

Influence of E-Procurement Practices on Management of Public Secondary School Resources in Mandera County, Kenya

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Abstract

E-procurement practices are essential components in the management of public secondary school resources. However, lack of financial accountability, inefficiency, lack of controls and imprudent use of resources in Mandera County has continued to affect management of secondary schools. Thus, this study analyzed the influence of e-procurement practices on management of public secondary school resources in Mandera County, Kenya. Mixed methods approach was used and thus the study adopted concurrent triangulation design. The study established that e-procurement practices influence management of public secondary school resources. In conclusion, e-procurement practices influence management of secondary school resources. Thus, the study recommends that schools should ensure that there is an appropriate focus on good practice in procurement and that there is a significant procurement procedure in place to ensure compliance with all relevant guideline. Schools should adopt integrated tendering methods which are meant to guarantee financial prudence and efficient use of school resources.

Keywords: E-procurement practices, management of secondary school resources, adoption and use of e-procurement

1. Introduction

Management of school resources entails many practices that relate to governance aspects such as management of financial resources, curriculum implementation, and human resources management through allocation of duties and responsibilities, management of students' welfare through monitoring of performance, ensuring effective communication through internal and external methods, but at the heart of management of school resources is the concept of managing expenditure for the school (Babrara, 2009). E-procurement is the electronic integration and management of all procurement activities including purchase request, authorization, ordering, delivery and payment between a purchaser and a supplier (Charles, 2007).

The development of e-procurement service has encouraged the implementation of a decentralized approach to give secondary schools more needed flexibility to distribute online access to a much larger number of employees and potential customers (Gerrard & Cunningham, 2003). To corroborate these assertions, Bradley and Stewart (2010), in a study conducted in Brazil, showed that the major benefits of e-procurement implementation not anticipated by the sector are business, efficiency, improved image, competitive advantage, increased automation of processes and increased business turnover. Also, the key challenges identified for the sector are the costs of the technology, the lack of knowledge of e-procurement, perceived risks, managing the change, budgeting and issues associated with linking back end systems. They did not consider secure transactions as a major challenge for the sector; in contrast, they were considered one of the success factors.

In Kenya, a recent survey conducted by CBK (2008) indicates that there is steady in-crease in use of e-procurement technologies. This however does not go for secondary schools where adoption of e-procurement is still low. This is inconsistent with the theory of consumer choice and demand as conceptualized in Au and Kauffman (2008) in relation to internet payments. Based on their observation, customers can choose to adopt a particular e-procurement technology perceived to offer such advantages as ease of use. Despite these successes, there have also been dynamics such as lack of internet foundation and lack of experts as the important challenges in the field of e-procurement. As the secondary schools embrace these new opportunities, they have to contend with issues and face challenges that arise in the context of procurement risks.

2. Statement of the problem

Procurement practices are important tools for enhancing management of resources in any learning institution. That is, procurement practices enhance prudent use of resources, accountability, financial controls and improve institutional efficiency. However, in most public secondary schools in Mandera County, this has not been the

case. In recent times, wastage and pilferage of school financial resources, inefficiency and lack of controls have been on the rise against the backdrop of the government's insistence on adherence to the Public Procurement Disposal Act (2007) (Ambani 2010). Despite these observations, little has been done to bring e-procurement practices into perspective and how they contribute towards management of public secondary school resources. In other words, little has been done to interrogate the influence of adoption and use of e-procurement on management of secondary school resources by enhancing prudent use of resources, guarantee accountability, internal controls and improve efficiency.

3. Objective of the study

To explore the extent to which adoption of e-procurement technology influences management of secondary school resources in Mandera County, Kenya.

4. Adoption of e-Procurement and Management of school resources

The development of information technology enables the organizations to perform tasks more effectively and efficiently. Particularly, adoption of e-procurement can provide greater opportunities for institutions to establish, nurture, and sustain long term relationships with their clients than in the past (Sun, 2006). Whereas the implementation and use of electronic procurement has been widely implemented in developed nations, the findings are not necessarily the same in developed regions of the world where the adoption is dismal (Skenter, 2009). Several studies indicate that adoption of information technology in procurement practice offers several capabilities; e-procurement can play an important role in leveraging productivity and efficiency in both public and private organizations and in particularly such institution has been found to save resources significantly and hence management performance gains (Harvey, 1992). On adoption of e-procurement, a study by Hussein (2001) failed to indicate how different forms of evaluations address the collaborative process of evaluation, that is, the different roles and responsibilities that different stakeholders may play during an evaluation process. Hussein (2001) has not specified how monitoring and evaluation of procurement practices impact on different aspects of management of school resources. Greunen, Herselman, and Niekerk (2010) also carried out a study on the adoption of regulation-based e-procurement in the Eastern Cape provincial administration. The study found that measurable benefits of supply chain management have not yet been realized due to general limited understanding of how supply chain management concept works within government environment. In Kenya, there are some organizations that have successfully embraced the use of e-procurement technology. For instance, Nation Media group through their digital platform commonly known as N-Soko enables their clients to purchase products online (Gitahi, 2011). A study by Mose et al (2013) on the critical success factors on the adoption of e-procurement in manufacturing firms around Nairobi revealed that majority of the large-scale manufacturers in Nairobi (72%) has adopted e-procurement with the following e-procurement practices: online advertisement of tenders, receiving online submission of proposals for the tenders, and short-listing suppliers online among others.

5. Methodology

The study applied mixed methods approach, that is, quantitative and qualitative methods. The study used concurrent triangulation design since it is single-phase design in which researcher implemented the quantitative and qualitative methods during the same timeframe and with equal weight. Qualitative data was analyzed thematically along the study objectives and presented in narrative forms whereas the quantitative data was analyzed using descriptive statistics and inferentially using ANOVA in Statistical Package for Social Science (SPSS 23) and presented using tables.

6. Research findings

The study sought to analyze the influence of e-procurement practices on management of public secondary school resources in Mandera County.

Table 1: Influence of E-Procurement on Management of Public Secondary School Resources

Summary of Test Items	SA %	A %	U %	D %	SD %	Mean	St. Dev.
Adoption of e-procurement is rare in secondary schools and has thus not enhanced financial prudence	61.2	20.4	4.1	12.4	1.9	4.316	1.315
Adoption of e-procurement is not common in schools which has not enhanced staff relations	63.1	14.2	3.7	9.8	9.2	4.449	1.356
Secondary schools which adopt e-procurement have enhanced curriculum implementation	64.4	14.6	2.9	9.7	8.4	4.542	1.384
Infrastructural development in improved in secondary schools which have adopted e-procurement	66.7	19.4	3.4	6.3	4.2	4.704	1.433
Use of e-procurement has rarely influenced management of resources	71.8	10.3	3.2	7.4	7.3	5.064	1.543
Use of e-procurement has not influenced management of school resources	55.2	15.3	3.5	20.8	5.2	3.941	1.392

Table 1 reveals that slightly more than half of the members of School Board of Management (61.2%) strongly agreed with the view that adoption of e-procurement is rare in secondary schools and has thus not enhanced financial prudence. At the same time, 20.4% agreed. On the contrary, only a small proportion of 4.1% of the members of School Board of Management were undecided, 12.4% of them disagreed whereas 1.9% strongly disagreed. Similarly, slightly more than half of the members of School Board of Management (63.1%) strongly agreed with the view that adoption of e-procurement is not common in secondary schools which has not enhanced staff relations as did 14.2% of the members of School Board of Management who agreed. However, 3.7% of the members of School Board of Management were undecided, 9.8% disagreed whereas 9.2% strongly disagreed. These findings are consistent with the assertions of Skenter (2009) that, whereas the implementation and use of electronic procurement has been widely implemented in developed nations, the findings are not necessarily the same in developed regions of the world where the adoption is dismal.

These findings also lend credence to the assertions of Staatscourant (2009) that the inadequacy of corporate electronic procurement system in the public sectors entity means that they found it a challenge in analyzing the expenditure on a macro-economic level. In most secondary schools in Eastern Cape Provincial Administration, Greunen, Herselman and Niekerk (2010) noted that measurable benefits of supply chain management have not yet been realized due to general limited understanding of how supply chain management concept works within government environment. Hence, these findings are indicative of the fact that adoption of information technology in procurement practice offers several capabilities; e-procurement can play an important role in leveraging productivity and efficiency in both public and private organizations and in particularly such institution has been found to save resources significantly and hence management performance gains.

Majority of the members of School Board of Management (64.4%) strongly agreed with the view that secondary schools which adopt e-procurement have enhanced curriculum implementation as did 14.6% of the members of School Board of Management who agreed. However, 2.9% of the members of School Board of Management were undecided, 9.7% disagreed whereas 8.4% strongly disagreed. These findings lend credence to the assertions of Sun (2006) that the development of information technology enables schools to perform tasks more effectively and efficiently. These findings also corroborate the findings of a study carried out in Brazil in which Giati (2012) noted that adoption of e-procurement in schools has led to significant cost savings and an increase in the transparency and accountability of government bodies.

Therefore, these findings attest to the fact that the use of computerized procurement systems in management of school resources increases efficiency, transparency and accountability in management of school resources. Two thirds (66.7%) of the members of School Board of Management strongly agreed with the view that infrastructural development in improved in secondary schools which have adopted e-procurement.

At the same time, 19.4% also agreed. However, 3.4% of the members of School Board of Management were undecided, 6.7% disagreed whereas 4.2% strongly disagreed. These findings are consistent with the findings of a study conducted in Australia in which Barrett (2007) found that adoption of e-procurement has a positive benefit in capacity utilization, inventory turnover, and product quality at the organization level. However, the study has established that an impressive majority of the members of School Board of Management (71.8%) strongly agreed with the view that use of e-procurement has rarely influenced financial prudence and management of infrastructure in secondary schools.

In the same vein, 10.3% also agreed. However, 3.2% of the members of School Board of Management were undecided, 7.4% disagreed whereas 7.3% strongly disagreed. The study also revealed that more than half of the members of School Board of Management (55.2%) strongly agreed with the view that use of e-procurement has not influenced staff relations and curriculum implementation in secondary schools as did 15.3% of the members

of School Board of Management. On the other hand, 3.5% of the members of School Board of Management were undecided, 20.8% disagreed whereas 5.2% strongly disagreed. These findings however, do not corroborate the assertions of Sun (2006) that adoption of e-procurement can provide greater opportunities for institutions to establish, nurture, and sustain long term relationships with their clients than in the past. Thus, these findings affirm the fact that adoption of e-procurement enhances transparency and the improvement of efficiency as well. The benefits further include; increases in compliance with contracts, leverage of the spending of procurement, increase in the involvement of personnel, and low cost of processing. This point to the fact that devolution of pre-primary education has not improved quality of the programmes. That is, it has not lead to improved enrollment, attendance, transition and completion amongst pre-primary school learners.

Inferential Findings on the Influence of E-procurement on Management of Public Secondary Schools

To further ascertain the difference between adoption of e-procurement and management of public secondary school resources, data was collected on the number of secondary schools which have adopted e-procurement, wastages in vote heads for infrastructural development, staffing and curriculum implementation resources and results.

Table 2: Results of Adoption of E-procurement and Wastages in School Vote Heads on Infrastructure, Staffing and Curriculum Implementation Resources

Adoption of E-procurement	Wastages in Management of School Resources (Kshs.)		
	Infrastructure	Staffing	Curriculum Implementation Resources
Secondary schools which have adopted e-procurement	7500	22,000	70,000
Secondary schools which have not adopted e-procurement	54,000	99,000	127,000

Table 2 indicates that secondary schools which have adopted e-procurement register minimal wastages of school resources in infrastructural development, staffing and curriculum implementation materials compared to their counterparts which have not adopted e-procurement. These results also lend credence to the assertions of Staatscourant (2008) that e-procurement can offer significant benefits in facilitating many of the administrative aspects of the procurement process. This implies when used effectively, e-procurement enables the sourcing, ordering, commissioning, receipting and payment for the whole range of resources and services that schools purchase to be conducted as a single automated process.

Table 3: ANOVA Analysis of the Difference between Adoption of E-procurement and Means of Wastages in School Vote Heads on Infrastructural Development, Staffing and Curriculum Implementation Resources

		Sum of Squares	df	Mean Square	F	Sig
Adoption of E-Procurement		5430041666.667	1	5430041666.667		
Infrastructure	Staffing Curriculum Implementation	4612750000.000	2	2306375000.000	19.213	0.049
	Residual	240083333.333	2	120041666.667		
	Total	485283333.333	4	121320833.333		
Total		10282875000.000	5	2056575000.000		

Grand Mean = 63250.00

From the ANOVA Statistics in Table 3, the processed data, generated a significance level of 0.049 which shows that the data is ideal for making a conclusion on the population's parameter as the value of significance (p-value of 0.049) is less than 5%, that is, $p\text{-value}=0.049 < 0.05$. It also indicates that the results were statistically significant and that there is significant difference between adoption of e-procurement and means of wastages in

vote heads set for infrastructural development, staffing and curriculum implementation resources. That is, secondary schools which have adopted e-procurement register minimal wastages in their resources compared to those schools which are yet to adopt e-procurement. These results were consistent with the findings of a study conducted by Mose et al (2013) which generated a p-value of $0.044 < 0.05$. These findings thus affirm the fact that e-procurement offers significant benefits in facilitating many of the schools' administrative aspects of the procurement process. E-procurement enables schools to reduce cases of pilferage and wastage of school resources. In other words, procurement enables the sourcing, ordering, commissioning, receipting and payment for the whole range of resources and services that schools purchase to be conducted as a single automated process.

Thematic Analysis of Qualitative Findings on the Influence of E-procurement on Management of Public Secondary School Resources

During interviews, the principals and QASOs also admitted that adoption of e-procurement has not been effective in their secondary schools. Principal, P4, reported,

“Adoption of e-procurement in secondary schools is still a challenge and is thus yet to enhance financial prudence, staff relations, curriculum implementation and infrastructural development”.

These views further lend credence to the viewpoints held by Skenter (2009) that implementation and use of electronic procurement has not been effective. This points to the fact that the inadequacy of corporate electronic procurement system in the public sectors entity means that they found it a challenge in analyzing the expenditure on a macro-economic level. During focus group discussions, tendering and procurement committee members, TPCM3, also noted,

“Most of our secondary schools are yet to adopt e-procurement as a way of ensuring prudent management of school resources. Most schools still hold on old and traditional methods of tendering and procurement of goods and services for schools”.

Just like in quantitative findings, these views affirm the fact that adoption of information technology in procurement practice offers several capabilities; e-procurement can play an important role in leveraging productivity and efficiency in both public and private organizations and in particularly such institution has been found to save resources significantly and hence management performance gains. Development of information technology enables schools to perform tasks more effectively and efficiently. On further interviews, QASO4, noted,

“It is challenge to adopt e-procurement since most secondary schools lack the pre-requisite infrastructure and qualified personnel. There is constant problem of mobile telephone connectivity and even the internet availability”

These views further corroborate the findings of a study carried out in Brazil in which Giati (2012) noted that adoption of e-procurement in schools has led to significant cost savings and an increase in the transparency and accountability of government bodies. During FGD, TPCM4, noted,

“If fully implemented, e-procurement can improve the efficiency and transparency of the secondary school procurement process”.

These views affirm the fact that e-procurement in management of school resources increases efficiency, transparency and accountability in management of school resources. In other words, adoption of e-procurement has a positive benefit in capacity utilization, inventory turnover, and product quality at the organization level. However, in most secondary schools in Mandera County, this is not the case with use of e-procurement having not been adopted to enhance financial prudence, management of infrastructure, staff relations and curriculum implementation.

7. Summary of the findings

The study also established that adoption of e-procurement in secondary schools still pose a challenge and is thus yet to enhance financial prudence, staff relations, curriculum implementation and infrastructural development. Adoption of information technology in procurement practice offers several capabilities; e-procurement can play an important role in leveraging productivity and efficiency in both public and private organizations and in particularly such institution has been found to save resources significantly and hence management performance gains.

Thus, adoption of e-procurement has a positive benefit in capacity utilization, inventory turnover, and product quality at the organization level. It is also evident that adoptions of e-procurement in secondary schools still pose a challenge and is thus yet to enhance financial prudence, staff relations, curriculum implementation and

infrastructural development. Inadequacy of corporate electronic procurement system in public sectors entity means that they found it a challenge in analyzing the expenditure on a macro-economic level.

8. Conclusions

Drawing from the study findings, it is evident that adoptions of e-procurement in secondary schools still pose a challenge and is thus yet to enhance financial prudence, staff relations, curriculum implementation and infrastructural development. That is, the inadequacy of corporate electronic procurement system in the public sectors entity means that they found it a challenge in analyzing the expenditure on a macro-economic level.

9. Recommendations

On adoption of e-procurement, the study recommends that the schools should also try to address the challenges faced by the departments namely inadequate funding, schools' inability to handle change management, lack of training of employees on how to use the system, adoption of e-procurement at a slow pace, inadequate responding to queries by the system provider, suppliers not being ready to use this system and unfavorable payment when using the system both to the school and the supplier. Besides, the secondary school should also advise suppliers to deliver supplies, services and works promptly, monitor closely inflated prices of goods, services and works. Besides, the school should ensure that goods, services and works that are substandard are not received.

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