FACTORS AFFECTING USE OF E-PROCUREMENT: A SURVEY IN SELECTED FIRMS IN KISII TOWN, KENYA.

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ABSTRACT

The purpose of this study was to establish the factors affecting use of e-Procurement in companies in Kisii town. This was as a result of realization that e-Procurement has become a vital tool in improving business performance today, though has not been adequately incorporated in most businesses, especially small and medium enterprises. The study used a descriptive survey method. The study considered a target population of 105 companies operating in the Kisii town, as extracted from Kisii County Offices on issuance of licenses as at 31st January, 2013. The researcher used purposive sampling to select 32 firms, translating into 32 procurement officers. Data was collected using questionnaires - open and closed-ended questions. Descriptive statistical techniques were used and findings presented in form of charts, tables and graphs using coded numbers and percentages. The research findings revealed that all the variables were statistically significant: value of e-procurement, e-procurement capability and e-procurement models affect the use of e-procurement. Based on the findings, the researcher came up with the following recommendations: individual firms should increase the proportion of expenditure on e-procurement; widening the scope of supplier sourcing thereby justifying use of e-procurement, firms need to increase the e-procurement capability in terms of IT expertise and IT infrastructure injecting regular upgrading of IT system and management of firm to expand the use of e-procurement by incorporating most of e-procurement processes as well as all e-procurement models.

Keywords: FACTORS AFFECTING ; USE ; E-PROCUREMENT; SURVEY ; SELECTED FIRMS ; KISII TOWN, KENYA.
CHAPTER ONE

1.1 Background

1.1.1 E-procurement and its use

According to Bialy 2008, e-Procurement is done with a software application that includes features for supplier management and complex auctions. The new generation of e-procurement is currently on demand or software as a service (SaaS). The e-procurement value chain comprises indent management, e-tendering, e-auctioning, vendor management, catalogue management and contract management. Indent management is the workflow involved in the preparation of tenders. This part of value chain is optional, with each procuring department defining its indenting process. As concerns works procurement, administrative approval and technical sanction are obtained in electronic format. On the other side, in goods procurement, indent generation activity is done online. The end result of the stage is taken as inputs for issuing the NIT (Peter, 2012).

e-Procurement (or Business-to-Business networks) is an online system by which companies can be connected directly to suppliers for the purpose of buying products and services at the lowest cost possible. e-Procurement essentially replaces its offline version, called tender. The advantages and disadvantages of e-Procurement mostly parallel the universal benefits and disadvantages of the internet.

The public sector organizations use e-Procurement for contracts to achieve benefits for example increased efficiency and cost savings, faster and cheaper in government procurement (Acher 2005) and improved transparency, to reduce corruption, in procurement services. e-Procurement in the public sector has seen rapid growth in recent years. Act 590 of Louisiana’s 2008 Regular Legislative Session requires political sub-division to make provisions for the receipt of electronic bids.
1.1.2 E-procurement trends in the world

E-Procurement in the public sector is emerging internationally; hence, initiatives have been implemented in Singapore, UK, USA, Malaysia, Australia and European Union. E-Procurement projects are often part of a country’s larger e-Government efforts to better serve its citizen and businesses in the digital economy. For instance, Singapore’s GeBIZ was implemented as one of the programmes under its e-Government master plan. This field is populated by two types of vendor’s: big enterprise resource planning (ERP) providers which offer e-Procurement as one of their services, and the more affordable services focused specifically on e-Procurement. According to Aberdeen 2001, an e-Procurement system manages tenders through a web site. This can be accessed anywhere globally and has greatly improved the accessibility of tenders.

E-Procurement applications focus on creating efficiencies; their goal is to make the traditional purchasing procedures more efficient and cost effective (Wu, 2007 and Turban et al, 2006). Larsen et al (2008) noted the development and implementation of electronic commerce business models such as a procurement portal in organizations in a challenge that goods beyond mere technological functionality. Top management support organizational adaptation, and training of employees are examples of issues for the successful implementation of organization IT system (Kawalek et al, 2003).

In the study on e-procurement adaptation in Greece, Panayiotou et al. (2004) pointed out e-procurement strategy, re-engineering of procurement processes and management of expectations as key success factors in an e-procurement adaptation strategy. Their conclusion was that implementation must be achieved in a manner of “incremental change” where technological solutions apply to regulations and policies.

Today, e-Procurement within government is recognized as one of the main areas in the Government-to-business (G2B) category, and receives much attention from researchers (Turban and King, 2003), being also called electronic public procurement. UK National e-Procurement Project Report (2004) notes e-Procurement is a tool to enable procurement
activities, including sourcing, ordering, commissioning, receipting and making payments for
the whole spectrum of an authority’s activities.

The issues in building efficient electronic government procurement solutions have been identified
by the CEN/ISSS e-Business Focus Group, as being of organizational, procedural, technical, and
legal nature (CEN, 2005). An investigation into the implementation strategy of e-Procurement
in the Irish public sector concluded that fundamental changes are required in the public sector
procurement environment to achieve the benefits of e-Procurement approach (Lee, 2001). It
was found that the key issues could be grouped into a number of areas: procurement
framework and practices, organizational arrangement, e-Procurement technology
framework, and the legal and economic environment. Among these issues, a strong and
efficient organizational aspect was identified as a very critical success factor for efficient e-
GP implementation.

Research on change management in respect of e-government is more recent (Golden et al., 2003)
than the general change management contributions. However, it does not include reference to
attempts at implementation issues. For example, Burn and Robins (2003) reported a project in
Western Australia that included measures of strategic initiatives, cultural readiness, learning
capacity, IT leveraging, knowledge capacity, and relationship building. This was balanced in the
context of change management practice, process management practice, outcomes and
performance gains.

As the successful implementation of e-GP is related to the efficient planning and management of
information, people, business processes, and the development of the relevant policies and plans,
attention to these areas should ensure success and the achievement of e-GP’s known benefits
(Krishna and Walsham, 2005; Bahatnagar, 2002). Therefore, e-GP needs to be understood as a
tool to underpin reform in public procurement, rather than being a technological add-on to an
already complex environment (World Bank, 2006).

1.1.3 E-procurement in Kenya

Several changes have taken place in Kenya concerning ICT though not properly through a
legal framework over the first 10 years of inception. Notable changes have been formation of
the Multi-Stakeholder Kenya ICT Action Network. Through the network, a policy process
deemed to be inclusive has been catalyzed, resulting in the country’s first draft ICT policy document which was approved by Cabinet in February, 2006, (Republic on Kenya, 2006). Though electronic commerce is viewed as involving many ministries, Communication Commission of Kenya (CCK) is responsible for revitalizing and transforming the economy into modern market oriented through e-commerce (Republic of Kenya, 2006). Many firms in Kenya and world over have registered dismal performance in terms of business growth and profit making because of insufficient and unsustainable procurement procedures. Employees have been fired because of low performance rate persistent lateness and wrong attitude towards work (Johnson, 2008).

Studies in ICT adoption frequently highlight in house technical capabilities and experience with ICT, as key contributory factors (Chapman et al, 2000). Price Waterhouse coopers (2002) defend this view by stating “we don’t have enough internet human resources, and can’t hire people”. Implementing a new technology needs skill and knowledge to operate in the organizations and most organizations do not implement because organizations’ employees are not familiar with new technology. Empirical evidence identifies that organization whose employees have the necessary skills and technical knowledge are more likely to implement e- Government applications (Lin and Lee, 2005).

In Kenyan market, research conducted by Humphrey, et al. (2003) revealed that conducting e- commerce is mostly meant for provisions that enable the firms identify trading partners that they could contact off- line with a view to doing business. The follow- up to an initial contact generally is to taking place through other channels such as e- mail, hyperlink, the telephone, fax or the post. Despite the benefits of e-procurement as recognized by managers such as better coordination with suppliers, quicker transaction times, higher flexibility, better supplier integration, and lower costs (Kheng and Hawamdeh, 2002), it is clear that adaption of e-procurement is still very low (Gunasekaran and Ngai, 2008). According to Mitraet al. (2000), the most common forms of e- commerce in Kenya market are e-procurement, e- banking and of late embanking. Of the three, e-procurement which is user friendly; internet based purchasing system (Nikolaos, Poulo, and Bokos, 2006) has generated a lot of interest
due to its ability in improving efficiency and transparency, thereby reducing the cost of operation within and between business parties (De Boer, et al., 2002)

1.2 Statement of the problem

In today’s world, e-Business has become part and parcel of everyday life in many business circles as a large number of organizations are involved in one form of e-Business or another such as e-procurement. The emphasis is on the use of technology to substitute or enhance transactional activities in order to gain operating efficiencies (Essig and Arnold 2001, Osmondbekov et al. 2002).

E-Procurement systems also allow more efficient integration of supply chains and provide better organization and tracking of transaction records for easier data acquisition. There is need to have a robust automated procurement system which is interlinked and this will lead to enhanced competitiveness and lowered costs (Ogot et al., 2009). Transactions can be standardized and all bids for products and services can be tracked more easily, allowing business owners to use such knowledge to obtain better pricing. Due to faster exchanges of information and delivery of goods and services, e-procurement also promotes shorter product-development cycles.

As it turns out, the consumer is not primarily price-driven when shopping on the internet but instead considers brand name, trust, reliability, and delivery time as at least as important as price (Brynjolfsson, Dick, and smith, 2004). Over the past few years, there has been increasing emphasis on e-procurement from the European Commission and Office of the Government Commerce, starting with the option for online tender submission, followed by online Official Journal of the Economic Union (OJEU) notices. The incentives for contracting authorities to use e-tendering methods include faster tender processes and more streamlined procurement, particularly for straightforward tenders where face-to-face contact with bidders is non-paramount.

Regardless of the recognition of value of e-procurement, it is clear from the study by Gunasekaran and Ngai (2008) that the adoption of e-procurement is still very low. It is against this background that the study seeks to find out the factors affecting e-procurement in firms in Kisii town to spearhead improvement of firm performance in Kenya.
1.3.0 Objectives of the study
1.3.1 General Objective
The aim of this study is to establish the factors affecting use of e-Procurement in selected firms in Kisii town.

1.3.2 Specific Objectives
1. To find out if value of e-procurement affects use of e-Procurement in firms.
2. To determine if e-procurement capability of firms affect its use of e-Procurement in firms.
3. To establish if e-procurement models affect use of e-Procurement in firms.

1.4 Research questions
1. Does strategic value of e-procurement affect use of e-Procurement in firms?
2. Has e-procurement capability of firms affected use of e-procurement in firms?
3. Do e-procurement models enhance the use of e-Procurement by firms?

1.5 Scope of the study
The study will be carried out in Kisii town on all firms that use e-Procurement and those which intend to use e-Procurement in Kisii Town. The objective of this research is to find out factors affecting e-Procurement in firms taking into consideration three factors including value of e-Procurement, e-Procurement capability and e-procurement models. The research findings of the study will be used to expand knowledge of company staff on use of e-Procurement to stimulate growth as it eliminates use of traditional procurement procedures already billed as costly and time consuming.

1.6 Significance of the study
The study will be used by companies to get more knowledge on factors affecting use of e-Procurement on firms. The knowledge will also be used by the researcher to develop more knowhow on e-Procurement. The study will assist scholars interested in conducting research in e-procurement and related areas as a source of reference. The study will also assist policy makers on e-Procurement in companies both for private and public sectors, which will help shape the procurement sectors to perform better with e-Procurement.
CHAPTER 2
2.0 LITERATURE REVIEW
2.1 Introduction
The chapter entails the literature of other scholars on factors affecting use of e-Procurement in firms. The bottom line of the study is to enrich the already existing work on e-Procurement attainable through critical consideration of other scholars’ work. The researcher will attempt to critic the findings and establish knowledge gap with a view to enhancing the factors affecting use of e-Procurement in firms.

2.2 Theoretical framework
2.2.1 The concept of e-procurement
e-Procurement is strongly related to concepts such as logistics, supply chain management (SCM) as well as e-commerce. Although some definitions are suggested to distinguish between these concepts, the problems faced are similar. They all require financial, transportation, legal, and communication infrastructure (Ohmae, 2000). If a country is weak in one or some of these infrastructures, then e-Procurement activities are destined to fail. In addition to these four factors, education of the e-Procurement personnel, security issues, societal readiness to use information and communication technologies (ICT), and the impact of the wireless technologies should also be considered.

In a country like Turkey, huge infrastructure investment is a common practice. However, since these investments are heavily affected by short-term political concerns and voter influence, projects function most of the time at sub-optimal rate. Rarely do you find a planned and systematic approach. Even so, as the economy grows and international trade rises, companies in Turkey experience meaningful global competition. This necessitates introduction of efficient tools like e-Procurement. Such investment in e-Procurement is continuous and therefore abrupt improvements may not be forthcoming. Tremendous adoption of e-Procurement can be slowed down by numerous problems facing it.

This study will assess the e-Procurement activities from a developing country’s perspective such as Turkey. Also, unique problems and strengths of Turkey will be examined. In addition, given the widespread application of wireless technology, we have equally elaborated on the concepts of m-Procurement. The possible outcomes of the widespread use
of wireless technology in procurement activities are rather an uncharted territory. These issues are changes and developments in technology and macro trends such as globalization also affect the micro world of enterprises and functions in the companies. In this respect, purchasing has morphed into procurement (Kotler, 2004).

In the past, the purchasing function was seen as a way to execute a transaction between a buyer and a seller. Today, purchasing function needs to be executed on broader level. This means connecting different partners and helping them come up to the mark (Shah, 2002). e-Procurement has a multi-layered body and is connected to auxiliary industries and distribution channels. For example, vehicle routing problems are part of general purchasing system (Emel, Taskin, & Deniz, 2004). These problems are also part of e-Procurement. Stanton and Stanton (2002) have created a model of Internet purchasing to show the link between personality, predisposition towards innovativeness, and adoption.

However, there is not an adequate solution in monetary value of face-to-face bargaining. Tomkins (2000) proposed the supply chain synthesis (SCS) which he claimed to be the next step to SCM. If SCS can be implemented, procurement activities throughout the supply chain can be streamlined. Raisch (2001) saw the future of SCM and e-Procurement as B2B marketplaces and stressed the importance of content management and community building. Bovet and Martha (2000) use the term “value net” as almost the equivalent of B2B e-marketplaces.

2.2.2 Value of e-Procurement

Varieties of benefits of B2B e-procurement have been reported as achieved or expected in the academic literature. Among different benefits the most common ones are transactional costs and buying price reduction, process shortening improvement of information exchange and control. Such benefits are grouped into taxonomies that include operational and strategic (Croom 2006). E-procurement has a far greater potential for cost savings and business improvements than online retailing or enterprise resource planning systems, and will permanently and fundamentally reform the way we do business in the future (Neef 2010).
Further, e-procurement, as well as other Internet technologies, provides recently unthinkable opportunities for efficient integration of supply chains. Thanks to their low acquisition and implementation costs, e-procurement technologies outperform similar functions of enterprise resource planning (ERP) applications in the cost of acquisition and speed of implementation, allowing even small businesses and highly fragmented industries to benefit from integrating into supply chains. Another important and frequently mentioned result of e-procurement implementation is shorter product development cycles rooted in the improvements of shorter order cycles, significant improvement in project management and team collaboration across supply chains and integrated information sharing across supply chains, allowed by e-procurement systems.

The shortening of product development cycles due to e-procurement practices is already evident in the U.S. automotive industry.

Hawking and Stein (2004) view e-procurement not only as a strategic player in the value chain but as a major driver in the extended supply chain. The use of e-equipment and systems improves quality, which in turn improves the level of output (Mukhopadhyay, 2007). This type of impact is mainly on the operational level and results in cost reduction, higher productivity and improved quality (Mukhopadhyay, 2008). Electronic commerce (e-commerce) tools provide the opportunity to enhance two elements of procurement process; communication and transaction aspects (Osloomebekor et al. 2002).

It has been confirmed that e-commerce tools and IT solutions have an influence on procurement-related processes. Companies have reported: Cost reduction (Croom and Johnston 2003, Davila et al. 2003, Lin and Hsieh, Radovisky and Hegde 2004, subramaniam and Show 2002); reduction in purchasing cycle time or order time (Davila et al. 2003, Lin and Hsieh, Radovisky and Hegde 2004); reduction in number of suppliers (Davila et al. 2003); increase in the number of products supplied by main suppliers (Muffato and Payaro 2004); inventory savings (Subramaniam and Show 2002); reduction of purchasing prices (Davila et al. 2003).
2.2.3E- procurement capability.

Growth in business-to-business e-commerce remains strong as information and communications technologies (ICTs) continue to transform organizations’ interactions with their suppliers and customers (Mullaney, 2003; European Commission, 2005a). For example, in 2004-2005 the proportion of Australian businesses placing orders via the Internet continued to increase (33%), growing by 2% from 2003-2004 (31%) (ABS 2006). Supply-side activities such as electronic procurement (e-Procurement) have been identified as a key area where information systems (IS)-enabled innovations are likely to yield significant benefits for organizations (European Commission, 2005b 2006, Laub, 2001).

Whist the drivers and potential benefits and transformations of e-Procurement are well documented, the ongoing impact of these changes on organizations is less well understood. Most organizations seek to improve procurement processes and reduce procurement costs; however, there are other motivations. Adoption profiles and reasons for adoption vary, as do the desired benefits (Williams and Morello 2004). For example, whilst there are similarities between public and private sector e-Procurement contexts in terms of deriving economic value and quality there are significant differences in terms of social welfare implications (Hardy and Williams, 2005).

ICT has sped up the pace of globalization and increased the complexity of business practices because firms do not only need to be familiar with their local context but also global developments. Thus, to compete in the knowledge economy, countries need a strong ICT-literate skills based that can innovate and adapt quickly to change (Kogilah et al, 2008). More value is placed on the knowledge; change and globalization are the driving forces of the new economy (Lin, 2009)

Jeyaraj et al. (2006) found that top management support to be one of the best predictors of organization adoption of Information System innovations. Top management can stimulate change by communicating and reinforcing. Organization size has been identified by Jeyaraj et al. (2006) as one of the best prediction of organization adoption of Information System innovations.
One way to estimate the value of a system is to quantify the improvements in the performance measures in some electronic terms. However, measuring and quantifying the impact on the immediate measures will provide more precise estimate of the value of the system (Kauffman and Kriebel, 2008, Mukhopadhyay, 2008), but require more detailed data at process level. The objective of electronic business strategy in procurement area is to provide purchasing managers with better control over their companies’ purchasing habits and relationships with suppliers (Croom and Johnston, 2003)

2.2.4 E-Procurement models

Throughout negotiations the procurement manager can further credibly guarantee the supplier a level of prompt payment, which was not possible prior to e-procurement, David Eakin (2002). Definitions of e-Procurement vary in both scope and depth; ranging from a narrowly defined technology-focused view through to a much broader business focused view. Most e-Procurement research studies place technology and applications center stage focusing on the adoption and implementation of specific technology solutions such as integrated catalogues, reverse auctions or marketplace systems.

Whilst such studies provide important insights into technology adoption they tend to investigate a limited range of procurement activities. Their focus is primarily on requisitioning (i.e. selection of products, authorization, order placement, and so on.) and the operational / transactional aspects of e-Procurement. The emphasis is on the use of technology to substitute or enhance transactional activities in order to gain operating efficiencies (Essig and Arnold 2001, Osmondbekov et al. 2002).

E- Business has drastically altered the ways in which firms interact with their suppliers (Phillips, 2003). Continued improvements in internet connectivity provide an opportunity to make procurement for goods and services more transparent and efficient (Carayannis and Popeau, 2005). Knudsen (2003) reminds researchers that e-procurement is not a single application but consists of many different tools. As organizations seek to enhance market efficiencies, six forms of e-procurement have been noted. Knudsen cites; e-sourcing, e-
tendering, e-informing, e-reverse auctions, e-MRO and web-based enterprise resource planning. Electronic commerce (e-commerce) tools provide the opportunity to enhance two elements of procurement process; communication and transaction aspects (Oslomebekor et al. 2002).

Neef (2010) said the obvious advantage for sellers is that they can create and maintain their own catalogues. The disadvantage to the system is that, because the storefront is a common portal, it has in the past been very difficult to integrate well with the buyer’s back-end financial systems. This makes life very difficult for the buyers, because nothing is automated from their point of view - they still have to locate the supplier’s website, log on, and enter orders manually through the catalogue web forms, which simply, because of volume, do not normally retain the buyer’s template or company purchasing information.

In many ways, these industry e-markets have advantage over horizontal or cross industry trading exchanges, in that the sponsors, as both buyers and (if manufacturers) sell themselves, will tend to reap a huge benefit from the efficient provision of suppliers to the industry. Many industry watchers contend that vertical industry online exchanges, based on their combination of industry knowledge and collaborative organization don’t even need to make profit in order for all participants to benefit (Botha et al, 2008). First, the buy side desktop requisitioning software enables employees to buy online. By hooking up the corporate intranet to supplier’s web based commerce sites, buy side software routes employee purchase requests internally before turning them into orders. Secondly, buy side centralized procurement solutions allow procurement managers and professional buyers to manage the process, analyze transactional data, and perform supplier management. Finally, sell side applications are solutions that help distributors or manufacturers sell products over the web. These applications often include tools for creating and maintaining electronic product catalogues, as well as transactional support for order entry from customer. Hong and Zhu (2006) suggest such network effects to be the “most influential drivers” for firms to adopt e-commerce applications.
Berger and Gattorna (2001) breaks e-procurement into three distinct processes, namely e-sourcing, which includes contracting, via e-auctions; e-requisitioning and e-intelligence, which is concerned with the collation of performance management information.

Wu et al (2007) explain that the need for conformity in networks leads to the brand-wagoning of many firms when they see a competitor apply the technology. Network forces can take many forms. Network effects may include the extent of adoption by other organizations in the network, and perception of their successes (Soares, Aguiar and Palma-Dos-Reis, 2008). These may also include industry standards, or policies that promote sharing and application of information.

2.25 Conceptual Framework
The study seeks to consider several variables and how they are related. The independent variable is e_procurement, in terms of its value of e_procurement, e_procurement capability and e_procurement models. The dependent variable is use of e_procurement. Figure 2.1 shows the conceptual framework relationship involving relationship of independent variables and dependent variable.

**Independent variable**
- Strategic value of e-Procurement
- e-Procurement capability
- e-Procurement models

**Dependent variable**
- Use of e-Procurement

*Figure 2.1: Conceptual Framework*
CHAPTER 3
3.0 RESEARCH METHODOLOGY

3.1 Research Design
Kombo and Tromp (2006) define research design as the structure of research. It shows how all the major parts of the research project work together to try to address central research questions. The researcher used descriptive survey design which provides a clear presentation of the variables under study. The design was suitable to establish the factors affecting use of e-procurement in firms. It emphasizes on quality in the collection and analysis of data and is to be used when collecting data using open-ended questionnaire.

3.2 Target Population
The population was chosen based on its suitability to provide information on most types of businesses such as hardware stores, pharmacies, supermarkets, consumer retail stores. The researcher collected information from Procurement Officers selected from the possible 105 Procurement Officers in all the selected firms.

3.3 Sample size and Sampling techniques
According to Kothari (2003), sampling is the process by which a relatively small number of individuals, objects or an event is selected in order to find out something about the entire population from which it was selected. Purposive sampling enabled the researcher to determine the composition of a sample by relying on various characteristics, thereby assisting the researcher to consider those firms which have implemented e-procurement in their systems in Kisii town. The researcher used a sample size of 30% of the target population translating into 32 firms from the 105 firms in the target population.

3.4 Data collection instruments
The researcher collected primary data by use of questionnaire, which is a set of questions, given to the respondents within the sample population to collect primary data. The questionnaires used had open and closed-ended questions; the tool had been chosen because it helps to collect numerous information over a short period of time, cheap and easy to administer. The questionnaire was suitable due to it being standard.
3.5 Data collection procedure

The researcher collected primary data from 32 Procurement Officers in the firms sampled in Kisii town on the factors affecting use of e-procurement in firms using semi-structured questionnaire. Respondents were assured of confidentiality of information provided. The data was collected by the researcher to enhance commitment and contact with respondents having been given ample time of two weeks to respond to the questionnaire items. The researcher made follow-up calls to ensure effectiveness of filling of questionnaires thereby clarifying questions which might have arisen.

3.6 Pilot test

To establish the reliability of questionnaire, the researcher used pre-test involving test-re-test on the sample. The questionnaires was administered to five non-sampled target population perceived to be knowledgeable in procurement issues, after two weeks the same questions were given to them again and the scores recorded in each case.

3.7 Data processing and analysis

The researcher used descriptive statistical techniques including a summary of findings in form of charts, tables and graphs from coded numbers and percentages. This was done after checking the filled questionnaires to establish consistency of the data to enhance sorting out those with no responses. Such a technique allowed inferences to be made that could be corroborated using other methods of data collection. The data was then analyzed using descriptive statistics involving frequencies and percentages.

CHAPTER 4

4.0 DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents results of data analysis and findings of the research. The presentation begins with background information results followed by analysis of the relationship between e-procurement and the explanatory variables: Value of e-procurement; e-procurement capability and e-procurement models.
4.2.0 Background information

4.2.1 Response rate

Table 4.1: Response rate

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual response</td>
<td>30</td>
<td>94</td>
</tr>
<tr>
<td>Non-response</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>32</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 4.1 above, the researcher issued a total of 32 questionnaires to the potential respondents. Two questionnaires or 6% were not responded to while 30 questionnaires or 94% were properly completed. According to Mugenda and Mugenda (2003), a response of above 50% is adequate enough to represent a phenomenon under investigation. The response rate of this study was therefore sufficient for the investigation.

4.2.2 Respondents’ age group

The research findings revealed that of the thirty respondents, two respondents or were aged under 25 years; thirteen respondents aged between 25 years and 35 years or 43%; twelve respondents aged between 36 years and 45 years or 40% and three respondents are in the age over 45 years or 10%, as shown in the figure 4.1 below:

Figure 4.1: Respondents’ age group

4.2.3 Respondents’ level of academic qualification

The findings on the highest academic levels showed that 2 respondents or 7% were Form 4; 4 respondents or 13% have Certificate qualification, 10 respondents or 33% have Diploma...
qualifications and 14 respondents or 47% have Degree qualifications as displayed in figure 4.2:

Figure 4.2: Respondents’ level of academic qualification

### 4.2.4 Respondents’ length of time in procurement process

The research findings showed that majority or 63% of respondents have worked in procurement process for less than 5 years while 37% of respondents have worked in procurement process between 5 years and 10 years. There rest of the age groups above 10 years had none. The following figure 4.3 shows respondents’ length of time in procurement process:

Figure 4.3: Respondents' length of time in procurement process
4.2.5: Response on mode of procurement mainly used in the firm

The study established that many firms mainly use traditional procurement method. This was mentioned by 77% of respondents while 23% of them mainly use e-procurement as shown in figure 4.4:

![Figure 4.4: Response on mode of procurement mainly used in the firm](image)

4.3.0: Value of e-Procurement

4.3.1: Response on trend in business management is towards e-Procurement

The researcher found out that majority of respondents agreed with statement that trend in business management is towards e-procurement with 87% of respondents while just 13% of the respondents disagreed with the statement.

![Figure 4.5: Response on trend in business management](image)
4.3.2 Rating on value of e-procurement

Table 4.2: Rating on value of e-procurement

<table>
<thead>
<tr>
<th>Statement</th>
<th>SA (F%)</th>
<th>A (F%)</th>
<th>N (F%)</th>
<th>D (F%)</th>
<th>SD (F%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-time delivery</td>
<td>15 (50)</td>
<td>10 (33)</td>
<td>2 (7)</td>
<td>3 (10)</td>
<td>0 (0)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Low procurement cost</td>
<td>20 (67)</td>
<td>4 (13)</td>
<td>2 (7)</td>
<td>3 (10)</td>
<td>1 (3)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Wide supplier sourcing</td>
<td>16 (53)</td>
<td>6 (20)</td>
<td>5 (17)</td>
<td>3 (10)</td>
<td>1 (3)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>Improved supplier relationship</td>
<td>13 (40)</td>
<td>10 (33)</td>
<td>3 (10)</td>
<td>4 (13)</td>
<td>1 (3)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>High profitability</td>
<td>18 (60)</td>
<td>9 (30)</td>
<td>1 (3)</td>
<td>2 (7)</td>
<td>0 (0)</td>
<td>30 (100)</td>
</tr>
<tr>
<td>High competitiveness</td>
<td>14 (47)</td>
<td>8 (27)</td>
<td>3 (10)</td>
<td>4 (13)</td>
<td>1 (3)</td>
<td>30 (100)</td>
</tr>
</tbody>
</table>

Key: SA: Strongly Agree; A: Agree; N: Neutral; D: Disagree; SD: Strongly Disagree.

Respondents majorly felt that e-procurement leads to on-time delivery given that 50% strongly agreed and 33% agreed. On the other hand 10% of respondents disagreed while 7% of them remained neutral. As concerns the statement that e-procurement leads to low procurement cost, a large number of respondents or 67% strongly agreed; 13% agreed; 7% remained neutral; 10% disagreed and 3% strongly disagreed. Respondents generally confirmed the statement that e-procurement leads to wide supplier sourcing with majority or 53% strongly agreeing while 20% agreed. Contrarily, 10% of respondents disagreed while 3% strongly disagreed with the rest or 17% remaining neutral. Majority of respondents or 40% strongly agreed and 33% of respondents agreed that e-procurement contributes to improved supplier relationship. Otherwise, 13% and 3% of respondents disagreed and agreed, respectively. Ten percent of respondents remained neutral. Many respondents or 60% strongly agreed and 30% agreed that e-procurement results in high profitability. Else, 7% of respondents and 3% disagreed and remained neutral, respectively. Finally, a large number of respondents of 47% strongly agreed that e-procurement leads to high competitiveness of firms with 27% agreeing. The rest of respondents were distributed as follows: 13% disagreed; 3% strongly disagreed and 10% remained neutral.
4.4.0: E-procurement capability

4.4.1: Response on the number of computers

![Figure 4.6: Response on number of computers](image)

The finding revealed that majority of the firms between 10 and 30 computers, expressed by 50% of respondents. Otherwise, 33% of respondents expressed that their firms have over 30 computers while the lowest percentage of 17% mentioned that their firms possess less than 10 computers, as shown on figure 4.5 above.

4.4.2: Rating on e-procurement capability

**Table 4.3: Rating on e-procurement capability**

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhances procurement success</td>
<td>19</td>
<td>63</td>
<td>5</td>
<td>17</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>In-house skilled IT personnel</td>
<td>8</td>
<td>27</td>
<td>11</td>
<td>37</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td>skills not available in Kenya</td>
<td>3</td>
<td>10</td>
<td>8</td>
<td>27</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>IT technology is complex</td>
<td>15</td>
<td>50</td>
<td>4</td>
<td>13</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Latest IT technology used</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Staff sponsored for IT courses</td>
<td>7</td>
<td>23</td>
<td>10</td>
<td>33</td>
<td>8</td>
<td>37</td>
</tr>
</tbody>
</table>

**Key- SA:** Strongly Agree; **A:** Agree; **N:** Neutral; **D:** Disagree; **SD:** Strongly Disagree.
Respondents largely strongly agreed that e-procurement leads to success of a firm, at 63% while 17% agreed, as well. Seven percent disagreed with 13% choosing to remain neutral. Twenty seven percent of respondents strongly agreed and 37% agreed that in-house skilled IT personnel is available in the firms while 13% and 3% disagreed and strongly disagreed, respectively, the rest or 17% chose to remain neutral. Majority of respondents strongly disagreed and 10% disagreed that IT skills are not easily available in Kenya. In contrary, 10% strongly agreed, 27% agreed and 13% were neutral. Respondents confirmed that IT technology is complex as follows: majority or 50% strongly agreed; 13% agreed, 7% neutral; 30% disagreed and 3% strongly disagreed. As concerns the statement that latest IT technology used by firms, a large number or 67% of respondents strongly disagreed, 17% disagreed, 10% neutral, 10% agreed and 3% strongly agreed. On the issue of staff being sponsored for IT courses, most of respondents chose to remain neutral while 23% strongly agreed and 33% agreed. The rest of the respondents were distributed as follows: 13% disagreed and 3% strongly disagreed.

4.5.0 E-procurement models

4.5.1 Response on e-procurement processes mostly used in organization

The study established that all the procurement processes are used by firms: 13% of respondents identified e-tendering, 61% of respondents mentioned e-sourcing, 7% for invoicing and 19% of respondents for e-invoicing. This is shown in figure 4.7 below.

![Figure 4.7: Response on e-procurement processes mostly used in organization](image-url)
4.5.2: Respondents’ familiarity with e-procurement models.

Figure 4.8: Respondents’ familiarity with e-procurement model

Figure 4.8 shows that 20% of respondents were familiar with sell-side, 30% of respondents were familiar with buy-side and 17% of respondents were aware of online trading communities. The rest of respondents or 33% were familiar with none. Clearly, most of respondents were familiar with all the three e-procurement models though majority is familiar with none of the models.

4.5.3: Rating on e-procurement models

Table 4.4 Rating on e-procurement models

<table>
<thead>
<tr>
<th></th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Suppliers lack websites</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>20</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>47</td>
<td>6</td>
<td>20</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global market place accessible</td>
<td>3</td>
<td>10</td>
<td>4</td>
<td>13</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>50</td>
<td>2</td>
<td>7</td>
<td>1</td>
<td>3</td>
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<td></td>
<td>30</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Takes long time to implement</td>
<td>6</td>
<td>20</td>
<td>17</td>
<td>57</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>41</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>30</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhances procurement success</td>
<td>4</td>
<td>13</td>
<td>21</td>
<td>70</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7</td>
<td>2</td>
<td>7</td>
<td>0</td>
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</tr>
<tr>
<td></td>
<td>30</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Give accurate prices of goods</td>
<td>20</td>
<td>67</td>
<td>8</td>
<td>27</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
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<td>1</td>
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<td>0</td>
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<tr>
<td></td>
<td>30</td>
<td>100</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Key- SA: Strongly Agree; A: Agree; N: Neutral; D: Disagree; SD: Strongly Disagree.
Many respondents disagreed that most suppliers lack websites; 20% strongly disagreed and 47% disagreed while 3% strongly agreed and 20% agreed. The remaining respondents or 10% chose to be neutral. On the issue of global market place accessible, respondents decided as follows: 10% strongly agreed, 13% agreed, 20% neutral, 50% disagreed and 7% strongly disagreed. E-procurement takes a long time to implement was supported by 20% of respondents who strongly agreed and 57% who agreed. Otherwise, 13% of respondents agreed, 3% strongly disagreed and 7% decided to be neutral. Majority of respondents or 70% agreed that e-procurement models enhance procurement success with 13% of them strongly agreeing. On the other hand, an equal number or 7% of respondents disagreed and strongly disagreed. Only 3% of respondents chose to remain neutral. A great number of respondents or 67% and 27% strongly agreed and agreed, respectively while 3% of respondents both disagreed and remained neutral.

4.6 Response on other factors that affect use of e-procurement

The respondents identified two other factors which affect use of e-procurement: cost of implementing e-procurement and organizational culture at 33% and 27%, respectively, the rest 40% remained non-committal. Some of the reasons mentioned included high cost of acquiring IT tools and IT personnel and employees’ resistance to change.

Figure 4.9 Response on other factors that affect use of e-procurement
CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of findings

The general research objective was to establish the factors affecting use of e-procurement in firms in Kisii County.

The response rate was 94% which is viewed as sufficient to conduct the study. The study established that many of the procurement officers lie in the age group of between 25 years and 35 years. The respondents’ highest academic level was mainly degree and that majority of the respondents had stayed in in procurement process for a short time of less than 5 years. The period of stay by respondents is too short to gain advantage of experience in discharging their duties in procurement processes.

The research objective one was to find out if value of e-procurement affects use of e-procurement in firms. The tally from the data collected indicated that the value of e-procurement affects use of e-procurement in firms being that majority of respondents strongly agreed with the statements. The finding agrees with Lysons and Gillingham (2003) assertion that firms have made considerable gains as a result of having electronic integration system installed. This is because the use of internet and technology based systems in procurement has led to lower costs and efficiency in the process. The study found out that the benefits above normally drive managers of firms to invest in e-procurement thereby realizing cost saving, improved quality, better relationship with supplier thus registering high profitability.

The research objective two was to determine if e-procurement capability affects use of e-procurement. The findings confirmed that e-procurement capability is an important determinant of use of e-procurement. This was evident in the strong agreement by majority of respondents. This is in agreement with Kauffman and Kriebel (2008) that the contribution of IT systems depends on other resources, such as people and investments in associated processes.
The research objective three was to establish if e-procurement models affect use of e-procurement. It was confirmed that e-procurement model is a possible factor which affects use of e-procurement. The tally indicated a strong agreement by majority of respondents. This is supported by Hong and Zhu (2006) that applications or network effects often include tools for creating and maintaining electronic product catalogues, as well as transactional support for order entry from customer are meant to be the “most influential drivers” for firms to adopt e-commerce applications.

5.2 Conclusion
The study was conducted to establish the factors affecting use of e-procurement in firms; the factors considered having been value of e-procurement, e-procurement capability and e-procurement models. Based on the findings, it was concluded that value of e-procurement affects use of e-procurement being a driving force in use of e-procurement in terms of on-time delivery, reduced cost of procurement, wide source of suppliers, improved buyer-supplier relationship, high profitability and increased firms’ competitiveness.

The research finding clearly revealed that e-procurement capability affects the use of e-procurement. This was evident in the low staff knowledge in basic ICT, insufficient in-house skilled IT personnel, unavailability of IT skills in Kenya and that it takes time to implement e-procurement. The firms therefore do not fully use e-procurement due to the technical aspect and huge cost involved.

The research finding indicates that use of e-procurement is also affected by e-procurement models in a firm. In fact, e-sourcing is the the main e-procurement process known by respondents and model type predominant being buy-side one-to-many model. This implies that use of e-procurement is still low and as such limited supplier sourcing contributing to few benefits to such firms.

5.3 Recommendation
Based on the establishment of factors affecting use of e-procurement in firms, the researcher came up with the following recommendations; individual firms should optimize benefits of e-
procurement by increasing the proportion of expenditure on e-procurement by widening the scope of supplier sourcing thereby justifying use of e-procurement, firms need to increase the e-procurement capability in terms of IT expertise and IT infrastructure injecting regular upgrading of IT system and management of firm to expand the use of e-procurement by incorporating most of e-procurement processes as well as all e-procurement models. The researcher recommends that firms to expand e-procurement models put in use by firms in order to optimize the benefits of e-procurement.

5.4 Suggestion for further research
This study was centered on firms operating in Kisii town, Kisii County which is a small region in Kenya. The researcher proposes that similar studies be conducted in other major towns or county headquarters in the entire country to ascertain the factors affecting use of e-procurement as well as stimulate level of investment in e-procurement.
In addition, studies should be conducted to assess the level of use of e-procurement in government institutions to consolidate Public Private Partnerships in Kenya.
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Appendix

DEFINITION OF TERMS

Firm: A basic unit of decision making which transforms resources into goods and services for sale to consumers with a view to making profit.

E-Commerce: Exchange of goods and services by individuals or organizations through electronic means.

Electronic Data Exchange (EDI): A programme where businesses exchange information by use of computers.

E-Procurement: Usage of the internet to operate the transactional aspects of requisitioning, authorizing, ordering, receipting, and payment processes of the required services or products (Baily et al., 2010)

Enterprise Resource Planning (ERP): Creating and approving purchasing requisitions, placing purchase orders and receiving goods and services by using a software system based on internet technology.

IT: Is the acquisition, processing, storage, and dissemination of vocal, pictorial, textual, and numerical information by micro-electronic based combination of computing and telecommunication (Adelman, C., 2000)

IT infrastructure: The hardware, software, and all the related network which enables both forward and backward linkages of the IT systems (Rodgers, 2003)

Supply chain: Network of retailers, distributors, transporters, storage facilities and suppliers that participate in the sale, delivery and production of a particular product (www.investorwords.com)
<table>
<thead>
<tr>
<th>ABBREVIATIONS</th>
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<tbody>
<tr>
<td>ADB</td>
<td>African Development Bank</td>
</tr>
<tr>
<td>APEC</td>
<td>Asian-Pacific Economic Cooperation</td>
</tr>
<tr>
<td>B2B</td>
<td>Business-to-Business</td>
</tr>
<tr>
<td>B2C</td>
<td>Business-to-Consumers</td>
</tr>
<tr>
<td>CIPS</td>
<td>Chartered Institute of Purchasing and Supplies</td>
</tr>
<tr>
<td>DRC</td>
<td>Democratic Republic of Congo</td>
</tr>
<tr>
<td>e-GP</td>
<td>Electronic Government Procurement</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic Data Interchange</td>
</tr>
<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
</tr>
<tr>
<td>ICT</td>
<td>Information Communication Technology</td>
</tr>
<tr>
<td>IS</td>
<td>Information System</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
</tr>
<tr>
<td>MRO</td>
<td>Maintenance Repairs and Operating</td>
</tr>
<tr>
<td>MRP</td>
<td>Materials Requirement Planning</td>
</tr>
<tr>
<td>NeRPA</td>
<td>National e-Procurement Research Project Australia</td>
</tr>
<tr>
<td>NIE</td>
<td>Newly Industrialized Economies</td>
</tr>
<tr>
<td>OPEC</td>
<td>Organization of Petroleum Exporting Countries</td>
</tr>
<tr>
<td>SaaS</td>
<td>Software as a Service</td>
</tr>
<tr>
<td>SCM</td>
<td>Supply Chain Management</td>
</tr>
<tr>
<td>SCS</td>
<td>Supply Chain Synthesis</td>
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