Effect of Regulated Electronic Tendering Practices on the Implementation of Preference Regulations in Kenyan State Corporations

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Abstract

The objectives of the study were to determine the effect of regulated electronic tendering on the implementation of preference regulations. The hypotheses of the study are Ho1 Regulated electronic tendering has no significant effect on the implementation of preference regulations. The theories informing this study are technology acceptance theory, Innovation diffusion theory, Systems theory, Affirmative action theory and Impact dimensional model. Mixed research design was used in the study. The targeted population was 292 state corporations. A sample was taken of state corporations consisting of 127 of the population arrived at using Nassiuma model. Data was collected using questionnaires. The questionnaires were administered to the procurement staff of the government agencies. A pilot study was done to test the questionnaire and the finding was a Cronbach's alpha of 0.781 for implementation of preference regulation, 0.865 for regulated electronic tendering. It was found out that employees electronically prepare for tender specifications and employees electronically search for new products and services in the market. The questionnaires were administered to the procurement staff of the government agencies. A pilot study was done to test the questionnaire and the finding was a Cronbach's alpha of 0.781 for implementation of preference regulation, 0.865 for regulated electronic tendering. The study recommended that regulated electronic tendering has a tremendous role to play in the implementation of preference regulations.

Keywords: Preference Regulations, Regulated Electronic Tendering Practices

Introduction

Economic empowerment is a fundamental element of the inclusive growth that a country strives to promote and is vital to the future competitiveness. Research has shown that increasing the participation of women and youth in the government procurement will enhance growth in economies throughout the region (Ngeno, Namusonge, & Nteere, 2014).

A number of public sector agencies worldwide have identified Electronic Procurement (e-Procurement) as a priority in e-Government agenda and have implemented or are in the process of implementing buy side e-Procurement systems (Vaidya, Sajeev, & Callender, 2006). However, the scholarly evaluation of e-procurement initiatives, especially in relation to the use of Critical Success Factors (CSFs) in e-Procurement is very limited (Birks, Bond & Radford, 2001). A review of e-Procurement literature, primarily from the last five years, shows a lack of core constructs around Critical Success Factors (CSFs). The reason for this might be that implementation of e-Procurement initiatives in the public sector is still in the early stages. Tonkin, (2003), argues there was little history of extensive use of e-Procurement in the public sector and, therefore, the academic literature covering early public sector adoption of e-Procurement is limited. Before the introduction of the Government of Kenya, (2005) the government of Kenya through the Financial Regulations of 1970, gave the Ministry of finance the overall responsibility of regulating the procurement of goods, works and services (Mose, 2012). According to Este & Boateng, (2016), the public procurement act has failed to bring about the value for money in acquisition of resources.

The use of technology, including electronic tools and platforms, is vastly changing the way public procurement is executed and constitutes a key part of modern public procurement. The benefits of e-procurement are much more than improved efficiency through computerization of processes. It represents a powerful information and management tool that underpins the strengthening of

public procurement systems and that can transform the provision of public services (Bailey P, 2008). According to Varma & Khan, (2014), improved data integrity allows decisions to be made real time and accurate data is generated which helps in product and catergory management decisions.

While not a panacea, many countries have been successful in lowering transaction costs, time, and prices, mainly for high-volume, low-value items that are particularly amenable to the use of framework agreements, reverse auctions, catalogues, and purchase cards. In some cases, these systems are shown to increase competition and even be more reliable in terms of integrity than other methods (African Development Bank, 2014). In Africa the concept of preference regulations started in South Africa in 2000 and has undergone quite a tremendous change to suit the dynamics of changing policies and environment (Ambe & BaddenShorst-Weiss, 2010). They further stated that South Africa gave 'Supply chain management' constitutional status in 2003 so as to address past inequitable policies and practices.

Cane, (2004), stated that procurement is central to the government service delivery system, and promotes aims which are, arguably, secondary to the primary aim of procurement such as using procurement to promote social, industrial or environmental policies. The Kenyan Government has a legal Act which contains special provisions regarding how public procurement activities are to be conducted. Section 39, subsection 4 stipulates that 'the preferences and reservations shall apply to, candidates such as disadvantaged groups, micro, small and medium enterprises; works, services and goods or any combination thereof; identified regions; and such other categories as may be prescribed' (GOK, 2005). Importantly, there is no explicit mention of women, youth or disabled as a specific group. As explicit evidence is lacking, it is still assumed that women, disabled and the youth still face exclusion from the procurement process.

This is tied to trade considerations since it is also assumed that most women would be engaged in activities relating to micro, small and medium-sized enterprises (MSMEs) which face technical barriers to entry into the public procurement process in Kenya. (ADB, 2007b). In 2011, there was a presidential directive that gave marginalized groups a chance at participating in public procurement by directing that 10% of all public procurement be set aside for marginalized groups but there were no guidelines to that effect (Government of Kenya, 2015). This led to amendment regulations 2012 which started giving guidelines on how the preference regulations could be implemented.

Statement of the Problem

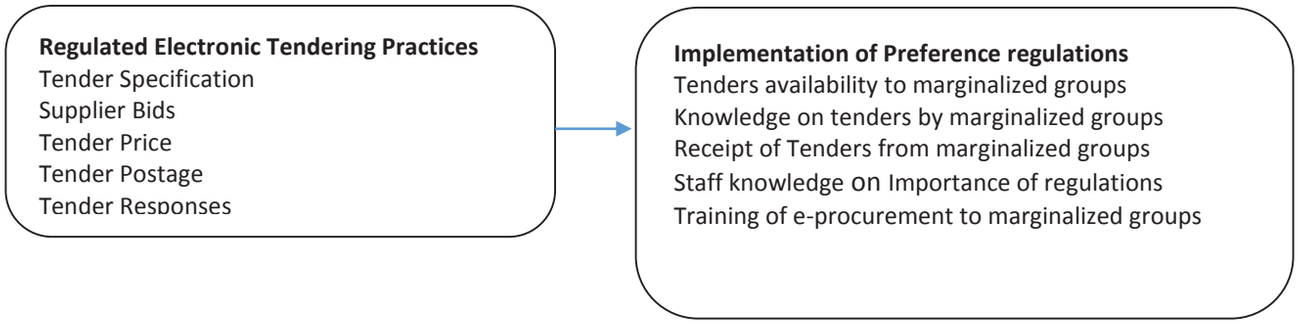
Procurement is an area of great importance and cries out for reforms due to corruption, entrepreneurs and cartels is the procurement section and financial management in public institutions. However, there are challenges of implementing the procurement regulations and also the electronic procurement practices which have been broken into e-tendering practices, e-supplier management practices, e-ordering practices and integrated financial management information systems in this study. In his study, Muraguri, (2014), said it is evident that public procurement preference and reservations policy among the marginalized group in public procurement had not been effectively implemented. Noor, (2014), said that implementing-procurement will enhance transparency and costs reduction but public institutions had not fully adopted the e-procurement practices.

However, the scholarly evaluation of e-procurement initiatives, especially in relation to the use of e-procurement on implementation of preference regulations on state corporations in Kenya is very limited. There is a need to contribute to literature gap on the link between e-procurement and disadvantaged groups' empowerment as the current uptake is just 3% against an available resource of 30% of the government procurement expenditure before full implementation of the e-tendering system (Public Procurement Oversight Authority, 2008). Noor, (2014), stated that e-procurement adoption in Kenyan state corporations stood at only 3% regardless of it being introduced from 2005 with the public procurement act.

With the presidential executive order vide legal notice 114 of 2013 instructing all public entities to adopt the implementation of preference regulations and also e-procurement and Integrated Financial Management Information System (IFMIS) by Dec 2015, the researcher wanted to find out if the implementation of the e-procurement would positively affect the uptake of preference regulations which stood at a mere 3% instead of 30% without e-procurement (PPOA 2015) to a higher percentage considering that those eligible to participate in the process form more than 50% of the total population of the country as per the last general census and the country was having excellent communication networks that would enable absorption of the preference regulations by those targeted.

Literature Review

Conceptual Framework



According to CIPS, (2015), regulated tendering is the tender process that follows the law but also uses electronic activities to ensure the e-tendering process is achieved. According to Bailey, (2008), e-tendering is defined as the process of sending Request For Information (RFIs) and Requests For Proposals (RFPs) to suppliers and receiving the responses of suppliers back, using internet technology hence improving supply chain performance. Usually e-tendering is supported by an e-tendering system which also supports the analysis and assessment of responses. E-tendering does not include closing the deal with a supplier (Bailey P, 2008). Regulated electronic tendering smoothens a large part of the tactical purchasing process without focusing on the content that is spending category of that process. According to Vaidya, *et al* (2006), in a study funded by the public procurement fund in the UK, he argued that the complete tendering process; from advertising to receiving and submitting tender-related information are done online thus creating more efficiency in projects and overall firm performance.

However, with increasing numbers of both business customers and consumers turning to the internet to research on goods and services before making a purchase, e-Tendering is becoming a successful and efficient sales channel for a variety of marginalised groups dominated organisations hence fostering their empowerment in the long run (Dexter, Chwelos, & Benbasat, 2001). Electronic bid submission is a very secure process. A tender is prepared and then posted; an authorized buyer is given secure access for document retrieval (Frankwick & Germain, 2010). The deadline and procedures for EBS are clearly identified for both buyers and suppliers by the buyer entity. Prospective bidders register, are authenticated and are then given a secure access key with which to submit their bids (Oyeridan, 2011). Proposals and associated response documents are submitted through an electronic bid submission system which logs a receipt and sends the supplier confirmation. Updates to the submissions can be made up to the time of closing. All submitted documents are stored in a secure fashion with a high level of security and bids may only be opened by the authorized buyer after the closing date and time have passed. A full electronic audit trail on all activity is maintained. Electronic bid submission improves firm performance because of easy accessibility (Frankwick & Germain, 2010). E-Tendering is a key strategy in the development of various electronic procurement programs and initiatives, offering additional opportunities for industrial businesses, contributing to a globally competitive economy, and helping secure a sustained economic growth (Dean M., 2006).

In the opinion of Kajewski & Weippert, (2004), the objective of regulated e-Tendering is to specifically increase productivity during the tendering process by decreasing paper handling and speeding up communication and interaction. With the exception of a reduction in paper in public procurement each of the above remain as barriers to implementation of a system. However, it is pointed out that resistance to change is one of the biggest barriers to the introduction of e-Tendering within the public sector. Therefore, a cultural change needs to take place prior to adoption of an e-Tendering system. This is proved by the Martin's 2008 findings (Eddie *et al* 2007) based on the United Kingdoms' construction industry, the perceived advantages of monitory savings and efficiency gains prompted the UK government to set targets for all procurement activities to be fully electronic by the end of 2005 (Eddie, Perera, & Hearney, 2010). Thus, this literature supports our hypothesis H_{o1} that regulated electronic tendering has no significant effect on the implementation of preference regulations.

Research Design

The study used a mixed research design that is both descriptive and explanatory research designs. Descriptive research can be either quantitative or qualitative. It involves collections of quantitative information that can be tabulated along a continuum in numerical form. This provided a better understanding of the research problem than the use of one method alone in a study. This is argued to be one, if not, the most of the central premise of the positivism philosophical reasoning in research today (Tashakori & Teddlie, 2001).

The proposed study target population comprised of all the 292 state corporations that implement the preference regulations in Kenya according to PPOA records (PPOA 2015). This is because state corporations in Kenya must implement the preference regulations and are also in the early stages of implementing the electronic procurement in their procurement activities. Sample size is a representation of the whole population that seeks to present the qualities of the whole population (Kothari 2007). The sample size was obtained using the following Naissuma, (2000), formulae;

$$Nc^2 \Big/ c^2 + (N-1)e^2 = n$$

Where, n=sample size, N=population, c=covariance, e=standard error

Nassiuma, (2000), asserts that in most surveys, a coefficient of variation in the range of 21%≤ C≤ 30% and a standard error in the range 2%≤ e ≤ 5% is usually acceptable. Therefore a coefficient variation of 30% and a standard error of 2% were used. The higher limit for coefficient of variation and standard error was selected so as to ensure low variability in the sample and minimize the degree or error

$$292(0.3)^2 \Big/ 0.3^2 + (292-1)0.02^2 = 127 \text{ state corporations}$$

Using this formula, a sample of 127 state corporations were selected.

Table 1: Sample Population

Population	Total targeted	Sample size
State corporations (That report to PPOA)	292	127
Total		127

A pilot study was conducted to check the validity and reliability of the research instruments and results were used to correct the research instruments. This was done in Eldoret at Moi University, University of Eldoret, Moi Teaching and Referral Hospital, Rift Valley Technical training institute, Uasin Gishu county government offices and Eldoret Polytechnic.

Reliability

Table 2: Implementation of Preference Regulations

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.778	.781	12

Table 3: Regulated Electronic Tendering

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.867	.865	10

Table 4: Summary of Measurement Instruments

Variables	Indicators	Adopted from
Implementation Of Preference Regulations	• Number of marginalized groups applying for tenders has increased • Marginalized groups perform well on the tenders • Marginalized groups know about the preference regulations • Marginalized groups have been trained • Marginalized groups have registered with the preference • Marginalized groups apply for tenders • Marginalized groups use E-procurement	(Quesada *et al.*, 2010)
Regulated Electronic Tendering	• Electronically provide tender notice • Electronically send tender specifications • Electronically allow suppliers to post their bids • Electronically send tender price • Electronically post tender document • Electronically receive tender response	(Betts *et al.,* 2010; De Boer *et al.,* 2002)

Results Discussions and Findings

Results Discussions and Findings

Implementation of Preference Regulations

Table 5: Implementation of Preference Regulations

	Implementation of preference regulations		SD	D	N	A	SA	Mean	Std. Deviation
1	Know about preference Regulations	Freq.	0	21	14	75	12	3.64	0.882
		%	0	17.2	11.5	61.5	9.8		
2	Staff Have been Trained on Implementation of preference regulations	Freq.	0	6	5	84	27	4.08	0.675
		%	0	4.9	4.1	68.9	22.1		
3	Staff know the Importance of implementing Preference Regulations	Freq.	0	28	46	26	22	3.34	1.027
		%	0	23	37.7	21.3	18		
4	Most of the marginalized groups know about the preference regulations	Freq.	0	7	26	75	14	3.79	0.718
		%	0	5.7	21.3	61.5	11.5		
5	Marginalized groups have been trained on use of preference regulations	Freq.	0	14	30	57	21	3.7	0.89
		%	0	11.5	24.6	46.7	17.2		
6	Marginalized groups have registered with the preference scheme	Freq.	0	16	28	42	36	3.8	1.009
		%	0	13.1	23	34.4	29.5		
7	Marginalized groups apply for tenders in the preference category	Freq.	0	7	56	32	27	3.65	0.89
		%	0	5.7	45.9	26.2	22.1		
8	Marginalized groups perform well on the tenders they get	Freq.	0	12	27	75	8	3.65	0.749
		%	0	9.8	22.1	61.5	6.6		
9	The number of marginalized groups applying for tenders has increased	Freq.	0	18	29	57	18	3.61	0.913
		%	0	14.8	23.8	46.7	14.8		
10	Marginalized groups use e-procurement in their tenders	Freq.	0	4	7	82	29	4.11	0.645
		%	0	3.3	5.7	67.2	23.8		
11	Marginalized groups know how to use of e-procurement	Freq.	0	9	29	62	22	3.8	0.823
		%	0	7.4	23.8	50.8	18		
12	Marginalized groups have been trained on the use of e-procurement	Freq.	0	0	33	48	41	4.07	0.779
		%	0	0	27	39.3	33.6		

Table 5 presents results on the implementation of preference regulations. The researcher sought to establish whether the staff knew about preference regulations. The results were such that 9.8% (12) of the respondents strongly agreed that the staff know about preference regulations, 61.5% (no. of repondents) of them agreed though 11.5% (14) of them were neutral and 17.2% (21) of the respondents disagreed.

The results summed up to a mean of 3.64 and standard deviation of 0.882 indicating that the respondents were not totally in agreement that staff knew about preference regulations. The respondents were asked whether the staff have been trained on implementation of preference regulations. The results of the study revealed that 22.1% (27) of the respondents strongly agreed that the staff have been trained on implementation of preference regulations, 68.9% (84) of them agreed whereas 4.1% (5) of the respondents were neutral and 4.9% (6) of them disagreed. The item revealed a mean of 4.08 and standard deviation of 0.675 implying that there was staff training on the implementation of preference regulations. Additionally, 18% (22) of the respondents strongly agreed that the staff know the importance of implementing preference regulations, 21.3% (26) of them agreed though 37.7% (46) of the respondents were neutral while 23% (28) of the respondents disagreed. The results summed up to a mean of 3.34 and standard deviation of 1.027 meaning that the respondents were undecided as to whether the staff know the importance of implementing preference regulations. (paragraph change should be here*) Furthermore, when the respondents were asked whether most of the marginalized groups know about the preference regulations.

The study findings revealed that 11.5% (14) of the respondents were strongly in agreement, 61.5% (75) of them agreed whereas 21.3% (26) of the respondents were neutral and 5.7% (7) of the respondents disagreed. The

study revealed a mean of 3.79 and standard deviation of 0.718 indicating that the marginalized groups knew about the preference regulations. In regards to whether marginalized groups have been trained on the use of preference regulations, 17.2% (21) of the respondents strongly agreed that marginalized groups have been trained on use of preference regulations, 46.7% (57) of them agreed whereas 24.6% (36) of the respondents were neutral and 11.5% (14) of the respondents disagreed. Generally, the results on the item summed up to a mean of 3.7 and standard deviation of 0.89. It can therefore be inferred that the marginalized groups have been trained on the use of preference regulations. In a related item on whether the marginalized groups have registered with the preference scheme, 29.5% (36) of the respondents strongly agreed that the marginalized groups have registered with the preference scheme, 34.4% (42) of them agreed, 23% (28) were neutral while 13.1% (16) of the respondents disagreed. The results summed up to a mean of 3.8 and standard deviation of 1.009. The mean value of 3.8 is an indication that a number of the marginalized groups have registered with the preference scheme.

In a bid to establish whether the marginalized groups apply for tenders in the preference category, the study revealed that 22.1% (27) of the respondents strongly agreed, 26.2% (32) agreed whereas 45.9% (56) of the respondents were neutral while 5.7% (7) of the respondents disagreed. This was confirmed by a mean of 3.65 and standard deviation of 0.89 indicating that there was provision for the marginalized groups in form of a preference category when applying for tenders. This however is not being reflected as the uptake is 3% against an availability of 30%. Further on the same, 6.6% (8) of the respondents strongly agreed that the marginalized groups perform well on the tenders they get, 61.5% (75) of the respondents agreed though 22.1% (27) of the respondents were neutral while 9.8% (12) of the respondents disagreed. This summed up to a mean of 3.65 and standard deviation of 0.749 which implies that on average, the marginalized groups perform well on the tenders they get.

Besides, 14.8% (18) of the respondents strongly agreed that the number of marginalized groups applying for tenders has increased, 46.7% (57) of the respondents agreed while 23.8% (29) of them were neutral and 14.8% (18) disagreed. The item revealed a mean of 3.61 and standard deviation of 0.913 indicating that there has been an increase of the number of marginalized groups applying for tenders. With respect to whether the marginalized groups use e-procurement in their tenders, 23.8% (29) of the respondents strongly agreed, 67.2% (82) of them agreed whereas 5.7% (7) were neutral and 3.3% (4) of the respondents disagreed.

The results revealed a mean of 4.11 and standard deviation of 0.645 inferring that e-procurement was used by the marginalized groups in their tenders. In a related item, 18% (22) of the respondents strongly agreed that marginalized groups know how to use e-procurement, 50.8% (62) of the respondents agreed while 23.8% (29) were neutral and 7.4% (9) disagreed. The results summed up to a mean of 3.8 and standard deviation of 0.823 implying that the marginalized groups know how to use e-procurement. Finally, 33.6% (41) of the respondents strongly agreed that the marginalized groups have been trained on the use of e-procurement, 39.3% (48) of them agreed while 27% (33) of them were undecided. Generally, the item had a mean of 4.07 and standard deviation of 0.779 meaning that the respondents were in agreement. From the aforementioned findings, it is clear that the marginalized group have been catered for in the procurement process.

The marginalized groups have been made aware of preference regulations and training on the same. Besides, they have registered with the preference scheme and are able to apply for tenders. As such, the implementation of preference regulations has led to the empowerment of the disadvantaged groups. This is in line with the Governments policy. Governments must determine whether procurement choices are based on narrow attributes of price, delivery and performance or are based on national economic benefits in terms of jobs created, technology acquired and level of exports involved (Ngeno, Namusonge & Nteere, 2014). While implementing preference regulations, a government must take into consideration the factors that affect the disadvantaged groups and their reasons of trying to get affirmative action, the benefits and losses associated with the affirmative action and the overall policies, costs and automation activities that will affect the affirmative action.

The GOK regulations of 2011 state that the essence of preference regulations is to promote local, national and regional industry and support socio-economic development by defining - the target group and eligibility requirements for benefitting from the preference and reservations schemes; the percentage margin of the preference, where applicable; the goods, works and services set aside or reserved for specified target groups; the regions within which to apply the scheme, and the means of measuring its effectiveness in achieving the objectives (GOK 2011).

But it refutes the study by Kabeer, (2005), who stated that affirmative action can be expensive to the government as it yields social benefits but not procurement benefits. Vyas-Doorgapersad & Kinoti, (2015), stated that implementing the gender based affirmative action will help governments achieve the 2015 post MDG goals on gender equality and equal opportunity. The focus should be on capacity buildling and facilitation to achieve this. GOK (2011) states that a person shall be qualified to benefit from the preference and reservations schemes if the person- has the necessary qualifications, capability, experience, and, where appropriate, resources, equipment and facilities to provide the goods or services intended to be procured; has the legal capacity to enter into a contract for the procurement; is not insolvent, in receivership, bankrupt or in the process of being wound up and is not the subject of legal proceedings relating to the foregoing; is among the persons with whom the procuring entity may enter into a contract, not being precluded from doing so under section 33 of the Act; is not debarred from participating in procurement proceedings under Part IX of the Act; and is registered by the Ministry of Finance under regulation 6 (GOK 2011). Thus we can see that the Government is focusing on the implementation of preference regulations.

Regulated Electronic Tendering

In this section of the analysis, results on regulated electronic tendering are presented in table 6. Regulated electronic tendering had the first indicator which required the respondents to state whether there are tenders regulated by PPOA that are in electronic form.

Table 6: Regulated Electronic Tendering

	Regulated Electronic Tendering		SD	D	N	A	SA	Mean	Std. Deviation
1	We have tenders regulated by PPOA that are in electronic form.	Freq.	0	15	41	50	16	3.55	0.873
		%	0	12.3	33.6	41	13.1		
2	We electronically prepare for tender specifications	Freq.	0	7	0	73	42	4.23	0.725
		%	0	5.7	0	59.8	34.4		
3	We electronically send out tender specifications	Freq.	0	20	13	48	41	3.9	1.048
		%	0	16.4	10.7	39.3	33.6		
4	We electronically send out tender prices to suppliers	Freq.	0	13	27	41	41	3.9	0.991
		%	0	10.7	22.1	33.6	33.6		
5	We Electronically Receive supplier bids	Freq.	9	42	12	35	24	3.19	1.301
		%	7.4	34.4	9.8	28.7	19.7		
6	We electronically receive clarifications from suppliers	Freq.	5	42	15	35	25	3.27	1.247
		%	4.1	34.4	12.3	28.7	20.5		
7	We Electronically Respond to all Bid clarifications	Freq.	0	20	8	41	53	4.04	1.079
		%	0	16.4	6.6	33.6	43.4		
8	We Electronically do postage of all tender documents	Freq.	9	22	2	65	24	3.6	1.204
		%	7.4	18	1.6	53.3	19.7		
9	We electronically consolidate government procurement processes.	Freq.	10	34	16	25	37	3.37	1.38
		%	8.2	27.9	13.1	20.5	30.3		
10	We electronically search for new markets	Freq.	7	24	24	49	18	3.39	1.131
		%	5.7	19.7	19.7	40.2	14.8		

The results were such that 13.1% (16) of the respondents strongly agreed that they have tenders regulated by PPOA that are in electronic form, 41% (50) of the respondents agreed, 33.6% (41) of them were neutral while 12.3% (15) of the respondents disagreed. The results on this summed up to a mean of 3.55 and standard deviation of 0.873 meaning that the tenders regulated by PPOA are in electronic form. When the respondents were asked whether they electronically prepare for tender specification, 34.4% (42) of the respondents strongly agreed that they electronically prepare for tender specification, 59.8% (73) of them agreed though 5.7% (7) of the respondents disagreed. The results summed up to a mean of 4.23 and standard deviation of 0.725 an indication that tender specifications were prepared electronically. In a bid to establish whether tenders specifications are electronically sent out, the respondents were asked to respond accordingly. The results were such that 33.6% (41) of the respondents strongly agreed, 39.3% (48) of the respondents agreed while 10.7% (13) of the respondents

were neutral and 16.4% (20) of them disagreed. The item had a mean of 3.9 and standard deviation of 1.048 implying that tender specifications are electronically sent out. In an attempt to establish whether tender prices are sent out electronically to suppliers, the respondents were asked to give their views on the same. The results revealed that 33.6% (41) of the respondents agreed, 22.1% (27) were neutral and 10.7% (13) disagreed. (no change of paragraph) This summed up to a mean of 3.9 and standard deviation of 0.991. It appears therefore that tender prices are sent out electronically to suppliers. Additionally, 19.7% (24) of the respondents strongly agreed that they electronically receive supplier bids, 28.7% (35) of them agreed though 9.8% (12) of the respondents were neutral, 34.4% (42) disagreed and 7.4% (9) of the respondents strongly disagreed. The item summed up to a mean of 3.19 and standard deviation of 1.301 an indication that the respondents were undecided.

With respect to whether the respondents electronically receive clarifications from suppliers, 20.5% (25) of the respondents strongly agreed that they electronically receive clarifications from suppliers, 28.7% (35) of the respondents agreed on the same, 12.3% (15) were neutral while 34.4% (42) of them disagreed and 4.1% (5) strongly disagreed. The results revealed a mean of 3.27 and standard deviation of 1.247 an indication that the respondents were undecided. Moreover, 43.4% (53) of the respondents strongly agreed that they electronically respond to all bid clarifications, 33.6% (41) of them agreed while 6.6% (8) of them were neutral and 16.4% (20) of the respondents disagreed. The mean for the item was 4.04 and standard deviation 1.079 an indication that the respondents were generally in agreement that they electronically respond to all bid clarifications. Similarly, 19.7% (24) of the respondents strongly agreed that they electronically do postage of all tender documents, 53.3% (65) of them agreed while 18% (22) disagreed and 7.4% (9) of the respondents strongly disagreed.

The results summed up to a mean of 3.6 and standard deviation of 1.204 an indication that postage of all tender documents was done electronically. In order to establish whether the respondents electronically consolidate government procurement processes, they were asked to give their views on the same. The results revealed that 30.3% (37) of the respondents strongly agreed, 20.5% (25) agreed, 13.1% (16) were neutral while 27.9% (34) of the respondents disagreed and 8.2% (10) of them strongly disagreed. The results summed up to a mean of 3.37 and standard deviation of 1.38 indicating that the respondents were undecided. Finally, 14.8% (18) of the respondents strongly agreed that they electronically search for new markets, 40.2% (49) of them agreed, 19.7% (24) of them were neutral whereas 5.7% (7) of the respondents strongly disagreed. The item had a mean of 3.39 and standard deviation of 1.131 inferring that there was uncertainty as to whether employees electronically search for new markets.

Cognate to the results, a study conducted by Sajeev *et al*, (2006), revealed that the complete tendering process; from advertising to receiving and submitting tender-related information are done online thus creating more efficiency in projects and enabling marginalised groups dominated firms to be more efficient thus ensuring marginalised groups empowerment as paper-based transactions are reduced or eliminated. Similarly, Dexter *et al*, (2001), infer that e-tendering is becoming a successful and efficient sales channel for a variety of marginalised groups dominated organisations hence fostering their empowerment in the long run.

Further support to the study findings is by Kajewski and Weippert, (2004), who note that the objective of regulated e-Tendering is to specifically increase productivity during the tendering process by decreasing paper handling and speeding up communication and interaction. CIPS (2006), in their report stated that about 53% of the tender time is allocated to searching for new suppliers and as such e-tendering can improve supply chain performance and time reduction in the process as a whole. Thus e-Tendering should be a strategy that is implemented alongside other e-procurement activities.

Factor Analysis

Implementation of Preference Regulations

Two test, namely Kaiser-Mayor-Oklin Measures of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity has been applied to test whether the implementation of preference regulations is significant or not. Table 4.7 highlights the results.

The Kaiser-Mayor-Oklin Measure of Sampling Adequacy shows the value of test statistic as 0.678. Bartlett's Test of Sphericity is used to test whether the data is statistically significant or not. With the value of test statistic and the associated significance level, it shows that there exists a high relationship among variables.

Table 7: Implementation of Preference Regulations

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.678
Bartlett's Test of Sphericity	Approx. Chi-Square	787.112
	Df	66
	Sig.	0.000

Total Variance Explained

From the study results, the Bartlett's Test of Sphericity has p-value of 0.000 which is less than the stated $\alpha = 0.05$, implying that the test is highly significant, hence the factor analysis is appropriate. Implementation of preference regulations was subjected to the factor analysis and four components with Eigen values ≥ 1 were extracted which cumulatively explained 71.254% of variance.

The first factor accounted for 24.276% of the total variance, the second factor accounted for 20.406%, third factor 14.971 while the fourth factor accounted for 11.601 of the total variance as shown in Table 7 below.

Table 8: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.913	24.276	24.276	2.913	24.276	24.276
2	2.449	20.406	44.682	2.449	20.406	44.682
3	1.797	14.971	59.654	1.797	14.971	59.654
4	1.392	11.601	71.254	1.392	11.601	71.254

Rotated Component Matrix for Implementation of Preference Regulations

Factor analysis for implementation of preference regulations was conducted to ensure that all of the constructs used are valid and reliable before proceeding for further analysis. The study requested that all loading less than 0.5 be suppressed in the output, hence providing blank spaces for many of the loadings. Thus from the findings all values for all the factors were more than 0.5 reflecting the accepted value of factor loading.

Table 9: Rotated Component Matrix for Implementation of Preference Regulations

	1	2	3	4
Staff Know about preference Regulations		0.606		
Staff Have been Trained on Implementation of preference regulations		0.779		
Staff know the Importance of implementing Preference Regulations		0.811		
Most of the marginalized groups know about the preference regulations	0.813			
Marginalized groups have been trained on use of preference regulations	0.866			
Marginalized groups have registered with the preference scheme	0.618		0.521	
Marginalized groups apply for tenders in the preference category	0.785			
Marginalized groups perform well on the tenders they get				0.802
The number of marginalized groups applying for tenders has increased				0.53
Marginalized groups use e-procurement in their tenders			0.891	
Marginalized groups know how to use of e-procurement		0.562		
Marginalized groups have been trained on the use of e-procurement		0.781		

Extraction Method: Principal Component Analysis.

a 4 components extracted.

Regulated Electronic Tendering

KMO and Bartlett's Test for Regulated Electronic Tendering

Table 10: KMO and Bartlett's Test Explained

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.672
Bartlett's Test of Sphericity	Approx. Chi-Square	1027.262
	Df	45
	Sig.	0.000

Total Variance Explained

From the study results, the Bartlett's Test of Sphericity has p-value of 0.000 which is less than the stated $\alpha = 0.05$, implying that the test is highly significant; hence the factor analysis is appropriate.

Regulated Electronic Tendering with ten measurement items were subjected to the factor analysis and three components with Eigen values ≥ 1 were extracted which cumulatively explained 76.167% of variance. The first factor accounted for 45.717% of the total variance, the second factor accounted for 17.585% and third factor 12.865% as shown in Table 10 below.

Table 11: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.572	45.717	45.717	4.572	45.717	45.717
2	1.759	17.585	63.303	1.759	17.585	63.303
3	1.286	12.865	76.167	1.286	12.865	76.167

Rotated Component Matrix for Regulated Electronic Tendering

Factor analysis was conducted in order to make sure that the items belong to the same construct (Ngacho, 2014).

Table 12 illustrates the factor analysis for regulated electronic tendering. As shown in the table, there were no exceptions, as all variables scored above the threshold of 0.5. The criterion for communality was fulfilled as shown in the table.

Table 12: Rotated Component Matrix a for Regulated Electronic Tendering

	1	2	3
We have tenders regulated by PPOA that are in electronic form.	0.779		
We electronically prepare for tender specifications	0.703		
We electronically send out tender specifications		0.835	
We electronically send out tender prices to suppliers		0.917	
We Electronically Receive supplier bids			0.862
We electronically receive clarifications from suppliers	0.727		
We Electronically Respond to all Bid clarifications		0.853	
We Electronically do postage of all tender documents	0.652		
We electronically consolidate government procurement processes.	0.78		0.517
We electronically search for new markets			0.881

Extraction Method: Principal Component Analysis.
Rotation Method: Varian with Kaiser Normalization.
a Rotation converged in 4 iterations.

Hypothesis Testing

Table 13: Test of Hypothesis Results

Hypothesis	Beta	*p* - Values	Comments	Decisions
$H_{o1:}$ Regulated Electronic Tendering practices has no significant effect on the implementation of preference regulations in Kenyan state corporations.	0.365	0.000	Significant	Reject

Summary and Conclusions

Based on the findings on regulated electronic tendering, employees electronically prepare for tender specification. The tender specifications as well as tender prices are electronically sent out.

Besides, supplier bids and bid clarifications are responded to electronically. Furthermore, tenders regulated by PPOA are in electronic form. Similarly, postage of tender documents is done electronically. It was however not fully established whether clarifications from suppliers are received electronically, if the employees electronically consolidate government procurement processes and if the employees electronically search for new markets.

The ever increasing numbers of both business customers and consumers has necessitated the use of the internet to research for goods and services before making a purchase. This has given ground for regulated electronic tendering. According to the study, regulated electronic tendering is of essence in the implementation of preference regulations. Through it, tendering processes are accomplished electronically. Precisely, employees prepare tender specifications electronically and suppliers are also able to bid electronically. As a result, paper-based transactions are reduced and the marginalized groups are empowered. Regulated electronic tendering has a tremendous role in the implementation of preference regulations.

There is thus need to do all the tendering processes online so that the marginalized groups are empowered. This will also bring about a speedy exchange and accessibility of information. All in all, a regulated tendering system will ensure efficiency in service delivery and overall improve firm performance.

Research Gaps

A critical review of both empirical and theoretical literature by the researcher got very limited related study conducted to assess the impact of e-Tendering on absorption of preference regulations. Researchers have made little contribution in linking e-Tendering to marginalised groups empowerment. Harink, (2003), found no research studies indicating the exact relationship between e-sourcing and marginalised groups empowerment. Some of the studies found were ambiguous and did not clearly outline the relationship between e-sourcing and marginalised groups empowerment. According to Dooley & Purchase, (2006), little or no research has been conducted to assess the impact of e-Tendering on marginalised groups empowerment. Researchers have made no contribution in linking e-Tendering to marginalised groups empowerment. He goes on to argue that e-Tendering does not have a significant relationship with marginalised groups' empowerment. Other areas to look into include:- Preference regulations and efficiency, Preference regulations and cost reduction, Preference regulations and delivery of quality products and services.

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