

**INFORMATION AND COMMUNICATION TECHNOLOGY AND  
PROCUREMENT PERFORMANCE IN STAR RATED HOTELS  
IN NAIROBI, KENYA**

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## **DECLARATION**

### **STUDENT'S DECLARATION**

This project is my original work and has not been presented for award of any degree in any other University.

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This project has been submitted with my approval as university supervisor.

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## **DEDICATION**

I dedicate this research work to my family who are my pillars and sources of great inspiration. My parents for their unceasing prayers for God's blessings upon me to be the best I can. May the Almighty God bless you all.

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## **LIST OF ABBREVIATIONS**

<b>BSC</b>	-	Balanced scorecard
<b>EDI</b>	-	Electronic Data Interchange
<b>EPTs</b>	-	E-Procurement Technologies
<b>ERP</b>	-	Enterprise Resource Planning
<b>LCC</b>	-	Life-cycle-cost
<b>ICT</b>	-	Information Communication Technology
<b>IT</b>	-	Information Technology

## **ABSTRACT**

In order to meet today's operating challenges, managers are turning to ICT to enhance the services for clients, businesses and visitors, and improve internal efficiencies by lowering costs and increasing productivity. ICT in procurement significantly influence the success of a company. The priority of ICT is to provide support in the creation of process efficiency and cost / expenditure transparency as well as achieving reductions in the purchasing price. The aim of this study was to investigate the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya. The research study adopted a descriptive research design. The target population for this study included the 100 star- rated hotels in Nairobi Kenya. The researcher used a questionnaire with a Likert scale as the primary data collection instrument. Descriptive statistics analysis were employed. The organised data was interpreted in terms of averages and standard deviation to objectives using assistance of computer packages. The study conducted a Pearson's product moment correlation analysis to establish the relationship between the study variables. Tables and other graphical presentations such as bar charts were utilized. Regression analysis was also conducted to show how ICT affect procurement performance in star rated hotels in Nairobi. The study concludes that that the star rated hotels make use of computers and internet. The various aspects of use of ICT that affect the procurement performance of star rated hotels in Nairobi include placing of the contract and advertising as well as tender evaluation, tender aggregation and tender specification. The study concludes that ICT tools offer a good strategy within an organization to achieve strategic goals of customer satisfaction and profitability through cost management. Supplier appraisal, supplier network and integrating brand and procurement management processes affect procurement performance in the star rated hotels in Nairobi as well as supplier selection and development plan, involvement in the early stages of brand building, information flow (documentation, reporting and communication), supplier performance tracking and assessment and developing the suppliers. The study recommends that the organizations should be sensitive of the ever changing business environment that dictates the competitive environment they operate in. For the star rated hotels to realize the optimum performance in the procurement, there is need to embrace the use of modern technology in procurement processes. The study recommends the star rated hotels need to employ procurement staffs who have attained professional qualification. The study was faced with several challenges. The respondents approached were likely to be reluctant in giving information fearing that the information sought would be used to intimidate them or print a negative image about them or their firms, a challenge in securing the respondent precious time considering their busy schedules and there are not many researches done on the area of ICT in procurement performance of star rated hotels in Nairobi owing to different objectives and methodologies (and study designs) of previous studies, the data was not in the right format or specific enough to aid in this study.

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

A well functioning information and communication technology (ICT) system can help organizations to gain sustainable competitive advantage. It can help businesses improve their product quality and service as well as reducing the cost. It is widely asserted that ICTs have optimistic effects on the economic, social, and political development of a country, region, or community” (TPRC Call for Papers: Societal Issues). The nature of the hotel sector product is perishable and must be consumed when it’s ready to be served, thus they have to provide services simultaneously with demand. The intense competition in today’s business environment means that the hotel businesses have to work hard to maintain and develop their competitiveness. The success of a business depends on its ability to acquire and utilize updated information to assist its management and marketing processes. Hence, ICT assists organization to manage information dynamically and influences business competitiveness through assisting decision makers to make appropriate investments and decisions. ICT helps to meet the demands for timely and accurate information by customers.

Procurement covers the whole practice of acquiring goods and/or services. It begins when an agency has identified a need and decisions are on the purchasing requirement for such a need. It also engrosses the processes of risk assessment, seeking and evaluating alternative solutions, contract award, delivery of and payment for the goods and/or services and where relevant, the ongoing management of a contract and consideration of options related to the contract. Procurement further extends to the ultimate disposal of property at the end of its useful life (Waters, 2004). Diverse procurement functions and responsibilities such as selection, quantification, product

specification, pre-selection of suppliers and adjudication of tenders should be appropriately managed for the function to achieve its intended objectives (Mendoza, 2008). As noted by Nelson et al (2009), the majority of organizational spending consists of purchasing. With most organizations spending at least one third of their overall budget to purchase goods and services, procurement holds vital business value (Killen & Kamauff, 2005). Procurement should be planned properly and thus procurement performance should be monitored regularly.

A good ICT system helps a firm categorize its interactions with its most essential suppliers. It provides those who use it with a set of built-in monitoring tools to help control costs and assure maximum supplier performance. It provides an organized way to keep an open line of communication with potential suppliers during a business process. The system allows managers to confirm pricing, and leverage previous agreements to assure each new price quote is more competitive than the last. It appears that during the past few years purchasing has begun to play an ever more important role in the strategy of the firm (Weele, 2010). In order to survive, managers have begun to rethink their competitive priorities and their value chain. Increasing numbers of organizations have recognized that ICT holds the potential to transform their competitive performance for the better.

### **1.1.1 Information Communication Technology (ICT)**

Information technology (IT) is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numerical information by a micro-electronics - based combination of computing and hotel. The term in its modern sense first appeared in a 1958 article published in the Harvard Business Review where it was commented that the new technology does not yet have a single established name (Atkinson, 2006). It is a term that largely covers the coupling of electronic technology for the information

needs of a business at all levels. ICT has surpassed the role of support services or only electronic data processing; its fields of applications are slightly global and unlimited. It is the computerization of processes, controls, and information production using computers, hotels, software and auxiliary equipment such as automated teller machine and debit cards (Teo, 2008). It is a term that generally covers the harnessing of electronic technology for the information needs of a business at all levels.

As emphasized by Thai (2009), one of the most significant challenges in developing countries procurement is how to best use ICT in an age of communications revolution. Information is fundamental to the performance of a supply chain as it provides the basis on which supply chain managers make judgments and for effective control of today's complicated procurement function. Information technology consists of the tools used to gain awareness of information, analyze this information and execute it to increase the performance of the supply chain (Chopra & Meindl, 2008). Private and public sector organizations have been utilizing ICT systems to rationalize and automate their purchasing and other processes over the past years. There is no doubt that use of ICT in procurement provides a number of advantages over earlier inter-organizational tools. For example, Electronic Data Interchange (EDI) has been providing automated purchasing transactions between buyers and their suppliers since it was launched in the 1960s. Enterprise Resource Planning (ERP) followed in the 1970s, and then came the commercial use of the Internet in 1980s. It was only in the 1990s that the World Wide Web the multimedia capability of the Internet - became widely enabled and provided the vital resource for the automation of procurement.

### **1.1.2 Procurement Performance**

Performance measurement is the course through which procurement establishes criteria, based on strategic planning goals, for determining the results and quality of

its actions. It involves creating an uncomplicated, effective system for determining whether procurement is meeting its objectives. For any organization to change its focus and become more viable, Amaratunga and Baldry (2002) suggest that procurement performance is a key driver to improving superiority of services while its absence or use of inappropriate means can act as an obstruction to change and may lead to decline of the purchasing function. None the less, most developing countries are facing a setback of hasty changes in procurement requirements. The changes are impacting force on how the procurement function performs its interior and exterior processes and procedures in order to achieve its objectives. Procurement performance provides a basis for effectual control and stewardship of resources and reveals the value of the procurement function. Most organizations have no performance measures in place for assessing procurement efficiency and effectiveness. Of the few that did have measures, many were qualitative statements rather than specific targets to achieve (Adams, 2008).

Performance measurement is crucial in enhancing the performance of organizations because whatever gets measured gets done. According to Van Weele (2006) purchasing performance is considered to be the result of two elements: purchasing effectiveness and purchasing efficiency. Performance provides the basis for an organization to assess how well it is progressing towards its predetermined objectives, identifies areas of strengths and weaknesses and decides on future initiatives with the goal of how to initiate performance improvements. This means that purchasing performance is not an end in itself but a means to effective and efficient control and monitoring of the purchasing function (Lardenoije, Van Raaij, & Van Weele, 2005).

Aberdeen Group<sup>8</sup> (a US-based supply chain research organization) reports that procurement leaders have organized procedures, resources and systems to consistently employ and align all procurement strategies that are related to business objectives. Overall, enterprises employing these approaches in a consistent and integrated method outperformed peers in cost savings, expenditure under management, compliance, supplier integration, and greater contribution to enterprise value (Lester, 2007).

### **1.1.3 Star-rated Hotels in Nairobi Kenya**

Hotels are primarily service oriented; other products involving activities are supportive activities of the primary. Services are considered to be most perishable items. Unlike physical products the warehousing of services is quite difficult and thus if not consumed at the time when it is ready to consume it just perishes. A lot of resources are channeled towards procurement of goods and services with an aim of ensuring that the full cycle is completed efficiently. Hotels in Nairobi are graded in accordance with the star classifications system. There are 100 star rated hotels in Nairobi (<http://www.kenya space.com/hotels, htm>). They present the most diverse range of accommodation to suit every taste. Apart from offering accommodation and various hospitality services, they encourage the inflow of tourists from other parts of the world thereby boosting our economy in the tourism industry. It is one of the fastest growing sectors of the economy of our time. The star rated hotels in Nairobi are a multi-billion dollar and growing enterprise. The emerging positive trend in the tourism industry indicates that hotel industry is like a reservoir from where foreign exchange flows (Ministry of Tourism- Kenya, 2012).

Star rated hotels in Nairobi are gradually adopting ICT to reduce costs, enhance operational efficiency, and most importantly to improve service quality and customer experience. ICT is increasingly becoming critical for the competitive operations of the

hotels as well as for managing the distribution and marketing of organizations on a global scale. Hotels are turning to performance measurement and management in order to qualify for the International Organizational Standardization standard certifications and Company of the year Awards. Business pressures, competition and the achievement of the coveted five star rating and membership to international hotel associations have created the need for effective key performance indicators.

## **1.2 Research Problem**

For decades ICT and procurement performance has been attracting great attention from practitioners, academicians and researchers due to poor operations performance resulting from non-adherence to proper procurement processes. Although there has been efforts to improve performance of the procurement function, operations in most institutions is still marred by shoddy works, poor quality goods and services (Javier, Lorenzo & Inken, 2010). The reengineering of procurement has been attempted through various information technologies; the real opportunity for achieving this reengineering goal may lie in the use of ICT. This is particularly true in a stagnant economy. High revenue growth is often the major concern of corporate executives but such growth may not be always possible in a slow economic environment. In an attempt to cut costs without hurting the service, hotels are actively adopting various forms of technological innovations to improve on their efficiency and effectiveness.

The hotel industry in Nairobi has weathered a turbulent economy in recent years and continues to evolve in order to satisfy guests and start generating more revenue. One challenge operators are facing is providing the right kind of food and beverage experience for the guests' expectations in an environment of changing preferences. Large hotel chains are known to be pioneers in innovation and recognized a shift in



how guests wanted to be served and what specific types of food they expected to find on the menus. Pricing also continues to be a major challenge. These challenges among others can be attributed to lack or poor use of ICT in the procurement process which brings about delays and increases the cost of acquiring goods and services hence poor procurement performance.

Studies have shown that while over 70 percent of American buyers use internet technologies at work (Caridi et al, 2004), the percentage of public procurement conducted electronically is relatively low – ranging from 10 percent to 20 percent (Kulp et al, 2006). This disconnect is evident in a recent study by Gunasekaran and Ngai (2008). In this study, 80 percent of industry respondents agreed that the use of the internet was important in procurement; however, only 20 percent had actually adopted EPTs. Kakwezi and Nyeko (2010) studied procurement process and performance and concluded that procurement efficiency and effectiveness of the purchasing function are measures of procurement performance.

Locally, Ngugi and Mugo, (2010) studied internal factors affecting procurement processes and established that accountability, ICT adaptation and ethics affect procurement processes in public procurement function in Kenya which is relevant. Rwoti (2005) conducted a study on procurement performance measurement systems a survey of large manufacturing companies in Nairobi and found that monitoring procurement performance is dogged by among others poor data management and operation of manual systems in procurement. Kiburi (2008) conducted a study on the factors influencing the implementation of e-procurement among firms listed on the Nairobi Stock Exchange and found that most corporations have not implemented e-

procurement and that e-procurement features could improve efficiency of the business operations. Magutu, Njihia and Mose (2013) also did a study and found out the critical success factors and challenges in e-procurement but their study was on large scale manufacturing firms. All these studies did not cover the relationship between ICT and procurement performance in Star-rated hotels in Nairobi, Kenya. From these studies it was evident that impact of ICT adoption and procurement performance needs to be researched. This study therefore sought to bridge the gap by seeking answers to the following research question: What is the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya?

### **1.3 Research Objectives**

The objectives of the study were;

- i) To determine the extent of use of ICT in procurement performance amongst star rated hotels in Nairobi, Kenya
- ii) To establish the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya
- iii) To establish the challenges facing the adoption and use of ICT in procurement performance amongst star rated hotels in Nairobi, Kenya

### **1.4 Value of Study**

The study would contribute towards implementation and effective utilization of ICT in procurement strategy in the Kenyan hotel industry. Other companies would also use the findings of the study since the procurement processes in various industries do not vary to a big extent.

The study recommendations would act as guideline for improvement of procurement performance. Effective application of the study recommendation would lead to minimization of procurement costs and competitive advantage.

The document report would act as source of knowledge to many students who would be researching on ICT and procurement performance thereby providing guideline to future researchers since the information provided by the study can be used in literature review of the future research studies.

The recommendation for further studies would also act as a guideline to academicians who would easily pinpoint areas of procurement that needs further studies. They can also use the information that would be provided by this study to identify gaps in literature that would need to be looked at.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter delves into the literature on relationship between ICT and procurement performance. The chapter also reviews literature done by other scholars touching on the area of ICT and procurement performance in hotel industry. The theoretical and empirical underpinning of relationship between ICT and procurement performance is covered in this chapter.

### **2.2 ICT Adoption and Use**

In order to meet today's operating challenges, managers are turning to ICT to enhance the services for clients, businesses and visitors, and improve internal efficiencies by lowering costs and increasing productivity. The executives are implementing scalable communication infrastructures to enhance economic development, draw new customers and businesses, and above all, offer excellent services to consumers (Abouzeedan & Busler, 2002). According Kirungu, (2011) in Kenya, manual systems are a cause of key inefficiencies in regulation and operations of the function. ICT needs to be adopted to ensure proper functioning of the procurement system. This does not only involve computerization of the system but scaling communication technology. With globalization and internet connectivity, there is need to upscale the function in Kenya.

The old methods of doing business consist of buyers managing forecasts and communicating requirements to suppliers via phone, fax and e-mail. Spreadsheets and manual reports are passed between the trading partners. These manual processes are slow and cumbersome. They cannot support today's demand-driven enterprises. According to Thomson & Jackson (2007) supply chain procurement professionals

spend too much time “putting out fires” and reacting to daily problems. They cannot seem to find the time to develop strategic relationships with suppliers and deploy improved business processes that eliminate shortages. The various aspects that hinder ICT growth in developing nations are infrastructure, business environment (financial, legal), social factors (such as poverty, illiteracy, urbanization level), educational factors and cultural environment.

Procurement of goods, works, and services through use of ICT is emerging worldwide with the potential to transformation processes, improve market access, and promote integrity in public procurement. Studies in other countries show that ICT is a predecessor to superior performance of the procurement system. For instance, Kramer, Jenkins, and Katz , (2007) report that the Government of Chile is using ICTs to facilitate the procurement from small businesses using a new business model and this has positively effected on the functioning of the procurement system especially, since the integration of online services in the system. Information access has been improved tremendously due to this. The system in Kenya if properly strengthened through integration of ICT can also yield these benefits. Procurement can take many forms, from uploading select information such as tender notices to a website to very comprehensive systems including the entire procurement process. Whatever complexity an ICT system might display, its use creates an immediate potential for making information public and widely available and thereby enhance transparency.

### **2.3 Procurement Performance**

Performance measurement is the process by which procurement establishes criteria, based on strategic planning goals, for determining the results and quality of its

activities. It involves creating a simple, effective system for determining whether procurement is meeting its objectives. Performance of the procurement function is measured through its efficiency and effectiveness in meeting procurement aims. An effective procurement process ensures the availability of the right goods and services in the right quantities, available at the right time, for the right customers and at reasonable prices, and at recognizable standards of quality (WHO, 2007).

Procurement is now being considered as a strategic business function. The increasing share of material costs and purchased services in major global organizations profit & loss account highlights its growing significance. The need to align procurement objectives with that of the organization is becoming a necessity. In order to improve on efficiency of any process, it is mandatory to have the correct metrics to measure it. Procurement is largely judged by the savings it generates. Measuring Procurement should be part of an improvement process. Measurement should not be done for measurement's sake but to identify gaps which can be filled timely to prevent any kind of savings leakages. Procurement is a complex function with suppliers and stakeholders and give results that are widely in line with the organization goal.

For procurement to successfully measure and manage performance, the key is to effectively leverage technology which is less time consuming and gives accurate savings while maintaining a single version of truth and at the same time ensuring transparency. There are several methods that are used to measure procurement performance. The following are examples of the methods that may be used to measure: Performance reviews to share performance measures that identify accomplishments and areas for improvement, quality management tools, benchmarking, regular staff meetings to share performance measures and progress,

performance indicators and performance targets. The method used to measure performance should be designed to motivate staff at all levels to contribute to organizational development.

### **2.3.1 Balanced Scorecard**

It is a management system that maps an organization's strategic objectives into performance metrics in four perspectives: financial, internal processes, customers, and learning and growth. Within each of the perspectives, the firm must define the following: Strategic objectives - what the strategy is to achieve in that perspective, Measures - how progress for that particular objective will be measured, Targets - the target value sought for each measure, Initiatives - what will be done to facilitate the reaching of the target. These perspectives provide relevant feedback as to how well the strategic plan is executing so that adjustments can be made as necessary. It was published in 1992 by Robert Kaplan and David Norton. The BSC also evaluates the firm's efforts for future improvement using process, customer, and learning and growth metrics. The term "scorecard" signifies quantified performance measures and "balanced" signifies that the system is balanced between: short-term objectives and long-term objectives, financial measures and non-financial measures, lagging indicators and leading indicators, internal performance and external performance perspectives

Some of the benefits of the BSC system include: communication of the strategy to everybody in the firm, translation of strategy into measurable parameters and alignment of individual goals with the firm's strategic objectives. The BSC recognizes that the selected measures influence the behavior of employees, feedback of implementation results to the strategic planning process. The reason why BSC has been chosen as the performance measure of this study is because since its beginnings

as a performance measurement system, it has evolved into a strategy implementation system that not only measures performance but also describes, communicates, and aligns the strategy throughout the organization and therefore will be relevant for use.

#### **2.4 Theoretical Orientation**

This study will be underpinned in the life-cycle-cost theory. The concept of Life-cycle-cost (LCC) was originally proposed and used by the U.S. Department of Defense, mainly applied to the procurement of important U.S. military equipment. LCC refers to total costs involved in the entire life cycle of a product, mainly covering research, experimentation, procurement, maintenance, transportation and storage (Letian, Hongbin and Yifeng, 2007).

As a frontier cost management theory, it believes that the value of procurement activity is not simply limited to purchase price, but has more significance in terms of other associated costs, such as transaction costs, financing costs, maintenance and use costs, and opportunity losses. Although invisible, these costs cannot be ignored. The basic meaning of LCC is to achieve the lowest cost of equipment in the total life cycle of ownership on the basis of meeting requirements of reliability (Miao, 2006). According to the international standard for life-cycle-cost IEC 60300-3-3 (2011), prepared by International Electro technical Commission, LCC includes costs occurring in a number of stages, such as concept and definition, design and development, manufacturing, installation, operation, maintenance, and disposal. The total costs can be calculated by summarizing related costs at each stage and generally be divided into procurement costs, ownership costs and disposal costs.

Compared to ownership costs, procurement costs can be readily evaluated since it is often a major component of LCC and it is visible. Ownership costs are a composite of



operating and support costs. Disposal costs may or may not be significant costs depending on the industry. Empirical studies on the use of LCC theory have been conducted in some leading companies from different industries overseas. Rajkumar and Jayakrishnan (2012) studied the application of the LCC theory to American military equipment. The results showed that if properly applied, LCC concepts could assist in the deployment of cost-effective weapons systems. Because of the deployment of the LCC method in the U.S. Department of Defense the proportion of use and maintenance costs of weapons systems had been declining year by year since 1980, lower than procurement costs by 1982. At the same time, the growth rate of annual costs of major weapons systems reduced from 6% in 1972 to 3.9% in 1980

Adtranz, a local company, applied the LCC technology contract in the country's X2000 high-speed train project in 1987. The contract included RAM / LCC norms, forecast data obtained from the development of the project, as well as the verification of previous operation experience. The results were proved to be successful, failure rate decreased and the number of non-plan overhaul reduced to be lower than required standards. Beer (2011) made an analysis and calculation of the reliability and LCC of a 400KV transmission substation which were accessed to a real system in Sweden Power Systems (Pryor, Gibson and Blakeley, 2010). Results demonstrated that if the reliability and availability of relevant units of the substation were increased, the efficiency of the substation would be improved.

Comparing with former studies which focused on military equipment, railways, power systems etc., the application of the LCC theory in hotel industry is rather limited, especially in the procurement activity of telecom operators. Through an empirical study on the procurement LCC of a domestic mobile telecom company (M Company),

this paper aims to promote the application of LCC to improve cost management in star rated hotels in Nairobi and find out efficient means to optimize the procurement performance (Beer, 2011).

## **2.5 ICT and Procurement Performance**

The potential of information technology is realized through its integrated use in the various core and support functions of an organization as well as with external business partners. According to Kearney (2004) ICT in procurement significantly influence the success of a company. The priority of ICT is to provide support in the creation of process efficiency and cost / expenditure transparency as well as achieving reductions in the purchasing price. ICT makes an important contribution to successfully carrying out the procurement function. ICT interacts with procurement to improving quality of services while its absence or use of inappropriate means can act as a barrier to change and may lead to deterioration of the purchasing function

### **2.5.1 Electronic-Tendering (e-Tendering)**

Nowadays, large organizations usually have to handle multiple procurement needs by applying different kinds of information systems developed by various suppliers. Such process will become inevitably long and cumbersome in conventional e-tendering systems when the categories of products are not well sorted out. In order to realize better cost savings and increase efficiency, replacing the manual paper-based tender procedures by electronic-facilitated system has become an essential element in process re-engineering (Croom & Brandon-Jones, 2007). With a highly automated e-Tendering system, tender specification, advertising, tender aggregation as well as the evaluation and placing of the contract can be prepared at ease.

According to Teo et al (2009), an e-Tendering System (or Electronic Tendering System) facilitates the complete tendering process from the advertising of the requirement through to the placing of the contract. This includes the exchange of all relevant documents in electronic format. Buyers are able to manage the tenders coming in, with all tenders stored in one place. Buyers can cut and paste data from the electronic tender documents for easy comparison in a spreadsheet. Evaluation tools can provide automation of this comparison process. The business benefits include reduced tender cycle-time, fast and accurate pre-qualification and evaluation, which enables the rejection of suppliers that fail to meet the tender specification, faster response to questions and points of clarification during the tender period, reduction in the labour intensive tasks of receipt, recording and distribution of tender submissions, reduction of the paper trail on tendering exercises, reducing costs to both councils and suppliers, improved audit trail increasing integrity and transparency of the tendering process, improved quality of tender specification and supplier response and provision of quality management information (Vaidyanathan and Devaraj, 2008).

### **2.5.2 Enterprise Resource Planning**

The fact that key information such as cost center and commodity codes is hard coded against the user dramatically reduces coding errors and provides highly detailed and easily accessible data. This is very important in maximizing the potential benefits of strategic sourcing (Mishra et al, 2007). A successful ICT systems implementation will provide high quality, detailed management information and will negate the need for data warehousing or resource heavy data mining. Despite the potential of ERP system to improve Organization performance, effectiveness and efficiency, many organizations are still unable to fully exploit these benefits. The benefits of ERP systems are often matched with high levels of risks associated with such projects.

Implementing ERP systems involve organizations to acquire one of the ERP software packages i.e. oracle and PeopleSoft and seeking implementers who are usually consultancy firms to turn around the organization in readiness for the migration of processes , data and people to the selected system. The consultancy service costs huge sums of money and the organization have also to undergo an extra cost through purchase of a license. Further, once the ERP system has been implemented and validated, the organization must continue maintaining the system which is extremely expensive (Fang et al, 2007).

Organizational impact consists of the impacts of an ERP system implementation on the company's operating cost, customer service level, overall productivity gains, and the realization of particular ERP implementation objectives. Implementing ERP software assists companies with standardized data formats, better customer service and retention, and enhanced management decision-making. Moreover, Al-Mashari et al (2003) noted that the general goal of an ERP system is basically to advance business performance by integrating a variety of business processes across the diverse functional departments and beyond enterprise boundaries. This integration allows for well-organized information flow within the firm as well as between the company and its customers and suppliers.

At its simplest, customer service is being influenced and revitalized by information technology resulting in a larger customer base for the companies which are leaders in the adoption of new technology (Ko and Kincade, 2003). Regardless of how one visualizes customer service, either from a logistics or marketing perspective, information technology now assumes an important role in customer service. Information technology is a powerful tool or enabler in the arena of customer service.

Information technology is essentially in the process of migration, from the support function to the front-line functions where the customer is served, as indeed is customer service itself.

### **2.5.3 Buyer Supplier Relationship**

In a sourcing strategy a buyer researches for available sourcing options in the supplier market, which can either be from local or international vendors. A detailed assessment of the different supplier options should be undertaken, weighing various criteria, such as price, lead time, quality, on-site support and long term conditions, amongst others. Procurement personnel should use their creativity in exploring alternative supply options. A supplier pre-qualification process to ensure they comply with requirements aligned with procurement strategy and policies is also necessary (Beer, 2011). The need to be competitive, flexible and efficient has forced companies to enter into collaborative relationships with suppliers and customers (Hines, et al., 2000; Carr & Smeltzer, 2010). This has been necessitated by today's competitive situations where true competitive battles are fought along a network of cooperating companies. These competitive battles are fought along supply chains, implying that a company is as strong as its weakest supply chain partner (Veludo, Macbeth & Purchase, 2011).

According to Liker and Choi (2012), actively developing the supplier relations is important. Understanding your suppliers and utilizing your suppliers mutual competition has proven to be a very effective way of supplier relationship development. Other development ideas include managing your suppliers to improve their performance and abilities. It's important to keep the managing role to yourself when conducting shared product development projects. The buying organization should communicate information with determination to selected suppliers. Understanding the actions and processes of your suppliers is a basis for starting to

develop your relationships with them. Supply market intelligence is one the factors that need to be accounted. It explains the mutual competition between competing organizations in the market. With the help detailed supply market understanding, the factors that affect competitive advantage can be identified. The determination of the knowhow of supplier processes and the total cost structure helps to develop supplier relationships (Liker and Choi, 2012).

The buying organization can imply that they have a deep knowledge about the supply market and supplier presented in the market. This shows that the organization can evaluate and compare suppliers that will enforce the suppliers to be more efficient and effective. It can also improve the service level of the suppliers (Liker and Choi, 2012). The best action to improve the supplier's performance is to give clear instructions on what is expected and required from them now and also in the future. Conducting a diverse analysis on supplier's performance would provide a tool to the supplier to develop its actions to a more wanted direction.

## **2.6 Challenges Facing the Adoption of ICT in Procurement**

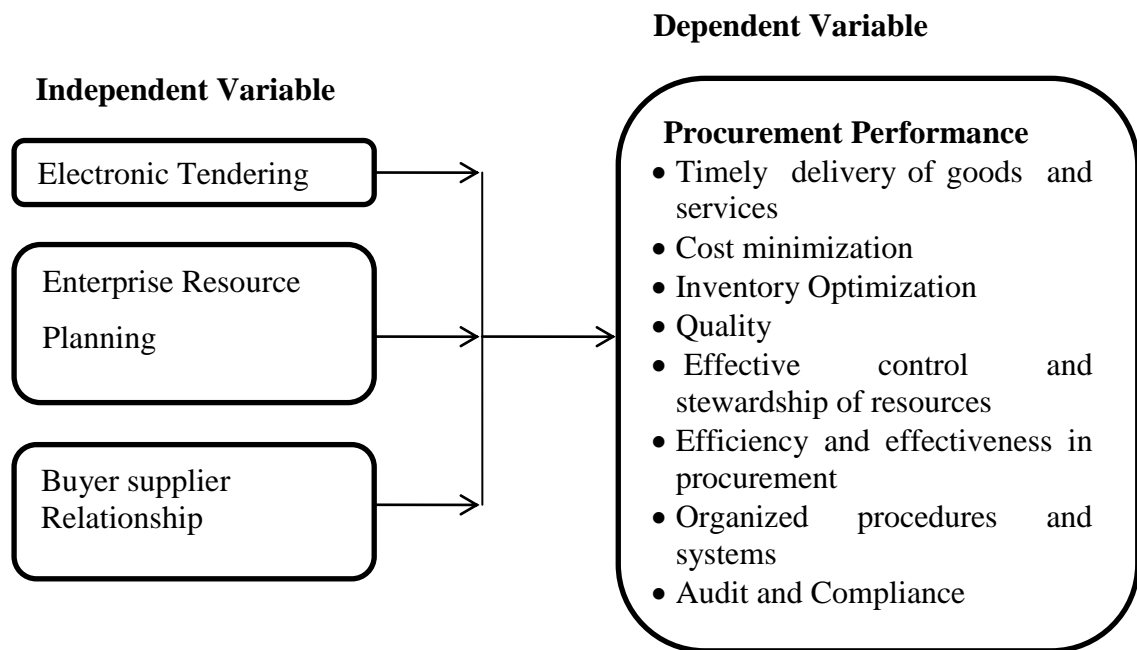
As organizations evolve toward a more strategic view of e-procurement and adoption broaden in reach and deepen in scope there are increasing challenges associated with integrating different systems and applications efficiently throughout the organization (Mendoza et al. 2006). This leads to the following challenges: Despite the various benefits offered by the use of ICT, organizations meet a number of challenges when implementing such systems. Problems with integration to backend systems, which may have incompatible platforms, are a stumbling block to many ICT efforts. Some companies use multiple ERPs, which may not be compatible. Suppliers need to be able to handle different e-Procurement systems customers are using (Bedell, 2002).

Most manufacturing plants are still using decades-old equipment and parts whose documentation is paper-based and lacks the digital format necessary for e-Procurement systems (Moore, 2003). The original suppliers of these equipment often prefer to sell manufacturers new equipment rather than to make the necessary upgrades to digital format. Firms which cannot afford to replace their aging equipment must forego opportunities to implement ICT. Although advances have been made in search technology to address nomenclature issues, inconsistencies in nomenclature for parts, between companies and even within different departments or sites of the same enterprise, often lead to costly delays and errors (Moore, 2003).

As with any new technology introduced into the workplace, ICT system's effectiveness depends, ultimately, on its being adopted and regularly used by employees in procuring. Employees are said to comply with the purchase of contracted items only 65% of the time, causing companies to miss out on the 22% in cost reductions possible through compliance with contract terms (Aberdeen, 2006). Maintenance requires a wider supplier base than other business functions, and an e-Procurement system needs to provide access to a broad supplier base. Many suppliers, especially smaller ones, do not have the technological capability to integrate with e-Procurement platforms. They may lack the IT infrastructure and capital necessary to provide e-Procurement and fear that e-Procurement will enable buyers to leverage price concessions (Singer, 2003).

## 2.7 Conceptual Framework

**Figure 1.1: ICT and Procurement Performance in star Rated Hotels**



**Source: Author (2014)**

A conceptual framework can be seen as an attempt to define the nature of research. A conceptual framework considers the theoretical and conceptual issues surrounding research work and form a coherent and consistent foundation that will underpin the development and identification of existing variables (Atkinson, 2006). This study seeks to establish the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya. The independent variables in this study are electronic tendering, enterprise resource planning and buyer supplier relationship. This study therefore established the influence of the independent variables on the dependent variable which was procurement performance in star rated hotels in Nairobi, Kenya.



## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter highlights the research design, the study variables, the study area, the study population, sampling techniques and sample size determination, construction of research instruments, pilot study, validity and reliability of the instruments, methods of data collection and data analysis.

### **3.2 Research Design**

The research study adopted a descriptive research design. The design is chosen since it is more precise and accurate since it involves description of events in a carefully planned way (Babbie, 2002). This research design also portrays the characteristics of a population fully (Chandran, 2004) and also according to Mugenda and Mugenda (2003), descriptive research determines and reports the way things are. The research design was both quantitative and qualitative with the aim of determining the relationship between the ICT aspects (independent variables) and procurement performance (dependent variables).

### **3.3 Study Population**

The target population for this study included the 100 star-rated hotels in Nairobi Kenya. This choice of the target population was because they are in a position to acquire the needed ICT systems necessary for measuring procurement performance. The study adopted a census approach collecting data from all the 100 star-rated hotels in Nairobi, Kenya. Owing to the small population of the star-rated hotels in Nairobi, a census study was conducted to collect information on the relationship between ICT and procurement performance in star-rated hotels in Nairobi. As such, the population involved the entire 100 star-rated hotels in Nairobi.

### **3.4 Data Collection**

The researcher used a questionnaire with a Likert scale as the primary data collection instrument. According to Kothari (2004), a self-administered questionnaire is the only way to elicit self-report on people's opinion, attitudes, beliefs and values. The questionnaire was divided into sections representing the various variables adopted for study. Each section of the chosen study included closed structured and open ended questions which sought the views, opinion, and attitude from the respondents which might not have been captured by the researcher. The questions were designed to collect qualitative and quantitative data. The open ended questions gave unrestricted freedom of answer to respondents. The questionnaire was administered through drop and pick method to the procurement managers/supply chain managers or equivalent of the star rated hotels in Nairobi.

### **3.5 Data Analysis and Presentation**

This included analysis of data to summarize the essential features and relationships of data in order to generalise from the analysis to determine patterns of behaviour and particular outcomes. The data collected from the field was assessed and comparison were made so as to select the most accurate and quality information from the feedback given by various respondents. Descriptive statistics analysis were employed. The quantitative data was coded to enable the responses to be grouped into various categories. The organised data was interpreted in terms of averages and standard deviation to objectives using assistance of computer packages.

In addition, the study conducted a Pearson's product moment correlation analysis to establish the relationship between the study variables. Tables and other graphical presentations such as bar charts, histogram, grouped frequency distributions and pie

charts as appropriate were used to present the study findings for ease of understanding. Regression analysis was also conducted to show how ICT affect procurement performance in star rated hotels in Nairobi.

The regression model was:

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

Where: Y = Procurement Performance;

$\beta_0$  = Constant Term;

$\beta_1, \beta_2, \beta_3$  = Beta coefficients

$X_1$  = Electronic-Tendering

$X_2$  = Enterprise Resource Planning

$X_3$  = Buyer Supplier Relationship

$\varepsilon$  = Error term

## **CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF RESULTS**

### **4.1 Introduction**

This chapter provides the data analysis, presentation and interpretation of the results of the study as set out in the research methodology. The purpose of the study was to investigate the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya. The data was gathered from questionnaires as the research instrument. The questionnaire was designed in line with the objectives of the study.

### **4.2 Background Information**

The study involved the management staff currently serving in the 100 star- rated hotels in Nairobi who are directly dealing with the day to day management of the hotels since they are the ones conversant with the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya. In order to get the background information on the relationship between ICT and procurement performance in star rated hotels in Nairobi, Kenya the demographic data of the respondents was investigated in the first section of the questionnaire. They are presented in this section under gender of the respondents, age of the respondents and work experience.

#### **4.2.1 Response Rate**

The study targeted 100 owners/managers and employees of the star- rated hotels in Nairobi in collecting data with regard to the relationship between ICT and procurement performance in star rated hotels in Nairobi. Table 4.1 shows the results obtained.

**Table 4.1: Response Rate**

<b>Response</b>	<b>Frequency</b>	<b>Percentage</b>
Responded	76	76.0
Not responded	24	24.0
<b>Total</b>	<b>100</b>	<b>100.0</b>

**Source: Author (2014)**

From the study, 76 out of the 100 sample respondents filled-in and returned the questionnaires making a response rate of 76.0%. This response rate is good and representative and conforms to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

#### **4.2.2 Gender Distribution of the Respondents**

The research sought to find out the gender of the respondents. Table 4.2 shows the distribution of the respondents by gender.

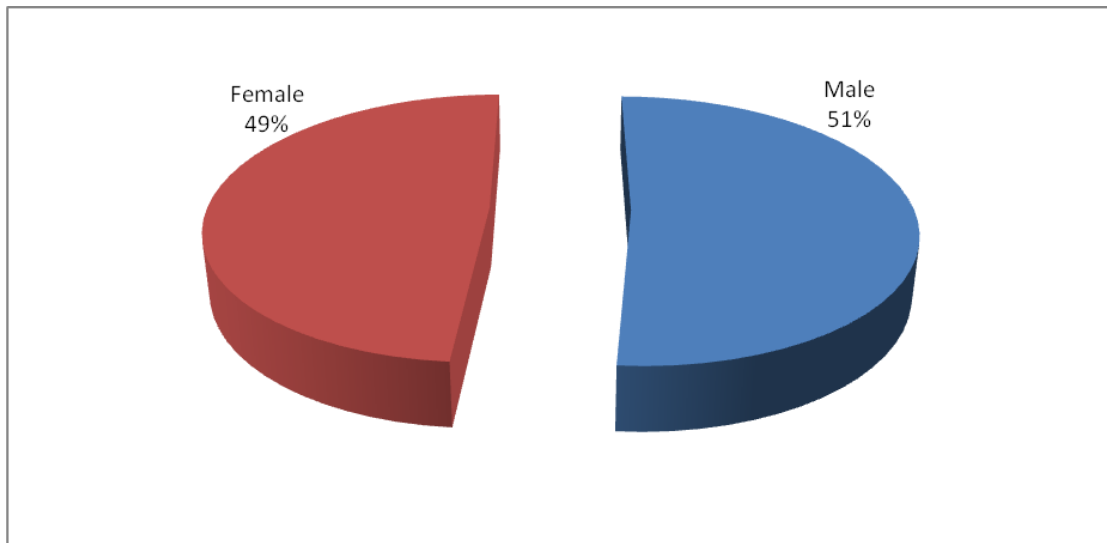
**Table 4.2: Gender of the Respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percentage</b>
Male	39	51.3
Female	37	48.7
<b>Total</b>	<b>76</b>	<b>100.0</b>

**Source: Author (2014)**

According to table 4.2 and figure 4.1, 51.3% of the respondents were male while 48.7% of them were female. The findings show that the hotels studied had both male and female members. The findings imply that the views expressed in these findings are gender sensitive and can be taken as representative of the opinions of both genders as regards to the relationship between ICT and procurement performance in star rated hotels in Nairobi.

**Figure 4.2: Gender of the Respondents**



**Source: Author (2014)**

#### **4.2.3 Age of the Respondents**

This study further sought to investigate the composition of the respondents in terms of age brackets. Table 4.3 shows the results of the findings on the age brackets of the respondents.

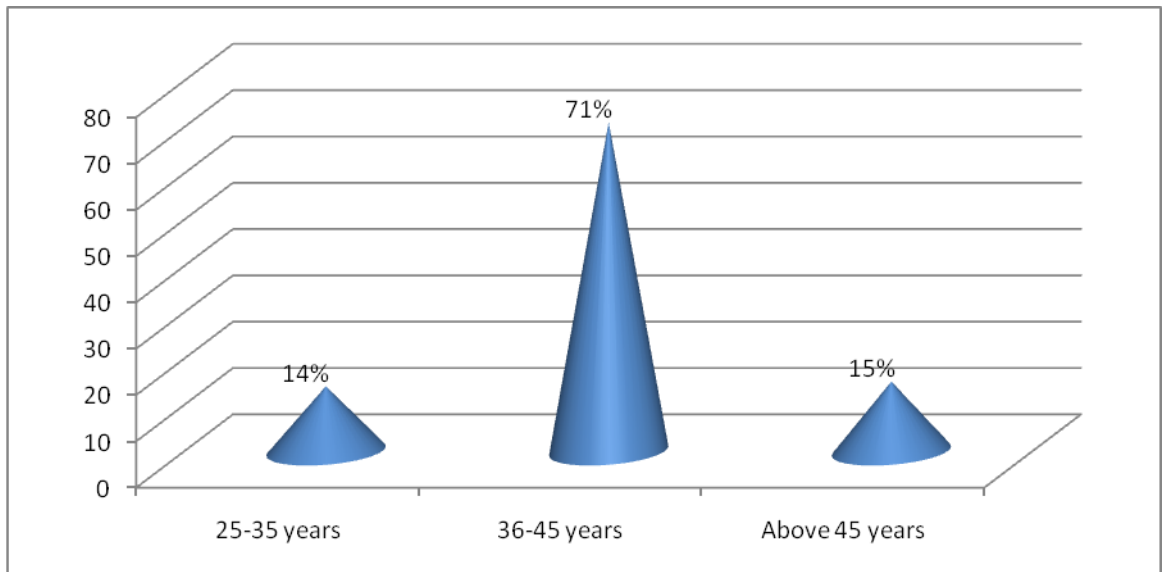
**Table 4.3: Age Bracket**

<b>Age bracket</b>	<b>Frequency</b>	<b>Percentage</b>
18-25 years	0	0
26-35 years	11	14
36-45years	54	71
46 years and above	9	12
<b>Total</b>	<b>76</b>	<b>100</b>

**Source: Author (2014)**

According to the results depicted in table 4.3 and figure 4.2, majority (71%) of the respondents were aged between 36-45 years, 14% of them indicated that they were aged between 26-35 years, while 12% of the respondents indicated that they were aged between 46 years and above. From these results it is clear that the respondents were well distributed in terms of age.

**Figure 4.3: Distribution of the Respondents by Age Brackets**



**Source: Author (2014)**

#### **4.2.4 Working Experience**

The study also sought to establish the length of time that the respondents had been working in the hotels. The results on this question are presented in Table 4.4.

**Table 4.4: Duration Worked in the Star Rated Hotels in Nairobi**

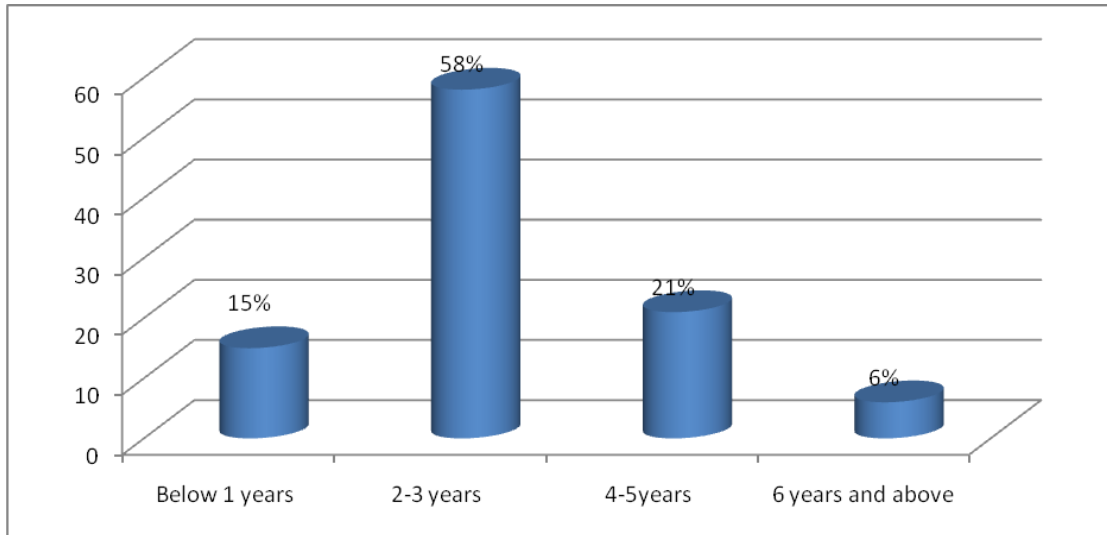
<b>Duration in Years</b>	<b>Frequency</b>	<b>Percentage</b>
Below 1 years	11	15
2-3 years	44	58
4-5years	16	21
6 years and above	5	6
<b>Total</b>	<b>76</b>	<b>100</b>

**Source: Author (2014)**

The study results depicted in table 4.4 reveal that 58% of the respondents indicated that they had an experience of 2-3 years in the Hotels, 21% of them had worked in the star rated hotels for a period of 4-5 years, 15% of them had a working experience of 1 or less than 1 year in the hotels, while 6% of the respondents indicated that they had an experience of over 6 years. This shows that majority respondents had enough work experience in star rated hotels in Nairobi hence conversant with the influence of

relationship between ICT and procurement performance in star rated hotels in Nairobi.

**Figure 4.4: Duration Worked in Star Rated Hotels in Nairobi**



**Source: Author (2014)**



### 4.3 ICT Adoption amongst Star Rated Hotels

The respondents were required to indicate the extent to which their hotels adopted various ICTs.

**Table 4.5: Extent to which the Star Rates Hotels adopted various ICTs**

ICT Applications	Mean	Std. Dev
Computers	4.0857	.37078
Internet	3.5423	1.1772

**Source: Author (2014)**

Majority of the respondents reiterated that the star rated hotels make use of computers in procurement performance to a great extent as shown by a mean score of 4.0857 as well as internet to a great extent as shown by a mean score of 3.5423. It is clear from these results that computers are widely applied in the star rated hotels within the procurement department as compared to use of internet.

The study further sought to establish the extent to which the star rated hotel have adopted ICT in various phases of the procurement cycle. The results are as depicted in Table 4.6.

**Table 4.6: Extent to which Star Rated Hotel adopted ICT in Procurement Cycle**

Phases of Procurement Cycle	Mean	Std. Dev
Announcement of the notice - publication	3.5845	0.7725
Contract Administration	3.5643	1.4527
Preparation of Tender Dossier	3.5542	1.1833
Procurement Planning	3.5428	1.5152
Calculating the value and classification of the contract	3.3714	0.8370
Opening and evaluation of tenders	3.3322	1.4923
Determination of the procurement procedure	3.0000	0.8401
Giving and signing of contract	3.0000	0.8401

**Source: Author (2014)**

From the study, majority of the respondents indicated the star rated hotel have adopted ICT in announcement of the notice – publication to a great extent as shown by a mean score of 3.5845, as well as contract administration shown by a mean score of 3.5643, preparation of tender dossier shown by a mean score of 3.5542 and procurement planning shown by a mean score of 3.5428. In addition, the hotels adopted ICT in calculating the value and classification of the contract, opening and evaluation of tenders, determination of the procurement procedure and giving and signing of contract to moderate extents as shown by a mean score of 3.3714, 3.3322, 3.0000 and 3.0000 respectively. ICT in procurement enables organizations to extend the speed, quality and quantity of information processing. The operational benefits are related to improving the efficiency of the procurement process and thereby reducing the total costs of procurement

#### **4.4 Relationship between ICT and Procurement Performance**

In its second objective, the study sought to establish the extent to which various aspects of use of ICT affect the procurement performance of star rated hotels in Nairobi, Kenya.

**Table 4.7: Effects of e-Tendering on Procurement Performance of Hotels**

<b>Aspects of E-Tendering</b>	<b>Mean</b>	<b>Std. Dev</b>
Placing of the contract	3.6828	1.250
Advertising	3.5528	1.1843
Tender evaluation	3.5423	1.1772
Tender aggregation	3.3322	1.4923
Tender specification	3.1000	1.634

**Source: Author (2014)**

Majority of the respondents recalled that placing of the contract affects the procurement performance of star rated hotels in Nairobi to a great extent as shown by a mean score of 3.6828 and advertising affects the procurement performance of star rated hotels in Nairobi to a great extent as shown by a mean score of 3.5528. On the

other hand, tender evaluation, tender aggregation and tender specification affect the procurement performance of star rated hotels in Nairobi to moderate extents as shown by a mean score of 3.5423, 3.3322 and 3.1000 in that order. The advantages of electronic business in supply-chain management include access to a wide range of suppliers and effective use of organisational resource. In procurement process, electronic business is putting efforts to reduce middlemen and increase intermediaries. It lowers the internal requisitioning cost by automating the internal requisitioning process.

The study further sought to establish the respondents' level of agreement with various statements on various aspects of use of ICT affect the procurement performance of star rated hotels in Nairobi. The results are classified under aspects of e-Tendering and Web-based Enterprise Resource Planning. Table 4.8 shows the results obtained in the study.

**Table 4.8: Agreement on Effects of e-Tendering on Procurement Performance**

<b>Aspects of e-Tendering</b>	<b>Mean</b>	<b>Std. Dev</b>
Web-based Enterprise Resource Planning improves customer service	3.7222	1.1785
ERP system advances business performance by integrating a variety of business processes	3.6943	1.218
Electronic tendering provides greater data accuracy	3.6828	1.2501
Electronic tendering leads to a reduced tender cycle-time	3.5845	0.7725
E-procurement implementation provide detailed management of information that will negate the need for heavy data mining	3.5423	1.1771
Electronic tendering allows for huge time savings	3.2972	1.6102
In electronic tendering there is improved audit trail increasing integrity and transparency of the tendering process	3.2972	1.6102
Electronic processing leads to a more efficient procurement process	3.1422	3.7743
ERP software assists companies with standardized data formats	3.0000	0.8401

**Source: Author (2014)**

According to the results shown in Table 4.8, majority of the respondents agreed that Web-based Enterprise Resource Planning improves customer service as shown by a mean score of 3.7222, ERP system advances business performance by integrating a variety of business processes as shown by a mean score of 3.6943, electronic tendering provides greater data accuracy as shown by a mean score of 3.6828, electronic tendering leads to a reduced tender cycle-time as shown by a mean score of 3.5845 and E-procurement implementation provide detailed management of information that will negate the need for heavy data mining as shown by a mean score of 3.5423. In addition, the respondents remained neutral on that electronic tendering allows for huge time savings as shown by a mean score of 3.2972, in electronic tendering there is improved audit trail increasing integrity and transparency of the tendering process as shown by a mean score of 3.2972, electronic processing leads to a more efficient procurement process as shown by a mean score of 3.1422 and ERP software assists companies with standardized data formats as shown by a mean score of 3.0000. From these results, a wide enterprise information system is needed for information sharing on a range of value adding activities in procurement performance. ICT systems are developed to integrate the procurement functions within the hotels rather than to integrate with multiple partners.

The respondents were further required to rate the extent to which various aspects of buyer-supplier relationship affect procurement performance in the star rated hotels in Nairobi.

**Table 4.9: Effects of Buyer-Supplier Relationship on Procurement Performance**

Aspects of buyer-supplier relationship	Mean	Std. Dev
Supplier appraisal	3.6250	1.4083
Supplier network	3.5428	1.5152
Integrating brand and procurement management processes	3.5423	1.177
Supplier selection and development plan	3.4612	1.2633
Involvement in the early stages of brand building	3.3889	0.84984
Information flow (documentation, reporting and communication)	3.2972	1.6102
Supplier performance tracking and assessment	3.0769	.75955
Developing the suppliers	2.8462	.55470

**Source: Author (2014)**

From the study, the respondents opined that supplier appraisal affect procurement performance in the star rated hotels in Nairobi to a great extent as shown by a mean score of 3.6250, supplier network to a great extent as shown by a mean score of 3.5428 and integrating brand and procurement management processes to a great extent as shown by a mean score of 3.5423. In addition, supplier selection and development plan to a moderate extent as shown by a mean score of 3.4612, involvement in the early stages of brand building to a moderate extent as shown by a mean score of 3.3889, information flow (documentation, reporting and communication) to a moderate extent as shown by a mean score of 3.2972, supplier performance tracking and assessment to a moderate extent as shown by a mean score of 3.0769 and developing the suppliers to a moderate extent as shown by a mean score of 2.8462.

The study was inquisive on what is the trend of various factors of procurement performance in the star rated hotels in Nairobi. Table 4.10 shows the results.

**Table 4.10: Trends of Factors of Procurement Performance**

<b>Factors of procurement performance</b>	<b>Mean</b>	<b>Std. Dev</b>
Effective control and stewardship of resources	3.7533	1.1823
Audit and Compliance	3.6828	1.250
Efficiency and effectiveness in procurement	3.5845	0.77251
Timely delivery of goods and services	3.5528	1.1843
Inventory Optimization	3.5423	1.1772
Quality	3.3725	1.2021
Organized procedures and systems	3.3322	1.4923
Cost minimization	3.3322	1.4923

**Source: Author (2014)**

Majority of the respondents indicated that effective control and stewardship of resources has improved as shown by a mean score of 3.7533 as well as audit and compliance shown by a mean score of 3.6828, efficiency and effectiveness in procurement shown by a mean score of 3.5845, timely delivery of goods and services shown by a mean score of 3.5528 and inventory optimization shown by a mean score of 3.5423, while quality, organized procedures and systems and cost minimization has remained constant as shown by mean scores of 3.3725, 3.3322 and 3.3322.

#### **4.5 Pearson's product moment correlation**

To quantify the strength of the relationship between the variables, the researcher used Pearson's product moment correlation. The researcher used the Pearson's product moment correlation ( $r$ ) to study the correlation between the study variables and the findings were as in the table below.

**Table 4.11: Coefficient of Correlation**

	<b>Procurement Performance</b>	<b>Electronic-Tendering</b>	<b>Enterprise Resource Planning</b>	<b>Buyer Supplier Relationship</b>
<b>Procurement Performance</b>	1	.119	.103	.242
<b>Sig. (p-Values)</b>		.365	.435	.063
<b>Electronic-Tendering</b>	.119	1	.097	.362
<b>Sig. (p-Values)</b>	.365		.461	.004
<b>Enterprise Resource Planning</b>	.103	.097	1	.213
<b>Sig. (p-Values)</b>	.435	.461		.102
<b>Buyer Supplier Relationship</b>	.242	.362	.213	1
<b>Sig. (p-Values)</b>	.063	.004	.102	

**Source: Author (2014)**

From the findings, it is clear that there is a positive correlation between the procurement performance and buyer supplier relationship as shown by a correlation figure of 0.242, it is also clear that there is a positive correlation between the procurement performance and enterprise resource planning with a correlation figure of 0.103 and a positive correlation between procurement performance and electronic-tendering with a value of 0.119. This shows that there is positive correlation between procurement performance and electronic-tendering, enterprise resource planning and buyer supplier relationship.

#### **4.6 Multiple Regression Analysis**

In addition, the researcher conducted a multiple regression analysis so as to establish the relationship between various dimensions of ICT and procurement performance. As such it explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable (procurement performance) that is explained by all the

independent variables (electronic-tendering, enterprise resource planning and buyer supplier relationship).

The main purpose of multiple regressions is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable.

**Table 4.12: Multiple Regression Analysis**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.224	.312		4.358	0.000
Electronic-Tendering	0.217	0.1440	0.185	0.776	0.038
Enterprise Resource Planning	0.118	0.0847	0.023	0.406	0.046
Buyer Supplier Relationship	0.299	0.0715	0.235	2.793	0.044

**Source: Author (2014)**

**Dependent Variable:** Procurement performance of the star rated hotels in Nairobi

The researcher conducted a multiple regression analysis so as to relationship between various dimensions of ICT and procurement performance and the three independent variables. The regression equation ( $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5$ ) now becomes:

$$Y = 1.224 + 0.2176 X_1 + 0.1187X_2 + 0.2994X_3$$

Whereby Y = Procurement performance of the star rated hotels in Nairobi

X1 = Electronic-Tendering

X2 = Enterprise Resource Planning

X3 = Buyer Supplier Relationship

According to the regression equation established, taking all factors (electronic-tendering, enterprise resource planning and buyer supplier relationship) constant at zero, the procurement performance of the star rated hotels in Nairobi realized would be 1.224. The data findings analyzed also shows that taking all other independent



variables at zero, a unit increase in electronic-tendering lead to a 0.217 increase in procurement performance. A unit increase in enterprise resource planning will lead to a 0.118 increase in procurement performance, whereas a unit increase in buyer supplier relationship will lead to a 0.299 increase in procurement performance. These results infer that buyer supplier relationship contributes more to procurement performance, followed by electronic-tendering, while enterprise resource planning contributes the least to procurement performance of the star rated hotels in Nairobi.

**Table 4.13: Coefficient of Determination**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.792 (a)	.627	.303	.125

**Source: Author (2014)**

**Predictors:** (Constant), electronic-tendering, enterprise resource planning and buyer supplier relationship.

The three independent variables in the model, explain 62.7% of the procurement performance of the star rated hotels in Nairobi as represented by the  $R^2$ . This therefore means the three independent variables contribute about 62.7% to their procurement performance while other factors not in the model contribute 37.3% of the procurement performance of the star rated hotels in Nairobi. Therefore, further research should be conducted to investigate the other factors (37.3%) that affect procurement performance of the star rated hotels in Nairobi.

**Table 4.14: ANOVA**

	Sum of squares	Df	Mean Square	F	Sig or P-value
Regression	225.366	1	225.366	7.639	000(a)
Residual	2212.745	75	29.503		
Total	2438.111	76			

**Source: Author (2014)**

ANOVA results in Table 4.14 indicate that regression model predicts the procurement performance significantly well. This indicates the statistical significance of the regression model that was applied. An F statistic of 7.639 indicated that the model was significant. This was supported by the p-value of 0.000a. It indicates that the overall model applied can statistically predict the procurement performance.

#### 4.7 Challenges Facing the Adoption of ICT

In order to establish the challenges facing the adoption and use of ICT in procurement performance amongst star rated hotels in Nairobi, the study sought to ascertain the extent to which the hotels experience various challenges in the adoption of ICT.

**Table 4.15: Challenges Experiences in Adoption of ICT**

<b>Challenges Experiences in Adoption of ICT</b>	<b>Mean</b>	<b>Std. Dev</b>
Costly delays and errors	3.6828	1.2501
High maintenance costs	3.5845	0.7725
Lack of the necessary IT infrastructure	3.5845	0.77251
Inadequate capital necessary to provide e-Procurement	3.3322	1.4923
Use of multiple ERPs which may not be compatible	3.2972	1.6102
Lack of the digital format necessary for e-procurement systems	3.1422	3.7743

**Source: Author (2014)**

From the study, majority of the respondents recalled that the star rated hotels experienced costly delays and errors to a great extent as shown by a mean score of 3.6828, high maintenance costs to a great extent as shown by a mean score of 3.5845 and lack of the necessary IT infrastructure to a great extent as shown by a mean score of 3.5845, while they indicated that the hotels experienced challenges of inadequate capital necessary to provide e-procurement, use of multiple ERPs which may not be compatible and lack of the digital format necessary for e-procurement systems to moderate extents as shown by a mean score of 3.3322, 3.2972 and 3.1422 respectively.

## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This is the final chapter in this study which gives the summary of the findings, the discussion, conclusions, recommendations of the study based on the objective of the study and suggestions for further findings. The chapter finally presents the suggestions for further studies.

### **5.2 Summary of Findings and Discussions**

This study found that the star rated hotels make use of computers and internet to great extents. From the results, the star rated hotels have adopted ICT in various phases of the procurement cycle including ICT in announcement of the notice – publication, contract administration, preparation of tender dossier and procurement planning to great extents and that the hotels adopted ICT in calculating the value and classification of the contract, opening and evaluation of tenders, determination of the procurement procedure and giving and signing of contract to moderate extents. organizations need to consider another organizational factor that can potentially affect the adoption of an IT a firm's information sharing culture. According to Weele (2010) procurement via the Internet requires firms to share information with its business partners. Since procurement has evolved to facilitate streamlining and automating the entire procurement process as well as making order and requisition information available along the entire supply chain, information sharing between and within organizations is indispensable.

Further, the findings concur with Kearney (2004) that ICT in procurement significantly influence the success of a company and the priority of ICT is to provide support in the creation of process efficiency and cost / expenditure

transparency as well as achieving reductions in the purchasing price. information sharing helps to reduce information asymmetry, thereby also prevent opportunistic behaviours. The study also found that various aspects of use of ICT affect the procurement performance of star rated hotels in Nairobi. For instance, placing of the contract and advertising affects the procurement performance of star rated hotels in Nairobi to great extents, while tender evaluation, tender aggregation and tender specification affect the procurement performance of star rated hotels in Nairobi to moderate extents.

The study further established that that Web-based Enterprise Resource Planning improves customer service, ERP system advances business performance by integrating a variety of business processes, electronic tendering provides greater data accuracy, electronic tendering leads to a reduced tender cycle-time and E-procurement implementation provide detailed management of information that will negate the need for heavy data mining. It is moderately established that that electronic tendering allows for huge time savings, in electronic tendering there is improved audit trail increasing integrity and transparency of the tendering process, electronic processing leads to a more efficient procurement process and ERP software assists companies with standardized data formats.

The findings also concur with Javier et al., (2010) that the reengineering of procurement has been attempted through various information technologies; the real opportunity for achieving this reengineering goal may lie in the use of ICT. The ability to communicate electronically between supply chain members is rapidly becoming a requirement for entering into business alliance. Further, the objective of electronic business strategy in procurement area is to provide purchasing managers with better control over their companies' purchasing habits and relationships with

suppliers. With increasing competitive pressures, procurement professionals should continually find ways to reduce costs, increase efficiency, and reduce lead time in the star rated hotels.

The study found that supplier appraisal, supplier network and integrating brand and procurement management processes affect procurement performance in the star rated hotels in Nairobi to great extents as compared to supplier selection and development plan, involvement in the early stages of brand building, information flow (documentation, reporting and communication), supplier performance tracking and assessment and developing the suppliers which affect procurement performance in the star rated hotels in Nairobi to moderate extents. ICT tools support supply chain activities, proper planning and management strategic decisions by a holistic visibility on; inventory (demands patterns, carrying costs), transportation (customer location, shipment sizes), facility (location, capacity, smart grid), and use design for recycle and reuse, limit waste and defects.

ICT tools (e-tendering, ERP and buye supplier relationship) also allowsenhances the performance of the entire procurement to make it less troublesome. The study found that effective control and stewardship of resources has improved, audit and compliance, efficiency and effectiveness in procurement, timely delivery of goods and services and inventory optimization, while quality, organized procedures and systems and cost minimization has remained constant.

In spite of the benefits that come with the adoption of ICT in procurement, the star rated hotels in Nairobi experience various challenges in the adoption of ICT. The study found that the star rated hotels experienced costly delays and errors, high maintenance costs and lack of the necessary IT infrastructure to great extents. On the

other hand they experience challenges of inadequate capital necessary to provide e-procurement, use of multiple ERPs which may not be compatible and lack of the digital format necessary for e-procurement systems to a moderate extents. In accordance, Thai (2009) emphasized one of the most significant challenges in developing countries procurement is how to best use ICT in an age of communications revolution.

From the Pearson's product moment correlation analysis, there was a positive correlation between the procurement performance and buyer supplier relationship enterprise resource planning and electronic-tendering. The coefficient of determination showed that the three independent variables that were studied, explain only 62.7% of the procurement performance of the star rated hotels in Nairobi as represented by the  $R^2$ . According to the regression analysis, if all the three factors studied were held constant the procurement performance of the star rated hotels in Nairobi realized would be 1.224. In addition, buyer supplier relationship contributes more to procurement performance, followed by electronic-tendering, while enterprise resource planning contributes the least to procurement performance of the star rated hotels in Nairobi.

### **5.3 Conclusions**

The study concludes that that the star rated hotels make use of computers and internet. Accordingly, the star rated hotels in Nairobi have adopted ICT in various phases of the procurement cycle including ICT in announcement of the notice – publication, contract administration, preparation of tender dossier and procurement planning to great extents and that the hotels adopted ICT in calculating the value and classification of the contract, opening and evaluation of tenders, determination of the procurement procedure and giving and signing of contract.

The study also concludes that the various aspects of use of ICT that affect the procurement performance of star rated hotels in Nairobi include placing of the contract and advertising as well as tender evaluation, tender aggregation and tender specification. This is an indication that ICT tools are a source of competitive power for procurement performance especially for service industries such as star rated hotels where they are now used widely and as a result ICT in procurement have earned a vital role in the organizations.

The study concludes that ICT tools offer a good strategy within an organization to achieve strategic goals of customer satisfaction and profitability through cost management. From the findings it is clear that Web-based Enterprise Resource Planning improves customer service, ERP system advances business performance by integrating a variety of business processes, electronic tendering provides greater data accuracy, electronic tendering leads to a reduced tender cycle-time and E-procurement implementation provide detailed management of information that will negate the need for heavy data mining. ICT tools have been used to ensure efficient and effective performance of supply chain. Technological advancements that include e-tendering, ERP and buye supplier relationship have enabled organizations to achieve competitive edge in material management and more organizations are now embracing the technological advancements.

The study further concludes that supplier appraisal, supplier network and integrating brand and procurement management processes affect procurement performance in the star rated hotels in Nairobi as well as supplier selection and development plan, involvement in the early stages of brand building, information flow (documentation, reporting and communication), supplier performance tracking and assessment and developing the suppliers. Technology in procurement process had affected vendors in

terms of procurement requirements such as response to request for quotation, delivery period and getting it right first time. Technological use on the procurement increased efficiency. In supply chain management, time and opportunities to get information on time is very important and accurate and timely information will enable the organizations to increase service level and as a result decrease the costs and lead times.

The study finally concludes that the star rated hotels experienced challenges of costly delays and errors, high maintenance costs, lack of the necessary IT infrastructure, inadequate capital necessary to provide e-procurement, use of multiple ERPs which may not be compatible and lack of the digital format necessary for e-procurement systems. These challenges affect the aspects of inventory, transportation, facility, and use design for recycle and reuse, limit waste and defects in the entire supply chain as well as the procurement function. As per the results, ICT tools in buyer supplier relationship contributes more to procurement performance, followed by electronic-tendering, while enterprise resource planning contributes the least to procurement performance of the star rated hotels in Nairobi.

#### **5.4 Recommendations**

From the findings and conclusion, ICT play a very vital role in the performance of the procurement departments of the star rated hotels. The study thus recommends that the organizations should be sensitive of the ever changing business environment that dictates the competitive environment they operate in. As such, staying ahead of the competition through adoption of ICT would ensure that the organizations survive in the competitive environment. Embracing of Information Communication Technology (ICT) ensures that the supply chain balances its need to satisfy customer needs and also to manage costs so as to attain profits.



The study found that the various aspects of use of ICT that affect the procurement performance of star rated hotels in Nairobi include placing of the contract and advertising as well as tender evaluation, tender aggregation and tender specification. The study therefore recommends for the star rated hotels to realize the optimum performance in the procurement, there is need to embrace the use of modern technology in procurement processes. This will help to reduce lead times and increase efficiency and lead to benefits such as elimination of de-linkage between procurement and financial management, elimination of corruption, elimination of fraud, efficiency or time of service delivery, elimination of delays and inefficiencies, reliability of the service and customer satisfaction.

As a way of dealing with the challenges, the study recommends the star rated hotels need to employ procurement staffs who have attained professional qualification. Workshops, seminars or short courses need to be offered to the procurement personnel so as improve their knowledge and skills which will in turn enhance procurement efficiency frequently. The organizations need to undertake regular training for procurement department staff to enable them update their skills and knowledge. Adequate basic facilities and resources to perform their expected tasks need to be provided.

### **5.5 Limitations of the Study and Suggestions for Further Research**

The study was faced with several challenges that might have hindered completion of the study. The respondents approached were likely to be reluctant in giving information fearing that the information sought would be used to intimidate them or print a negative image about them or their firms. Some respondents would even turn down the request to fill questionnaires. The study handled the problem by carrying an introduction letter from the University and assuring them that the information they

give would be treated confidentially and it would be used purely for academic purposes.

The researcher's sole aim was to personally administer the questionnaires so as to enhance the rate of returned responses from the respondents. While the study concentrated on management staff within the various star rated hotels in Nairobi, the researcher foresaw a challenge in securing the respondent precious time considering their busy schedules. The researcher had to make proper arrangements with respondents to avail themselves for the study off-time hours as well as motivating the respondents on the value of the study. The researcher also had to exercise utmost patience and care and in view of this the researcher has to make every effort possible so as to acquire sufficient data from respondents.

An additional limitation was the fact that there are not many researches done on the area of ICT in procurement performance of star rated hotels in Nairobi. Owing to different objectives and methodologies (and study designs) of previous studies, the data was not in the right format or specific enough to aid in this study. To counter this limitation, the study did not limit itself to the scope of ICT and procurement performance in Kenya only but rather in othe countries to enhance the research process. Indeed, this limitation served as an important opportunity for the need of this research.

Given that ICT tools can have revolutionary impact on procurement performance the star rated hotels in Nairobi need to adopt a more forward looking stance in relation to ICT tools. Viewing ICT tools as an incremental improvement of supply chain performance can turn out to be the best thing to all organizations that are involved in logistics and manufacturing. Future research needs to continue the development of

sound theoretical models and instruments. There is an urgent need for understanding the costs and benefits of ERP, the implementation challenges, and the management of the system once it is installed and up running.

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**APPENDICES**

**Appendix I: Research Questionnaire**

**Kindly respond to the following questions by ticking on the appropriate box (√) or filling the answers in the blank spaces**

**A. DEMOGRAPHIC INFORMATION**

1. What is your gender?      Male [  ]    Female [  ]
2. What is your age?  
18-25 years [  ]    26-35 years [  ]  
36-45years [  ]    46 years and above [  ]
3. For how long have been serving in this hotel?  
Below 1 years [  ]    2-3 years [  ]  
4-5years [  ]    6 years and above [  ]

**B. ICT Adoption amongst Star Rated Hotels**

4. To what extent has your hotel adopted the following ICT?

	<b>Very Great Extent</b>	<b>Great Extent</b>	<b>Moderate Extent</b>	<b>Little Extent</b>	<b>Very Low Extent</b>
Computers					
Internet					
Others .....					

5. To what extent have your hotel adopted ICT in the following phases of the Procurement cycle

	<b>Very Great Extent</b>	<b>Great Extent</b>	<b>Moderate Extent</b>	<b>Little Extent</b>	<b>Very Low Extent</b>
Procurement Planning					
Calculating the value and classification of the contract					
Determination of the procurement procedure					

Preparation of Tender Dossier					
Announcement of the notice - publication					
Opening and evaluation of tenders					
Giving and signing of contract					
Contract Administration					

### C. Relationship between ICT and Procurement Performance

6. To what extent do the following aspects of use of ICT affect the procurement performance of hotels in Nairobi, Kenya?

	<b>Very Great Extent</b>	<b>Great Extent</b>	<b>Moderate Extent</b>	<b>Little Extent</b>	<b>Very Low Extent</b>
<b>Electronic-Tendering (e-Tendering)</b>					
Tender specification					
Advertising					
Tender aggregation					
Tender evaluation					
Placing of the contract					



7. What is your level of agreement with the following statements?

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Slightly Disagree</b>	<b>Strongly Disagree</b>
<b>Electronic-Tendering (e-Tendering)</b>					
Electronic tendering allows for huge time savings					
Electronic processing leads to a more efficient procurement process					
Electronic tendering provides greater data accuracy					
Electronic tendering leads to a reduced tender cycle-time					
In electronic tendering there is improved audit trail increasing integrity and transparency of the tendering process					
<b>Enterprise Resource Planning</b>					
E-procurement implementation provide detailed management of information that will negate the need for heavy data mining					
ERP system advances business performance by integrating a variety of business processes					

Enterprise Resource Planning improves customer service					
ERP software assists companies with standardized data formats					

8. To what extent do the following aspects of buyer-supplier relationship affect procurement performance in your hotel?

	<b>Very great extent</b>	<b>Great extent</b>	<b>Moderate extent</b>	<b>Little extent</b>	<b>Not at all</b>
Supplier appraisal					
Supplier selection and development plan					
Supplier network					
Supplier performance tracking and assessment					
Developing the suppliers					
Information flow (documentation, reporting and communication)					
Integrating brand and procurement management processes					
Involvement in the early stages of brand building					

9. What is the trend of the following factors of procurement performance in your hotel?

	<b>Greatly Improved</b>	<b>Improved</b>	<b>Constant</b>	<b>Decreasing</b>	<b>Greatly decreased</b>
Effective control and stewardship of resources					
Efficiency and effectiveness in procurement					

Organized procedures and systems					
Quality					
Timely delivery of goods and services					
Cost minimization					
Inventory Optimization					
Audit and Compliance					

### **D Challenges Facing the Adoption of ICT**

10. To what extent do you experience

	<b>Very Great Extent</b>	<b>Great Extent</b>	<b>Moderate Extent</b>	<b>Little Extent</b>	<b>Very Low Extent</b>
Use of multiple ERPs which may not be compatible					
Lack of the digital format necessary for e-procurement systems					
Costly delays and errors					
High maintenance costs					
Lack of the necessary IT infrastructure					
Inadequate capital necessary to provide e-Procurement					

11. In your opinion how can your hotel overcome the challenges faced in ICT use in the procurement process?

.....  
.....  
.....  
.....

**THANK YOU**

## **Appendix II: List of Star Rated Hotels in Nairobi House of Waine**

1. House of Waine
2. PrideInn Hotel Raphta Suites
3. The Boma Nairobi
4. Nairobi Serena Hotel
5. Palacina Residence & Suites
6. Villa Rosa Kempinski Nairobi
7. Fairview Hotel
8. Sarova Stanley
9. Reata Serviced Apartments
10. Sankara Nairobi
11. Fairmont The Norfolk
12. Hemingways Nairobi
13. Tribe Hotel
14. Progressive Park Hotel
15. Country Lodge
16. Southern Sun Mayfair Nairobi
17. Best Western Premier Nairobi
18. Nanchang Hotel
19. Sarova Panafric
20. Eka Hotel Nairobi
21. Ole - Sereni Hotel, Nairobi
22. The Ndemi Place
23. Safari Park Hotel
24. 67 Airport Hotel
25. Meltonia Luxury Suites
26. Red Court Hotel
27. InterContinental Nairobi
28. Windsor Golf Hotel and Country Club
29. PrideInn Hotel Lantana Suites
30. The Panari Hotel
31. Summerdale Inn
32. The Hotel Emerald
33. PrideInn Hotel Westlands

34. West Breeze Hotel
35. Hotel Embassy
36. Jupiter Guest Resort Langata
37. Sunrise Hotel
38. Hotel LaMada
39. Hilton Nairobi
40. Maasai Ostrich Resort
41. DusitD2 Nairobi
42. Jacaranda Hotel
43. Hotel Central Park Nairobi
44. Silver Springs Hotel
45. Park Place Hotel
46. Nairobi Safari Club
47. Olive Gardens Hotel
48. The Crown Place Hotel
49. Nomad Palace Hotel Nairobi
50. Sentrim 680 Hotel
51. Laico Regency Hotel
52. Kenya Comfort Hotel
53. Sportsview Hotel
54. Blue Posts Hotel
55. Sentrim Nairobi Boulevard Hotel
56. Hotel Kipepeo
57. Nairobi Transit Hotel
58. Jupiter Guest Resort
59. Parklands Shade Hotel
60. Meridian Court Hotel
61. Marble Arch Hotel
62. Nairobi Upper Hill Hotel
63. Grand Royal Hotel
64. Kenya Comfort Hotel Suites
65. Rock Motel
66. Oakwood Hotel
67. Jamiat Hotel

68. Eastland Hotel
69. The Clarion Hotel
70. Arkland Palace Hotel
71. Blue Hut Hotel
72. Parkside Hotel
73. Hennessis Hotel
74. Hotel Greton
75. Oryx Hotel
76. Utalii Hotel
77. Kivi Milimani Hotel
78. New Hillcrest Hotel
79. Hotel Ambassadeur
80. Dafam Hotel
81. Diamond Hotel
82. County Park Hotel
83. Lenana Mount Hotel
84. The Headquarters Inn
85. Clarence House Nairobi
86. Hotel Rio
87. The Strand Hotel
88. Sunstar Hotel
89. CPA Centre
90. Hadassah Hotel
91. Homecarehomestays
92. Hotel Southern Blue
93. Karibu Hotel
94. Laibon Hotel Nairobi
95. Milestone City Hotel
96. The Monarch Hotel
97. Qaribu Inn
98. Rabi Hotel & Safaris
99. Radisson Blu Hotel, Nairobi
100. Wida Highway Motel

**Source: Kenya Association of Hotelkeepers and Caterers, 2014**