sure that the issue of validity was considered.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.785
Bartlett's Test of Sphericity	Approx. Chi-Square	1.265E3
	Df	435
	Sig.	.000

Source: Research findings, (2023)

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Reliability

Reliability is referred to the stability of findings (Altheide & Johnson, 1994). To ensure reliability, the Cronbach's alpha (α) analysis was employed to test the reliability of the predictor variables where the range Cronbach's coefficient is shown on *Table 3*. Cronbach's α analysis is a useful way of determining internal consistency and homogeneity of groups of items and questionnaires (Crowther & Lancaster, 2008). According to Lee Cronbach's, the Cronbach's alpha test is a measure of the internal consistency of a test or scale; it is expressed as a number between 0 and 1 and the rule of thumb for the reliability test is that 0.7 or higher which suggests a good reliability. The reliability of variables in this study, Cronbach's Alpha was found between 0.608 to 0.708 as expressed in *Table 3*.

Table 3: Reliability of Variable

Construct	Cronbach's Alpha	N of Items
Relative Advantage	.708	5
Complexity	.650	5
Trial ability	.670	3
Use EPS	.608	7

FINDINGS AND DISCUSSION

The mean, standard deviation (SD), maximum and minimum values of variables have been shown in *Table 4*. Each item from the main independent and dependent variables is shown in *Table 5*. To come up with findings expressed in *Table 4.* According to Field (2009), mean values represent the respondents' views on a given variable and the values of standard deviation (SD) indicate how well the mean represents the data. On the trialability and using electronic procurement system in Songwe District Council, the results indicate that the mean values of most of the items were above the scale's centre point (3 = moderate). The highest mean score was from RA3 which was 3.79 that stood for relative advantage variable with the mean of 2.62 of the complexity variables. Generally, other items had mean score above 3.0 specifically the highest mean score. For relative advantage, the variable was 3.7 and the lowest was 3.1. For complexity variable, the highest score was 3.4 and the lowest was 2.6. The highest mean score of 3.3 was for trialability while the low was 3.0 and significantly, electronic procurement had the highest mean score of 3.7 while the lowest was 2.7 respectively. Therefore, these justifies that the responses of employees in the Songwe District Council were well organized. This means that all item had useful score for generating final decisions. , This study employed a 5-point Likert scale ranging from 1 = strongly disagree (minimum) to 5= strongly agree (maximum) over a total of 56 observations (n = 56). From this score, most of the item scored above the threshold of mean. This means that most of the item scored above 3 which is termed as agreed meanwhile few scored below 3 which is termed as disagree.

Findings Based on the Specific Objectives

Firstly, the aim was to determine how relative advantage as one of the factors that affected technological transfer, how it affected the adoption of electronic procurement system in Songwe District Council. In delving to the aspect of relative advantage, the study explored how tender procurement procedures were carried out before and after the inception of electronic procurement system, compared the elements of cost differences, analysed the challenges and opportunities of EPS at the level of the district as well as assessed the position of the tender bidders in relation to new installed EPS. This aspect concludes by presenting respondents' levels of perception on how innovations in procurement affect its adoption process. The general results from respondent is that 32(57%) of the respondents agree that relative advantage had effect on electronic procurement system adoption and 14(25%) and 10(18%) were neutral. The

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findings revealed that the relative advantage had effect on electronic procurements system.

Secondly, in understanding the relationship between complexity as an important element in technological adoption, the chapter examined the level of staff awareness on the EPS especially those that are directly involved in the procurement procedures, assessed the trends and patterns of trainings and workshops regarding mastery of EPS as well as compared the challenges faced by the public and the private sector as crucial stakeholders in procurements against the opportunities found during the implementation of EPS at the district level. This part concludes by determining respondents' levels of perceptions on how complexity affected the adoption of EPS at the Songwe district council. The generally result from respondents is that 25(45%) agreed complexity of electronic procurement system affect the adoption of electronic procurement system, 20(35%) disagreed and 11(20%) were neutral. The findings therefore revealed that the complexity of the electronic procurements system affected its effectiveness to users and the final outcomes.

Table 4: Descriptive Statistics for Item

Variable/item		N	Min	Max	Mean	Std. Dev.
Relative Advantage	RA1	56	1	5	3.11	1.510
	RA2	56	1	5	3.11	1.289
	RA3	56	1	5	3.79	1.187
	RA4	56	1	5	3.62	1.169
	RA5	56	1	5	3.52	1.236
	RA6	56	1	5	3.50	1.307
Complexity	COMPL1	56	1	5	3.48	1.307
	COMPL2	56	1	5	3.16	1.385
	COMPL3	56	1	5	2.64	1.242
	COMPL4	56	1	5	2.70	1.278
	COMPL5	56	1	5	2.79	1.385
Trialability	TRIALABILITY1	56	1	5	3.38	1.169
	TRIALABILITY2	56	1	5	3.32	1.130
	TRIALABILITY3	56	1	5	3.00	1.293
Electronic procurement	USE1	56	1	5	3.66	1.116
	USE2	56	1	5	3.71	1.091
	USE3	56	1	5	3.27	.963
	USE4	56	1	5	3.41	1.437
	USE5	56	1	5	2.84	1.318
	USE6	56	1	5	2.70	1.264
	USE7	56	1	5	3.30	1.387

Source: Field data (2023)

Thirdly, in an effort to understand how trialability as the critical element in technological transfer, the study revisited stages and procedures on how EPS was capacitated to the stakeholders, assessed how staff and contractors/bidder's competency levels were determined as well as how lack of competency on the newly introduced system affected the adoption process. This part concludes by underscoring respondents' awareness on how trialability affected the adoption of EPS. The general result from respondents is that 26(46%) agreed with the statements that, electronic procurement system has been experimented with limited basis, our organization has available network connection in use of electronic procurement system and Employees at our organization know how to evaluate tender using electronic procurement system. On the same statements, 15(28%) of the respondents disagreed whereas 15(26%) of them were neutral. The findings thus revealed that trialability had effect on electronic procurement system that had been experimented with limited basis and the Songwe District Council.

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The Influence of Relative Advantage on Electronic Procurement System Adoption

In an effort to understand the extent to which relative advantage has effects on the adoption of electronic procurement system, several aspects were revisited, such as the comparison between the old procurement and the new electronic procurement system. *Table 5* gives a summary of the different items compared.

Table 5: Comparative Matrix for Non-Electronic and Electronic Procurement System Tendering Process & Its Advantages

Manually	TANePS Procurement System	NeST New Electronic Procurement System
Requirement from user department	Collected manually before entered in the system	Filled in the System by user department
Procurement plan	Prepared and Upload in system,	Determined by the system
Preparation of tender documents	Prepared manually and uploaded to system	Tender prepared in system
Approval of tender documents	Approval of tender out of system	Approval of tender out of system
Tender advertisement magazine 4,000,000	Prepared Manually and uploaded in the system Tsh. 250,000 per tender	Prepared on system Tsh. 250,000 per tender
Binding tender by supplier or contractors, Tsh. 150,000	Binding tender Tsh. 30,000 per one tender	Binding tender Tshs 30,000 per one tender
Opening tender after receiving	Opened on system by opening commit	Opened by System by opening commit
Evaluation of tender by Selected staff	Evaluation of tender in system by selected staff with letter by account officer.	Evaluation tender selected in system by accounting officer and received selection on line
Approval of recommendation by Tender board meeting	Approval of Recommendation of evaluation by tender board out of system and upload	Approval of Recommendation of evaluation by tender board out of system and uploaded
Notification of award by letters	Notified by letters and upload to system	Notified by System and account officer signed on line and send a letter
Negotiation of cost if any	Negotiations by Client	System driven
Award of contract by tender board	Tender Board approved award and upload to system Tsh. 250,000 per tender	Tender board approved award and upload to System Tsh. 250,000 per tender
Preparation of contract by PMU staff	Prepared manually and uploaded to system	prepared by system
Contract Signing	Out of system signing	Out of system signing

Source; Songwe District Procurement Report, 2023

Respondent's Perception on Relative Advantage on the Adoption of New Electronic Procurement System

The researcher wanted to find out the perceptions of the respondents on the relative advantage of using electronic procurement system in the Songwe District Council. To answer this objective of the study, five statements were given to the respondents to rate using the Likert scale of agreement. The responses to the statements are illustrated in *Table 6*.

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Table 6: The Effect of Relative Advantage on Using EPS

Statement	SD		D		N		A		SA		Total
	F	%	F	%	F	%	F	%	F	%	F
RA1: The Electronic procurement system has no problem in use	11	19.6	12	21.4	8	14.3	10	17.9	15	26.8	56
RA2: The Electronic procurement system is easily adopted and used	9	16.1	10	17.9	9	16.1	22	39.3	6	10.7	56
RA3: The Electronic procurement system is perceived better than manually procurement	4	7.1	5	8.9	7	12.5	23	41.1	17	30.4	56
RA4: Our organization is satisfied with the use of electronic procurement system	4	7.1	5	8.9	13	23.2	20	35.7	14	25.0	56
RA5: Use of electronic procurement system has cost advantage	5	8.9	7	12.5	11	19.6	20	35.7	13	23.2	56

Source: Field data (2023)

Findings from *Table 6* indicate that out of 56 respondents, 44.7% respondents agreed that electronic procurement system had no problem in the adoption while 41% disagreed and only 14.3% were neutral. This implies that some of the employees used the electronic procurement system comfortably and others were not using it due to its difficulties. Also, about 50% of the respondents agreed that the electronic procurement system was easily adopted and used while 34% disagree and 16% were neutral. This implies that 50% of the employees had adopted the use of electronic procurement in the Songwe District Council. In addition to that, 71.5% of the respondents agreed that the electronic procurement system was perceived better than manually procurement while 16% disagreed and 12.5% were neutral. This implies that the electronic procurement system has good advantage and is simplified compared to the manually procurement system. Furthermore, 60.7%, of the respondents agreed that the Songwe District Council was satisfied with the use of the electronic procurement system while 16% disagreed and 23.2% were neutral. This implies that some efforts are needed to satisfy all the employees to be comfortable with the use of electronic procurement system. Lastly, about 58.9% of the respondents agreed that the use of the electronic procurement system had cost advantage to the Songwe District Council while 20.4% disagree and 19.6% were neutral.

The findings revealed that relative advantage affected the adoption of electronic procurement system based in its item above. For instance, respondents agreed that electronic procurement system had no problem in use, electronic procurement system is easily adopted and used, electronic procurement system is perceived better than manual procurement, the Songwe District Council was satisfied on the use of electronic procurement system and the use of electronic procurement system had cost advantage meaning that it reduced cost in the procurement processes. Therefore, these items had advantage towards the use of electronic procurement system in Songwe District Council. In addition, its effects were not high because other respondents did not agree. Thus, efforts are required to train employees to be on board in using the electronic procurement system effectively.

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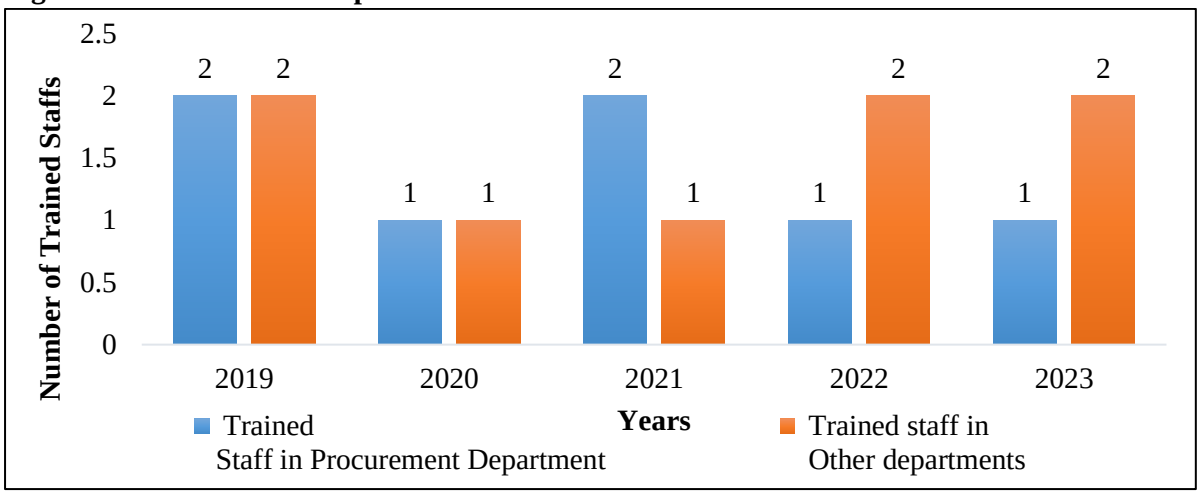
Figure 3: Distribution of Departmental staff trained on TANePS



Source: Human resource report 2023

The general result from the respondents is that 32(57%) of them agreed that relative advantage had effect on electronic procurement system adoption and 14(25%) and 10(18%) were neutral. The findings reveal that the relative advantage had positive effects on the electronic procurements system.

Moreover, the overall general mean from the Likert scale indicated that respondents agreed that TANePS had a relative advantage over the old procurement system which is manual. More results are indicated in *Table 7*.

Table 7: Descriptive Statistics for Relative Advantage Items (N=56)

Relative advantage	Min	Max	Mean	Median	Mode	Std. Dev.
RA1	1	5	3.11	3.00	5	1.29
RA2	1	5	3.79	3.50	4	1.19
RA3	1	5	3.62	4.00	4	1.17
RA4	1	5	3.52	4.00	4	1.24
RA5	1	5	3.5	4.00	4	1.31
Overall			3.5	3.7	4.2	1.24

Source: Field data (2023)

In this section, descriptive results of independent and dependent variables have been presented. The mean, standard deviation (SD), maximum and minimum values of variables have been shown in *Table 7*. Each item from the main independent and dependent variables is shown in *Table 7*. To come up with findings expressed in *Table 7*, this study employed a 5-point Likert scale ranging from 1 = strongly disagree (minimum) to 5= strongly agree (maximum) over a total of 56 observations (n = 56). From this score, most of the items scored above the threshold of mean. That means most of the item scored above 3 which is termed as agreed mean while few scored below 3 which is termed as disagree. The overall mean is 3.5 which entails agree.

According to Field (2009), mean values represent the respondents' views on a given variable and the values of standard deviation (SD) indicate how well the mean represents the data. Therefore, from the relative advantage, adopting electronic procurement system in the Songwe District Council, the results indicate that the mean values of most of the items were above the scale's centre point (3 = moderate/agree). The highest mean score was from RA3 which was 3.79 that stood for relative advantage variable having effects on the adoption of new electronic procurement system.

Lowest median of respondents was 3.00 which was at RA1 with the statements of the electronic procurement system has no problem in use and highest median of the respondents was at RA3,

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RA4 and RA5 with the statements that: The Electronic procurement system is perceived better than manually procurement, our organization is satisfied with the use of electronic procurement system and the use of electronic procurement system has cost advantage.

The highest mode was at RA1 with the statement, The electronic procurement system has no problem in use and the lowest was at RA2-RA5 with the statements, electronic procurement system is easily adopted and used, electronic procurement system is perceived better than manually procurement, Our organization is satisfied with the use of electronic procurement system and Use of electronic procurement system has cost advantage. The findings revealed that the relative advantage had effect on electronic procurements system.

The Influence of Complexity on the Electronic Procurement System Adoption

In identifying the influence of the complexity of the system on adoption of the electronic procurement system, the results are presented in *Table 8.*

Table 8: Respondents perceptions on the complexity of the EPS in the Songwe District Council

Statement	SD		D		N		A		SA		Total
	F	%	F	%	F	%	F	%	F	%	F
COMPL1: Our organization provide training and skill to PMU about the use of electronic procurement system	8	14.3	4	7.1	9	16.1	23	41.1	12	21.4	56
COMPL2: Electronic procurement system ease to use	13	23.2	3	5.4	9	16.1	24	42.9	7	12.5	56
COMPL3: Electronic procurement system difficult to understand	12	21.4	15	26.8	15	26.8	9	16.1	5	8.9	56
COMPL4: Our organization provide training to departments on use of electronic procurement system	14	25.0	12	21.0	9	16.1	19	33.9	2	3.6	56
COMPL5: Staffs know how to evaluate tenders by using electronic procurement system	17	30.4	4	7.1	14	25.0	16	28.6	5	8.9	56

Source: Field data (2023)

Table 8 shows that out of 56 respondents, 62.5% of them agreed that in the Songwe District, training, and skill on PMU on the use of electronic procurement system were generally provided while 21.4% disagreed and only 16.1% were neutral. This implies that most of the respondents were given general training on understanding the concepts of procurement but some were not conversant with the training given related to electronic procurement system. Also, respondents agreed that the electronic procurement system was somehow easy to use since about 55.4% of the respondents agreed about this statement and 28.6% disagreed while 26.8% were neutral. This implies that most of the respondents agreed on the simplicity of using the electronic procurements but orienting employees on the system was more required. In addition, the majority of the respondents agreed that electronic procurement was not difficult to understand. This was confirmed by 48.2% of the respondents. Furthermore, about 46% of the respondents disagreed that the Songwe District Council did provide training to departments on the use of electronic procurement system. Thus, since training was generally provided, some of the employees were not aware about the procedure of using electronic procurement. Likewise, most staff members were not conversant on evaluating tenders through an EPS. The findings indicated

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that 37.5% of the respondents disagreed on the statement which stated that staffs knew how to evaluate tenders by using electronic procurement system.

Therefore, the general responses were that 25(45%) respondents agreed that their organization provided training and skills to PMU about the use of electronic procurement system, electronic procurement system was ease to use, electronic procurement system was difficult to understand, their organization provided training to departments on use of electronic procurement system and Staffs knew how to evaluate tenders by using the electronic procurement system ,20(35%) and 11(20%), findings revealed that the complexity of the electronic procurements system affected its effectiveness to users and final result.

Despite the competitive advantage, complexity of the system affected its effectiveness. Generally, the researcher observed that the use of complexity was among the factors affecting the use of electronic procurement at the Songwe District Council. Moreover, the overall mean from the descriptive statistics indicated that the respondents agreed that the new system was perceived complex. The results are shown in *Table 9.*

Table 9: Descriptive statistics for the complexity item (N=56)

Complexity	Min	Max	Mean	Median	Mode	Std. Dev.
COMPL1	1	5	3.48	4.00	4	1.307
COMPL2	1	5	3.16	4.00	4	1.385
COMPL3	1	5	2.64	3.00	2	1.242
COMPL4	1	5	2.70	3.00	4	1.278
COMPL5	1	5	2.79	3.00	1	1.385
Overall						

Source: Field data (2023)

The lowest mean score was COMPL3 with the mean of 2.64 of the complexity variables. Generally, other items had mean score above 3.0 specifically the highest mean score for complexity variable was 3.7 and the lowest was 3.1. For complexity variable, the highest score was 3.4 and the lowest was 2.6. The lowest mean implies that the respondents disagreed on influence of complexity in the electronic procurement system.

The highest Median was found at COMPL1 and COMPL2 with the statements which stated that, Our organization provides training and skill to PMU about the use of electronic procurement system and Electronic procurement system is easy to use and the lowest median was found at COMPL3, COMPL4, COMPL5 with the statements which state that, the Electronic procurement system is difficult to understand, Our organization provides training to departments on use of electronic procurement system and Staffs know how to evaluate tenders by using the electronic procurement system.

The Mode of the study was COMPL1, COMPL2 and COMPL4 with the statements that, our organization provides training and skills to PMU about the use of electronic procurement system and the electronic procurement system is easy to use and Our organization provides training to departments on the use of the electronic procurement system. The findings revealed that the complexity had effect on electronic procurements system.

Influence of Trialability on electronic procurement system adoption in Songwe District

To determine how trialability had effects on the adoption of EPS particularly in the Songwe District, the study reviewed best practice procedures accrued by the PPRA as a standard model for determining successful system installation across the country. Ground information revealed that, the NeST procurement system underwent a general national level installation program from planning to the operation stage. The system was not locally tested

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but all the organizations under the umbrella of the government have been mandated to adopt through intergrading their staff into continuum training processes. Basically, these stages for installation conform to the system trialability. For any system to function well, trialability must be given higher priority especially adhering to installation stages. However, regarding the above stages that portrayed wide scale generalizations, the researcher determined that the adoption of EPS is still not smooth since it lacks specific relevance especially when comparing the need of the specific locality against the capacity of the service providers in this case the Songwe District Council. *Table 10* shows the respondents' perceptions on how trialability affected the adoption of EPS.

Table 10: Respondents' perceptions on the influence of trialability on the EPS adoption

Statement	SD		D		N		A		SA		Total
	F	%	F	%	F	%	F	%	F	%	F
TRIALABILITY1: Electronic procurement system has been experimented with limited basis	5	8.9	6	10.7	18	32.1	17	30.4	10	17.9	56
TRIALABILITY2: Our organization has available network connection in use of electronic procurement system	4	7.1	10	17.9	13	23.2	22	39.3	7	12.5	56
TRIALABILITY3: Employee at our organization know how to evaluate tender using electronic procurement system	11	19.6	7	12.5	15	26.8	17	30.4	6	10.7	56

Source: Field data (2023)

Table 10 shows that out of 56 respondents, 48.3% of the respondents agreed that electronic procurement system had been experimented with limited basis, 19.6% disagreed and 32.1% were neutral. This implies that the majority of the respondents were aware about the use of electronic procurements. Thus, the largest number of employees which is 51.8% agreed that the Songwe District Council had available network connection in the use of electronic procurement system while 25% disagreed and only 23.2% were neutral. This implies that the Songwe District Council had available network connections in the use of electronic procurement system. Also, about 41.1% agreed that employees at the Songwe District knew how to evaluate tender using the electronic procurement system while 32.1% disagreed and 26.8% were neutral. This implies that some employees at Songwe knew how to evaluate tenders by using the electronic procurement system and some of them did not know how to evaluate tenders by using the electronic procurement system.

Overall, the findings by 26(46%) agree that, the electronic procurement system had been experimented with limited basis, Our organization has available network connection in use of electronic procurement system and employees at our organization know how to evaluate tender using electronic procurement system, 15(28%) disagreed on that the electronic procurement system had been experimented with limited basis, Our organization has available network connection in use of electronic procurement system and employees at our organization know how to evaluate tenders using electronic procurement system awhile 15(26%) were neutral. Therefore, trialability had effects on using electronic procurement system in the Songwe District Council.

The finding also revealed the 46% of the respondents agrees that the electronic procurement system had been experimented with limited basis, had available network connection in use of electronic procurement system and the employees knew how evaluate tenders using the electronic procurement also, trialability had effect

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on electronic procurement system that had been experimented with limited basis and the Songwe District Council had available network connections.

Table 11: Descriptive Statistics for the Trialability Item (N=56)

Variable/item	Min	Max	Mean	Median	Mode	Std. Dev
TRIALABILITY1	1	5	3.38	3.00	3	1.169
TRIALABILITY2	1	5	3.32	4.00	4	1.130
TRIALABILITY3	1	5	3.00	3.00	4	1.293

Source: Field data (2023)

The highest mean score of 3.38 was for trialability while the low was 3.0 and significantly, electronic procurement had the highest mean score of 3.7 of complexity while the lowest was 2.7 respectively. Therefore, these justifies that the responses of employees in the Songwe District Council were well organized. This means that all item had useful score for generating final decisions.

The highest median was at TRIALABILITY2 with was 4.00 with the statement which stated that, our organization has available network connection in use of electronic procurement system. The lowest median was at TRIALABILITY1 and TRIALABILITY3 with the value of 3.00 on the statement which stated that, electronic procurement system has been experimented with limited basis and Employee at our organization know how to evaluate tenders using the electronic procurement system.

The Lowest mode was at TRIALABILITY1 which state that, electronic procurement system has been experimented with limited basis and the highest mode was at TRIALABILITY2 and TRIALABILITY3 which stated that, our organization has available network connections in the use of electronic procurement system and employees at our organization knows how to evaluate tenders using the electronic procurement system. The finding revealed that trialability has effect on the adoption of electronic procurement system.

The Use of Electronic Procurement System in the Songwe District Council

The researcher wanted to know the factors affecting the adoption of the Electronic Procurement System in the Songwe District Council. To answer this objective of the study, seven statements were given to the respondents to rate using a Likert scale of agreement *Table 12*.

Findings from *Table 12* indicate that out of 56 respondents, 62.5% of them agreed that low rates of use of the electronic procurement system was affected by accountability in the Songwe District Council while 17.9% disagree and only 19.6% were neutral. This implies that some of the employees were working business as usual without following the electronic system of procurements. Also, about 62.5% of the respondents agreed that low rate of use of the electronic procurement was affected by integrity in the Songwe DC while 14.3% disagreed and 23.2% were neutral. This implies that low rate of the use of electronic procurement system was affected by integrity. In addition to that, 51.8% of the respondents agreed that the Songwe District Council had infrastructure which supported the use of electronic procurement system while 25% disagreed and 23.2% were neutral. This implies that electronic procurement system lacked important infrastructure to support its proper uses. Furthermore, 59% of the respondents agreed that in the Songwe District Council, the use of electronic procurement system was hindered by corruption while 30.4% disagreed and 19.6% were neutral. This implies that some efforts are needed to create awareness related with corruption. About 33.9% of the respondents agreed that the Songwe District Council had expertise to assist in the use of electronic procurement system while 37.5% disagreed and 28.6% were neutral. This implies that there were few people with expertise to assist in the use of the electronic procurement system. In addition to that, 30.3% of the respondents agreed that in the Songwe district council, suppliers were aware of

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the use of the electronic procurement system while 44.6% disagreed and 25% were neutral. This implies that few suppliers were aware about the electronic procurement system.

Table 12: The Use of electronic procurement system in the Songwe District Council

Statement	SD		D		N		A		SA		Total
	F	%	F	%	F	%	F	%	F	%	F
USE1: Low rate of use of electronic procurement system affected with accountability in Songwe DC	2	3.6	8	14.3	11	19.6	21	37.5	14	25.0	56
USE2: Low rate of use of electronic procurement affected with integrity in Songwe DC	2	3.6	6	10.7	13	23.2	20	35.7	15	26.8	56
USE3: Our organization has infrastructure in use of electronic procurement system	2	3.6	12	21.4	13	23.2	27	48.2	2	3.6	56
USE4: Use of electronic procurement system hindered with corruption in procurement	7	12.5	10	17.9	11	19.6	9	16.1	19	33.9	56
USE5: Our organization has expertise in use of electronic procurement system	3	23.2	8	14.3	16	28.6	13	23.2	6	10.7	56
USE6: Suppliers aware in use of electronic procurement system	3	23.2	12	21.4	14	25.0	13	23.2	4	7.1	56
USE7: Low registration of supplier affecting use of electronic procurement system	8	14.3	9	16.1	11	19.6	14	25.0	14	25.0	56

Source: Field data (2023)

Lastly, about 50% of the respondent agreed that low registration of supplies affected the use of the electronic procurement system while 30.4% disagreed and only 19.6% were neutral. The finding revealed that low rates of the use of electronic procurement system was affected by accountability and integrity in the Songwe District Council and the use of electronic procurement system was also hindered by corruption.

Table 13: Descriptive statistics of the use of electronic procurement system in the Songwe District Council (N=56)

Variable/item	Min	Ma	Mean	Median	Mode	Std. Dev.
USE1:	1	5	3.66	4.00	4	1.116
USE2:	1	5	3.71	4.00	4	1.091
USE3:	1	5	3.27	4.00	4	0.963
USE4:	1	5	3.41	3.50	5	1.437
USE5:	1	5	2.84	3.00	3	1.318
USE6:	1	5	2.70	3.00	3	1.264
USE7:	1	5	3.31	4.00	4	1.387
Overall			3.3			

Source: Field data (2023)

The lowest mean score was USE6 with the mean of 2.70 of the Use of electronic procurement system. Generally, other items had mean score above 3.0. Specifically, the highest mean score for use of electronic procurement system was 3.66. The lowest mean implies that respondent disagreed.

The highest median was USE1, USE2, USE3 and USE7 with the statements which state that, Low rate of use of electronic procurement system is

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affected with accountability in the Songwe District Council, Low rate of use of electronic procurement is affected with integrity in the Songwe District Council, our organization has infrastructure in the use of electronic procurement system and low registration of supplier affects the use of the electronic procurement system. The lowest median was at USE5: USE6: with statements which state that, our organization has expertise in use of electronic procurement system and suppliers are aware in the use of the electronic procurement system.

The highest Mode was at USE4 with the statements which stated that, USE4: The use of the electronic procurement system is hindered with corruption in procurement and the lowest mode was at USE5 and USE6: with the statements which stated that, Suppliers aware in the use of the electronic procurement system and Low registration of suppliers affects the use of the electronic procurement system.

CONCLUSION AND RECOMMENDATIONS

Conclusion

The study examined the factors affecting the use of electronic procurement in the public sectors. Based on the findings obtained, given the first objective that was to determine effect of relative advantage on using electronic procurement system in the Songwe District Council, it can be concluded that the electronic procurement system is more advantageous and is simplified compared to the manually procurement system. This was true taking reference to the majority score of 57%, of all the respondents' who concurred that the system was not only useful but also effective, efficient, and cost effective in the Songwe District Council.

Based on the second objective that was to determine effect of complexity on using electronic procurement system in the Songwe District Council, it can be concluded that, although electronic procurements system was comprehensive and adoptable in the Songwe District taking note of 48.2% of the respondents who agreed against 46% who disagreed, much investment on training and capacity building for proper use of the system is critically needed. This is because it was discovered that the district had not conducted adequate training for the employees to smoothly run the electronic systems. For instance, the average staffs were not conversant on evaluating tenders via electronic systems.

On the basis of the third objective that was determine the effect of trialability on using the electronic procurement system in the Songwe District Council, it can be concluded that, on average, 51.8% of the responses agreed that the Songwe District Council had available network connection that supported the use of electronic procurement system. However, the district had low level of electronic system experimentation. Although trialability had effect on the electronic procurement system, there was still a limited number of staff to competently run procurement affairs using the system. This calls for broadening of training and trialability efforts to facilitate smooth public procurement operations.

Generally, the study concludes that since electronic procurement system is not new in Tanzania, increasing its use presents a number of benefits for both the public and privates sectors particularly in the Songwe District Council. Electronic procurement system is time saving as compared to traditional or manually procurement system. Re-improving electronic procurement system will enable the public sector to reduce cost and manage corruption especially on goods, services, and work tendering. This is also easy to be linked with other public financial systems thereby enhance transparency, integrity, and accountability.

Despite the fact that the potential benefits of electronic procurement system use towards public sectors is to help in the management of contracts, transparency, integrity and accountability and information, it can also be linked with other systems of payment and thus reduce corruption in the procurement processes in the public sector.

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Recommendations

Based on the finding of this study, the following are the recommendations to be considered for improving the level of the use of electronic procurement system in the public sectors.

On the relative advantage and its effects on the use of electronic procurement system, the study recommends that the public procurement entities should provide more training on the electronic procurement system especially to contractors and suppliers for creating more awareness of the importance of relative Advantage on using electronic procurement system.

On complexity affects in the use of electronic procurement system in the Songwe District Council, complexity of software demands frequent trainings and capacity building for contractors and Suppliers. Moreover, more training of the Software as the technology and the procurement software is required for stakeholders, employees, contractors, and Supplies. On the impact of trialability in using the electronic procurement system in the Songwe District Council, the study recommends that since there was positive and significant effect, the management should continue to improve the system and have several pilot trials especially of the improved areas of the system before it is ready for use. This means contractors and suppliers should often be part of the trialability process for the continued mastery of the system.

Recommendation for Action

Based on the result of the study findings, the study recommends that the Songwe District council should install a stable capacity building framework for mastering electronic procurement system. This is by locating and improving the available budget for empowering the present and incoming staff. Alongside that, the district should also remove all delay bureaucracies for staff attendance to trainings. By so doing, the public service delivery in this aspect of procurement will meet its targets.

Recommendations for Further Studies

Further research can be undertaken in other district councils. In addition, the same study can be done at the central government, the ministry, regions, and other government institutions. Also, a qualitative study can be done to assess as to why other variables have insignificant effect on the use of electronic procurement.

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