EFFECT OF ELECTRONIC PROCUREMENT ON PERFORMANCE OF UNITED NATIONS AGENCIES IN NAIROBI: A STUDY OF SELECTED UN AGENCIES IN NAIROBI

BY

AGNES OKWAR WAGANDA

UNITED STATES INTERNATIONAL UNIVERSITY - AFRICA

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A Research Project Report Submitted to the Chandaria School of Business in Partial Fulfillment of the Requirement for the Degree of Master of Organizational Development (MOD)

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STUDENT'S DECLARATION

I, the undersigned, declare that this is my original work and has not been submitted to any other college, institution or university other than the United States International University in Nairobi for academic credit.

Signed: _____   **Date:** _____

        Agnes Waganda (ID No: 622011)

This research project report has been presented for examination with my approval as the appointed supervisor.

Signed: _____   **Date:** _____

Prof. Peter M. Lewa

Signed: _____   **Date:** _____

Dean, Chandaria School of Business

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ABSTRACT

The purpose of this study was to examine the effect of Electronic Procurement (E-Procurement) on the performance of the procurement function of UN Agencies in Kenya. The study sought to answer the following research questions: What is the influence of e-tendering on performance of UN Agencies in Nairobi? What is the influence of e-auctioning on performance of UN Agencies in Nairobi? What is the influence of e-invoicing on performance of UN Agencies in Nairobi? What is the influence of e-sourcing on performance of in UN Agencies in Nairobi? It is hoped the result of this study will enable the Agencies to increase their competitiveness.

The study used exploratory research design seeking to unveil the effect that E-procurement has on organizational performance of UN Agencies in Kenya, more specifically in UNICEF, WFP, UNSOA and UNON. Primary data was collected by use of semi-structured questionnaires that were self-administered to the respondents. Secondary data was collected by use of journal publications, government reports and UN reports. The target population was drawn from UN Agencies in Nairobi. From the population of procurement managers and staff of the department, the researcher purposively selected 15 respondents from each agency, thus giving sample total of 60 respondents. Data was analysed using SPSS version 2.0. The analysed data was interpreted and presented in frequency tables, bar charts, graphs and pie charts. Regression analysis was done so as to test the relationship between the independent variables and dependent variables.

The study found that there exists a positive association of e-sourcing to performance of UN Agencies in Nairobi. This positive association suggests that when one increases, performance of UN Agencies in Nairobi increases.The study concludes that E-tendering, E-auctioning, E-invoicing and E-sourcing are statistically significant and influences performance of UN Agencies in Nairobi. The study findings reveal that majority of the respondents indicated that e-tendering process influences performance of procurement function in the organization to a great extent. Majority of the respondents were neutral as to whether e-auctioning process influences performance of procurement function in the organization. Majority of procurement officers agreed to statements that: E-auctions provide buyers and sellers an open environment. The respondents agreed to a great extent that e-invoicing process influences performance of procurement function in the organization. Specifically, majority of procurement officers strongly agreed to statements that: Through

the reduction in use of papers it offers environmental benefits. Through the process of e-sourcing there has been timely delivery of goods and services to user departments are statements regarding e-sourcing process and performance of UN Agencies in Nairobi.

The study recommends that UN Agencies in Nairobi should use a joint policy in the establishment of similar systems of selecting and issuing tenders as a standard procedure to ensure high levels of performance. UN Agencies in Nairobi should be encouraged to use electronic reverse Auctions as an e-sourcing tool to achieve greater savings, and also the greater transparency. The study recommends that all UN Agencies in Nairobi should automate the practice of invoicing so as to promote transparency and record management since it will be easier to track records or identify payments to be made to suppliers. There is need to conduct a similar study in other organizations in an attempt to compare the findings. There is also need to conduct a study on the challenges facing implementation of e-procurement in organizations.

ACKNOWLEDGEMENT

DEDICATION

I dedicate this research paper to my family, UN Colleagues from different Agencies based in Nairobi for their support during the study and preparation for the project. My dedication also goes to research supervisor and MOD colleagues whom I consulted from time to time.

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LIST OF ACRONYMS AND ABBREVIATIONS

AMISOM - African Union Mission to Somalia

ICT - Information Communication Technology

MOD - Master of Science in Organizational Development

UN - United Nations

UNICEF - United Nations Children's Fund

UNON - United Nations Office at Nairobi

UNSOA - United Nations Support Office for Africa Mission for AMISOM

WFP - World Food Programme

WTO - World Trade Organization

1.0 INTRODUCTION

1.1 Background to the Study

E-procurement has recently gained dominance in many organizations worldwide due to technological advancements which have made business operations easier, faster and more efficient in today's competitive global village. It encompasses all activities involved in obtaining goods and services and managing their inflow into an organization toward the end user through the internet (Lee et al, 2007). It also refers to the use of internet-based system to carry out individual or all stages of procurement process, including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Croom and Brandon, 2004). This has been facilitated by the growth in information and communication technology which has led to electronic commerce, commonly referred to as e-commerce. The growth in e-commerce has been significant in the adoption of new supply chain-related technology and applications by organizations globally. Like other functions embraced by e-commerce, the procurement function has positively been impacted with a predicted growth in e-procurement applications covering both transactional buying and strategic sourcing activities (Greunen et al., 2010).

The emergence of the internet as a means of doing business has served as a medium for major changes in the operation and status of organizational procurement. It is evident that ICT has totally transformed the way organizations and governments operate (Nelson et al., 2011). Nelson noted that the majority of organizational expenses consist of money used to purchase various products and services, and in order to decrease the total costs spent on purchasing process, internet technologies are used. Consequently, e-procurement has become popular to implement by governments and enterprises alike. Although the opportunities for improvement in e-procurement seem to flourish, both private and public sector organizations are still guarded as far as the adoption of electronic technologies is concerned (Klein, 2010).

It is now evident that among the electronic technologies that have revolutionized organizational processes in the last decade is e-procurement and there is growing interest in the adoption of e-procurement by both private and public sector organizations. However, this interest has faced reservations considering e-procurement is a recent phenomenon

(Hamner et al., 2009). There is no doubt that the use of the internet in e-procurement provides several advantages over earlier inter-organizational tools. E-procurement systems aid in reducing transaction costs by automating processes, thus replacing human labor with information technology (Hawking et al., 2010). Hossein et al. (2014) found that the emergence of internet meant that companies started turning their procurement activities towards internet since it would benefit them if all procurement processes are carried out correctly, efficiently and properly. In essence, e-procurement has the capacity to act as an integrative technology that enables integration and improvement of processes between departments. Flynn et al. (2010) define internal integration as the degree to which two departments collaborate in the management of both inter and intra departmental processes to provide maximum value for the firm. Researchers have argued that internal integration of various activities in an organization has the ability to enhance economic performance.

In Kenya, just like other countries the world over, businesses are embracing the technological applications and use of ICT tools to ensure that their business dealings and operations are made faster, convenient, easier, reliable, and operational across business hours and beyond (Jesse, 2013). For instance, both small and large organizations have embraced ICT and their business environment is thriving because of positive adoption and implementation of e-procurement (WTO, 2013). This is because in comparison to traditional procurement, the use of e-procurement reduces the cost per transaction by 65% (Davila, Gupta & Palmer, 2003). Moreover, companies using e-procurement system reported that they achieve saving up to 42% in purchasing transaction cost as a result of less paperwork, which enabled transaction processes to be less prone to errors, leading to more efficient purchasing (Flynn et al., 2010).

The United Nations (UN) is an intergovernmental organization founded in 1945 to promote peace, order and international cooperation amongst nations following the devastating effects of WWII. The UN is headquartered in Manhattan, New York USA and currently has 193 sovereign members with equal representation in its General Assembly. The UN operates over 20 agencies to fulfill its mandate. Among the best known agencies are WHO, FAO, ILO, UNEP, UNICEF, UNESCO, UNHCR, IFAD, IAEA, WFP and the World Bank Group. Two of the agencies namely UNEP and HABITAT operate at the UNON Office based in Nairobi.

Being a public organization, the UN gets its funding from member states (funded by tax payers' money) with the US being the largest contributor accounting for 22% of the UN annual budget of $ 8 billion. Like other public organizations' procurement approval, all UN procurement activities are undertaken under the authority of the UN Charter. UN procurement activities are regulated by UN Financial Regulations approved by the UN General Assembly. Under the guidance of UN Secretary General, the Principal Officer of UN, are procurement staff who are responsible for purchase of goods and services for use by the secretariat and field agencies.

Under Financial Regulations are detailed promulgations outlining how the procurement should be carried out. For instance, Financial Regulation 5.12 stipulates that the UN obtains high quality goods, services and works that meet the criteria of competitive prices and delivery within the time frame required in order to achieve the mandates of user organization. In order to streamline and standardize procurement procedures, UN has outlined the following best value for money procurement principle to guide procurement staff: when procuring goods and services, procurement staff should ensure that optimal outcome has been achieved taking into consideration the cardinal factors of costs, benefits, risks, and resources available.

For many years in the UN system, the procurement function was considered a mere transaction-oriented back office function that more often than not was fragmented and managed in a haphazard manner. But things took a turn for the better between 2014 and 2015 as total procurement volume of UN and its agencies took a significant leap to $ 18 billion from $ 11 billion two years earlier. It dawned and became evident that procurement needed to be recognized and assigned prominence in order to manage such large financial commitments. It is significant to note that out of the total UN procurement budget, over $ 1 billion representing 13% were goods and services for use in Africa with Kenya taking a staggering 40% of Africa's total in 2015.

According to Hawkinget al. (2008), procurement of goods and services represents the single largest cost item for any given enterprise since for each revenue a company earns on the sale of a product more capital is spent on the procurement of materials and services to support the business's operations than on all other expense items combined (Hawking et al., 2010). In recent past, there has been increased adoption and usage e-procurement in major procurement functions of United Nations Agencies. The adoption of e-procurement

in UN Agencies could be influenced by several factors, besides that of integrating the buyer in the procurement system within the organization in a bid to procure the right products, at the right price from the right supplier in addition to accountability in the organization expenditure. The potentials of e-procurement have already been proven in a number of studies (Aberdeen, 2001). According to these studies, e-procurement enables companies to decentralize operational procurement processes and centralize strategic procurement processes as a result of the higher supply chain transparency provided by e-procurement systems (Puschmann & Alt, 2005). However, there is limited empirical literature on the impact of e-procurement on performance of UN Agencies.

1.2 Statement of the Problem

Adoption of e-procurement plays a significant role in improving the effectiveness and efficiency of organizations' procurement functions. Procurement department could contribute tremendously to the organization's vision and the bottom line if it adopts proper technologies. Technology adoption helps procurement department to buy all that is required in the organization at the right time, price, place, quantity and quality for all departments and users within the organization. An organization could derive great benefits from e-procurement and thus be able to serve their customers (both internal and external) better. On the other hand,, if the procurement department is inefficient in its acquisition of goods and services or even works, other departments would be adversely, sometimes severely affected. Adoption of e-procurement could make it easier, faster and less expensive to purchase the goods and services which the organization needs.

In the United Nations Conference on Trade and Development (UNCTAD, 2003) report, which is a background paper on development and issues on e-commerce and information and communications technologies, it was reported that effective e-procurement execution when buying goods and services in companies yields savings up to 30 percent and decline of transaction expenses by up to 25 percent. Steinberg's (2003) did a study on the implementation of e-procurement in state corporations in Britain agreed that, although different governments are calling for public sector agencies to embrace e-procurement, there do not seem to be a streamlined execution of e-procurement, and the success rates in its implementation have been less than dramatic, as backed by the assertion that "Government e-Procurement projects have been notoriously unsuccessful". A study by Stein (2009) found that adaptation of information technology within state agencies has had

an impact on the enhancement of the provision of services by 40%, and as such, the necessity to improve the effectiveness of service provision by the adoption of a well-coordinated automated operation. The execution of the procurement function, which is important to the procurement of materials necessary for the provision of services, has been hindered by the use of traditional, exhausting techniques.

Locally, Korir (2009) looked into the obstacles that the Kenyan public sector among a few government ministries had to deal with in the execution of e-procurement. The researcher discovered poor IT systems, insufficient financing, lack of political will to be the major obstacles. Productivity of most public institutions in Kenya is very low, although they continuously take in an extreme share of the budget and most of it goes to procurement which is not fully automated (GoK, 2011). These studies did not explore the adoption of e-procurement in UN agencies or any other international bodies.

Although several studies have been done on e-procurement and performance such as those by Orori (2011), Njoroge (2010), Mburu (2011), Noor, Wario and Iravo (2013); Masheti (2016), Avedi (2016), Ndiiri (2016), Chesire and Kimutai (2015), Rutto (2016), and Kipngeno and Okello (2015) among others attained their objectives, they did not delve into effect of e-procurement on performance of UN Agencies. There is scarcity of published works on e-procurement and performance of UN Agencies particularly in the context of developing countries in the dynamic African region, and more specifically in Kenya. Hence this study attempted to establish effect of e-procurement on performance of UN Agencies intending to bridge this gap in knowledge that exists. The study focused on selected UN Agencies in Nairobi.

1.3 Purpose of Study

The purpose of this study was to determine the effect of e-procurement on performance of United Nations Agencies in Nairobi.

1.4 Research questions

1.4.1 What is the effect of e-tendering on performance of UN Agencies in Nairobi?

1.4.2 What is the effect of e-sourcing on performance of UN Agencies in Nairobi?

1.4.3 What is the effect of e-invoicing on performance of UN Agencies in Nairobi?

1.4.4 What is the effect of e-auctioning on performance of UN Agencies in Nairobi?

1.5 Significance of the Study

The study is of importance to the following stakeholders:

1.5.1 United Nations Agencies

The study will be of value to United Nations Agencies in Kenya as well as foreign based agencies seeking to adopt e-procurement. The study will help in appreciating the role of e-procurement in UN Agencies in Nairobi as a way of achieving organizational performance. In addition, it will help to ascertain the need, and to re-orient the strategic choices of the agencies in order to turn them into sustainable entities while delivering on their core mandate of offering services to the public through technology adoption. Furthermore, findings from the study will equally enable managers to formulate e-procurement policies that will ensure a positive impact on strategic performance of organizations/agencies.

1.5.2 Other Agencies

The findings of the study will highlight the importance of e-procurement for adoption by other UN agencies outside Nairobi. In so doing, the agencies will benefit from effective competitive strategies to enable them keep abreast with the dynamics of digital environment for them to stay relevant and competitive in their operations.

1.5.3 Academicians / Researchers

The study will also be of value to academicians and other researchers in the field of procurement in general and e-procurement in particular. They may use the results of this study as a basis for further research in the form of secondary data to enhance future studies in support of digitization. In addition, the results of the study may facilitate the work of individual researchers to identify gaps in the current research and carry out further in-depth research in those areas.

1.6 Scope of the Study

The study was carried out in selected UN agencies that use e-procurement in undertaking their procurement function. The objective of this research was to determine the effect of e-procurement on performance of UN agencies taking into consideration the following four factors namely e-tendering, e-auctioning, e-invoicing and e-sourcing. The study population will be drawn from the four UN agencies in Nairobi. These agencies were UNICEF, WFP, UNSOA and UNON. The research study covered the period September 2017 to July 2018.

1.7 Definition of Terms

1.7.1 E-Procurement

This is the use of information and communication technologies to carry out individual or all stages of the procurement process which include sourcing, negotiation, ordering, receipt and post procurement review leading to significant reduction in both cost and time (Croom and Brandon, 2004).

1.7.2 Performance

Measuring the results of a firm's policies and operations in monetary and non-monetary terms. These results are reflected in the firm's efficiency, effectiveness, quality services, dematerialization and value creation (Rubambey, 2002).

1.7.3 E-tendering

A procedure of supplier or contractor selection in order to find a competent supplier using internet based ICT infrastructures or on the basis of electronic transaction through the internet and is expected to reduce face to face transaction as well as collusion (Vaidya *et al.,* 2006)

1.7.4 E-auction

An online, real-time auction between a buying organization and two or more invited suppliers, where suppliers can submit multiple bids during the time period of the auction, and where some degree of visibility exists among suppliers regarding the actions of their competitors. (Carter *et al*., 2003)

1.7.5 E-invoicing

This is the document that defines and ultimately leads to payment. E-procurement should be capable of accepting and processing electronic invoices for those suppliers who do not have systems that automatically generate electronic invoice; besides, it should provide an easy means of online creation either through a supplier portal or document scanning (Brun, 2007).

1.7.5 E-Sourcing

This involves buyers searching for suppliers using internet technology (Knudsen, 2003)

1.8 Chapter summary

The chapter commenced by giving an overview of e-procurement with its numerous advantages to businesses all over the world. In the era of globalization, e-procurement has resulted in increased competitiveness in many industries including the retail industry. It enhances transparency, efficiency and accountability and aims to improve market access and fair competition. It also improves the efficiency of procurement processes; supports the process of monitoring and auditing; and meets the needs of real-time information access. Therefore, in a bid for UN agencies to differentiate themselves and keep up with the growing trends both locally and internationally, this platform should be embraced as an important corporate business strategy. In conclusion, this chapter started with the background to the study, then the statement of the problem, objectives of the study, research questions, and significance of the study, scope of the study and the definition of key terms. The chapter has indicated the purpose and the scope of the study and it has discussed in details the beneficiaries of the study. Chapter two discusses the literature review, while chapter three explains the research methods that was adopted for the study. Chapter four presents the study findings, and chapter five offers the study summary, discussions, conclusions and the study recommendations

<center>**CHAPTER TWO**</center>

2.0 LITERATURE REVIEW

2.1 Introduction

The previous chapter examined the background to the study, then the statement of the problem, objectives of the study, research questions, and significance of the study, scope of the study and the definition of key terms. This chapter covers the literature review of the existing research literature on the effect of e-procurement on organizational performance. In specific the chapter discusses the effect of e-tendering, e-auctioning, e-invoicing and e-sourcing, and e-procurement in its entirety on organizational performance and concludes with chapter summary.

2.2   Effect of E-tendering on Performance of Organizations

E-tendering is part of e-procurement. Procurement refers to the use of internet-based (integrated) information and communication technologies (ICTs) to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Muhia & Afande, 2015). Procurement is one department that can contribute tremendously to the organization's efficiency and effectiveness if managed properly. If the procurement department bought all that is required in the organization at the right time, price, place, quantity and quality all other departments within the organization would derive great benefits from this and would thus be able to serve their customers (both internal and external) better (Kauffman and Kriebel, 2010). If, however, the procurement department is inefficient in its acquisition of goods and services or even works, other departments would be adversely affected and sometimes the consequences can be grave.

2.2.1   E-tendering Technology on Performance of Organizations

According to Roma and McCue (2012), e-procurement is the application of information technology with a view to creating a procurement process which satisfies the dynamics within the environment. At one point or the other, all countries will embrace the electronic procurement concept. Specifically, in the public sector, e-procurement is driven by social, cultural and political factors (Garran, 2005). Implementation of e-procurement in public procurement requires resources and specialized skills. In addition, the process requires a well-coordinated change management system and training program (Garran, 2005). It is also important to put into place practices, processes and systems for the implementation of e-

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procurement (Vaidya, Sajeev & Callender, 2006). Other factors that are critical in the implementation of e-procurement include good governance and capacity developments (United Nations, 2011).

Koorn, Smith and Mueller (2001), cited by Vaidya et al. (2006), discussed two types of e procurement systems: seller e-procurement system and buyer e-procurement system. Implementation of these two systems require a workflow system integrated with an e-procurement application that supports requisition to payment and the electronic catalogue that lists supplier's items and prices over the internet (Vaidya et al., 2006). According to Aberdeen Group (2001), most e-procurement solutions are developed to address one of the three primary areas of procurement operations: indirect procurement, direct procurement and sourcing. Other organizations adopt e-procurement to enhance organizational flexibility, strategic flexibility, technical flexibility and environmental flexibility (Shirzad and Bell, 2012).

The commonly adopted e-procurement practices used in the public procurement includes: E-Tendering, E-Request for Quotations, E-Auctions, E-Catalogues, and E-Invoicing (Vaidya et al., 2006). According to Roma and Mc Cue (2012), tools such as E-Notice, E-Auction, E-Catalogue, E-Dossier, E-Submission and E-Signatures are part and parcel of e-procurement. In this study, Enterprise Resource planning (ERP) defined as information system package that integrates information and processes across organizational functions (Brazel and Dang, 2008), and E-maintenance embracing maintenance managed through computer over the internet (Darin, 2007).

In today's dynamic global competitive business environment, technology-based service is no longer an afterthought; rather it is a must for public and private organizations. It has become necessary for companies to provide their customers with cost-effective total solution and better customer satisfaction with innovative ideas and methods. With the emergence of Information and Communication Technology (ICT), companies have been forced to shift their operation from the traditional style to e-Business, e-Procurement and e-Supply Chain philosophy in order to sustain themselves (Lee et al., 2007). Over the past decade, both private and public sector organizations have been utilizing Information Technology (IT) to streamline and automate their purchasing and other processes (Koorn et al., 2001).

E-tendering is a procedure in e-procurement applied in supplier selection in order to find a competent supplier using internet based ICT infrastructures or on the basis of electronic transaction through the internet. It is expected to reduce face to face transaction as well as collusion (Vaidya, et al., 2006, Walker and Harland 2008). Through e-tendering, the process of supplier or contractor selection is considered a suitable mechanism to select a proper contractor fairly, efficiently and productively (Betts et al., 2006; Oyediran & Akintola 2011).

De Boer et al., (2002) hypothesized that e-tendering helps firms reduce the cost of establishing specifications, choosing suppliers, negotiating conditions and contracting. Whilst it is expected that e-auction will have a direct effect on the cost of both operational and strategic inputs by allowing firms to obtain lower prices by using the market mechanism, De Boer et al., (2002) expect that e-tendering will have an impact on purchasing cost only indirectly, as firms are able to consider more alternatives over time. The benefit of expanding the supplier base also applies to e-auctions.

In the project life cycle, the tendering stage is arguably the most critical and important phase, when the project owner and contractor enter into contractual and legal agreements (Vaidya, et al., 2006, Lou and Alshawi 2009). Although e-tendering adds the values of transparency, efficiency and accountability, in practice, however, the implementation of e-procurement still faces constraints, such as lack of human resource / ICT expertise, limited internet connectivity, and contractor unpreparedness in the face of digital change (Walker and Harland 2008, Anton 2010, Asnudin 2012).

Furthermore, the human and technology factors, the two most critical success factors in e tendering are expensive to acquire. Human factor is influenced by a host of variables including human behavior and expertise, support management, business case, user uptake and training, project management, and supplier adoption aspects. Technology category, which is dependent on activities and deployment technologies, is related to reliability, availability, efficiency, and interoperability aspects (Vaidya, Sajeev and Callender 2006; Lou and Alshawi 2009). Additionally, understanding of legal rules and principles becomes another important factor necessary to make security compliance for e-tendering and to minimize fraud and collusion inside and outside of the process (Betts et al., 2006; Eadie, Perera and Heaney 2010).

2.2.2. E tendering Process Market Mechanism and Organization's Performance

E-tenders in the corporate setting also use "the market mechanism". Snir and Hitt (2003), in their study of competitive electronic tenders for information technology, modeled these tenders as first price auctions. Elmaghraby (2007) indicates that supplier discomfort with e-auctions leads major e-procurement vendors to increasingly use e-tenders instead. Hannon (2006) reports 24% of buyers using e-tenders and 31% use e-auctions. De Boer et al. (2002), based on the technology available at the time, claim that e-auctions are suitable for commodities, or items that can be clearly specified, but correctly foresee the ability to run more complex auctions. Elmaghraby (2004) argues that e-auctions for non-commodities can take place by giving quality differences a monetary value, to be added to or subtracted from monetary bids. Such adjustments can help evaluate different delivery conditions and financial terms that affect the firm's total cost. Snir and Hitt (2003) discuss how to do this in e-tendering for information technology contracts. Dimitri (2013) discusses scoring in government e-tendering.

Non-governmental organizations and governments use e-tendering in the procurement function. However, there is always greater agency problem between the procurement officer (PO) and the ultimate user which might result in additional benefits accrued from e-tendering being lost. Tenders are vulnerable to bid rigging where a corrupt PO favors a particular supplier in exchange for a bribe, and this practice raises purchase prices. Ingraham (2005) provides evidence of corruption in competitive tenders for school repair and construction in New York. In the theoretical model of bid rigging of Arozamena and Weinschelbaum (2009), the PO has an existing relation with one of the suppliers, referred to as the dishonest supplier (DS). All suppliers submit their bids before the tender closes. The PO examines the bids before announcing the winner and allows the DS to change its bid in the most favorable way. If the DS bid is the lowest, it can increase its bid to a little under the second lowest bid. If the DS bid is not the lowest, the PO allows the DS to reduce its bid to a little under the lowest bid. In the first case the cost to the organization goes up, whereas in the second the cost remains unchanged. Clearly, bid rigging raises the expected purchasing price for the organization. Arozamena and Weinschelbaum (2009) call this behavior the direct effect of corruption, which assumes that the honest suppliers are unaware of the corruption scheme.

It is clear that when the honest suppliers know about the bid rigging they may bid more or less aggressively, depending on the statistical distribution of their costs. Arozamena and Weinschelbaum (2009) show that this second effect, which they call the perception effect, does not outweigh the direct effect in regular cases so the expected purchasing price for the organizational buyer goes up. E-tendering is likely to reduce supplier–procurement officer corruption because it minimizes the direct human interactions between bidders and public buyers (UNODC, 2013), transforming a documentary, interpersonal interaction into an electronic interaction which is not face to face (Ho, 2002).

2.2.3   Electronic Procurement and Performance of Organizations

Furthermore, with the deployment of a secure electronic procurement platform, the procurement officer will no longer be able to tinker with bids, as Du, Foo, Gonzalez-Nieto, and Boyd (2005) explain. When suppliers register on the platform a certification authority provides them with identities and cryptographic keys. Suppliers submit their digitally signed bids to an electronic tender box, and only after the closing time of the tender will the procurement officer perceive a key to decrypt the bids. The World Bank requires that all supplier bids use an electronic system that "maintains the integrity, confidentiality, and authenticity of bids submitted, and uses an electronic signature system or equivalent to keep bidders bound to their bids" (World Bank, 2014).

E-tendering might limit the incidence of collusion between bidders relative to traditional tendering because they fear detection. Croom (2000) discusses how the centralized storage of e-procurement documents leaves a clearer trail of activities than the traditional decentralized paper-based system. As Bajari and Summers (2002) discuss, if one could estimate bid functions using variables that affect the costs of different bidders, the correlation of residuals between groups of bidders would be evidence of collusion, as would bidders reacting differently to objective cost conditions. Another benefit of e-procurement is improvement of communication. Eadie *et al.* (2007) argues that e-procurement allows sections of electronic documentation to flow through the supply chain; it improves the speed of returns and subcontractor price visibility. He further notes that since it is easier to communicate requirements in a quicker more accessible manner, it will result in a better understanding of requirements and due compliance besides allowing clients to gauge the state of the market by seeing how much interest is shown in the tender. It therefore becomes

relevant, which this paper does, to examine the effect of e-tendering on performance of UN agencies in Kenya. This will enable users to fill existing knowledge gap in this area.

2.3 Effect of E-sourcing on Performance of Organizations

E-sourcing involves the process of obtaining bids from different suppliers via a single online portal. It refers to internet-enabled applications and decision support tools that facilitate interactions between buyers and suppliers through the use of online negotiations, online auctions, reverse auctions and similar tools. The benefits of e-sourcing include streamlining the sourcing process, reducing prices by maximizing supplier competition, and creating a repository for sourcing information (Chan and Chin, 2007).

Traditional geographical limitations are no longer present in e-sourcing since sending and receiving e-mail and other information from the World Wide Web is fast and efficient. With e- sourcing, organizations are able to increase the sources of their potential suppliers at no cost as they do not only depend on those vendors and suppliers they can physically visit their premises since they interact on-line and they are able to get whatever information that they need with the pressing of a button of their computers. They can source for their inputs from any part of the world in the comfort of their offices. They interact via the internet and partner with suppliers and buyers online, and this enhances their operations (Dinda, 2010). Computers can be used to track supplier details and purchases, and all this requires minimal investment in form of computers and internet airtime or subscription (Saleemi, 2006).

2.3.1   Electronic Bids Sourcing on Performance of Organizations

Over the past three decades many organizations have exhibited tremendous growth in the use of e-sourcing. It has been commonly accepted that information infrastructure systems such as e-procurement have become increasingly connected and embedded with other infrastructure to initiate growth of enterprises (Hsin et al., 2013). Today suppliers are using the internet to submit multiple electronic bids during a fixed time period often 30 minutes or less (Duplaga et al., 2006). A survey of US companies shows that in 2004, 27 percent of buyers surveyed used e-auction, up from 15 percent who reported using e-auction in 2003 (Hannon, 2004). However, up to 85 percent of businesses in the world have experienced incidents disrupting business and supply chain performance glitches as a result of inefficient sourcing policies. If well utilized, e-sourcing would enhance efficiency in utilization of

funds, shorten lead times, accountability and efficiency in the delivery of public services (Trent & Schlegel, 2015).

Best Practice Network (2004) considers e- sourcing as a strategic process to establish, manage and monitor contracts and as an essential part of e-procurement. According to Aberdeen Group, reported by Best Practice Network (2004), a well-managed sourcing process should prioritize organizational requirements, understand supply market, select the supplier best placed in satisfying organizational needs, negotiate for the best overall value, establish and manage relationships with suppliers, develop cost reduction strategies and enhance long term performance of the purchasing operations and in turn the procurement performance.

2.3.2 E-sourcing Implementation and Organizations Performance

Lewis (2004) developed a guide for implementation of e-sourcing. In the guide, the first factor he emphasizes is configuration for capacity which involves understanding of the needs of the organization and developing a system to take such needs. The second factor is an understanding that an e-sourcing platform will not automatically come with resource savings. Other factors he identified are selection of appropriate tools and development of the right skills. Organizations need to train employees on the required skills and manage change in the work place.

Purchasing integration through strategic sourcing promotes better buyer–supplier relationships and supplier development (Narasimhan and Das, 2001). To achieve successful strategic sourcing, firms need to maintain good relationships with suppliers and seek to achieve their long-term goals (Chan and Chin, 2007). The research of Humphreys et al. (2000) also highlights the importance of selecting suppliers and their development. Among studies on the impact of e-procurement, Boyer and Olsen (2002) found that purchasing performance is improved with internet purchasing. Wu et al. (2003) assessed the impact of firm characteristics, competitive environment and intensity of e-business adoption on performance.

Wu et al. (2007) also found that the use of coordinated e-sourcing applications was found to have both direct and indirect effects on perceived efficiency gains. Johnson et al. (2007) presented findings that e-business technologies targeted at reducing dyadic coordination costs were found to lead to improved financial performance. E-procurement helped to

establish common processes, to convert from transactions to strategic activities and to save spending (Smart, 2010). According to Devaraj et al. (2007), e-business technologies might support customer integration and supplier integration, as well as operating performance in the supply chain. In the recent study by Ordanini and Rubera (2008), it was found that the Internet boosted the integration process capability in procurement. Based on the above literature review, it was evident that more studies needed to be conducted, investigating the joint impact of strategic sourcing and e-procurement. In addition, previous research has generally neglected to empirically test the influence of business characteristics on supply chain integration and performance (Van der Vaart and Van Donk, 2008). Other business conditions such as delivery time and process type can also be applied to examine the impact on supply chain integration (Van Donk and Van der Vaart, 2004). Research by Petersenet al. (2007) emphasizes that firms need to apply their e-sourcing strategies as a way of increasing competitive advantage.

2.3.3   E-sourcing Adoption by Procurement and Organizations Performance

Alan (2010) investigated and explored through a case study the extent of business adoption of e-procurement. The research provided empirical evidence of the drivers and challenges encountered in the implementation of e-procurement and found out that the growth in use of ecommerce in business-to-business markets has shown a significant adoption of new supply chain-related technology and applications by organizations globally. Canan et al. (2015) in their study to analyse the impact of strategic sourcing and e-procurement on performances found out that strategic sourcing has significant impact on several aspects of a firm's performance. The hypothesized conceptual framework adopted for the study was strategic sourcing and e-procurement as the major variables for firm performance. The theory of dynamic capability was empirically examined and it was concluded that e-procurement provides firms with competitive advantage by purchasing with minimized transaction cost and enhanced transparency. Mugume and Ntayi (2014) argued that despite increased research, there remains a certain level of confusion surrounding the conceptualization of strategic sourcing.

Giaconda et al. (2010) studied the impact of e-procurement on procurement practices and performance. The study was motivated by the fact that there was a gap in analyzing e-procurement where previous literature had limited the studies to internet-based procurement only. The findings of the study showed that e-procurement is not widely used but at least 30

percent of multinational firms surveyed had implemented a basic e-procurement system. The study concluded that procurement managers should seriously consider adopting electronic buying to continuously improve their information gathering, supplier contact, contracting, intelligence and analysis practices. Previous studies have also linked supply chain processes integration with operational agility, lower costs, superior product or service design and enhanced profitability. The studies revealed significant relationship between firm size and e-procurement applicability (Gesuka et al., 2013)

2.4   Effect of E-invoicing on Performance of Organizations

Invoicing generally involves the process of creating and sending out invoices for work that has been completed. It is an itemized bill for goods sold or services provided, containing individual prices, the total charge, and the terms (Hernandez-Ortega, 2011). Electronic invoicing (e-invoicing) refers to the sending and receiving of invoices by electronic means. E-invoicing has been recognized as one of the most important sources of profitability increases in organizations (Brun, 2007). The e-invoice is a kind of information system service that gathers transaction information and transmits it through a network (Hernandez-Ortega, 2011). In this era of e-business, it plays a critical role in maintaining business information throughout the supply chain (Chang et al., 2013). Electronic data interchange (EDI) was initially implemented between businesses only. Later, the internet was employed to transmit e-invoices between individuals, businesses, and government, becoming the backbone for e-commerce.

E-invoices have been adopted differently among the employees; however mixed feelings are normal for any novelty. During the transition to the new systems a proper communication and demonstration of the added value in the eyes of the user is extremely important. Employees have recognized the benefits mainly in spending less time on each activity and reducing the number of errors due to manual input of data. Besides, e-invoicing significantly reduced administrative tasks. However, organizations should standardized internal rules for work or redefine their procedures. Particularly in smaller companies a desire to standardize processes is evident since the entrepreneur does not want to deal with bureaucratic tasks, but to devote its time to his core business (Varga, 2015).

2.4.1   Electronic Invoicing and Organizations Performance Possibilities

E-invoicing offers many benefits: significant cost reduction, process simplification, reduced payment time, greater security of data, as well as numerous environmental benefits. This is

confirmed by enterprises and public authorities which already use it (Lian et al., 2014). They attempt to explain why individual corporations do not perform asset transformation themselves as a function of the transaction costs incurred in conducting such activities. As shown in transaction cost economics, the cost of the infrastructure is reduced per transaction when the volume of transactions increases (Chang et al., 2013).

Security is one of the most important concerns in connection with ICT, such as internet retailing and financial transactions (Ranganathan & Grandon, 2002). It reflects a perception of the reliability of the payment methods used and the mechanisms of data transmission and storage (Kolsaker & Payne, 2002). In recent years, there have been several technological advances to strengthen the security of web-based transactions, particularly in e-invoicing and digital signatures (Dai & Grundy, 2007). However, firms are still concerned about conducting their relationships with suppliers and customers via the internet, so security may be one of the most important barriers to the development of e-invoicing (Yu & Tao, 2009).

Electronic invoicing (eINV) presents additional possibility to use the ICT for both the automating and redesigning business processes. Therefore, several initiatives at the European level have been raised in order to facilitate the eINV environment. Therefore, all domestic suppliers of UN and public administration have to submit only electronic invoices. Since not every "e- initiative" is successful, the purpose of this paper is to examine the effect of using eINV on the business process performance, to analyse whether business processes were merely automated or also redesigned and to outline the advantages and disadvantages of eINV. Transition to e-business requires vision and the organisations should not focus on paperless operations only, but should also rethink the processes.

2.4.2 E-invoicing and Procurement Security in Organizations Performance

E-Invoicing should satisfy strict security requirements in order to become part of the financial practices of a firm (Kaliontzoglou, Boutsi & Polemi, 2006). Some of these requirements are related to the firm's relationships with other agents (authentication and non-repudiation of origin and receipt, confidentiality and privacy) while others are derived from the firm's technological culture (security policy, electronic storage of e-invoicing). As with ease of use, security is an aspect highlighted by several national public administrations, so extensive standards have been established that try to improve this perception and influence the behavior of the firm.

E-Invoice is an invoice for the goods delivered or services performed issued to the debtor or recipient in electronic form and equivalently replaces an invoice in the paper form. Recipient of an e-invoice is a budgetary user or legal entity or individual person. An e-invoice is therefore considered as a document that contains mandatory elements regardless of how the document is originally called (invoice, credit note, debit note, advance payment invoice, payment request). The research has shown that banks should invest a lot of effort in order to convince consumers to use eINV. Individuals namely accept such changes only when it is required or they do not have any other, or where significant savings in comparison with conventional accounts are evident Horvat, 2014). Therefore, it is evident that companies in Finland perceived the business benefits when shifting towards automated processes.

2.4.3 E-Invoicing and Financial Performance in Organizations

To create a financially viable e-invoicing solution, organizations needs to create this critical mass by a value network of alliance partners and technology solution providers to add the necessary desirability for electronic invoicing through the Financial Supply Chain. A Value Network is a web of relationships that generates economic value and other benefits through complex dynamic exchanges between two or more individuals, groups or organizations. The Value Network models mediating firms as creating value through three basic primary activities: network promotion and contract management; service provisioning; and infrastructure operations. The customers are offered direct access to each other, as in payment mediation, or indirect access to a common pool, as in saving and loan services through a set of mediation activities performed by the firm (Yu & Tao, 2009).

In the recent past, many countries have employed internet to provide e-invoice services for all stakeholders. Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions. Many previous studies have paid attention to e-invoice adoption. However, most of them are focused on the business/firm level (Hernandez-Ortega, 2011; Vrcek & Magdalenic, 2011). Little attention has been paid to international organizations such as UN agencies, thereby creating a research gap in understanding the effect of e-invoicing on organizational performance. Closing that gap is therefore one of the purposes of this study.

Some calculations suggest that the plain paper invoice cost a company up to 14 euros including the cost of equipment, labour and infrastructure, while the electronic invoice costs a company only 1 euro (Varga, 2014). Yet, selecting proper solutions for the issuing,

receiving and storing e-invoices is of a great importance. Besides, additional investments for implementing eINV, various problems in the transition process that are making eINV more complex, should also be considered.

E-invoices have been adopted differently among the employees; however mixed feelings are normal for any novelty. During the transition to the new systems a proper communication and demonstration of the added value in the eyes of the user is extremely important. Employees have recognized the benefits mainly in spending less time on each activity and reducing the number of errors due to manual input of data. Besides, e-invoicing significantly reduced administrative tasks. However, organizations should standardized internal rules for work or redefine their procedures. Particularly in smaller companies a desire to standardize processes is evident since the entrepreneur does not want to deal with bureaucratic tasks, but to devote its time to his core business (Varga, 2015).

2.5   Effect of E-auction on Performance of Organizations

E-auction involves acceleration of negotiations between a buyer and a seller, and drawing conclusions to the bidding process with a dynamic alternative to final negotiations (Dagg, 2015). Within the possibilities of e-procurement, there is an increasing interest in e-reverse auctions (Saprikis 2013). In an electronic reverse auction (ERA), a buyer invites suppliers with a request for quotation who will directly compete against each other online, in real-time by submitting e-bids for a specific good or service (Hackney et al. 2007). Many transactions that would be previously conducted as traditional face-to-face negotiations are now candidates for online, real-time auctions (Williams, Dobie 2011). Auctions have been employed to establish the market values of goods and to facilitate the transfer of goods in a cost effective manner for many years (Gallien and Wein, 2005).

2.5.1   E-auction Bidding and Organizations Performance

Auctions in general have been defined as public sale of something to the highest bidder. The use, number, and types of auctions increased greatly with the advent of the internet. In the early twenty-first century, some researchers purported that within a few years most business-to-business transactions would be auction based (Schoenherr et al., 2011). There are several ways to carry out the electronic auctions. From the viewpoint of the number of criteria there are multi-criteria and single-criterion e-auctions. One of the criteria of the e-auction can also be the price. In the course of the e-auction, prices are constantly changing, which is mostly demonstrated by their reduction. In the given case, one of the advantages of the e-auction is

achieving the lowest price possible. However, alongside with the electronic auction, which constitutes an extension to a standard (hard copy) competitive contracting, we can also think about better involvement of the information and communication technologies while these tools are also used for bidding by individual suppliers (Bertók, 2010).

The increasing popularity of e-actions has resulted in a burgeoning of academic research (Yeniyurt et al. 2011). Nevertheless, the examination of e-auctions is still considered to be in the early stages leaving research with much more to uncover (Saprikis, 2013). E-auctions use has been criticized because it may negatively impact supplier relationships (Pearcy et al., 2007). Therefore, it is important to examine how purchasing professionals reach the conclusion that an e-auction is appropriate for a particular procurement situation. Explanations of why purchasing professionals decide to utilize e-auctions are still incomplete. Despite the growing importance of e-auctions few empirical studies have explored the appropriateness of e-auction usage (Mithas et al. 2008; Hawkins et al. 2009).

2.5.2   Electronic Actions and Organizations Performance

According to Soudry (2010) electronic auctions can decrease contracting costs, increase transparency and achieve better economic outcomes as a result of increased competition. This stems from the fact that under the electronic auction procedure, the danger of having the procuring entity favouring a particular firm by providing it information on other tenders is limited. This is because information on other bids is available to all bidders in an open and equal manner. Moreover, all bidders are allowed to amend their tender at any time within the limits of the time period. Thus, the electronic auction increases transparency in two levels: (1) information available on other tenders; and (2) the availability of the procedure phases and its outcome to all interested tenderers (Soudry, 2010). Bertók (2010) confirms the positive effects of the use of ICT in public procurement and states that by means of e-procurement, there is available more information and costs are reduced. Therefore e-procurement should be considered as a major tool for limiting corruption and increasing transparency and efficiency of using public funds. Well-designed and implemented systems can minimize unnecessary face-to-face contract and reduce opportunities for the improper exercise of discretion.

Reverse auctions, also referred to as procurement auctions literally reverse the roles of the buyer and the seller. Sellers compete to obtain buyers' business with the primary objective of the reverse auction to drive purchase price downward for the buyer. As of late, reverse

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auction use has become prevalent in many major industries (Carter and Kaufman, 2007). Many studies espoused the use of auctions and stated that companies such as Boeing, SPX/Eaton, United Technologies, Nestle, Dell, and Intel have employed auctions to reduce procurement costs. There was also much written about the magnitude of these cost reductions. Tassabehji (2010), reported that cost savings could be anywhere from 5% to 40%, while others reported 15% as typical (Leong, 2008).

In addition to widely discussed cost savings resulting from e-auctions, researchers have also suggested that when appropriately utilized, online auctions can also have significant strategic implications. For example, studies have identified strategic benefits such as significant time savings for the buying firm (which will greatly improve the firm's efficiency), faster and more effective information transmitting, much increased supplier pool (can easily draw suppliers all over the world), and increased competition among suppliers that works to the buyer's favor (Tassabehji, 2010)

In a traditional auction, sellers offer one or more items for sale while potential buyers compete with each other for purchasing an item of common interest. In a reverse auction, multiple suppliers are vying for a single buyer, so that the supplier with the lowest offer wins the auction (Tarazona-Bermudez et al. 2014). The electronic variant of a reverse auction requires that pre-qualified suppliers directly compete against each other online in real-time (Beall et al. 2003). An e-auction is a downward bidding event in which suppliers submit successively lower prices bids within a fixed timeframe (Schoenherr, Mabert, 2011). Most commonly, buyers announce requirements and select suppliers from the lowest bidders (Mithas et al., 2008). E-auctions can substitute traditional, asynchronous, paper-based or email-based request for proposals and face-to-face negotiations (Hawkins et al. 2009).

An electronic auction requires clear, complete and comprehensive specifications of the product or service (Tarazona-Bermudez et al., 2014). Other requirements refer to the magnitude of the purchase, and appropriate market conditions and infrastructure (Pereira et al., 2011). Commodities such as bulk materials, stock commercial goods, or non-technical services are most suitable for an e-auction (Saprikis, 2013) because they can be easily specified and their switching costs are negligible. E-auctions are increasingly and widely used in order to reduce the cost of materials. They reverse the roles of buyers and suppliers, with the main buyer's objective to drive purchase prices down (Kros et al. 2011). E-auctions have brought significant savings in terms of prices and transaction costs (Aloini et al., 2012).

Research suggested other e-auction benefits, such as cycle time reductions, quality improvement, broader supply base, faster information transmission, and increased competition (Kros et al., 2011). Suppliers may benefit too from e-auctions. This is because it could provide suppliers with specific benefits, such as new distribution channels, wider customer data base, new means to increase sales, to reduce excess inventory, and reduce the cost of products for sale (Tarazona-Bermudez et al., 2014).

2.5.3   E-auction Challenges and Organizations Performance

Despite the key benefits of e-auctions, there appeared cracks in this platform. The first hitch was the outcome of critical analyses of the most popular online auction type, reverse auctions, and its overall impact on supplier relationships (Jap, 2002; Smeltzer and Carr, 2003). Many researchers provided discourse on the stress that reverse online auctions put on supplier trust and noted numerous claims from procurement managers of being ''burnt" by auctions and their reluctance to return to participate in the future (Emiliani and Stec, 2002). Pavlou and Gefen (2005) suggested that some of the most common problems associated with online auction use include: product misrepresentation, contract default, delivery delays, non-enforceable warranties, and payment problems.

The second was that many of the auction portals that were touted as new institutes for saving the supply chain huge sums of money collapsed. In short, many of the online auction sites were built on weak business models or lacked sufficient capital to withstand the dot com bust. It has also been reported that some online auction failures resulted from insufficient control mechanisms necessary to ensure user satisfaction or did not offer customers the value that they were looking for (Finch and Huang, 2009). Consequently, much of the research that was conducted on the use of e-auctions must, like all past research, be re-evaluated periodically as it may no longer be relevant because the models that those businesses were premised, and in some cases, the businesses themselves either no longer exist or have been materially modified. Given the consolidation and growth that has occurred within this industry, it is of utmost importance to revisit this important business tool in order to empirically assess impact of e-auction on performance of organizations. This study attempts to contribute to the knowledge base of e-auction by analyzing its impact on the performance of UN agencies in Nairobi.

2.6 Effect of E-procurement on Organizational Performance

E-procurement refers to the purchase of goods and services for organizations through the internet (Cullen, 2007). The introduction of e-procurement by a firm for integrated supply chain management could lead to better efficiency and effectiveness as compared to existing supply chain systems. The e-procurement systems if used properly can lead to higher quality products, enhanced productivity and reduced space in the warehouse and ultimately increase logistics efficiency and flexibility (Chan et al., 2007). All e-procurement applications aim to improve the efficiency of procuring personnel, automating the approval cycle, enabling negotiation of better contract pricing, leveraging existing contracts more effectively and reducing off-contract purchases (Schneider, 2001).

2.6.1 The Role of E-Procurement and Organizational Performance

In Africa, combating corruption, and building capacity in procurement has helped governments maximise the buying power of their budgets and improve the quality of service delivery to their citizens especially the marginalised. Competitive and transparent public procurement systems are seen as a key element to achieving sustainable development and more prosperous marginalised group in Africa. In Ghana, e-procurement system holistically tackles underlying issues affecting hospital performance such as lack of access to information for civil society partners and the public. In South Africa, the implementation of the Preferential Procurement Policy Framework Act 5 of 2000, gave effect to section 217(3) of the Constitution of the Republic of South Africa of 1996, by providing a framework for the implementation of a fair public preferential procurement policy.

Driven by the increasing trend toward purchasing inputs and other raw materials from outside the organization, implementing electronic procurement (e-procurement) has become a significant tactic in most companies' e-business strategies (Deloitte Consulting, 2001). Today baseline procurement capabilities are rapidly becoming a cost of doing business. More and more companies are conscious of the needs to introduce Internet-based technologies in their order process, due to the benefits of saving transaction cost, increasing competitive sourcing opportunities, and enhancing inter-organizational coordination.

Internal customer satisfaction, through E-Procurement function can usually contribute to the competitive position of any company in many other ways than first through cost serving Van Weele (2005) presents a few of these was such as: reduction of quality cost –e-

procurement can reduce quality costs by making sure that selected suppliers deliver a product of service that does not exceed extensive quality control. E-Procurement can also reduce quality costs by making sure that the components bought do not load to complaints on the user department 12 or final product to the customer. Product standardization internal customer satisfaction can be enhanced through E-procurement due to the product variety concept. This can be achieved by reducing the number of different components and or the number of suppliers via set product standards. Contribution to product design and innovation of then innovation in industry come from suppliers or are results from intensive interactions between suppliers and user department in any organization.

2.6.2   E-Procurement Implementation and Organizations Performance

According to a study carried out by Kipyego (2012) on factors affecting implementation of electronic procurement system in the public sector, costs associated with the Implementation of e-procurement were found to have a direct impact on the Organizations. The study further established that training of users and management's support has a positive impact on the Implementation of the e-procurement system; Turnover of the employees' required continuous training for the incoming staff; Formal recognition backed by legislation of the electronic procurement transactions should be encouraged to accelerate the' rate of Implementation of the System within the public sector; Integration of the Organizations system and those of the suppliers; demonstration of the positive impact of the system and installation of linkages between all Governments agencies should be encouraged for faster Implementation of the e-procurement system in the public sector (Kipyego, 2012)

Prior to the emergence of using the internet in procurement, Electronic Data Interchange (EDI) had been providing automated purchasing transactions between buyers and sellers since it was launched in the 1960's. In the 1970's we had the Enterprise Resource Planning (ERP), followed by the commercial use of the internet in the 1980's. In the 1990's came the universal application (Saleemi, 2006).The buying of goods and services in an organization is a continuous process throughout the life of an organization (Parida et al., 2005).

Procurement entails the different ways through which private and public organizations acquire goods and services needed for their day to day operations. Procurement of goods and services is a function that takes place in the upstream part of the supply chain. It ensures

the needed products and services are bought and availed to the users within the organization and the ones they trade in are offered for sale to their customers. Through procurement large amounts of money of an organization are spent (Snider et al., 2001). Procurement is important to any organization since through it the strategic objectives of organization can be met when well-co-ordinated and linked to other sectors. Measures are put in place to check losses arising through procurement of substandard goods and also procuring goods and services at very high prices. With the advent of e-procurement organizations have embraced it to help check the shortcomings of the initial traditional procurement methods (Snider et al, 2001).

E-procurement process has four broad phases of sourcing, tendering, payment and maintenance of records. Sourcing involves the surfing of the internet to get potential suppliers, what they offer for sale, terms of sale, negotiation of prices and determining the best price at which to buy. The tendering deals with buyers selecting the suppliers of goods/services, raising and placing orders for goods needed. Payment is the collection of invoices, approving them and arranging for payment. Finally archiving maintains vital but relevant information on their suppliers and customers in their buyer, seller relationships. E-procurement integrates the four processes to create efficiency and synergy in procurement by organizations and making procurement enjoyable and a memorable experience.

2.6.3   E-procurement Software and Organizations Performance

Any good e-procurement software system today is designed to greatly reduce effort and time required to complete purchasing transactions by eliminating traditional paper chain of payment reconciliation, approvals, requisitions and receiving. The key features of e-procurement approaches enables users to find an item in an electronic catalog, create a requisition, route the order requisition for approval, create and transmit the order to vendors, and also help to automate the invoicing and payment process (Berger & Zeng, 2006).

To attain the greatest benefits, procurement processes should be evaluated and improved before adopting e-procurement tools (Chan et al., 2007). Internet technologies enable integration with trading partners to amplify the need for fundamental organizational change (Chan et al., 2007). E-procurement is more likely to be beneficial in dispersed supply chains as it facilitates its coordination (Chaffey, 2002). Different actors in supply chains

have got different power, legitimacy and urgency to implement e-procurement; and e-procurement can have an effect on trust in supply chain relationships (Chan et al., 2007).

Efficiency measures the usage of resources during a process in an organization. E-procurement impacts this dimension allowing the employees to achieve reliable result compared to traditional paper-based procedure, but using less time, and energy (Chan et al., 2007). Effectiveness involves comparing goals and results of the organization. Furthermore, for organization to minimize disputes, appeals and clarification requests from the suppliers, e-procurement plays a key role. This is because they are sure signals of a mismatch between goals and quality of results (Atkinson, 2000).

E-procurement also helps in dematerialization. This involves using e-procurement in organization's operations as an operation standard to trigger dramatic turnaround in paper consumption, given a favourable normative framework. This could happen due to different reasons such as great documents retention in e-procurement platforms; the value of digital signatures which have the same value as the autograph; the use of email instead of fax; the reduced or eliminated need to print hard copies hence facilitating in dematerialization (Atkinson, 2000).

Improving the performance of supply chain contributes to greater value creation for the customer, and includes both intangible such as capacity utilization and tangible such as cost factors (Croom & Jones 2007, Presutti 2003). So value creation perspective is key in enhancing supply chain performance. This could be done by adopting joint-learning strategy which focuses on know-how buyer/supplier collaboration and mutual competency creation. This would also increase information sharing which can decrease operational costs by reducing transaction cost as well as improving management and control in the supply chain. Furthermore, maintaining information sharing decreases the extent of uncertainty and this leads to increase in performance (Chang et al., 2013).

2.7 Chapter Summary

The chapter covered literature related to the study. From the reviewed literature, it has emerged that e-procurement plays an important role in improving the efficiency and effectiveness of performance of employees. However, there is limited empirical evidence on the effect of e-procurement on performance of UN agencies. Therefore, this study seeks to bridge this knowledge gap. The next chapter discusses the research methodology.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research design and methodology that will be used when carrying out the study. The specific items to be covered include research design, population and sample, data collection methods and analysis as well as data presentation methods.

3.2 Research Design

Research design is the plan and structure of investigation conceived to obtain answers to research questions that includes an outline of the research work from hypothesis, methods and procedures for collecting and analysing data and presenting the results in a form that can be understood by all (Mugenda & Mugenda, 2003). In this study, the choice of the research design was guided by the research question(s) and objective(s), existing knowledge, time and resources (Kothari, 2004). The study adopted an explanatory research design. The strategy was selected because it is helpful in exploration to answer who, what, where and how questions in human resource research (Cooper & Schindler, 2006). Through the explanatory research, the study sought to investigate the impact of e-procurement on performance of UN agencies in Nairobi. An explanatory research determines and reports the way things are and attempts to describe such things as possible behaviour, attitudes, values and characteristics, (Mugenda & Mugenda, 2008). The independent variables of the study included e-tendering, e-auctioning, e-invoicing and e-sourcing. The dependent variable was performance of the procurement function.

3.3 Population and Sampling Design

3.3.1 Population

A population is defined as a complete set of individual cases or objects with some common observable characteristics (Mugenda & Mugenda, 2012). A particular population has some characteristics that differentiate it from other populations. The study focused on UN agencies (UNICEF, WFP, UNSOA and UNON) in Nairobi. The accessible population was procurement officers and staff of the procurement department in these four UN agencies.. In this study, the population was the 60 employees of the UN agencies. These were sub-categorized according to every agency. The population distribution per cadre was shown in table 3.1.

Table 3.1 Population Distribution

Cadre	Population	Percent
UNICEF	15	25
WFP	15	25
UNSOA	15	25
UNON	15	25
Total	60	100%

3.3.2 Sampling Design

Sampling design involves selecting some of the elements in a population from which a researcher may draw conclusions about the whole population. The sample frame of the study (list of the employees in the agencies) was obtained from the relevant human resources office located at Gigiri.

3.3.2.1 Sampling Frame

The study sampling frame is the list of the study target population, from where the study will select the sample size (Kothari, 2008). A sampling frame is the list of elements from which the sample is actually drawn (Ngechu, 2004). The sampling frame was obtained from list of procurement officers and staff in the procurement departments.

3.3.2.2 Sampling Technique

This is the method applied in selecting the subject from the sampling frame. It involves selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group (Orodho & Kombo, 2002). Purposive sampling technique was used to select the procurement officers and staff in the procurement department who are conversant with e-procurement. This method was used since the study required officers who have practised e-procurement and are aware of e-procurement. This made the researcher to conveniently and purposely select the most convenient respondents within the target population.

3.3.2.3 Sample Size

From the population of procurement managers and staff of procurement department of each organization the study purposively selected 15 respondents from each agency, thus giving a population of 60 respondents. Mugenda and Mugenda (2008) suggest that a sample size

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of between 10 and 30% is an adequate representation of the study population. The researcher selected 44 respondents that represented 73.3% of the population size.

3.4 Data Collection Method

The procedure to be used to collect data was influenced by the research instruments used (Kombo & Tromp, 2006). The task of data collection begins after research problem and research design have been defined (Kothari, 2004). The primary data was collected by use of questionnaires that were self-administered to the respondents. The questionnaire was developed in line with specific research objectives. The questionnaire was made simple and easy for the respondents to answer. Secondary data was collected by use of journals, government reports, UN reports and periodicals. The researcher obtained permission from the necessary department and also from the university in order to commence the data collection exercise.

The questionnaire had five sections. Part one dealt with the general information of the respondent; part two dealt with e-tendering process; part three dealt E-auctioning process; and part four dealt with E-invoicing process and part five dealt with E-sourcing process. The questionnaire contained self-structured questions. The questionnaire employed a five-point Likert scale to determine the extent to which E-procurement affects organizational performance within UN-Agencies. This allowed respondents to extensively respond to topic under study.

3.5 Research Procedures

The research procedure was started by carrying out a pilot test. The purpose of the pilot test was to refine the questionnaire so that respondents will have no problems in answering the questions and there was not going to be problems in recording the data (Saunders et al., 2009). In addition, it was to enable the researcher obtain some assessment of the questions' validity and the likely reliability of the data that had been collected. Pilot tests helped the researcher to determine whether the proposals in the collection of data was applicable including the time taken to complete each tool (Mugenda & Mugenda, 2012). This was done on five respondents from the target population. This helped in ensuring that the information gathered was reliable and valid. In addition, it helped to manage the data collection process with respondents hence reducing ambiguity.

The questionnaires were administered personally to the respondents after explaining the

purpose of the research to them and how their sincerity would be important to the study. The filled questionnaires were then reviewed by a panel of experienced researchers from United States International University, who offered their insights and suggestions as to how the research instrument can be amended so that it is more efficient in collecting useful data. These suggestions and changes were incorporated into the questionnaire that was used in the actual study.

3.6 Data Analysis Methods

The purpose of data analysis was to prepare raw data for presentation and statistical inference (Kombo & Tromp, 2006). The data collected went through data preparation, which involves editing, coding, classification and tabulation so that they are amenable to analysis (Marshall & Rossman, 2006). The primary data was analysed through descriptive statistics such as ratios, percentages and averages. Cooper & Schindler 2006 argued that the use of percentages is important for two reasons; first they simplify data by reducing the numbers to range between 0 and 100. Second, they translate the data to standard form with a base of 100 for relative comparisons and easier in interpretation.

Editing detects errors and omissions, corrects them when possible, and certifies that maximum data quality standards are achieved. The editing of data guaranteed that data is: accurate, consistent with the intent of the question and other information in the survey, uniformly entered and averaged to simplify the coding and tabulation (Neuman, 2000).

Coding involved assigning numbers to answers so that the responses were grouped into a limited number of categories. Responses from the open-ended questions were coded and their frequencies determined through cross-tabulations on differences between respondents and the central tendencies of the responses to each factor. To devise a descriptive framework, the main variable components, themes and issues in the research proposal will be identified (Yin, 2003). The analysed data was interpreted and presented in frequency tables, bar charts, graphs and pie charts. Each variable was analysed descriptively and then inferences made on the impact of each variable on the dependent variable (linear regression) and the impact of all the four variables on the dependent variable (multiple regression).

Regression analysis was done so as to test the relationship between the independent variables and dependent variable. Regression is conducted to analyse the nature and the strength of relationship between each of the independent variables and the dependent

variable (Cooper & Schindler, 2006). It helps to explore the forms of these relationships (Kothari, 2004). In some restricted circumstances, regression analysis can be used to infer casual relationships between the independent and dependent variable. Qualitative data was analyzed through thematic analysis. The study employed multiple linear regressions in its multivariate analysis. Statistical package for social sciences (SPSS) was used to analyze data. Multiple regression analysis was used to establish the relationship between the study variables. The multiple regression equation was shown to be;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Performance of UN agencies in Nairobi.

β_0 = Constant Term

$\beta_{1,2,3,4}$ = Beta coefficients

X_1 = E-tendering process

X_2 = E-auctioning process

X_3 = E-invoicing process

X_4 = E-sourcing process

ε = Error

3.7 Chapter Summary

Chapter three has mainly described the research design and the methodology which was applied in the study to assess the impact of e-procurement on performance of UN agencies in Nairobi. The research will take a survey approach to be conducted using a structured questionnaire. The sample frame was obtained from employees of UN agencies in Nairobi. The samples were selected through a purposive sampling method. The analysis of the data was done using the SPSS data analysis tool. The results and findings of the study are presented in the next chapter.

CHAPTER FOUR

4.0 RESULTS AND FINDINGS

4.1 Introduction

This chapter addresses the results and findings collected from the field based on the effect of e-procurement on performance of United Nations Agencies in Nairobi. The findings are presented in the order of the research objectives. The first section of the results and findings are based on the respondents' demographic profiles. The second, third, fourth and fifth sections of the results and findings are based on the responses to the different sections of the questionnaire. A sample of 60 procurement officers and staff in the procurement department was used. SPSS was used to analyse the data collected from the respondents. The response rate is shown below:

Response Rate = Number of Questionnaires Completed
                          Number of Sample Size

= 44/60*100 = 73.3%

4.2 General Information

The first section of the results and findings are based on the respondents' demographic profile from gender of the participants, duration worked in the organization, education level, current position in years, and availability of e-procurement and duration the e-procurement has been used in the organization.

4.2.1 Gender of the Respondents

According to the data shown in Figure 4.1, out of 44 respondents who participated in the study, (64.0%) the majority were females while 34.0% were males. The findings could be an indication that most of the procurement officers in UN agencies are females.
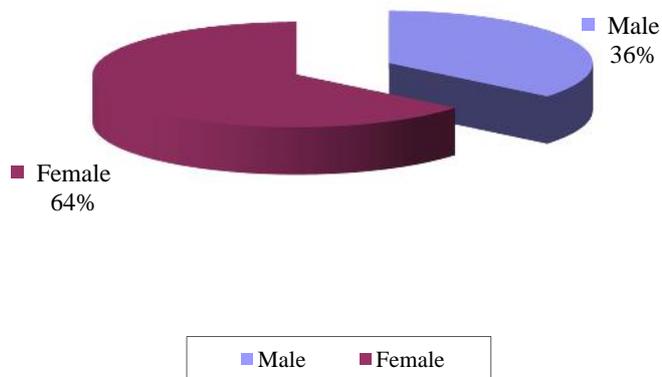
Figure 4.1: Gender of the Respondents

4.2.2 Duration Worked in the Organization

From the data shown in Table 4.1, majority of the procurement officers (34.1%) have worked in the organization for 6-10 years, less than 5 years (31.8%), 11-15 years (9.1%), 16-20 years (9.1%) and above 20 years (4.5%). The findings reveal that most of the procurement managers have worked in the organization for some time and are therefore conversant with the organization.

Table 4.1: Distribution of the Procurement officers by years worked in the organization

Years	Frequency (F)	Percentage (%)
Less than 5 years	14	31.8
Between 6-10 years	15	34.1
Between 11-15 years	4	9.1
Between 16-20 years	4	9.1
Above 20 years	2	4.5
No response	5	11.4
Total	**44**	**100.0**

4.2.3 Distribution of the respondents by education level

Figure 4.2 shows that majority of the respondents represented by 59.1% have attained bachelor's level of education, 22.7% have attained masters, higher diploma (2.3%) and diploma (2.3%) levels of education. The findings reveal that majority of the procurement officers have attained tertiary education.
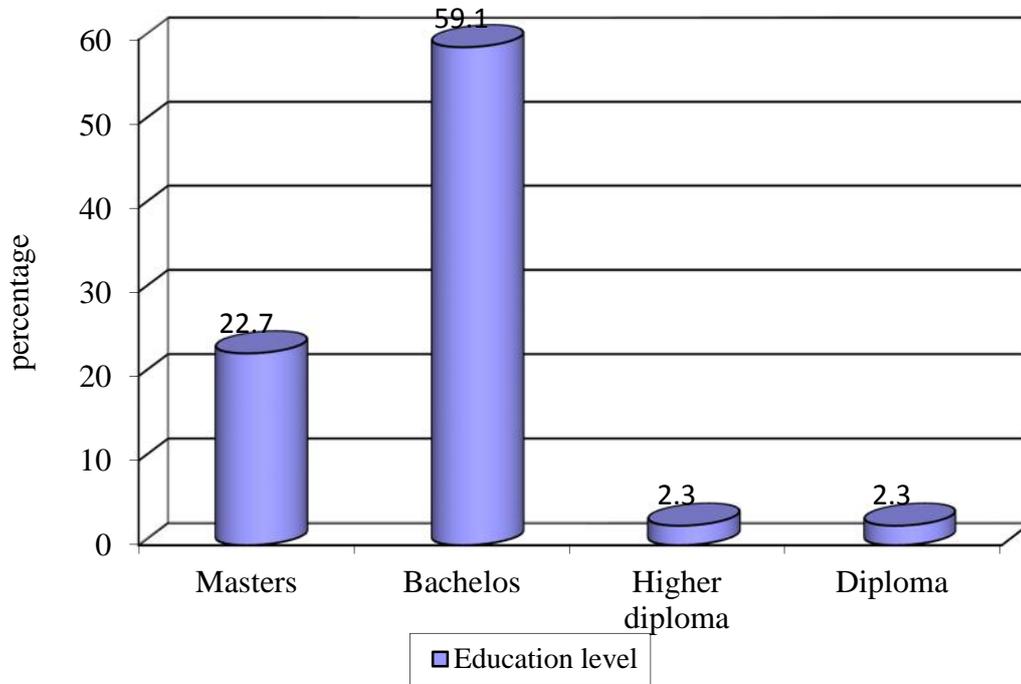
Figure 4.2: Education level of the respondents

4.2.4 Duration of Respondent in Current position

Figure 4.3 shows that majority of the respondents represented by 47.7% have been in the current position for less than 5 years, 6-10 years (22.7%) have been there for more than 10 years but less than 15 years and this is occupied by the highest number, 11-15 years (91%) and 16-20 years (9.1%) representing the lowest number employees in terms of age in the agencies that participated in the study.
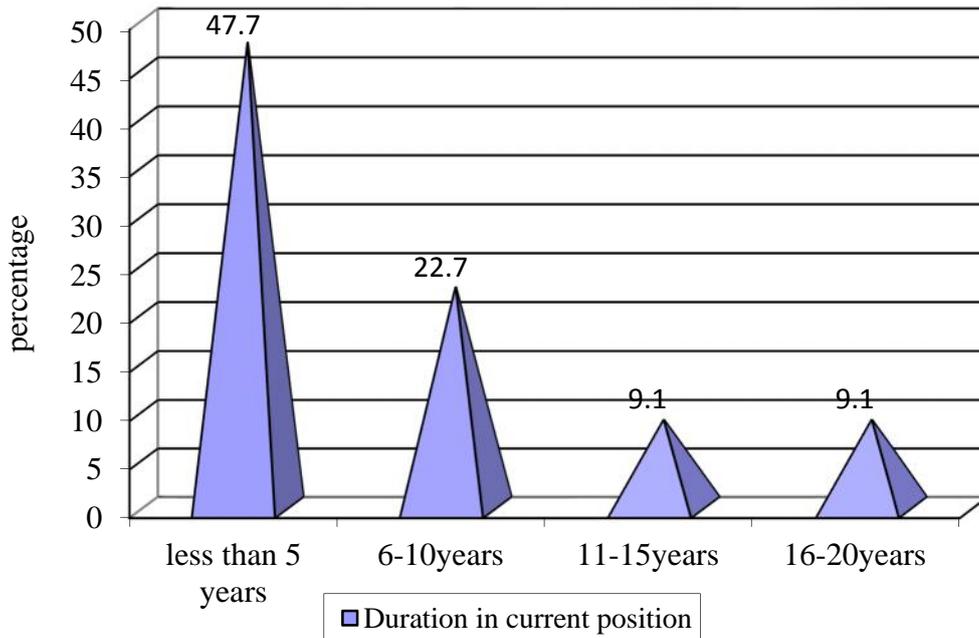
Figure 4.3: Duration in current position

4.2.4 Adoption of E-procurement by the Company

It is evident from the data shown in Table 4.2 that, majority of the UN agencies (79.5%) have adopted e-procurement while 9.1% have not adopted e-procurement. However, 11.4% did not respond to the question.

Table 4.2: Adoption of E-procurement by the company

Adoption	Frequency (F)	Percentage (%)
Yes	35	79.5
No	4	9.1
No Response	5	11.4
Total	**44**	**100.0**

4.2.5   Years Since Company Adopted E-procurement

The findings in Figure 4.4 shows that majority of the respondents represented by 47.7% indicated that the organization has adopted e-procurement for 1-5 years, 6-10 years (13.6%) and above 10 years (9.1%).

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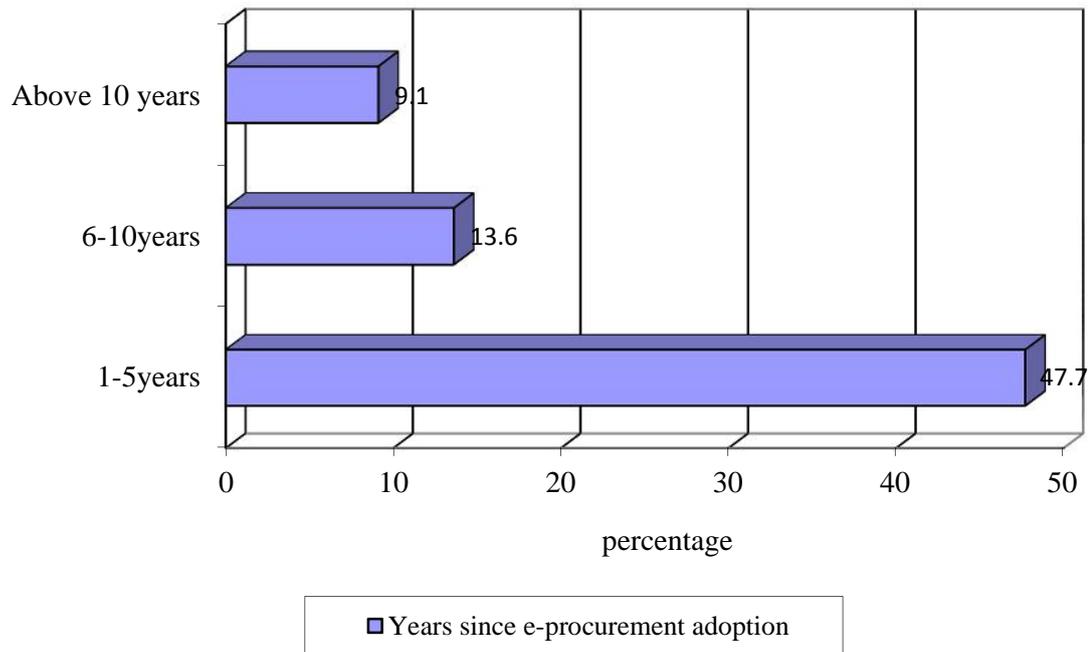
Figure 4.4: Years since company adopted e-procurement

4.3 E-tendering Process

This section looks at the level of agreement with the following statements that are related to e-tendering on performance of UN Agencies in Nairobi which is an objective of the study. Descriptive analysis as well as inferential statistics was used.

4.3.1 Extent to which E-tendering Process Influences Performance of Procurement Function in the Organization

The findings on Table 4.3 indicate that majority of the respondents indicated that e-tendering process influences performance of procurement function in the organization to a great extent (50.0%), very great extent (31.8%), neutral (4.5%), and less extent (2.3%). However, 4.5% of the respondents indicated that e-tendering process does not at all influence performance of procurement function in the organization while another 4.5% indicated that this was not applicable, mainly because the e-procurement was not available in their organization.

Table 4.3: Extent to which e-tendering process influences performance of procurement function in the organization

E-tendering	Frequency (F)	Percentage (%)
Very great extent	14	31.8
Great	22	50.0
Neutral	2	4.5
Less extent	1	2.3
Not at all	2	4.5
Not applicable	2	4.5
No Response	1	2.3
Total	**44**	**100.0**

4.3.2 Employees' Responses to E-tendering and Performance of UN Agencies in Nairobi

The results in Table 4.4 below indicate that the majority of procurement officers strongly agreed to statements that: Tenders are advertised online (59.1%); Prospective suppliers submit proposals online (54.5%); (e tendering) limits the incidence of collusion between bidders relative to traditional tendering because they fear detection (45.5%); helps to maintain the integrity, confidentiality, and authenticity of bids submitted (43.2%); allows sections of electronic documentation to flow through the supply chain (43.2%); improves the speed of returns and subcontractor price visibility (43.2%); improved levels of trust (38.6%); Low infrastructure and transaction costs of internet-based systems allow organizations to exploit the increased opportunities (38.6%); Short listing of tenders is done by the e-procurement system (34.1). The findings also reveal that a sizeable proportion of the respondents strongly disagreed to: Short listing of tenders is done by the e-procurement system (9.1%); limits the incidence of collusion between bidders relative to traditional tendering because they fear detection (6.8%) as statements regarding e-tendering process and performance of UN Agencies in Nairobi. Whilst it is expected that e-auction will have a direct effect on the cost of both operational and strategic inputs by allowing firms to obtain lower prices by using the market mechanism, De Boer et al., (2002) expect that e-tendering will have an impact on purchasing cost only indirectly as firms are able to consider more alternatives over time. The benefit of expanding the supplier base also applies to e-auctions. Through e-tendering, supplier selection is considered a suitable mechanism to

select a proper contractor fairly, efficiently and productively (Betts et al., 2006, Oyediran and Akintola 2011).

Table 4.4: Level of agreement with the following statements that are related to e-tendering and performance of UN Agencies in Nairobi

	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Tenders are advertised online	2.3	0.0	9.1	25.0	59.1
Prospective suppliers submit proposals online	2.3	4.5	9.1	25.0	54.5
Short listing of tenders is done by the e-procurement system	9.1	15.9	20.5	15.9	34.1
There is increased coordination between suppliers	4.5	9.1	27.3	27.3	25.0
There is improved levels of trust	0.0	2.3	25.0	29.5	38.6
Low infrastructure and transaction costs of internet-based systems allow organizations to exploit the increased opportunities	2.3	2.3	18.2	34.1	38.6
Inter-organizational systems enhance opportunities tend to create more effective customer-supplier relationships over time	2.3	0.0	19.2	45.5	29.5
It limits the incidence of collusion between bidders relative to traditional tendering because they fear detection	6.8	2.3	18.2	22.7	45.5
It helps to maintain the integrity, confidentiality, and authenticity of bids submitted.	2.3	0.0	11.4	38.6	43.2
It allows sections of electronic documentation to flow through the supply chain,	2.3	0.0	11.4	38.6	43.2
It improves the speed of returns and subcontractor price visibility	2.3	4.5	9.1	35.4	43.2

4.3.3 Correlation between E-tendering and Performance of UN Agencies in Nairobi

The Pearson's correlation coefficient of performance of UN Agencies in Nairobi and prospective suppliers submit proposals online is 0.825; Short listing of tenders is done by the e-procurement system (0.472); There is increased coordination between suppliers (0.139); improved levels of trust (0.683); Low infrastructure and transaction costs of internet-based systems to exploit opportunities (0.508), Inter-organizational systems enhance opportunities create more effective customer-supplier relationships over time (0.700); limits collusion between bidders relative to traditional tendering for fear of detection (0.320); helps to maintain integrity and authenticity of bids submitted (0.685); allows sections of electronic documentation to flow through the supply chain (0.695); improves the speed of returns and subcontractor price visibility (0.654). These coefficients imply that there exists a positive association of e-tendering to performance of UN Agencies in Nairobi. This association suggests that when one variable increases, performance of UN Agencies in Nairobi increases.

Table 4.5 Correlation Analysis between e-tendering and performance of UN Agencies in Nairobi

Correlations

		1	2	3	4	5	6	7	8	9	10	11
1	Correlation	1										
2	Correlation	.825**	1									
3	Correlation	.472**	.550**	1								
4	Correlation	.139	.191	.325*	1							
5	Correlation	.683**	.688**	.500**	.185	1						
6	Correlation	.508**	.452**	.182	.079	.482**	1					
7	Correlation	.700**	.696**	.577**	.184	.547**	.561**	1				
8	Correlation	.320*	.340*	.360*	.457**	.391*	.210	.308*	1			
9	Correlation	.685**	.672**	.353*	.343*	.699**	.450**	.537**	.622**	1		
10	Correlation	.695**	.558**	.560**	.297	.614**	.355*	.582**	.492**	.781**	1	
11	Correlation	.654**	.643**	.579**	.160	.437**	.453**	.578**	.206	.545**	.702**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Where:

1 = Tenders are advertised online

2 = Prospective suppliers submit proposals online

3 = Short listing of tenders is done by the e-procurement system

4 = There is increased coordination between suppliers

5 = There is improved levels of trust

6 = Low infrastructure and transaction costs of Internet-based systems allow organizations to

    exploit the increased opportunities

7 = Inter-organizational systems enhance opportunities tend to create more effective

     customer-supplier relationships over time

8 = It limits the incidence of collusion between bidders relative to traditional tendering

     because they fear detection

9 = It helps to maintain the integrity, confidentiality, and authenticity of bids submitted

10 = It allows sections of electronic documentation to flow through the supply chain

11 = It improves the speed of returns and subcontractor price visibility

4.4 E-auctioning process on Performance of UN Agencies in Nairobi

This section sought to establish the extent to which e-auctioning process influences performance of UN Agencies in Nairobi. Descriptive analysis as well as inferential statistics was used.

4.4.1 Extent to which E-auctioning process Influences Performance of Procurement Function in the Organization

The findings in Figure 4.5 shows that majority of the respondents were neutral (32.4%) as to whether e-auctioning process influences performance of procurement function in the organization. However a large proportion of the respondents agreed to very great extent (17.6%) as well as to great extent (17.6%) that e-auctioning process influences performance of procurement function in the organization. 5.9% of the procurement officers were in disagreement that e-auctioning process influences performance of procurement function in the organization.
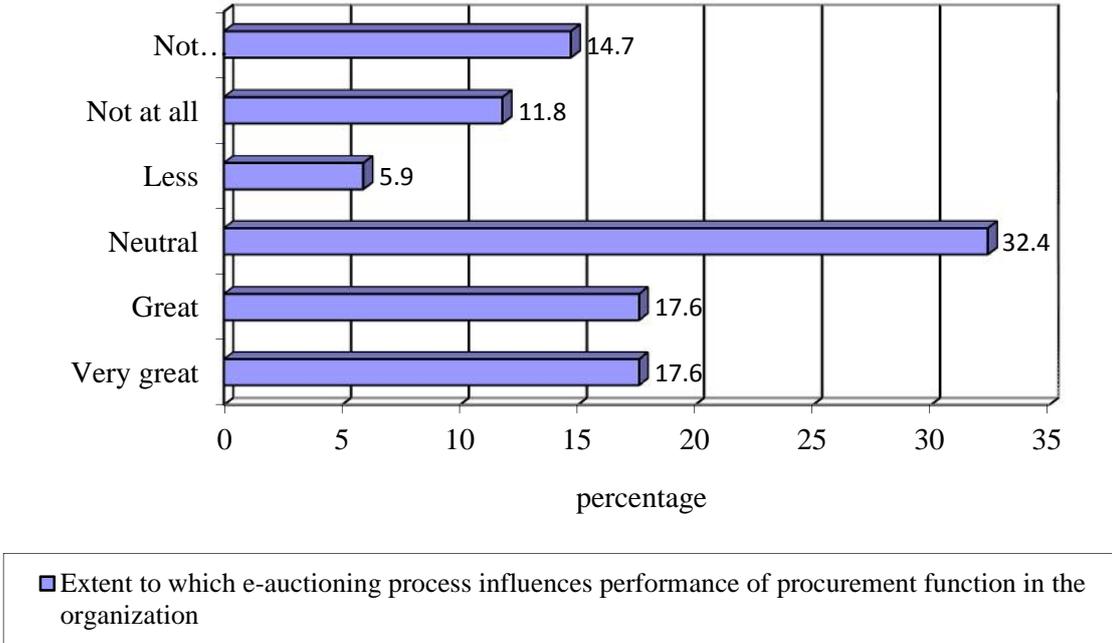
Figure 4.5: Extent to which e-auctioning process influences performance of procurement function in the organization

4.4.2 Employees' Responses to E-auctioning process and performance of UN Agencies in

Nairobi

The results in Table 4.6 indicate that the majority of procurement officers agreed to statements that: E-auctions provide buyers and sellers an open environment where they can compare the true value of their products (44.1%); enhances improved procurement process efficiency (41.2%); facilitates financial savings (38.2%); facilitates access to a larger supplier base (32.4%); improves transparency of the whole procurement process (32.4%); lowers transaction costs such as ordering costs (29.4%); and leads to increased speed of transaction (23.5 %) regarding e-auctioning process and performance of UN Agencies in Nairobi. The findings also revealed that a sizeable proportion of the respondents strongly disagreed (17.6%) and disagreed (11.8%) that it potentially damages buyer-supplier relationships by challenging suppliers' trust in buyers as a statement regarding e-auctioning process and performance of UN Agencies in Nairobi. The findings support Soudry (2010) who noted that electronic auctions can decrease contracting costs, increase transparency and achieve better economic outcomes as a result of increased competition. Under the electronic auction procedure, the danger of having the procuring entity favouring a particular firm by providing it with information on other tenders is limited because information on other bids

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is available to all bidders in an open manner. In addition to widely discussed cost savings resulting from e-auctions, researchers have also suggested that when appropriately utilized, online auctions can also have significant strategic implications. For example, strategic benefits, faster and more effective information transmitting, increased supplier pool and increased competition among suppliers that works to the buyer's favor (Tassabehji, 2010).

Table 4.6: Level of agreement with the following statements that are related to e-auctioning process and performance of UN Agencies in Nairobi

	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
E-auctions provide buyers and sellers an open environment where they can compare the true value of their products.	0.0	5.9	17.6	44.1	14.7
It facilitates financial savings in the organization.	0.0	8.8	11.8	38.2	23.5
It enhances improved procurement process efficiency which includes time savings for both buyers and sellers.	0.0	5.9	11.8	41.2	23.5
It facilitates access to a larger supplier base.	0.0	5.9	20.6	32.4	23.5
It improves transparency of the whole procurement process.	0.0	5.9	11.8	32.4	32.4
It helps in reducing the unfair or corruptive behavior.	0.0	5.9	20.6	20.6	35.3
It lowers transaction costs such as ordering costs.	0.0	5.9	14.7	29.4	32.4
It leads to increased speed of transaction.	0.0	5.9	17.6	23.5	35.3
It potentially damages buyer-supplier relationships by challenging suppliers' trust in buyers	17.6	11.8	32.4	8.8	11.8

4.4.3 Correlation between e-sourcing and performance of UN Agencies in Nairobi

For Pearson's coefficient of performance of UN Agencies in Nairobi,: It facilitates financial savings in the organization (0.721) enhances improved procurement process efficiency

which includes the time savings for both the buyers and sellers (0.795); facilitates access to a larger supplier base (0.773); improves transparency of the whole procurement process (0.863); helps in reducing the unfair behaviour (0.708); lowers transaction costs such as ordering costs (0.707); leads to increased speed of transaction (0.728); and potentially damages buyer-supplier relationships by challenging suppliers' trust in buyers (0.234). These coefficients imply that there exists a positive association of e-auctioning to performance of UN Agencies in Nairobi suggesting that when one variable increases, performance of UN Agencies in Nairobi increases.

Table 4.7: Correlation between e-sourcing and performance of UN Agencies in Nairobi

<table>
<tr><td colspan="10" align="center">Correlations</td></tr>
<tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr>
<tr><td>1   Pearson Correlation</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>2   Pearson Correlation</td><td>.721</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>3   Pearson Correlation</td><td>.795</td><td>.925</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4   Pearson Correlation</td><td>.773</td><td>.793</td><td>.782</td><td>1</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>5   Pearson Correlation</td><td>.863</td><td>.691</td><td>.739</td><td>.866</td><td>1</td><td></td><td></td><td></td><td></td></tr>
<tr><td>6   Pearson Correlation</td><td>.708</td><td>.717</td><td>.697</td><td>.623</td><td>.768</td><td>1</td><td></td><td></td><td></td></tr>
<tr><td>7   Pearson Correlation</td><td>.707</td><td>.823</td><td>.804</td><td>.767</td><td>.829</td><td>.823</td><td>1</td><td></td><td></td></tr>
<tr><td>8   Pearson Correlation</td><td>.728</td><td>.877</td><td>.867</td><td>.824</td><td>.778</td><td>.702</td><td>.836</td><td>1</td><td></td></tr>
<tr><td>9   Pearson Correlation</td><td>.234</td><td>.298</td><td>.270</td><td>.161</td><td>.126</td><td>.109</td><td>.147</td><td>.195</td><td>1</td></tr>
</table>

Where:

1 = E-auctions provide buyers and sellers an open environment where they can compare the true value of their products

2 = It facilitates financial savings in the organization

3 = It enhances improved procurement process efficiency which includes the time savings for both buyers and sellers

4 = It facilitates access to a larger supplier base

5 = It improves transparency of the whole procurement process

6 = It helps in reducing the unfair or corruptive behavior

7 = It lowers transaction costs such as ordering costs

8 = It leads to increased speed of transaction

9 = It potentially damages buyer-supplier relationships by challenging suppliers' trust in buyers

4.5 E-invoicing on performance of UN Agencies in Nairobi

This section sought to establish the extent to which e-invoicing influences performance of UN Agencies in Nairobi. Descriptive analysis as well as inferential statistics was used.

4.5.1 Extent to which e-invoicing process influences performance of procurement function in the organization

The findings in Figure 4.6 shows that majority of the respondents agreed to a great extent (32.4%) that e-invoicing process influences performance of procurement function in the organization while 23.5% agreed to a very great extent that e-invoicing process influences performance of procurement function in the organization. However 17.6% were neutral and .9% indicated that e-invoicing process does not influence the performance of procurement function in the organization.
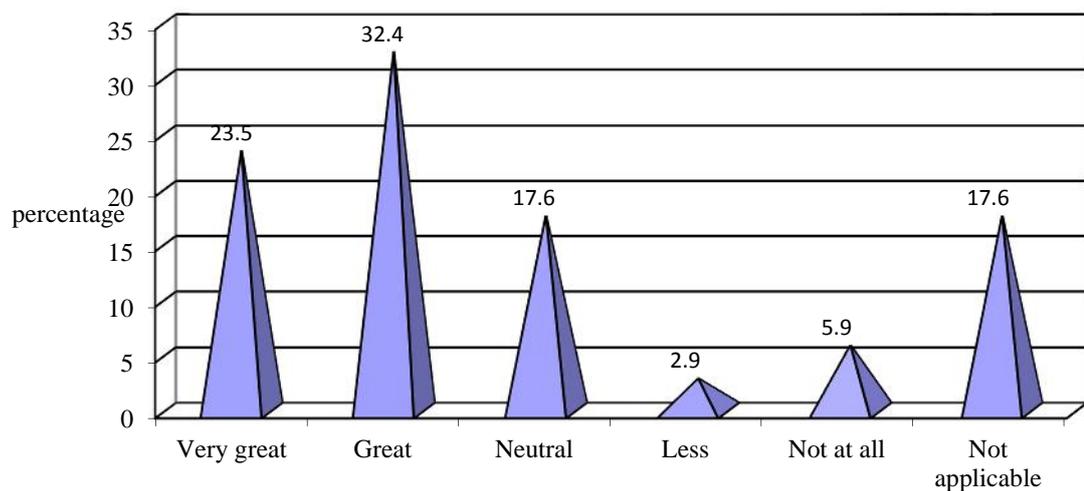
Extent to which e-invoicing process influences performance of procurement function in the organization

Figure 4.6: Extent to which e- invoicing process influences performance of procurement function in the organization

4.5.2 Employees' Responses to e- invoicing and performance of in UN Agencies in Nairobi

Concerning employees' responses to e- invoicing and performance of in UN Agencies in Nairobi, the results in Table 4.8 below indicate that, majority of procurement officers strongly agreed to statements that: Through the reduction in use of papers it offers

environmental benefits (44.1%); Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions (35.3%); It offers easy retrieval and processing of data (35.3%); It offers greater security of data in the organization (32.4%).

There is faster and better communication between suppliers and buyers (32.4%); There is secure and low cost procurement transaction (29.4%); It offers efficient and effective exchange and utilization of information to users in the organization (29.4%); It has increased reliability of service delivery in the operations of the organization (26.5%); and Use of e-invoice reduces payment time to suppliers since time taken for delivery of service has reduced (26.5%) are statements regarding e-invoicing process and performance of UN Agencies in Nairobi. The findings are in line with Lian et al., (2014) who stated that e-invoicing offers many benefits: significant cost reduction, process simplification, reduced payment time, greater security of data, as well as numerous environmental benefits.

This is confirmed by enterprises and public authorities which already use it. They attempt to explain why individual corporations do not perform asset transformation themselves as a function of the transaction costs incurred in conducting such activities. As shown in transaction cost economics, the cost of the infrastructure is reduced per transaction when the volume of transactions increases (Chang et al., 2013). In recent years, there have been several technological advances to strengthen the security of web-based transactions, particularly in e-invoicing and digital signatures (Dai & Grundy, 2007).

However, firms are still concerned about conducting their relationships with suppliers and customers via the internet, so security may be one of the most important barriers to the development of e-invoicing (Yu & Tao, 2009). In the recent past, many countries have employed internet to provide e-invoice services for all stakeholders. Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions. Many previous studies have paid attention to e-invoice adoption. However, most of them are focused on the business/firm level (Hernandez-Ortega, 2011; Vrcek & Magdalenic, 2011).

Table 4.8: Level of agreement with the following statements that are related to e-invoicing and performance of UN Agencies in Nairobi

	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions.	2.9	2.9	8.8	32.4	35.3
There is secure and low cost procurement transaction.	5.9	2.9	14.7	29.4	29.4
Use of e-invoice reduces payment time to suppliers since time taken for delivery of service has reduced.	5.9	2.9	11.8	35.3	26.5
It offers greater security of data in the organization.	2.9	5.9	11.8	29.4	32.4
There is faster and better communication between suppliers and buyers.	2.9	2.9	17.6	26.5	32.4
It offers easy retrieval and processing of data.	2.9	2.9	8.8	32.4	35.3
It has increased reliability of service delivery in the operations of the organization	2.9	2.9	17.6	32.4	26.5
It offers efficient and effective exchange and utilization of information to users in the organization	2.9	2.9	8.8	38.2	29.4
Through the reduction in use of papers it offers environmental benefits	2.9	2.9	11.8	20.6	44.1

4.5.3 Correlation between e- invoicing and performance of in UN Agencies in Nairobi

From Pearson's correlation coefficient of performance of UN Agencies in Nairobi, the following statements hold: There is secure and low cost procurement transaction (0.696); Use of e-invoice reduces payment time to suppliers since time taken for delivery of service

has reduced (0.575); It offers greater security of data in the organization (0.688); There is faster and better communication between suppliers and buyers (0.748); It offers easy retrieval and processing of data (0.858); It has increased reliability of service delivery in the operations of the organization (0.704); It offers efficient and effective exchange and utilization of information to users in the organization (0.870); and Through the reduction in use of papers it offers environmental benefits (0.911). These coefficients imply that there exists a positive association of e-invoicing to performance of UN Agencies in Nairobi. This positive association suggests that when one variable increases, performance of UN Agencies in Nairobi increases.

Table 4.9: Correlation between e-invoicing and performance of UN Agencies in Nairobi

<table>
<tr><td colspan="10" align="center">Correlations</td></tr>
<tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr>
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<tr><td>3</td><td>Correlation</td><td>.575</td><td>.826</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>4</td><td>Correlation</td><td>.688</td><td>.795</td><td>.806</td><td>1</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>5</td><td>Correlation</td><td>.748</td><td>.842</td><td>.644</td><td>.733</td><td>1</td><td></td><td></td><td></td><td></td></tr>
<tr><td>6</td><td>Correlation</td><td>.858</td><td>.782</td><td>.740</td><td>.877</td><td>.797</td><td>1</td><td></td><td></td><td></td></tr>
<tr><td>7</td><td>Correlation</td><td>.704</td><td>.833</td><td>.816</td><td>.861</td><td>.815</td><td>.847</td><td>1</td><td></td><td></td></tr>
<tr><td>8</td><td>Correlation</td><td>.870</td><td>.842</td><td>.687</td><td>.733</td><td>.875</td><td>.845</td><td>.865</td><td>1</td><td></td></tr>
<tr><td>9</td><td>Correlation</td><td>.911</td><td>.757</td><td>.620</td><td>.708</td><td>.764</td><td>.843</td><td>.705</td><td>.788</td><td>1</td></tr>
</table>

Where:

1 = Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions

2 = There is secure and low cost procurement transaction

3 = Use of e-invoice reduces payment time to suppliers since time taken for delivery of service has reduced

4 = It offers greater security of data in the organization

5 = There is faster and better communication between suppliers and buyers

6 = It offers easy retrieval and processing of data

7 = It has increased reliability of service delivery in the operations of the organization

8 = It offers efficient and effective exchange and utilization of information to users in the organization

9 = Through the reduction in use of papers, it offers environmental benefits

4.6 E-sourcing on performance of UN Agencies in Nairobi

This section sought to establish the extent to which e-sourcing influences performance of UN Agencies in Nairobi. Descriptive analysis as well as inferential statistics was used.

4.6.1 Extent to which e-sourcing process influences performance of procurement function in the organization

The findings in Figure 4.7 shows that majority of the respondents agreed to a very great extent (35.3%) and great extent (35.3%) that e-sourcing influences performance of procurement function in the organization. However 14.7% were neutral and 2.9% indicated that e- sourcing does not influence performance of procurement function in the organization.
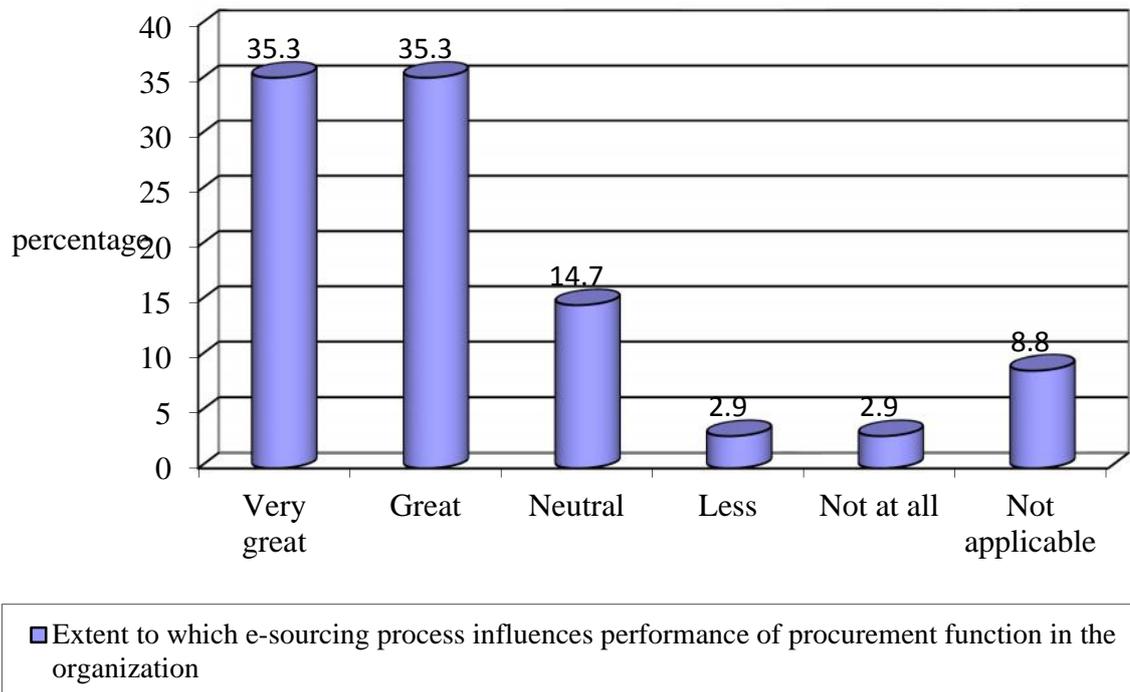

Extent to which e-sourcing process influences performance of procurement function in the organization

Figure 4.7: Extent to which e-sourcing process influences performance of procurement function in the organization

4.6.2 Employees' Responses to e-sourcing and performance of UN Agencies in Nairobi

Concerning the employee's response to e-sourcing and performance of UN agencies in Nairobi, the results in Table 4.10 below indicating that the majority of procurement officers agreed to statements that: It helps in achieving low cost in procurement transactions (55.9%); E-sourcing creates value to the organization through innovation (50.0%); It improves communication between the organization and new suppliers (47.1%); It compels the organization to be super-efficient and proactive in their quest to increase return on their investments (47.1%); E-sourcing reduces costs through improved process efficiencies (44.1%); It facilitates tracking procurement transactions and ensures quality supplies (41.2%); and Through the process of e-sourcing there has been timely delivery of goods and services to user departments (38.2%) are statements regarding e-sourcing process and performance of UN Agencies in Nairobi.

The findings are in line with Hsin et al., (2013) who noted that over the past three decades many organizations have exhibited tremendous growth in the use of e-sourcing. It has been commonly accepted that information infrastructure systems such as e-procurement have become increasingly connected and embedded with other infrastructure to initiate growth of enterprises. Today suppliers are using the internet to submit multiple electronic bids during a fixed time period often 30 minutes or less (Duplaga et al., 2006). Purchasing integration through strategic sourcing promotes better buyer–supplier relationships and supplier development (Narasimhan and Das, 2001).

To achieve successful strategic sourcing, firms need to maintain good relationships with suppliers and seek to achieve their long-term goals (Chan and Chin, 2007). The research of Humphreys et al. (2000) also highlights the importance of selecting suppliers and their development. Among studies on the impact of e-procurement, Boyer and Olsen (2002) found that purchasing performance is improved with internet purchasing. Wu et al. (2003) assessed the impact of firm characteristics, competitive environment and intensity of e-business adoption on performance.

Table 4.10: Level of agreement with the following statements that are related to e-sourcing and performance of UN Agencies in Nairobi

	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
It helps in achieving low cost in procurement transactions.	2.9	2.9	11.8	55.9	20.6
Through the process of e-sourcing there has been timely delivery of goods and services to user departments.	2.9	5.9	23.5	38.2	23.5
It facilitates tracking procurement transactions and ensures quality supplies.	2.9	5.9	20.6	41.2	23.5
It improves communication between the organization and new suppliers.	2.9	5.9	17.6	47.1	20.6
E-sourcing creates value to the organization through innovation.	2.9	2.9	11.8	50.0	26.5
E-sourcing reduces costs through improved process efficiencies.	2.9	2.9	11.8	44.1	32.4
It compels the organization to be super-efficient and proactive in their quest to increase return on their investments.	2.9	5.9	14.7	47.1	23.5

4.6.3 Correlation between e- sourcing and performance of in UN Agencies in Nairobi

Based on information from Table 4.11, Pearson's correlation coefficient of performance of UN Agencies in Nairobi holds as follows: Through the process of e-sourcing there has been timely delivery of goods and services to user departments (0.659); facilitates tracking procurement transactions and ensures quality supplies (0.699); It improves communication between the organization and new suppliers (0.657).

 E-sourcing creates value to the organization through innovation (0.749); E-sourcing reduces costs through improved process efficiencies (0.765); and compels the organization to be super-efficient and proactive in their quest to increase return on their investments

(0.625). These coefficients imply that there exists a positive association of e-sourcing to performance of UN Agencies in Nairobi.

This positive association suggests that when one increases, performance of UN Agencies in Nairobi increases.

Table 4.11: Correlation between e-sourcing and performance of UN Agencies in Nairobi

Correlations

	1	2	3	4	5	6	7
Correlation	1						
Correlation	.659**	1					
Correlation	.699**	.823**	1				
Correlation	.657**	.648**	.831**	1			
Correlation	.749**	.720**	.848**	.849**	1		
Correlation	.765**	.736**	.830**	.774**	.938**	1	
Correlation	.625**	.795**	.749**	.685**	.774**	.726**	1

**. Correlation is significant at the 0.01 level (2-tailed).

4.8 Level of adoption in various procurement functions in the organization

The results in Table 4.12 indicate that the majority of procurement officers agreed that: Internal coordination (44.1%), Supplier identification (41.2%), Contract monitoring (35.3%), Specification of supplies (35.3%), Relationship management (35.3%), Communication with potential suppliers (32.4%), and Online negotiations (26.5%) are statements regarding level of adoption in various procurement functions in the organization.

Table 4.12 Level of adoption in various procurement functions in the organization

	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
Online negotiations	2.9	14.7	29.4	26.5	17.6
Supplier identification	2.9	0.0	8.8	41.2	38.2
Internal coordination	2.9	0.0	11.8	44.1	32.4
Communicate with potential suppliers.	2.9	2.9	11.8	32.4	41.2
Contract monitoring.	2.9	0.0	17.6	35.3	35.3
Specification of supplies.	2.9	0.0	17.6	35.3	35.3
Relationship management	2.9	2.9	17.6	35.3	35.3

Other ways through UN Agencies view of e-procurement influence performance of the organization include: training; controls; segregated delegations; contract management; ease of accessibility to long-term agreements; accessibility to vendors; performance management relations; vendor requisitions (buyer); and by use of other agencies' long-term agreements (LTA) which are normally found online thereby making it easier for the sister agencies to apply 'peggy back'.

4.9 Regression Analysis

4.9.1 Model Summary

The study established a correlation value 0.875 with an r-squared of 0.765 that was adjusted to -0.737.

Table 4.13: Model Summary

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.875[a]	.765	.737	.158

a. Predictors: (Constant), E-sourcing, E-auctioning, E-tendering, E-invoicing

4.9.2 Analysis of Variance (Anova)

The Anova Table 4.13 below shows that the independent variables statistically predict the dependent variable as (4, 34) = 27.651, p<0.05 (i.e. 0.000).

Table 4.13: ANOVA

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.746	4	.686	27.651	.000[b]
	Residual	.844	34	.025		
	Total	3.590	38			

a. Dependent Variable: E-procurement
b. Predictors: (Constant), E-sourcing, E-auctioning, E-tendering, E-invoicing

4.9.3 Coefficient of Variation

From the coefficients Table 4.12, it is evident that the p-values for e-procurement are E-tendering (0.000), E-auctioning (0.002), E-invoicing (0.001) and E-sourcing (0.013) are less than 0.05. This therefore means that E-tendering, E-auctioning, E-invoicing and E-sourcing are statistically significant and influence performance of UN Agencies in Nairobi.

Table 4.14: Coefficients

Coefficients [a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.664	.063		10.510	.000
	E-tendering	.190	.025	.824	7.645	.000
	E-auctioning	.929	.017	.009	.090	.002
	E-invoicing	.948	.019	.007	.066	.001
	E-sourcing	.601	.025	.069	.528	.013

a. Dependent Variable: E-procurement

Therefore, the regression model is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where:

Y = Performance of UN agencies in Nairobi.

β_0 = Constant Term

$\beta_{1,2,3,4}$ = Beta coefficients

X_1 = E-tendering process

X_2 = E-auctioning process

X_3 = E-invoicing process

X_4 = E-sourcing process

ε = Error term

Therefore, this translates to

$$Y = .664 + .190X_1 + .929 + 948 + .601$$

4.10 Chapter Summary

This chapter looked at the results and findings on the effect of e-procurement on performance of United Nations Agencies in Nairobi. The results and findings were presented as per the research questions. Tables and figures were used in the presentation of the results and findings. Chapter five will look at the summary of findings, discussions, conclusions and recommendations.

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The basic purpose of this chapter is to give summary of the findings, conclusions and recommendations of the study. This was based on the research findings presented and discussed in the previous chapters. The study established several findings which make a direct contribution to knowledge and policy formulation. Recommendations both for further research as well as policy and practice have been made.

5.2 Summary

This study aimed at determining the effect of e-procurement on performance of United Nations Agencies in Nairobi. The study was guided by the following research questions: What is the effect of e-tendering on performance of UN Agencies in Nairobi? What is the effect of e-sourcing on performance of in UN Agencies in Nairobi? What is the effect of e-invoicing on performance of UN Agencies in Nairobi and what is the effect of e-auctioning on performance of UN Agencies in Nairobi?

This study adopted an exploratory research design and employed quantitative research as the main approach to guide the study. The study targeted procurement officers and staff of the procurement department in four UN agencies. The unit of study was UN agencies in Nairobi. Purposive sampling technique was used to select the procurement officers and staff in the procurement department who are conversant with e-procurement. From the population of procurement managers and staff of procurement department of each organization the study purposively selected 15 respondents from each agency, thus giving sample of 60 respondents. The primary data was collected by use of questionnaires that were self-administered to the respondents. The collected data was coded and entered into the Statistical Package for Social Sciences (SPSS) program according to each variable of the study for analysis.

The study findings reveal that majority of the procurement officers are female and have worked in the organization for 6-10 years. The study findings reveal that majority of the respondents have attained bachelors level of education. The study findings also reveal that majority of the respondents have been in the current position for less than 5 years. Majority of the UN agencies (79.5%) have adopted e-procurement for 1-5 years.

The study findings reveal that majority of the respondents indicated that e-tendering process influences performance of procurement function in the organization to a great extent. Majority of procurement officers strongly agreed to statements that: Tenders are advertised online, Prospective suppliers submit proposals online, It limit the incidence of collusion between bidders relative to traditional tendering because they fear detection, It helps to maintain the integrity, confidentiality, and authenticity of bids submitted, It allows sections of electronic documentation to flow through the supply chain, It improves the speed of returns and subcontractor price visibility, There is improved levels of trust, Low infrastructure and transaction costs of Internet-based systems allow organizations to exploit the increased opportunities and Short listing of tenders is done by the e-procurement system are statements regarding E-tendering process and performance of UN Agencies in Nairobi.

The study findings reveal that majority of the respondents were neutral as to whether E-auctioning process influences performance of procurement function in the organization. Majority of procurement officers agreed to statements that: e-auctions provide to buyers and sellers an open environment where they can compare the true value of their products, It enhances improved procurement process efficiency which includes the time savings for both buyers and sellers, It facilitates financial savings in the organization, It facilitates access to a larger supplier base, It improves transparency of the whole procurement process, It lowers transaction costs such as ordering costs, and It leads to increased speed of transaction are statements regarding e-auctioning process and performance of UN Agencies in Nairobi.

The study findings reveal that majority of the respondents agreed to a great extent that e-invoicing process influences performance of procurement function in the organization. Majority of procurement officers strongly agreed to statements that: Through the reduction in use of papers, it offers environmental benefits; Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions; It offers easy retrieval and processing of data; It offers greater security of data in the organization; There is faster and better communication between suppliers and buyers; There is secure and low cost procurement transaction; It offers efficient and effective exchange and utilization of information to users in the organization; It has increased reliability of service delivery in the operations of the organization; and Use of e-invoice reduces payment time to suppliers since time taken for delivery of service has reduced are statements regarding e-invoicing process and performance of UN Agencies in Nairobi.

The findings also reveal that majority of the respondents agreed to a very great extent and great extent respectively that e-sourcing influences performance of procurement function in the organization. The majority of procurement officers agreed to statements that: It helps in achieving low cost in procurement transactions; E-sourcing creates value to the organization through innovation; It improves communication between the organization and new suppliers; It compels the organization to be super-efficient and proactive in their quest to increase return on their investments; E-sourcing reduces costs through improved process efficiencies; It facilitates tracking procurement transactions and ensures quality supplies; and Through the process of e-sourcing there has been timely delivery of goods and services to user departments are statements regarding e-sourcing process and performance of UN Agencies in Nairobi.

The Pearson's correlation coefficients imply that there exists a positive association of e-sourcing to performance of UN Agencies in Nairobi. This positive association suggests that when one variable increases, performance of UN Agencies in Nairobi increases.

From the coefficients of variation in regression analysis, it is evident that the p-values for e-procurement are E-tendering, E-auctioning, E-invoicing and E-sourcing are less than 0.05. This therefore means that E-tendering, E-auctioning, E-invoicing and E-sourcing are statistically significant and influences performance of UN Agencies in Nairobi.

5.3 Discussion
5.3.1 E-tendering and Performance of UN Agencies in Nairobi
The study findings reveal that majority of the respondents indicated that e-tendering process influences performance of procurement function in the organization to a great extent (Croom, 2007). Majority of procurement officers strongly agreed to statements that: Tenders are advertised online, Prospective suppliers submit proposals online, It limit the incidence of collusion between bidders relative to traditional tendering because they fear detection, It helps to maintain the integrity, confidentiality, and authenticity of bids submitted, It allows sections of electronic documentation to flow through the supply chain, It improves the speed of returns and subcontractor price visibility, There is improved levels of trust, Low infrastructure and transaction costs of Internet-based systems allow organizations to exploit the increased opportunities and Short listing of tenders is done by the e-procurement system are statements regarding e-tendering process and performance of UN Agencies in Nairobi.

Based on the findings; Tendering is used regularly, and many entities conform to the procedures as stipulated in the act. Furthermore many agreed that training employees on tender procedures would improve their performance. A larger proportion attributed the performance of their department to the tendering process they undertook. This concludes that, entities that conduct tendering procedures as per the act improve the performance of their department.

From the results of analysis, e-tendering plays a vital role to enhance organizational performance of UN agencies. From the findings of the study, based on the fact that the main finding of the study was that majority of the respondents were of the opinion that there is increased tendency towards market structures and could be interpreted to mean that the market that enabled the supply of the company's products and services is large enough to accommodate the business. This could also imply to mean that the market is promising and thus profitable to the organization. The ability of the institution to penetrated into the market is not difficult as a result of low cost and little time needed in accessing the market and thus this enables that institution to make more strides, in addition to this, the study finding could also be interpreted to mean that it is due to small legal issues needed that the institution has been able to access the market.

The findings are in line with De Boer et al., (2002) who hypothesized that e-tendering helps firms reduce the cost of establishing specifications, choosing suppliers, negotiating conditions and contracting. Whilst it is expected that e-auction will have a direct effect on the cost of both operational and strategic inputs by allowing firms to obtain lower prices by using the market mechanism, De Boer et al., (2002) expect that e-tendering will have an impact on purchasing cost only indirectly, as firms are able to consider more alternatives over time. The benefit of expanding the supplier base also applies to e-auctions. Through e-tendering the process of supplier or contractor selection is considered a suitable mechanism to select a proper contractor fairly, efficiently and productively (Betts et al., 2006, Oyediran and Akintola 2011).

Most of the tender committee's members attended training on tender procedures sometimes. Most of the responses strongly agreed that separation of duties within the tendering committees improved procurement performance to an average. Furthermore presence of numerous tendering committees caused delays to the process of tendering as

many respondents agreed to this. This concludes that how many, duties are allocated and how tendering committees execute their duties affects the performance of the department.

The procurement process should therefore as much as possible portray ethical behaviors to portray a good image to the public about the process. Ethical practices improve the performance of the procurement department and the organization at large. In each organization it was found that it had at least two computers in the procurement department and enterprise/computer application system for use in the procurement. The staff were generally trained and thus aware of ICT and only a few respondent stated that they were either less or not trained at all. This means that public entities should employ more capital in ICT to increase efficiency and effectiveness of the tender documents. Majority respondents indicated that indeed they kept records on tendering for at least six years; some indicated that they kept their records under lock and key but most of them used passwords. Some respondents said they used both methods though.

5.3.2 E-auctioning Process on Performance of in UN Agencies in Nairobi

The study findings reveal that majority of the respondents were neutral as to whether e-auctioning process influences performance of procurement function in the organization. Majority of procurement officers agreed to statements that: E-auctions provide buyers and sellers an open environment where they can compare the true value of their products; It enhances improved procurement process efficiency which includes the time savings for both the buyers and sellers; It facilitates financial savings in the organization; It facilitates access to a larger supplier base; It improves transparency of the whole procurement process; It lower transaction costs such as ordering costs; and It leads to increased speed of transaction are statements regarding e-auctioning process and performance of UN Agencies in Nairobi.

The study results revealed that UN agencies in Nairobi invested heavily in the electronic procurement system. The study further revealed that information system has helped in controlling the stock inventory and reduced ordering time and follow up time. This adoption of the information technology has added a competitive advantage to the organization. The study results revealed that information system has helped to improve the quality of services. Further, the study reveals that information system has put in place steps towards risk reduction and mitigate of those that are most likely to occur.

That information technology is an important component of electronic procurement in state corporations. That electronic procurement rides and thrives on information technology to provide infrastructure where the both end users interact. 5.3.2 Information System That information system provides the software of electronic procurement which is mounted on the information technology to enhance free follow of information between the suppliers and the host. When suppliers install this software it enables them to place their orders with ease.

Auctions offer great promises mechanisms for optimal resource allocation complex distributed systems with self-interested agents. However, limited and costly computation necessitates a rethinking of traditional auction theory because direct extensions of auctions that work well in small problems can fail in complex distributed systems. My thesis is that it is necessary to take an explicitly computational approach to auction design. Indeed, thev Auctions in e-commerce systems will depend on the ability to maintain the desirable properties of auctions, for example economic efficiency, robustness, and simplicity, as methods are introduced to allow tractable computation. Once computational issues are successfully addressed, auctions may provide simple, stable, and robust solutions to many important distributed optimization problems.

The findings support Soudry (2010) who noted that electronic auctions can decrease contracting costs, increase transparency and achieve better economic outcomes as a result of increased competition. This stems from the fact that under the electronic auction procedure, the danger of having the procuring entity favouring a particular firm by providing it information on other tenders is limited. This is because information on other bids is available to all bidders in an open and equal manner. Moreover, all bidders are allowed to amend their tender at any time within the limits of the time period. In addition to widely discussed cost savings resulting from e-auctions, researchers have also suggested that when appropriately utilized, online auctions can also have significant strategic implications. For example, studies have identified strategic benefits such as significant time savings for the buying firm (which will greatly improve the firm's efficiency), faster and more effective information transmission, much more increased supplier pool (can easily draw suppliers all over the world), and increased competition among suppliers that works to the buyer's favor (Tassabehji, 2010).

5.3.3 E-invoicing on Performance of in UN Agencies in Nairobi

The study findings reveal that majority of the respondents agreed to a great extent that e-invoicing process influences performance of procurement function in the organization. Specifically, majority of procurement officers strongly agreed to statements that: Through the reduction in use of papers it offers environmental benefits; Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions; It offers easy retrieval and processing of data; It offers greater security of data in the organization; There is faster and better communication between suppliers and buyers; There is secure and low cost procurement transaction; It offers efficient and effective exchange and utilization of information to users in the organization; It has increased reliability of service delivery in the operations of the organization; and Use of e-invoice reduces payment time to suppliers since time taken for delivery of service has reduced are statements regarding e-invoicing process and performance of UN Agencies in Nairobi. The findings are in line with

Lian et al., (2014) who stated that e-invoicing offers many benefits: significant cost reduction, process simplification, reduced payment time, greater security of data, as well as numerous environmental benefits. This is confirmed by enterprises and public authorities which already use it. They attempt to explain why individual corporations do not perform asset transformation themselves as a function of the transaction costs incurred in conducting such activities. As shown in transaction cost economics, the cost of the infrastructure is reduced per transaction when the volume of transactions increases (Chang et al., 2013). In recent years, there have been several technological advances to strengthen the security of web-based transactions, particularly in e-invoicing and digital signatures (Dai & Grundy, 2007).

From the survey it also became clear, that suppliers invoice entries are increasingly tightened under the new system in order to keep the processing of invoices as automated and less time consuming as possible. That is also why less bills are missing. Also if some markings are missing from the bills, they can be promptly requested without any delays. All this speeds up the invoice processing. Also united opinion about the new system was that, it is important that the new system shifts workload of employees from paper rotation to productive work. They also have access to the required bills while being outside the office. This also affects

the speed of the invoice handling chain and the recording of the expense to be charged to the customer.

This is supported by a study done by Rebecca (2007) who reveals that to pursue the understanding of current business-to business e-procurement practices by describing the success factors and challenges to its implementation in the corporate setting. The study through factor analysis resulted in three e procurement success factors: supplier and contract management; end- user behaviour and e-procurement business processes; and information and e-procurement infrastructure. Three challenge- to-implementation factors also emerged: lack of system integration and standardization issues; immaturity of e-procurement-based market services and end-user resistance; and maverick buying and difficulty in integrating e- commerce with other systems.

However, firms are still concerned about conducting their relationships with suppliers and customers via the internet, so security may be one of the most important barriers to the development of e-invoicing (Yu & Tao, 2009). In the recent past, many countries have employed internet to provide e-invoice services for all stakeholders. Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions. Many previous studies have paid attention to e-invoice adoption. However, most of them are focused on the business/firm level (Hernandez-Ortega, 2011; Vrcek & Magdalenic, 2011).

Results and analysis provided in this chapter made it clear how important it really is for a company to plan and execute a project in a proper way. In conclusion it can be stated that after the transition to the electronic purchase invoice system, the transparency of invoice processing has improved – the information is correct and easily available. It is possible to view purchase invoices from the new system regardless of time and place. The possibility of misuse is reduced and the procedures of internal control is made easier.

5.3.4 E-sourcing on Performance of UN Agencies in Nairobi

The findings also reveal that majority of the respondents agreed to a very great extent and great extent respectively that e-sourcing influences performance of procurement function in the organization. The majority of procurement officers agreed to statements that: It helps in achieving low cost in procurement transactions; E-sourcing creates value to the organization through innovation; It improves communication between the organization and

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new suppliers; It compels the organization to be super-efficient and proactive in their quest to increase return on their investments; E-sourcing reduces costs through improved process efficiencies; It facilitates tracking procurement transactions and ensures quality supplies; and Through the process of e-sourcing there has been timely delivery of goods and services to user departments are statements regarding e-sourcing process and performance of UN Agencies in Nairobi.

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The findings are in line with Hsin et al., (2013) who noted that over the past three decades many organizations have exhibited tremendous growth in the use of e-sourcing. It has been commonly accepted that information infrastructure systems such as e-procurement have become increasingly connected and embedded with other infrastructure to initiate growth of enterprises. Today suppliers are using the internet to submit multiple electronic bids during a fixed time period, often 30 minutes or less (Duplaga et al., 2006). Purchasing integration through strategic sourcing promotes better buyer–supplier relationships and supplier development (Narasimhan and Das, 2001). To achieve successful strategic sourcing, firms need to maintain good relationships with suppliers and seek to achieve their long-term goals (Chan and Chin, 2007). The research of Humphreys et al. (2000) also highlights the importance of selecting suppliers and their development. Among studies on the impact of e-procurement, Boyer and Olsen (2002) found that purchasing performance is improved with internet purchasing. Wu et al. (2003) assessed the impact of firm characteristics, competitive environment and intensity of e-business adoption on performance.

Wu et al. (2007) also found that the use of coordinated e-sourcing applications was found to have both direct and indirect effects on perceived efficiency gains. Johnson et al. (2007)

presented findings that e-business technologies targeted at reducing dyadic coordination costs were found to lead to improved financial performance. E-procurement helped to establish common processes, to convert from transactions to strategic activities and to save spending (Smart, 2010).

The results of the study showed that most of the respondents agreed with the statement on the effect of e-sourcing on the performance of UN Agencies in Nairobi. The results shows that e- sourcing saves time , enables the Agencies to get information about the goods suppliers, facilitates accessing pricelists and catalogues from suppliers, it enables them to interact with their customers and suppliers online and enables the supermarkets to find out what their customers want. Additionally it was established that e- sourcing facilitates faster decisions making by supermarkets using sourced information, which helps in the utilization of sourced information to enhance the supermarket performance, it facilitates getting information from a large number of potential suppliers, this enhanced information flow between the buyers and the suppliers and reduced to a large extent sourcing costs. The findings indicated that all the statement items that were used to describe the effects of e-sourcing on the performance of the supermarket since the mean value of the statements is all above 4.0 meaning that more than 75% of the respondents agreed with the statements. This agreed with the findings of Loukis et al. (2009) and Saleemi, (2006) who indicated that e-sourcing influences the performance of the organization.

5.4 Conclusion

5.4.1 E-tendering and Performance of UN Agencies in Nairobi

The study concludes that E-tendering, E-auctioning, E-invoicing and E-sourcing are statistically significant and influences performance of UN Agencies in Nairobi. The study concluded that among other factors that might have an effect on organisational performance major focus should be paid on e-tendering, e-auctioning, e-purchasing and e-invoicing so as an organization or institution can have greater organisational performance. On the basis of the afore-mentioned findings, the following deductions are expedient: The correlation and linear regression analysis employed for testing the two hypotheses revealed that; e-procurement has a significant effect on the organisational performance of the Un agencies in Nairobi and that there is a positive and significant relationship between e-procurement and organisational performance. Generally, these findings have a lot of implications on the

entire UN at large, because if the agencies are doing well at the micro level due to e-procurement, then general UN level too would be influenced positively.

5.4.2 E-auctioning Process on Performance of in UN Agencies in Nairobi

With regard to e-auction, the study concludes that there is increased competitiveness in the tendering bid for the hospital and was interpreted to mean that; the hospital has put in place electronically enabled procurement systems that allow individuals and hospitals to bid for any amount of tender they find suitable and in line with their profession or qualifications; most of the hospitals in the area have free and fair bidding processes that allow those who qualify to receive a tender to apply with assurance; there are less condition put on bids and the availability of information for suppliers is readily available either through online or directly from the hospitals website; and finally the hospital management has supplier friendly ICT systems that allow applicants for tendering projects to easily access information with less knowledge or skills required to operate the site where tenders and availed.

Based on e-invoicing, the main finding of the study was that the adoption of e-invoice is able to indicate charges from purchasers to suppliers and was interpreted to mean that majority of the UN agencies conduct operations based on information regarding the tenders that the agencies conduct; the number of hospitals in the area that apply the use of e-tendering systems is greater than those that do not have e-procurement process and that most agencies prefer to make extra charges based on changes in cost of goods and services. In addition to the use of e-invoicing, the main finding of the study was also interpreted to mean that majority of the agencies use e-invoicing to reduce the cost of labor for the delivery of hard files as an invoice to destined suppliers and partners.

5.4.3 E-invoicing on Performance of in UN Agencies in Nairobi

With respect to e-invoicing, the main finding of the study was that e-payment makes it cheap to promptly pay suppliers on supply delivery due to fewer charges incurred upon sending money through e-banking systems. The main finding of the study was then interpreted to mean that the development of IT has enhanced the usage of e-payment and improved the use of supply chain management; that the complete implementation of the website usage has to a large extend integrated, much more effective supply chains with full information transparency and optimal allocation of value-adding processes; and that the hospitals that have full operational e- procurement systems are able to follow up the stages

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of procurement to determine the payments to be made and thus a transparent system reduces the cost of operation which has been flooded with corruption in the past when the hospital was using manual methods.

5.4.4 E-sourcing on performance of UN Agencies in Nairobi

It is concluded that using e–sourcing in UN Agencies has a positive and significant effect on the performance of the agencies. It is also noted that e sourcing influences the performance as it enhances effective selection of suppliers from a wider region and hence enhancing effective competitiveness in the process. The study also concludes that by using e – tendering the firms performance is likely to be enhanced because through e – tendering the UN Agencies are able to process the tenders fast and efficiently hence this will boost their performance. The study also concludes that the use of e- payment plays an important role in the enhancing the performance of the supermarkets, it was revealed that the by using e-payment the procedures involved are reduced making the entire process very efficient and hence improved performance .The study also concludes that since there is a strong positive correlation between e- archiving/ record keeping and performance of supermarkets then e- procurement is seen to play a significant role in the performance of supermarkets in Nairobi county.

The purpose of this study was to examine the effect of e- procurement on the performance of UN Agencies in Nairobi. The results were analyzed using both descriptive and inferential statistics. It is concluded that using e–procurement in UN agencies has a positive and significant effect on the performance of the agencies. It is also noted that e sourcing influences the performance agencies as it enhances effective selection of suppliers from a wider region and hence enhancing effective competitiveness in the process. The study also concludes that by using e – tendering the firms performance is likely to be enhanced because through e – tendering the agencies are able to process the tenders fast and efficiently hence this will boost their performance. The study also concludes that the use of e- payment plays an important role in the enhancing the performance of the supermarkets, it was revealed that the by using e-payment the procedures involved are reduced making the entire process very efficient and hence improved performance .The study also concludes that since there is a strong positive correlation between e- archiving/ record keeping and performance of UN agencies then e- procurement is seen to play a significant role in the performance of UN agencies in Nairobi.

5.5 Recommendations

5.5.1 Recommendations for improvement

On the basis of the above conclusions, the following recommendations are made for the effect of e-procurement on performance of United Nations Agencies in Nairobi, Kenya.

5.5.5.1 E-tendering and performance of UN Agencies in Nairobi

The study recommends that UN Agencies in Nairobi should use a joint policy in the establishment of similar systems of selecting and issuing tenders as a standard procedure to ensure high levels of performance. This will enable the UN Agencies to purchase the right items from the best suppliers filtered through stiff competition among the suppliers.. The agencies should in turn provide the suppliers with access credentials for the supplier portal. In the end, this will increase user access to e-procurement resulting in increased chances of selecting the best supplier for e-tendering. E-procurement process should be specific and accurate with respect to requisition, tendering, contracting and invoice payment. The goal of e-procurement in the UN Agencies in Nairobi should be to enhance the quality of service delivery to stakeholders by providing timely, transparent and accurate financial information to all users.

5.5.5.2 E-auctioning process on performance of UN Agencies in Nairobi

Proper application of e-auctioning brings instant impact on the winning price. From the viewpoint of efficiency an important factor to consider is the increased number of bidders attracted by the clear advantage that electronic auctions have with respect to transparency, which leads to increased trust. As e-auctions strive to bring direct benefits, it is also necessary to boost skills and qualifications of procurement staff in general and tendering staff in particular. This will not only increase efficiency, transparency and credibility in tendering procedures but also decrease the level of passive waste. The above measures can thus bring significant savings in procurement expenses of UN Agencies in Nairobi.

5.5.5.3 E-invoicing on performance of in UN Agencies in Nairobi

The study recommends that all UN Agencies in Nairobi should automate the practice of invoicing so as to promote transparency and record management since it will be easier to track records or identify payments to be made to suppliers. E-invoicing should therefore

benefit the agencies by enhancing their financial controls and improved accounting, recording and reporting procedures.

5.5.5.4 E-sourcing on performance of in UN Agencies in Nairobi

It is also recommended that UN Agencies in Nairobi should adopt the use of e- sourcing to enable them expand sourcing scope and hence attract more competent people to offer them effective, efficient and competitive services. Conversely, failure to adopt e-sourcing could adversely impact on their performance. It has been demonstrated that firms that seek to enhance their performance must ensure that they embrace e-procurement in its entirety as this facilitates the coordination and processing of various activities leading to higher performance and profitability.

5.5.2 Recommendations for Further Studies

This study sought to determine the effect of e-procurement on performance of United Nations Agencies in Nairobi by attempting to bridge the gap in knowledge that existed. Although the study attained these, it mainly focused on one organization. There is need to conduct a similar study in other organizations in an attempt to compare the findings. There is also need to conduct a study on the challenges facing implementation of e-procurement in organizations.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Agnes Waganda,

P.O Box 9550-00100

Nairobi, Kenya

15 May 2017

Dear Respondent,

RE: **<u>DATA COLLECTION</u>**

I am a student at United States International University currently undertaking a research study to fulfill the requirements of the Award of Master in Business Administration on the **effect of electronic procurement on performance of United Nations agencies in Nairobi**. I would largely appreciate your participation as you have been selected to participate in this study by answering all the questions truthfully and completely. The responses will be treated with extreme confidentiality and privacy as they will be used solely for this study. This study will only be used for academic research. You are required to participate voluntarily and no one will be coerced to participate. Kindly spare a few minutes to complete the questionnaire attached.

Thank you in advance for your co-operation.

Yours Faithfully,

Agnes Waganda,

Researcher

This questionnaire is divided into five sections. Section A will be used to obtain general information about the respondent. Section B will be used to obtain information on the effect of e-tendering on performance of the organization. Section C will be used to obtain information on effect of e-auctioning on performance of the organization. Section D will be used to obtain information on effect of e-invoicing on performance of the organization. Section E will be used to obtain information on effect of e-sourcing on performance of the organization.

NB: The information obtained will be strictly treated in confidence.

Your assistance in completing this questionnaire will be highly appreciated.

Section A: Demographic Data

1. What is your gender?

    i) Male   ( )   ii) Female   ( )

2. How long have you worked in this organization?

    i) Less than 5 years   ( )   ii) between 6 to 10 years   ( )

    iii) Between 11 to 15years   ( )   iv) between 16 to 20years   ( )

    v) Above 20 years   ( )

3. What is your highest level of education?

    i) PhD   ( )   ii) Masters   ( )   iii) Bachelors   ( )

    iv) Higher Diploma   ( )   v) Diploma   ( )   vi) Certificate   ( )

    vii) Other, please specify   _____

4. How long have you been in the current position?

    i) Less than 5 years   ( )   ii) between 6 to 10years   ( )

    iii) Between 11 to 15years   ( )   iv) between 16 to 20years   ( )

    v) Above 20 years   ( )

5. Has your company adopted e-procurement?

    i) Yes ( )   ii) No ( )

6. How many years have elapsed since your company adopted e-procurement?

    i) 1-5 years   ( )

    ii) 6-10 years ( )

    iii) Above 10 ( )

Section B: E-tendering Process

7. To what extent does E-tendering process influence performance of procurement function in your organization?

Very great extent	( )
Great extent	( )
Neutral extent	( )
Less extent	( )
Not at all	( )

	To what extent do you agree with each of the following statements regarding the effects of E-tendering process on performance of procurement function in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A-agree; SA=strongly agree.	Strongly disagree(1)	Disagree(2)	Neutral (3)	Agree(4)	Strongly Agree(5)
8.	Tenders are advertised online					
9.	Prospective suppliers submit proposals online					
10.	Short listing of tenders is done by the e-procurement system					
11.	There is increased coordination between suppliers					
12.	There is improved levels of trust					
13.	Low infrastructure and transaction costs of Internet-based systems allow organizations to exploit the increased opportunities					
14.	Inter-organizational systems enhance opportunities tend to create more effective customer-supplier relationships over time					
15.	It limit the incidence of collusion between bidders relative to traditional tendering because they fear detection					
16.	It helps to maintain the integrity, confidentiality, and authenticity of bids submitted.					
17.	It allows sections of electronic documentation to flow through the supply chain,					

		Strongly disagree(1)	Disagree(2)	Neutral (3)	Agree(4)	Strongly Agree(5)
18.	It improves the speed of returns and subcontractor price visibility					

Section C: E-auctioning Process

19. To what extent does E-auctioning process influence performance of procurement function in your organization?

       Very great extent   ( )

       Great extent   ( )

       Neutral extent   ( )

       Less extent   ( )

       Not at all   ( )

	To what extent do you agree with each of the following statements regarding the effects of E-auction process on performance of procurement function in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A-agree; SA=strongly agree.	Strongly disagree(1)	Disagree(2)	Neutral (3)	Agree(4)	Strongly Agree(5)
20.	E-auctions provide to buyers and sellers an open environment where they can compare the true value of their products.					
21.	It facilitates financial savings in the organization.					
22.	It enhances improved procurement process efficiency which includes the time savings for both the buyers and sellers.					
23.	It facilitates to access to a larger supplier base.					
24.	It improves transparency of the whole procurement process.					
25.	It helps in reducing the unfair or corruptive behavior.					
26.	It lower transaction costs such as lowering ordering costs.					
27.	It leads to increased speed of transaction.					
28.	It potentially damage buyer-supplier relationships by challenging suppliers' trust in buyers					

Section D: E-invoicing Process

29.   To what extent does E-invoicing process influence performance of procurement function in your organization?

        Very great extent   ( )

        Great extent   ( )

        Neutral extent   ( )

        Less extent   ( )

        Not at all   ( )

	To what extent do you agree with each of the following statements regarding the effects of E-invoice process on performance of procurement function in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A-agree; SA=strongly agree.	Strongly disagree(1)	Disagree(2)	Neutral (3)	Agree(4)	Strongly Agree(5)
30.	Compared with traditional paper invoices, the e-invoice can help businesses achieve paperless, transparent transactions.					
31.	There is secure and low cost procurement transaction.					
32.	Use of e-invoice reduces payment time to suppliers since time taken for delivery of service has reduced.					
33.	It offers greater security of data in the organization.					
34.	There is faster and better communication between suppliers and buyers.					
35.	It offers easy retrieval and processing of data.					
36.	It has increased reliability of service delivery in the operations of the organization					
37.	It offers efficient and effective exchange and utilization of information to users in the organization					
38.	Through the reduction in use of papers it offers environmental benefits					

Section E: E-sourcing Process

39.   To what extent does E-sourcing process influence performance of procurement function in your organization?

        Very great extent   ( )

Great extent   ( )

Neutral extent   ( )

Less extent   ( )

Not at all   ( )

	To what extent do you agree with each of the following statements regarding the effects of E-sourcing process on enhancing procurement efficiency in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A-agree; SA=strongly agree.	Strongly disagree(1)	Disagree(2)	Neutral (3)	Agree(4)	Strongly Agree(5)
40.	It helps in achieving low cost in procurement transactions.					
41.	Through the process of e-sourcing there has been timely delivery of goods and services to user departments.					
42.	It facilitates tracking procurement transactions and ensures quality supplies.					
43.	It improves communication between the organization and new suppliers.					
44.	E-sourcing creates value to the organization through innovation.					
45.	E-sourcing reduces costs through improved process efficiencies.					
46.	It compels the organization to be super-efficient and proactive in their quest to increase return on their investments.					

	To what extent do you agree with each of the following statements regarding the level of adoption of e-sourcing in various procurement functions in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A-agree; SA=strongly agree.	Strongly disagree(1)	Disagree(2)	Neutral (3)	Agree(4)	Strongly Agree(5)
47.	Online negotiations					
48.	Supplier identification					
49.	Internal coordination					
50.	Communicate with potential suppliers.					
51.	Contract monitoring.					

52.	Specification of supplies.					
53.	Relationship management					

54. Indicate other ways through UN Agencies view of E-procurement influence performance of the organization.

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Thank you for your time