CRITICAL DIGITAL INCLUSION FACTORS OF E-PROCUREMENTSTRATEGY AMONG GOVERNMENT MINISTRIES IN KENYA

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Abstract

Studies linking digital inclusion factors and eProcurement strategy performance in the public sector are lacking today, especially in the developing world contexts. Yet eGovernment systems adoption across the world is increasing in fast rate due to high demand for eServices due to the motivation of increasing transparency, reducing costs and offering better service quality to the citizens. Particularly, the critical digital inclusion factors determining eProcurement strategy performance have not been comprehensively explored. The main objective of the study was to examine the critical digital inclusion factors affecting e-procurement strategy performance among government ministries in Kenya. The specific objectives included: to establish the influence of technological digital inclusion factors on e-procurement strategy performance among government ministries in Kenya and to examine the influence of organizational digital inclusion factors on e-procurement strategy performance among government ministries in Kenya. A cross-sectional descriptive research design and mixed sampling methods were adopted so as to only include ICT staff and Procurement staff with the necessary knowledge and experience in eProcurement strategy issues in the ministries. At the end, a sample size of 169 respondents was chosen from the 312 as determined by employing the Krejcie and Morgan table (1970). Data was collected through a semi-structured questionnaire. Data was analyzedat both descriptive and inferential statistics levels using SPSS. The study found that Technological and organizational factors play a vital role in the e-procurement strategy performance. The study recommends that technological digital inclusion factors should be deployed for an improved e-procurement strategy performance and application of the organizational digital inclusion factors should be considered for a positive result on the e-procurement strategy performance.

Keywords: *Technological Digital Inclusion, Organizational Digital Inclusion, E-Procurement Performance*

INTRODUCTION

According to Porter (1996), for a company seeking to achieve higher performance as well as competitive advantage, their success lies in the ability to acquire and deploy resources such as Information Communication Technology (ICT) that are coherent with the organization's competitive needs. Today, many researchers agree that it is increasingly clear that digital, mobile, and social media have become an indispensable part of everyday life, even as media toaccomplish work tasks, for people all over the world (Hambley, O'Neill, and Kline (2017); Nguyen (2021); Elldér (2020); O'Brien and Yazdani Aliabadi (2020); and Felstead and

Henseke (2017). Through application of digital technology, millions of organizations and individuals have excelled by its reliance to make money and develop careers (Nguyen, 2021; Susilo, 2020). Indeed, Floyd (2010) elaborate that ICT strategy has become an important aspect of an organization's general policy that entails purposes, values, and procedures that relate to usage of technologies in a given organization or institution.

Rouse (2012) describes ICT strategy as a broad blueprint used by an organization's ICT management to guide the vision and mission of an organization by providing an overall structure that ensures effective administration of ICT infrastructure and processes in line with corporate objectives and the changing business environment. In addition, LaBelle (2005) concludes that some of the areas where ICT Strategy focuses on include: (a) new and creative ways of using ICT for better value provisioning for system users and sharing of public infrastructure to ensure efficiencies are obtained via consolidation of resources and structures; (b) increased output and efficiency via adoption and use of digital infrastructure to progress and advance the relationship between the general population, companies and government; (c) increasing efficiencies through integrated services and increased data sharing to facilitate improved decision making; (d) increased openness and transparency between Government and its citizens; (e) provision of advanced user experience and superior services to the general public. Other researchers such as Tarute et al. (2014) and Ramli (2013) have clearly pointed out that ICT strategy is the key to the company's success today.

Recent research has clearly indicated that e-procurement increases organizational performance in large firms and small and medium enterprises (SMEs) (Sanchez-Rodrigues et al., 2020). In addition, a report by Boston Consulting Group found out that 9 of the top 20 Fortune 500 companies captured in their annual reports digital technologies assisted them greatly in their procurement operations (Hogel et al., 2018). Furthermore, researchers in the field of supply management and e-procurement strategic management have highlighted several actual benefits with Edmiston (2003) and Panayiotou, et al., (2004) identifying major advantages such as; reduction of supply costs, reduction of cost per tender, lead time savings, simpler ordering, reduced paperwork, decreased redundancy, less bureaucracy, standardization of processes and documentation, online reporting, clearer and more transparent processes, ensured compliance with procurement laws and regulations, minimization of errors, and easier access to information. Other researchers such as McKinsey consulting group noted that the procurement officers anticipate a 40% rise of annual savings, 30 to 50% reduction on time spent on sourcing 50% reduction wastage of resources due to uptake of digital procurement programs (Zeller & Drescher, 2017). Further evidence show that e-procurement strategy positively increases the performance of organizations while also improving the quality of information being shared between buyers and suppliers and hence improving decision making that contributes to overall effectiveness of organization (Tai et al., 2010). Similarly, e-procurement strategy could save material cost between 5 and 10 percent, increase productivity to about 30 and 50 percent, enhance innovation, quality, high speed of processing documents in real time and assist in risk management (Hogel et al., 2018). In the latest advanced e-procurement systems, digital (e.g. use of sensors, cyber-physical systems) and virtual (e.g. virtual reality glasses) technologies have been applied to meet the new procurement and logistics decisions requirements (Choi, 2020). In addition, e-procurement has been found to potentially improve competitive purchasing, compliance capabilities, and provide economies of scale for buyers and sellers, particularly in the public sector (Alvarez-Rodríguez et al., 2014).

According to the World Bank (2019) report, Kenya has acquired the status of a regional leader within East Africa with its position as the 'Silicon Savannah' meant to promote digital inclusivity. This elevated status owes to a number of advantages in the form of a thriving tech ecosystem, digitally skilled talent, geographical positioning endowment, and ICT centric

policies. According to the Communcations Authority of Kenya (CAK, 2020) report, Kenya aspires to become a middle-income country by 2030 and has identified four priority growth areas as part of its 'Big Four Agenda' - manufacturing, food security, affordable housing and universal health coverage. Each of the digital economy foundations outlined in this report – digital infrastructure, digital platforms, digital financial services (DFS), digital entrepreneurship and digital skills are crucial to achieving this aspiration. According to CAK (2020) report, at present, Kenya has one of the most advanced digital infrastructure networks (public and private) in the region - a result of early liberalization of the telecom sector, improvements to its national backbone, as well as strategic regulatory interventions to supportan enabling environment.

Statement of the problem

Many researchers such as Bromberg & Manhoaran, 2015 and McCue & Roman (2012), agree that e-Procurement is expected to improve supplier participation and cost-saving practices through competitive purchasing using real-time tools. These tools are referred to as 'e-tools,' which include e-notice, e-auction, e-catalog, e-dossier, e-submission, and e-signatures to facilitate the procurement processes on an online platform. Researchers also emphasized that e-procurement is expected to support an online purchasing experience. However, according to recent researchers such as Bentley (2020), it is acknowledged that the speed of digital adoptionand transformation across every aspect of society during 2020 raises significant challenges forgovernments in the decade to 2030. For this reason, continuous e-Procurement systemsimprovement is overwhelmingly recommended as one of the conditions to develop and to stayin business (Galeazzo et al. 2017; Timans et al., 2016; Butler, et al., 2018; Adam & Marta, 2020). This is because researchers such as Kvasny and Keil (2006); Hargittai, Piper, and Morris(2018) found that providing computers, Internet access and basic computer education was necessary but not sufficient condition for reducing the digital divide experienced by poor people and people with disabilities in urban areas. Furthermore, researchers agree that digital inclusion challenges still exist, especially lack of access to infrastructure leading to increase poverty (Correa, Pavez, and Contreras, 2020). Therefore, many researchers [(eg Correa, Pavez,and Contreras, (2020); Colombo and Aroldi (2015); Van Dijk (2005); and Selwyn (2003)] havewarned about the negative consequences of ignorance of the issues around digital exclusion.

 In Kenya, existence of digital inclusion challenges has mainly been confirmed by CAK (2020) report statistics only hence lacking proper academic research in the area. The few studies that have been done such as one by Njuguna (2018; 2019) and Sanni (2017) have also found very low digital penetration and hence also low digital inclusion levels in Kenya. All these studies concluded that this low digital inclusion has been associated to too many factors hence the needto identify the critical ones. Furthermore, it can be concluded that the problem has not been addressed because only a few studies have been done highlighting the digital inclusion challenges in Kenya. Yet, for e-procurement strategy to work in Kenya, many comprehensive studies need to be undertaken to not only unravel the critical digital inclusion challenges faced by e-procurement strategy users and implementers but also recommend practical ways to address them. This study, therefore, seeks to undertake a comprehensive analysis of the criticaldigital inclusion factors facing e-procurement strategy in Kenya. Furthermore, in the Kenyan public sector, no study has so far examined the relationship between digital inclusion factors and eProcurement strategy performance.

This study therefore, sought to bridge the existing gap by consolidating all the existing study findings into a holistic cross-sectional study of all ministries to determine the critical digital inclusion factors affecting e-procurement strategy performance in the public sector in Kenya. This was deemed critical at this point in time because the ministries are both e-government champions and e-service policy custodians in Kenya, and hence should offer leadership by

example when it comes to e-procurement strategy critical digital inclusion factors understanding and management. Thus, the research intended to fill the existing knowledge gapsby first identifying and analyzing the critical digital inclusion factors and determine their effects on e-procurement strategy performance among government ministries in Kenya using a combined lens of the Technology-Organization-Environment (TOE) and CSFs theoretical frameworks. This study therefore attempted to not only determine the critical digital inclusion factors of e-procurement strategy but also the influence of each critical digital inclusion factor in explaining e-procurement strategy performance among government ministries in Kenya.

Objectives

i) To establish the influence of technological digital inclusion factors on e-procurement strategy performance among government ministries in Kenya.

ii) To examine the influence of organizational digital inclusion factors on e-procurement strategy performance among government ministries in Kenya.

LITERATURE REVIEW

Theoretical Review

Technological determinism theory

Technological determinism theory maintains that technologies drive the development of socialstructure and cultural values according to its own logic, and this in turn has effects on society (McLuhan, 2003). It is the belief that characteristics inherent in technology manage the direction of its development and set conditions for social change, and is suggested by some tobe a widely held view of the relationship between technology and society (Schatzki, Knorr- Cetina, & Von Savigny, 2001). Technology, and technological change, are viewed as autonomous factors impacting on society from outside, and determinism focuses concern on how to adapt to technology and not on how to shape its development (Davison, 2004). Using this theory, Kevin (2010) suggested technology create itself using humans to do its bidding, and that it is a global force beyond human control that appeared to have no boundaries. Through the lens of technological determinist view, the term digital divide entered public discourse and became very popular in the last year of the 1990s (van Dijk, 2000).

The Resource Based Theory

Resource Based View Theory was developed by Wernerfelt (1984). The resource-based view (RBV) the theory focuses on highlighting the organization's competitive advantage. It indicatesthat firms can only gain competitive advantage through utilization of resources as well as capabilities available in the organization (Hinkes & Peter, 2020). RBV focuses attention on an organization's internal resources as a means of organizing processes and obtaining a competitive advantage. Barney stated that for resources to hold potential as sources of sustainable competitive advantage, they should be valuable, rare, imperfectly imitable and notsubstitutable (Vasudevan, 2021).
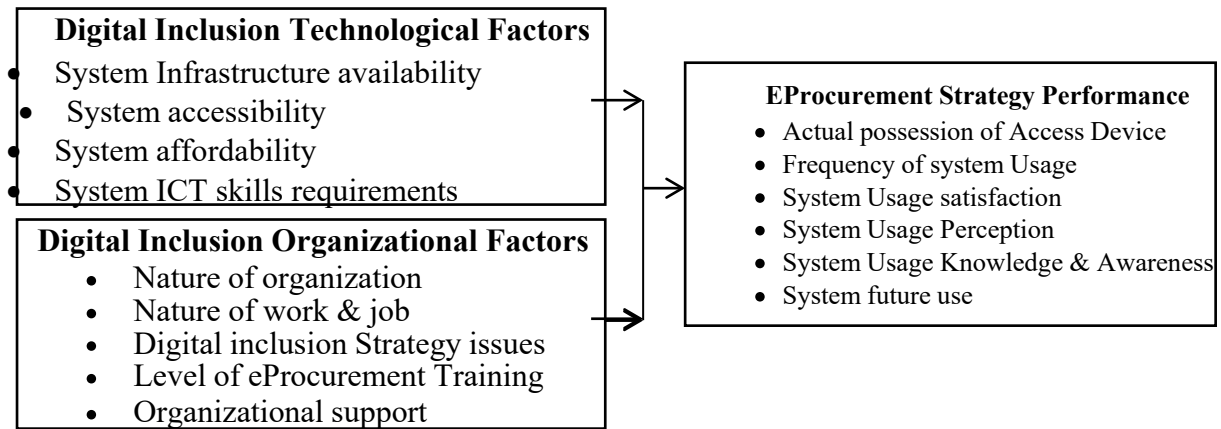
Putra and Wiagustini (2021) indicated that resources refer to all the assets that a certain firm owns while capabilities are the abilities owned by the firm which facilitate usage of the firm resources. Firm capabilities originate from the building process of the company's resources (Vasudevan, 2021). Firm resources are among the key determinants of the firm success. A company is most likely to succeed if the available resources are in line with the operations and the strategies of the firm. In this theory an organization is known in terms of the available resources as well as capabilities (Hong, Cho & Kim, 2015).

Conceptual Framework

Sekaran & Bougie (2016) defines conceptual framework as a diagrammatical representation that shows the relationship between dependent variables and independent variables as shown in figure 1.

Independent Variable   **Dependent Variable**

Digital Inclusion Technological Factors
• System Infrastructure availability
• System accessibility
• System affordability
• System ICT skills requirements

Digital Inclusion Organizational Factors
• Nature of organization
• Nature of work & job
• Digital inclusion Strategy issues
• Level of eProcurement Training
• Organizational support

EProcurement Strategy Performance
• Actual possession of Access Device
• Frequency of system Usage
• System Usage satisfaction
• System Usage Perception
• System Usage Knowledge & Awareness
• System future use

Fig 1: Conceptual Framework

Empirical Review

Technological Digital Inclusion Factors and eProcurement Strategy

Many empirical studies (e.g. Chowdary, 2002; James, 2003; Lim, 2002; Ming & Li, 2002; Moss, 2002, etc.) have demonstrated the importance of technological factors in digital inclusion and e-service emphasizing physical access. The gap in access could also be understood as a phenomenon with three distinct aspects, including a global divide (referring to ICT disparities between countries), a social divide (referring to the gap in access to ICT between different sections of a nation's society) and a democratic divide (referring to the difference between those who do and those who do not use the variety of digital means to engage in public life) (Norris, 2001). In this regard, Susilo (2020), found that during the global pandemic, digital technologies have become a critical enabler of connectivity facilitating the continuity of our regular lives and connecting people more than ever before.

Researchers have confirmed a positive relationship between the quantity and quality of ICT infrastructure and its adoption, use, and hence successful eGovernment projects (Klischewski and Scholl, 2008; Susilo, 2020). ICT infrastructure refers to the existence of adequate ICTs (both software and hardware) within a good IT environment that could provide a starting point for various stakeholders to adopt electronic services (Salemink, Strijker, & Bosworth, 2017). Susilo (2020) found that e-service efforts are facing enormous technological digital inclusion challenges. Specifically, there are many components and elements involved from hardware to software; in addition to technology standards, government Portal availability and Access, security and privacy, design and interoperability and collaboration (Al-Sobhi et al, 2010). Also, Sinibaldi (2020), Katz, Jung and Callorda, (2020) and Susilo, (2020) found that Security, assurance, ICT skills and privacy are important prerequisites for the usage of e-services. Also too complexity or difficult processes and technical interoperability has been found to influence electronic service projects performance (Ahmad et al., 2012).

The most cited key e-service digital inclusion challenges are three: affordability, usability and accessibility [(Makau, et al., (2015); Sinibaldi (2020), Katz, Jung and Callorda, (2020) and Susilo, (2020)]. Higher internet penetration rate and internet speed are factors which according to Solís (2016) has a positive impact on the potential and efficiency of e-service strategy. Three aspects of IT security that need to be taken into consideration while teleworking that are presented by James (2011) are: confidentiality, integrity and availability. Research has clearly indicated that organizational actions pertaining digital inclusion influence e-service practices especially in government institutions. This is because organizational e- service projects are conceptualized, implemented and used within organizational settings to deliver work results. Organizations are defined as a collection of ideas that together form a, somewhat consistent, perspective of the mechanisms supporting

and restricting social behaviour. Organizational structure is the way that organizations separate the responsibility relationship that holds a structure together and how to coordinate it (Strens & Dobson, 1994). Jackson and Morgan (1982) define it as the relatively enduring allocation of work roles and administrative mechanisms that creates a pattern of interrelated work activities and allows the organization to conduct, coordinate, and control its work activities.

Specifically, regarding digital inclusion endeavors, recent researchers (Sinibaldi, 2020; Katz, Jung and Callorda, 2020; Susilo, 2020) have found that successful delivery of the digital inclusion agenda will depend on strong leadership. It also requires a national or organizational ICT strategy that is explicitly established to meet the needs of citizens and communities (Makau, et al, 2015). The strategy needs to be flexible and closely tailored to the different needs of communities and individuals (Susilo, 2020). Regarding nature of organization, research has found that telework is mainly employed in education and health, information and communication, and in large firms (Pigini & Staffolani, 2019). These are organizations whose nature of work is flexible and can be easily digitized (Susilo, 2020). Different organizations have different organizational cultures, which have also been found to play role in the e-service mix. For instance, some highlighted concerns are the e-service strategy's impact on the organizational culture (Verbeke, et al, 2008; Standen, 2000) and in turn, the organizational cultures impact on it (Peters & Batenburg, 2015). In addition, there are some concerns regarding managing control (Dimitrova, 2003), coordination (Daniels, et al., 2000) and communication (Nilles, 1997) under e-service work arrangements.

Organizational culture (OC), often referred to as corporate culture, provides the employees with norms and values, and is created by the members of the organization (Kurland & Egan, 1999). Some researchers argue that organizational norms and attitudes are of importance if e-service strategy can be implemented, reasoning that, if e-service goes against the norms, it is guaranteed to fail (McDavid, 1985; Kurland & Egan, 1999). Attitudes are not only determining whether an organizational shift such as allowing e-service will be implemented or not, but also determines to what extent it will be adopted by the organization and its employees, and to what extent it will be successful (Verburg, et al., 2013). Another study that is in favor of the importance of providing company support to the workers in the study conducted by Stich et al. (2018) who suggest that organizations should provide training to employees since not everyone likes technology or can use it well or effectively. New technologies associated with digital transformation promise to improve business performance but require competencies that need to be improved (Erceg & Zoranović, 2020). As with support and communication, trust is necessary at all levels of the e-service system of an organization (Stich et al. (2018). Similarly, workforce and user ICT capability is important. ICT workforce should possess the skills, knowledge and experience necessary to facilitate the delivery of any eGovernment services such as supporting teleworkers and other stakeholders efficiently and effectively of which failure to poses that can influence adoption and usage and eventually eGovernment project performance (Arduini et al. 2010). Training programs for stakeholders in e-service or any other similar eGovernment sytem will have a significant effect on the adoption and usage of the particular eGovernment initiative (Picazo-Vela et al. 2012). You can also put computers in libraries, for example, but they are not going to be used by those who do not have the ability or know-how (Silcock, 2001). Therefore, providing computer literacy education to citizens, especially to the elderly and less computer-literate users, will ensure that the digital inclusion is guaranteed and digital divide will be minimized and hence promote adoption and use of eGovernment systems.

METHODOLOGY

Cross-sectional descriptive research design was considered most appropriate in this study since it covered and give a clear picture of not only the eProcurement digital inclusion factors

but also the eProcurement strategy performance status across all the ministries. The study population covered all eProcurement strategy management staff from all the Government Ministries in Kenya which are 22 as per the current Executive Order and Kenya Gazette.

The sample size was determined by employing the Krejcie and Morgan table (1970) where assuming a population proportion of 0.5 with confidence level of 95% and margin error (e) of 0.05 then the appropriate sample size for target population of 312 officers was 169 officers as per the Krejcie and Morgantable. Data collection tools and instruments. Data was analyzed at both descriptive and inferential statistics levels using SPSS.

RESEARCH FINDINGS

Response Rate

During the fieldwork, a total of 169 questionnaires were distributed, but only 160 questionnaires were returned having been dully filled. This translated to 94.7%. A response rate of 70% and aboveis considered excellent according to Mugenda and Mugenda (2013).

Descriptive Statistics

In this section, the study presents results of Likert scale questions where respondents were asked to indicate their level of satisfaction with various statements relating to critical digital inclusion factors affecting e-procurement strategy performance in the public sector in Kenya Respondents were asked to use a 5-point scale where 1- strongly disagree, 2- disagree, 3- neutral, 4- agree, 5-strongly agree. The results were merged and interpreted based on three levels of satisfaction, disagree, neutral and agree and presented in terms of percentages.

Technological Digital Inclusion factors

Respondents were asked to give their level of satisfaction with various statements to examine the effect of digital inclusion technological factors on e-procurement strategy performance.

Table 1: Technological Digital Inclusion Factors

Statements	Disagree	Neutral	Agree	Mean	STD
The existing ICT system infrastructure (Smart Phone, computer, laptop, Internet Network, WiFi Network, Access Points) for connecting me and my co-workers to deliver eProcurement services is always available at my place, all the time	31.3	14.8	53.9	2.9	1.0
The existing online system (Smart Phone, laptop, computer, Internet, WiFi, and office system) for connecting me and my co-workers to deliver eProcurement services is always easily accessible at my place all the time	20	27.8	52.2	2.9	1.1
The existing eProcurement system has been affordable for my connecting to deliver services from anywhere all the time	34.8	25.2	40	2.9	1.1
The existing eProcurement system does not require much computing skills for my connecting to deliver serviceswhenever I chose to	21.7	23.5	54.8	3.0	1.1
The existing eProcurement system is of high quality in terms of ensuring security, privacy, ease of use, speed and accuracy whenever I connect	14.8	28.7	56.5	3.3	1.2

Statements	Agree	Neutral	Disagree	Mean	SD
In my Ministry/Department, there has been adequate eProcurement system support from the technical team for all workers to work and submit tenders through the online system from anywhere all the time	21.7	37.4	40.9	3.0	1.1
Average Proportion	**24.1**	**26.2**	**49.7**	**3.0**	**1.1**

The results in Table 1 shows that 53.9% of the respondents agreed that the existing ICT system infrastructure (Smart Phone, computer, laptop, Internet Network, WiFi Network, Access Points) for connecting me and my co-workers to deliver eProcurement services is always available at my place, all the time. Roughly, a half (52.2%) of the respondents affirmed that the existing online system (Smart Phone, laptop, computer, Internet, WiFi, and office system) for connecting me and my co-workers to deliver eProcurement services is always easily accessible at my place all the time. Two in five (40.0%) of the respondents were in agreement that the existing eProcurement system has been affordable for my connecting to deliver services from anywhere all the time. In addition, 54.8% of the respondents agreed that the existing eProcurement system does not require much computing skills for my connecting to deliver services whenever I chose to. Approximately, 56.5% of the respondents agreed that the existing eProcurement system is of high quality in terms of ensuring security, privacy, ease of use, speed and accuracy whenever I connect. It is also noted that 40.9% of the respondents agreed that in their Ministry/Department, there has been adequate eProcurement system support from the technical team for all workers to work and submit tenders through the online system from anywhere all the time.

Organizational Digital Inclusion factors

Table 2: Organizational Digital Inclusion factors

Statements	Agree	Neutral	Disagree	Mean	SD
By nature, my Ministry/Department work can be accomplished through the eProcurement system from anywhere all the time	15	25.6	59.4	2.3	1.2
By nature, my Ministry/Department tasks are all doable through eProcurement online system from anywhere all the time	13.8	12.4	73.8	2.8	1.2
There has been high organizational support for workers to work and submit everything through eProcurement online system from anywhere all the time	21.7	23.5	54.8	2.1	1.1
The existing eProcurement system is of high quality in terms of ensuring security, privacy, ease of use, speed and accuracy whenever I connect	14.8	28.7	56.5	2.6	1.0
The eProcurement online system strategy terms and conditions of use are clearly communicated and understood by all our suppliers and customers	21.7	37.4	40.9	2.5	1.0
There has been enough eProcurement online system technical skills training enabling everyone to effectively use the systems	7.4	33.8	58.8	2.3	1.0
Average Proportion	15.7	26.9	57.4	2.4	1.1

The findings in Table 2 below provide the output of the analysis digital inclusion organizational factors affecting the performance of e-procurement strategy. Slightly above a half (59.4%) of the respondents disagreed to the statement that by nature, their Ministry/Department work can be accomplished through the eProcurement system from anywhere all the time while 73.8% of the respondents also disagreed to the statement that by

nature, their Ministry/Department tasks are all doable through eProcurement online system from anywhere all the time. About a half (54.8%) of the respondents were not in agreement with the statement that there has been high organizational support for workers to work and submit everything through eProcurement online system from anywhere all the time. It is evident that 56.5% of the respondents did not agree to the statement that the existing eProcurement system is of high quality in terms of ensuring security, privacy, ease of use, speed and accuracy whenever they connect while 40.9% of the respondents were not terms with the statement that the eProcurement online system strategy terms and conditions of use are clearly communicated and understood by all our suppliers and customers. Lastly, 58.8% of the respondents declined to the statement that there has been enough eProcurement online system technical skills training enabling everyone to effectively use the systems.

EProcurement Strategy Performance factors

Table 3: E-Procurement Strategy Performance factors

Statement	Disagree	Neutral	Agree	Mean	SD
In my best knowledge, all the staff in my Ministry/Department have the necessary general education competencies to engage customers and suppliers in all procurement activities through eProcurement online system all the time	22.6	30.4	47	2.8	0.8
In my best knowledge, all the staff in my Ministry/Department have the necessary general ICT technical competencies to engage customers and suppliers in all procurement activities through eProcurement online system all the time	11.3	34.3	54.3	2.7	0.8
In my best knowledge, all the staff in my Ministry/Department have the necessary resources enabling them to engage customers and suppliers in all procurement jobs through eProcurement online system all the time	13.1	25.2	61.7	2.6	0.9
We have been engaging all our customers and suppliers in all procurement jobs through eProcurement online system all the time without any delays	23.1	15	61.9	2.3	1.0
We are satisfied with engaging all our customers and suppliers in all procurement jobs through eProcurement online system all the time	34.8	20.9	44.3	3.2	1.0
We enjoy engaging all our customers and suppliers in all procurement jobs through eProcurement online system	15.7	20.2	64.1	3.5	0.9
The eProcurement strategy of engaging customers and suppliers through online system is the best thing ever to happen in Kenya Government, I support it to continue.	7.5	15.6	76.9	4.1	1.0
Average percentages	**18.3**	**23.1**	**58.6**	**3.0**	**0.9**

The results in Table 3 shows that 47.0% of the respondents agreed that in their best knowledge, all the staff in their Ministry/Department have the necessary general education competencies to engage customers and suppliers in all procurement activities through eProcurement online system all the time. In addition, 54.3% were in agreement that in their best knowledge, all the staff in their Ministry/Department have the necessary general ICT technical competencies to engage customers and suppliers in all procurement activities through eProcurement online system all the time. Approximately 61.7% of the respondents

agreed that in their best knowledge, all the staff in their Ministry/Department have the necessary resources enabling them to engage customers and suppliers in all procurement jobs through eProcurement online system all the time. Also, 61.9% of the respondents affirmed that they have been engaging all our customers and suppliers in all procurement jobs through eProcurement online system all the time without any delays. Approximately 44.3% of the respondents accepted that they are satisfied with engaging all their customers and suppliers in all procurement jobs through eProcurement online system all the time. About 64.1% of the respondents agreed that they enjoy engaging all their customers and suppliers in all procurement jobs through eProcurement online system. In addition, 76.9% agreed that the eProcurement strategy of engaging customers and suppliers through online system is the best thing ever to happen in Kenyan Government, and they support it to continue.

Multiple Regression Analysis

The regression analysis was done to test the relationship between the dependent and the independent variables. The results were used to examine the critical digital inclusion factors affecting e-procurement strategy performance among government ministries in Kenya.

Table 4: Model summary

	R	R Square	Adjusted R Square	Std. Error of the Estimate
Model	0.520[a]	0.417	0.408	8.91
ANOVA			**F**	**Sig.**
Model 1			10.207	.000[b]
Coefficients				**p-value**
Constant			28.79*	0.000
Digital inclusion Technological factors			0.52*	0.021
Digital inclusion organizational factors			0.99*	0.000

R-squared (R^2) is a measure of how well the independent variables explain the variation in the dependent variable. In this case, R^2 is 0.520, which means that approximately 52% of the variance in the e-procurement strategy performance is explained by the digital inclusion technological factors and digital inclusion organizational factors. The results in indicate that the model is significant ($p < 0.05$) in determining the effect of independent variables on the e-procurement strategy performance. The model equation above reveals that holding the variables technological factors and organizational factors to a constant zero, e-procurement strategy performance will be at a constant value of 28.79. Digital inclusion Technological factors has a coefficient of 0.52, and its p-value is 0.021. This coefficient represents the change in the dependent variable for a one-unit change in "Technological factors" when "Digital inclusion" is held constant. The p-value of 0.021 suggests that this variable is statistically significant. Digital inclusion Organizational factors: This variable has a coefficient of 0.99, and its p-value is 0.000. Similarly, it represents the change in the dependent variable for a one-unit change in "Organizational factors" when "Digital inclusion" is held constant. The very low p-value indicates that this variable is also statistically significant.

CONCLUSIONS

Technological factors play a vital role in the e-procurement strategy performance. The existing ICT system infrastructure (Smart Phone, computer, laptop, Internet Network, WiFi Network, and Access Points) for connecting them and their co-workers to deliver eProcurement services was always available at their place. It was noted that the existing online system (Smart Phone, laptop, computer, Internet, WiFi, and office system) for connecting them and their co-workers to deliver eProcurement services were always easily accessible at their place all the time. The existing eProcurement system does not require much

computing skills for their connecting to deliver services whenever they chose to and the existing eProcurement system is of high quality in terms of ensuring security, privacy, ease of use, speed and accuracy whenever they connect

The organizational digital inclusion factors had influence on e-procurement strategy performance. By nature, their Ministry/Department work was not accomplished and was not always doable through the eProcurement system from anywhere all the time. The findings also showed that there has not been high organizational support for workers to work and submit everything through eProcurement online system from anywhere all the time. It is also evident that the eProcurement online system strategy terms and conditions of use are not clearly communicated and understood by all their suppliers and customers and there has not been enough eProcurement online system technical skills training enabling everyone to effectively use the systems.

Recommendations

The study recommends that technological digital inclusion factors should be deployed for an improved e-procurement strategy performance. It was observed that the organizational digital inclusion factors also had a positive significant influence on e-procurement strategy performance hence the application of the organizational digital inclusion factors should be considered for a positive result on the e-procurement strategy performance.

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