2021

Impact of e-procurement practices on operational performance of retail supermarkets in Nairobi City County, Kenya.

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IMPACT OF E-PROCUREMENT PRACTICES ON OPERATIONAL PERFORMANCE OF RETAIL SUPERMARKETS IN NAIROBI CITY COUNTY, KENYA

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MBA 110030

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION AT STRATHMORE UNIVERSITY BUSINESS SCHOOL

NOVEMEBER 2021

DECLARATION

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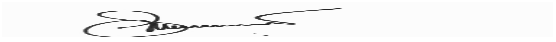
Signature: 

Date: **12th November 2021**

Approval

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ABSTRACT

The increased need by different firms to achieve operational performance has increased over the years. This has compelled firms to apply various strategies like Information Communication Technology and e-resourcing especially so as to attain desired performance. At Retail Supermarkets in Nairobi City County, Kenya, e-procurement has been used as a mode of daily transaction. However, information regarding how e-procurement has contributed to operational performance is limited. It is upon this perspective that this study examined the impact of e-procurement practices on operational performance of Retail Supermarkets in Nairobi City County, Kenya. The study reviewed the effect of e-tendering, e-sourcing and e-payments on the operational performance of retail supermarkets within Nairobi City County. The study was grounded on the Technology Acceptance Model 2. A positivism philosophy which commanded the use of quantitative approaches of research was used to underpin the study under a case study of Retail Supermarkets in Nairobi City County, Kenya as a firm or an enterprise. Under these approaches, administered questionnaires and interview guide was used to collect primary data from the procurement managers from the 94 registered retail supermarkets within Nairobi County. The sample respondents for the study were the 94 personnel from the supermarkets. The collected quantitative data was analyzed using descriptive, Spearman rank correlation and regression analysis. The collected research data was presented using tables and charts in line with the requirements of the study. The study was able to a response rate of 88% with only 12% of the sample participants not able to respond to the research. The study applied correlation tests and results established a strong positive effect of e-tendering, e-sourcing and e-payment on the operational performance of the retail supermarkets. Further, regression analysis pointed to a positive and statistically significant impact of e-procurement practices on operational performance of retail supermarkets in Nairobi City County. The study noted that 66.5% of the changes in the operational performance of retail supermarkets were as a result of e-procurement practices. The research concluded that electronic procurement practices have a significant impact on retail supermarkets performance. The study found out that adoption of e-payment, e-tendering and e-sourcing practices were significant predictors of operational performance of the supermarkets. The study recommends that managers ensure that adopted technologies are compatible with existing systems and resources to ensure compatibility and usability. The study also recommends that the organization management should invest in appropriate technologies that are easy to use and can be integrated across different stores and used with different devices since procurement processes involve multiple stakeholders with vested interests. The study recommends that policy makers campaign to promote infrastructural development to increase widespread use of e-procurement systems.

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LIST OF ABBREVIATIONS / ACRONYMS

AfDB:	African Development Bank
ASP:	Application Service Provision
B2B:	Business-to-Business
FMCG:	Fast-moving Consumer Goods
ICT:	Information Communication Technology
IS:	Information System
IT:	Information Technology
IMF:	International Monitory Fund
ITC:	International Trade Centre
KCB:	Kenyan Central Bank
PEOU:	Perceived Ease-Of-Use
PLCs:	Product Life Cycles
PU:	Perceived Use
TAM2:	Technological Acceptance Model 2
U.S.A:	United States of America
WB:	World Bank

OPERATIONAL DEFINITION OF TERMS

E-payment	E-payment is the use of online systems to facilitate transactions (Mahdillou & Akbary, 2014)
E-Procurement:	As one of the Information Communication Technologies (ICTs) that is used to carry out individual or all stages of the procurement process which include sourcing, negotiation, ordering, receipt and post procurement review which leads to significant reduction in both cost and time (Khu, Husain & Mustaffa, 2012).
E-Sourcing	E-sourcing is the use of web-based systems in collecting and comparing supplier-related information to enable selection of appropriate business partners (Campbell & Du Preez, 2017)
E-Tendering	E-tendering refers to the sourcing of suppliers through online platforms (Panduranga, 2016).
Operational performance	Operational performance is the sum-total of entity's routine process and activities that range from financial and non-financial (Alves & Alves, 2015).
Procurement:	This is the acquisition of goods, services, capabilities and knowledge required by businesses, from the right source, the right quality, in right quantity, at a right price and right time to maintain and manage a company's primary and support activities. It includes sourcing, purchasing and covers all activities from identifying potential suppliers to delivery to the beneficiary (Akinyi, 2010).

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Today, the business environment is characterized by rapid series of market shifts, increased technological developments, and changes in legal operating landscape. This has resulted in an environment whereby firms that are able to integrate emerging technologies into their operations are best placed to generate and sustain competitive advantage (Tallman, Luo, & Buckley, 2018). Ajwang (2017) notes that Information Communication Technology (ICT) is a critical enabler of the redefinition of an organization, facilitating power and control distribution to ensure efficiency and harmony in the realization of organizational objectives. E-procurement technologies are among the technologies that have promoted e-procurement practice among retail businesses (Marin-Garcia, 2015). E-procurement practice is the use of electronic technologies and the internet to carry out procurement functions like identification, sourcing, pricing, tendering, payments and constructive management. This, in turn, enhances efficiency, effectiveness, transparency and accountability. These factors are key indicators of firms' ability to meet their objectives (Hardy & Williams, 2008).

Prescott and Hughes (2018) suggest that the digitalization is aimed at the reduction of costs, better higher market transparency, coordination and collaboration. E-procurement has been adopted in developed countries such as the U.S.A due to its influence in enhancing time and cost efficiency. In a study conducted by Neupane, Soar, Vaidya and Yong (2012), it was found that 90% of companies in the United States had incorporated some form of e-procurement procedure on their operations. E-procurement has been adopted in Africa mainly as a means of increasing accountability and operational transparency, in a continent where the procurement industry has been plagued by corruption (Boudijilda & Pannetto, 2017).

Mwangi (2020) notes that e-procurement is faster in sending, managing and cataloging financial documents, compared to the manual method of sourcing, delivering them the post office and manually storing them. Most firms like tracing and tracking nature in e-procurement because it is much easier in rectifying mistaken information (Mahdillou & Akbary, 2014). E-procurement has

been essential to stabilizing procurement transactions and management processes in Africa where much of the financial information remains unsecure (Masheti, 2016).

In Kenya, e-procurement took an executive way within the government agencies, especially in Nairobi City and Mombasa Port (World Bank, 2014). Mutindi, Namusonge and Obwogi (2013), show that all institutions, organizations and firms were initially involved in manual process of procurement under the Supply Manual of 1978. Chang, Tsai and Hsu (2013) show that the government of Kenya together with development partners like the World Bank (WB), International Monitory Fund (IMF), International Trade Centre (ITC), the African Development Bank (AfDB), Kenyan Central Bank (KCB) and private sector perceived the role of e-procurement for both demand and supply. Mutindi, Namusonge and Obwogi (2013) assert that being at the road line seeking for accountability and effectiveness, the Government of Kenya had to emphasize adoption of e-procurement to its entities and agencies. A growing number of firms such as tertiary institutions, hospitals, manufacturing companies and retail supermarkets have also incorporated online technologies in their supply chain networks to enhance operational efficiency (Basole, Bellamy, & Park, 2017). Firms have adopted e-procurement measures as a means of enhancing their competitive nature while at the same time improving the quality of product and service provision (Shale, 2015). According to Wagana and Kabare (2015), the use of e-procurement eases services and goods in supply; ensures appropriate bidding and institution of more efficient pricing procedures. This research sough to analyze the influence of e-procurement on the operational performance of retail supermarkets in Nairobi County.

1.1.1 E-procurement practices

Rotich and Okello (2015) defined e-procurement as the use of information technologies in the development of procurement processes that are responsive to environmental changes. According to Abdullahi, Oyewobi, Ganiyu and Shittu (2021), e-procurement refers to the use of internet-based systems and technologies in individual or all stages of the procurement process. These technologies could be used in searching, sourcing, ordering, negotiating, and post-purchase review. E-procurement practices have been used in single operations such e-Tendering, e-Auction/Reverse Auction, e-Marketplace, and e-Catalogue/ Purchasing or in joint procurement processes that are interlinked through the internet. Mohd Nawi, Deraman, Bamgbade, Zulhumadi,

and Mehdi Riazi (2017) are of the opinion that e-procurement practices are adopted to enhance efficiency, effectiveness, transparency and accountability in the procurement process. Simply defines e-procurement as the automation of procurement processes such that sourcing, vendor selection, shipment tracking, tendering and payments can be done in an online environment.

E-procurement has also been adopted as a strategy of combat corruption and enhancing the building of institutional capacities (Ionescu, 2013). In Ghana for example, e-procurement system holistically tackles underlying issues affecting performance and lack of access to information for Civil Society Organization and public (Wanjera, 2014). In South Africa, Anthony (2018) shows that e-procurement was implemented through the Preferential Procurement Policy Framework Act 5 of 2000, which gave effect to section 217(3) of the Constitution of the Republic of South Africa of 1996. In Tanzania, Sijaona (2010) shows the extension of e-procurement through various e-resource system. These include e-sharing, e-advertisement, e-submission, e-evaluation, e-contacting, e-payment, e-communication and e-checking and e-monitoring which were intended to ensure that the public procurement activities were conducted online.

Neupane et al. (2014) associated e-procurement with the following functions; e-sourcing, e-noticing, e-tendering, e-awarding, e-contract, e-orders, e-invoicing and e-payment. Rashid (2018) divided these processes into pre-awarding phase (e-sourcing, e-noticing, e-tendering) and post-awarding phase (e-awarding, e-contract, e-orders, e-invoicing and e-payment). Waithaka and Kimani (2021) defined e-procurement as the incorporation of services such as e-sharing, e-communication, e-submission, e-advertising, e-evaluation, e-contacting, e-payment, e-checking and e-monitoring. Candra and Gunawan (2017) asserts that e-procurement as a practice has enhanced the competitive nature of procurement, has improved customer service offering and resulted in improved relationship with business partners, citing improved data accuracy, reduction in administration costs and time efficiency in service delivery.

The most common platforms involved in e-procurement are Enterprise Resource Planning Software (ERP), Maintenance, and Repair Operations (MRO) software, E-sourcing software, E-reverse auctioning software, E-informing software and E- Market websites (Dakpo, 2017). These platforms are responsible for automating the procurement function among companies. This study used the core practices performed by the Enterprise Resource planning (ERP) system which most

businesses, and indeed retail supermarkets have integrated into their operations. These include e-tendering, e-sourcing, e- and e-payment.

1.1.2 Operational performance

Operational performance is the sum-total of entity's routine process and activities that range from financial and non-financial (Alves & Alves, 2015). According to Khanapuri, Kraemer and Dunkle (2011), such operational performance is measured through organizations' framework that gives balanced view of performance under four perspectives; financial accumulation, increased number of customers, expansion of a firm and its internal processes. Richard et al. (2009) affirm that organizational performance can be assessed through the lens of three main outcomes: Financial outcomes measured as a factor of profits generation, return on assets and return on investment.; product performance encompassing volume of sales and market share respective to competitors; and shareholder return which includes total shareholder return and economic value added.

Globally, companies are facing increased pressure to provide cost effective products and services that will still be able to satisfy customer expectations (Soltani, Zareie, & Navimipour, 2018). ITC technologies have enabled firms to shift their operations from traditional style to the modern style of operation where most processes have been automated and managed from central positions (Khan, Kaviani, & Galli, 2019). E-procurement is expected to improve performance of institutions by enhancing their service delivery (Ajwang, 2017). This shall be assessed as similar to growth of Retail Supermarkets in Nairobi City County, Kenya as one of the main goals for the establishment. Within retail and manufacturing organizations there are three primary performance measures analyzed, these are shareholder value performance, market performance and financial performance (in some cases, production capacity performance may be analyzed) (Mutindi, Namusonge & Obwogi, 2013). These measures were considered in the current research.

1.1.3 Retail supermarkets in Kenya

The growth of urban centers has signaled great potential for retail businesses, with liberalization of the market economy encouraging growth of retail firms. Retail chain stores play an important role in the Kenyan economy. It is estimated that the Retail Industry in Kenya contributes about 18.5% of Kenya's GDP (Omondi & Namusonge, 2015). Kenyan supermarkets contribute to the economy by provide employment opportunities for many people and act as a convenience to many

shoppers since they provide almost all household goods under one roof (Karuga & Ntungwe, 2017). Makali, (2015) adds that supermarkets facilitate the acquisition of day-to-day consumables for both the private and public sector. Kenya, being the fourth largest economy in sub-Saharan Africa has attracted huge investments in the retail industry.

Coupled with high literacy levels and a very industrious people, urban centers in Kenya have become a beehive of activities (Oyamo & Nyakeyo, 2019), with a favorable business environment and rapidly developing middle class signaling great potential for retail businesses. Nairobi is rated highly as a business centre due to its shopping malls, retail chains, and robust retail Industry in general. The country has been home to some of the largest retail chain stores in East Africa such as Nakumatt, Tuskys, Uchumi, and Naivas. Consequently, numerous foreign retail firms have set shop in Kenya in recognition of the country's potential (Gatutha & Namusonge, 2020). Supermarkets have embraced electronic payment systems such as credit cards, card fees, debit cards, e-money, online credit card payment, electronic-cash, electronic-wallet, value systems, digitally collecting balance systems, wireless payment systems, digital check payment systems, Automated Teller Machine (ATM), Point-of-Sale (POS) terminal, among others as a means of enhancing customer service (Peter, 2020). There are currently 94 registered and operational retail supermarkets operating within Nairobi County (Retail Trade Association of Kenya, 2020).

1.2 Statement of the Problem

Competitive strategies facilitate internal efficiency, improved quality in service provision and ensures customer satisfaction (Gatutha & Namusonge, 2020). With market liberalization, competitive strategies applied by businesses are key to attracting customers. The increase in urban populations has led to an increase in demand for goods and services which has transformed how supermarkets operate, compete, gain and sustain competitive advantage (Peter, 2020). There has also been a major shift in customer preferences, with comfort, elegance and convenience shopping being critical aspects for success among supermarkets. The ease and convenience of shopping are the key sources of competitive advantage. Emerging technologies have become key drivers of operational effectiveness among retail stores (Mahdillou & Akbary, 2014).

The increased need for operational performance drives various firms and business personnel to apply different methods to accumulate more capital, increase number of customers and expand business (Tallman, Luo, & Buckley, 2018). At Retail Supermarkets in Nairobi City County, Kenya, e-procurement has been adopted and used in e-payments, e-information sharing, e-sourcing, requisitioning, approval and invoicing (Collins, 2020). Yang, Li, Ma and Chen (2018) reported that the adoption of Electronic-based payment systems is associated with improved efficiency in provision of financial services, increased customer satisfaction, personalized relationship with customers, easier documentation and transaction tracking, reduced transfer/processing fees, reduction of processing transaction time, offering of multiple payment options and giving of immediate notification on all transactions on the part of customers (Ugwueze & Nwezeaku, 2016). It also reduces transaction time, risk, and enhances cost control (Oyetayo & Fatokun, 2015).

A number of studies have been conducted on various companies and firms in Nairobi to confirm about e-procurement practices but little is available in the retail supermarkets (Masheti, 2016). In Kenya, most studies on e-procurement have focused on adoption modalities, with a specific focus on the effects of adoption in the public sector (Akoth, 2017; Chegugu & Yusuf, 2017; Matunga, Nyanamba, & Okibo, 2013). This study sought to contribute by focusing on the contribution of e-procurement to procurement performance in supermarkets. Musau, (2015) focused on state corporations but his study was specific to how inventory optimization challenges influenced e-procurement performance in state corporations. Additionally, (Mahdillou & Akbary, 2014) also did a very specific study investing how buyer/supplier collaboration influenced e-procurement performance in the public sector. Omondi and Namusonge (2015) did a study on best practices in the retail industry and established that e-procurement is one of the best practices.

Moreover, stiff competition has caused many supermarkets that are mismanaged to register poor returns, with some, such as Nakumatt being shut down effectively (Peter, 2020). Uchumi supermarket has also had to receive a government bailout in order to resume operations. Poor quality of goods and services, lack of timely delivery of supplies, delayed payments of suppliers and leaking funds where systems fail have characterized some retail stores, forcing management to use manual practices which have been a source of major inefficiencies in the regulation and operations of the procurement function (Gatutha & Namusonge, 2020). This study sought to fill

this gap by investigating the impact of e-procurement practices on operational performance of retail supermarkets in Nairobi City, Kenya.

1.3 General Objective

To examine the Impact Of E-Procurement Practices on Operational Performance of Retail Supermarkets in Nairobi City County, Kenya.

1.3.1 Specific Objectives

i. To determine the influence of e-tendering on operational performance among Retail Supermarkets in Nairobi City County, Kenya.
ii. To determine the effect of using e-sourcing on operational performance among Retail Supermarkets in Nairobi City County, Kenya.
iii. To examine the effect of e-payment on operational performance of Retail Supermarkets in Nairobi City County, Kenya.

1.4 Research Questions

i. What is the impact of e-tendering on operational performance of Retail Supermarkets in Nairobi City County, Kenya?
ii. How much does e-sourcing impact operational performance of Retail Supermarkets in Nairobi City County, Kenya?
iii. To what extent does e-payment impact operational performance of Retail Supermarkets in Nairobi City County, Kenya?

1.5 Scope of the Study

This is presented as geographical, content and time scope as presented herewith. The main emphasis under the scope is to determine the limit or the borders of the study without having a

small scope to study and not to large / big to be managed. The study involved supermarkets in Nairobi County. The impact of e-procurement on the operational performance of Retail Supermarkets in Nairobi City County, Kenya is the content. The research time scope was limited to August, 2021. The period or the time frame was selected since it witnessed growth in ICTs and expansion of Retail Supermarkets in Nairobi City County, Kenya.

1.6 Significance of the Study

The business community, the government, academicians and the general public served by Retail Supermarkets in Nairobi City County, Kenya find this study significant.

1.6.1 The Government

The study will remain unique as an approach where the government and its agencies draw a holistic analysis of the technology in the operational performance. Most of the East African citizens face challenges related to transparency, efficiency and accountability which are fundamentals to use of e-procurement. The results from this study will therefore energize the governments towards e-procurement and other e's in business and institutional operations. In fact, the study will serve to inform parliamentarians to seek and lobby for an appropriate policy to ensure that e-procurement enhances the procurement process in business, government departments and institutions, private institutions and individual persons in business.

1.6.2 The Business and Manufacturer Communities

The findings of the study will be important in highlighting how various retail firms within the region can enhance their operation performance through leveraging on emerging technologies. Further, the findings can be applied in guiding the manufacturers and the business community to always seek redress from ICTs, qualified and experience human capital if the business is to grow and expand.

1.6.3 The People / Demand side

The study serves as call to the public to always access and shop items from the Retail Supermarkets in Nairobi City County, Kenya through e-buying and e-demands which are essential to e-documentation. Such forms of demand are essential to support the growth of e-businesses.

1.6.4 The Academicians and Future Researchers

Academically, by achieving the objectives outlined in this chapter, this study will not only serve to help in the conceptualization of e-procurement process configuration. But it will also enhance the literature on procurement in general and e-procurement in particular with current empirical literature on the efficacy of the same in effective procurement processes.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presented the literature on e-procurement with a view to establishing a lacuna especially in using e-practices as an integral part to performance. It started with the theories underpinning the study, the empirical evidence, conceptual framework, and operational definitions of terms.

2.2 Theoretical Review

The study was guided by the Technological Acceptance Model 2 (TAM2), Transaction Cost Theory and E-Technology Perspective Theory. TAM2 is used the explain how an individual person perceive the use of e-procurement and how it is either easy or hard to do so.

2.2.1 Technological Acceptance Model 2 (TAM2)

In 2000, Davis and Vankatesh (2000) advanced a theory which came to be known as TAM2. The theory was an additional to Advanced Technology model which had been used over the years. In this theory, the main emphasis is put on the cognitive ability and the social world. It is the cognitive ability of individuals that scans the importance of the new technology and the extent it suits the principle of friendliness. Davis and Vankatesh (2000) realized that the new technology is used due to social norms which determines perceived use (PU), whilst the cognitive determines perceived ease-of-use (PEOU). In other words, the adoption and use of e-procurement has been used by Retail Supermarkets in Nairobi City County, Kenya due to the culture developed with the ICTs. However, to make it useful in the operation of the supermarket, workers cognitive abilities must conceive it easy and friendly.

Venkatesh and Davis (2000) used the social perspective lens of construct to explain the theory. Under reasoned action (Fishbein & Ajzen, 1975), the theory assumes that norms have direct effects on an individual's ability and willingness to comply for actions or practice. Norms are the social values which a society (Retail Supermarkets in Nairobi City County, Kenya) values important in the day – to- today affairs or actions. Therefore, in case a person perceives the importance of the

social norms as important in his or her actions, it is easy to adopt and use a new technology (Warsaw, 1980). This compliance is voluntary rather than mandatory and it is based on social mechanisms that influence the mind of an individual to act directly or indirectly in different perspectives.

Despite this context, an individual has internal mechanism which are important to determine the beliefs in what has been introduced (e-procurement). The theory assumes that within an individual person, there are cognitive abilities which are influential in perceiving usefulness (PU). These are important in shaping quality of technology, its relevance and application, output or what the technology can contribute to the society. For the purposes of this study, the management of Retail Supermarkets in Nairobi City County, Kenya perceived that the use of e-procurement essential in enhancing operational performance. This led installation of the facilities in the supermarkets and the network system. Like TAM1, TAM2 does not disassociate itself from the perceived usefulness, rather it shows a direct relationship between the two.

TAM2 shows that people across the world and workers especially use mental ability to assess the goals and consequences of performing certain acts using the mind judgment test (Venkatesh & Davis, 2000). It is upon this perspective that the theory takes the mental ideal in assessing what is easy at use and usefulness to an individual or community where a new technology has been used. In this study for example, e-procurement is an important component which is essential to the operational performance of the supermarket. Workers are therefore taken by the societal perspective of retail supermarkets to use e-procurement technologies in their operations.

This theory was key when informing the researcher about the specific features of e-procurement practices that enhance retail supermarket's operational performance, and the specific reason for the suitability of some of the practices in Nairobi City County, Kenya.

2.2.2 Transaction Cost Theory

The theory was advance by Dedrick, Xu and Zh (2008) and it assumes that firms encounter challenges of opportunism whenever bargaining with other small firms. Therefore, having many suppliers enables such firm to negotiate better procurement deals as the buyer is less dependent on any particular supplier. Dedrick, et al., (2008) further states that the number of suppliers chosen encompasses an optimal balance transaction factor like fit, coordination costs and risk

opportunism. ICT is therefore used in transaction to reduce such costs as the firm continues working with the suppliers so that the buying firm benefits most. Using the ICT, the firm is able to determine the performing groups so that it can be able to reduce the number of suppliers and focus on low-cost suppliers of standard goods and consolidated their purchases to obtain volume discounts (Gedajlovic & Carney, 2010).

Uncertainty in the context of supply chain is caused by new product, development uncertainty, demand uncertainty, technology uncertainty and supply uncertainty (Koufteros, 1999). Supply uncertainty relates to unpredictable events that occur in the upstream part of the supply chain. Among the causes to supply uncertainty are late deliveries and shortages of materials. Clearly, supply uncertainty can disrupt manufacturing and have adverse effect on sales where distributors and retailers down the chain are also affected. Demand uncertainty can be defined as unpredictable events that occur in the downstream part of the supply chain (Koufteros, 1999). Demand uncertainty (or demand risk) can result from new product adoptions, short product life cycles (PLCs), seasonality or volatility of fads (Johnston, 2005).

This theory was integral in explaining the motivation behind adoption of e-procurement practices among retail stores in Kenya. This theory informed the study about the cost-benefit analysis that managers have to calculate before settling on the type of emerging technology to adopt, both in financial and non-financial terms.

2.3 Review of Empirical Literature

This section presents a review of previous author's and researcher's findings on the impact of the adoption of various e-procurement practices on operational performance among different organizations. The sections were presented in the order e-tendering, e-sourcing and e-payments.

2.3.1 E-tendering and Operational Performance

E-tendering refers to the sourcing of suppliers through online platforms (Panduranga, 2016). E-tendering offers an online solution that is designed electronically to handle the process of public tender for the acquisition of specialized goods, works and consulting services that are of high value and low volume. Tender documents containing details are hosted on organization's website. These documents can be downloaded by the interested suppliers free of cost, from the day of publication

of a tender. Waithaka and Kimani (2021) define e-tendering as the process of transmitting tender requests electronically, evaluating the responses and awarding of tenders. In this type of e-procurement, the tendering software is in neither the procurer's computer or in the supplier's computer. The applicants can also track the status of their bid at any time in the procurement cycle through online sources, saving time and costs associated with physical delivery and follow-up of offers made. In public spaces, e-tendering offers an online solution that is designed electronically to handle the process of acquisition of specialized goods, works and consulting services that are of high value and low volume (Al-Yahya & Panuwatwanich, 2018).

E-tendering results in online automation of the tendering process, allowing for a smoother and controlled procurement process (Qusef, Daradkah, Sammour, & Albadarneh, 2019). E-tendering is important to both procurers and suppliers in various ways, including, the removal of geographical constraints, time saving by reduction of time obtaining tender documentation and reduces communications traffic between procurer and buyer. E-tendering has also been associated with increased certainty of procurement deals since it gives real-time feedback of ongoing deals. This also eliminates the worry of not having application forms or receipts arrive in time. E-tendering included all automated tendering processes including e-noticing, e-selecting, e-mailing, e-awarding and e-response for prices (E-RFP).

Jayawardhena and Jayaratne (2019) investigated e-procurement adoption and performance of Sri Lanka's apparel supply chain to determine the drivers and impediments of implementation. Information was sourced from apparel companies that had implemented e-procurement practices in their operations. Data analysis involved exploratory factor analysis, confirmatory factor analysis and structural equation modelling. The findings reported a significance impact on cost reduction especially on eliminating paperwork and associated errors, thus improving reliability and transparency of the procurement process. E-procurement also resulted in reduced customer complaints, reduced reverse logistics cost, improved fill rate and lead time reduction. Reduced workload resulted in improved satisfaction rate among all the stakeholders including customers, employees and suppliers. However, lack of compatibility, poorly developed IT security systems, and lack of a common technology across firms have impacted the effectiveness of e-procurement practices. The study did not address the relationship between e-procurement adoption and operational performance of supermarkets.

Sunmola and Shehu (2021) carried out a case study aimed at assessing the performance features of e-tendering systems from the perspective of the users. The design features were obtained from e-tendering literature. A Kano model was applied on data collected from a Kano-questionnaire survey. The study determined that e-tendering platform's multi-user feature, multi-language feature, unlimited auction duration, free test auctions, security, real-time first interface, review capability and feedback reports resulted in increased satisfaction and absorption among customers. Further, management control, integrity, compliance and confidentiality were features that encouraged business participation. The study recommended adoption of e-tendering technologies with a focus on customer needs so since this is positively associated with increased business performance. This study only assessed e-tendering systems while the current will also address e-payment and e-sourcing practices.

Mohd-Nawi, Deraman, Bamgbade, Zulhumadi and Mehdi Riazi (2017) sought to examine the benefits and challenges associated with electronic procurement systems implemented in the Malaysian construction industry. The study carried out a literature review of online documents and published reports to specifically investigate the impact of the introduction of e-tendering practices and online registration of companies the quality-of-service provision and project outcomes. The findings revealed that e-procurement systems had resulted in improved quality of services offered and improved supplier relationships. The findings reported that since the introduction of the e-tendering, construction firms reported improved contract fulfilment, significant cost reduction in terms of elimination of processing purchase orders, improved competitive bidding, reduced technical and financial risks, and reduction in the cost of purchasing goods. Electronic bidding was associated with increased supplier participation, better pricing and enhanced transparency among public institutions. The study relied on secondary data and focused on companies in the construction industry.

In a Nigerian study, Kareem, Owomoyela, and Oyebamiji (2014) investigated e-commerce practices application in supermarkets. The study sampled 8 supermarkets located in Ibadan city. Data was analyzed using regression analyses methods with findings showing that e-commerce adoption was associated with enhanced service operations, cost reductions and improved profit generation. The study also showed that e-commerce helps businesses understand international competitors and recommended increased IT training to improve systems utilization. The study

generalized performance metrics while the current study limited itself to analyzing procurement performance.

Munubi, Kinanga and Ondiba (2017) focused on the biggest supermarkets in the country in an investigation into how electronic procurement practices impact their organizational performance outcomes. The study excluded mini supermarkets and focused on 26 hypermarkets to investigate how e-payments, e-sourcing, e-tendering and e-archiving practices influence the supermarkets' operational effectiveness. A two-stage cluster sampling was adopted in selection of 124 respondents from a total population of 619 employees. The results showed that electronic procurement improved supplier selection, improved tender information dissemination to a wide range of potential suppliers, and bid evaluation, relationship management through online interactions, and improved decision making based on informed supplier bid assessment. The study focused on the major supermarket chains and excluded minimarts. The current study involved supermarkets of all sizes.

Munyao and Moronge (2018) carried out a census survey involving Kenyan universities with the aim of determining in impact of adopting e-procurement practices on the efficiency of procurement within public universities. The study applied multivariate regression models in the analysis of the relationships and significance between dependent and independent variables. The study revealed that e-procurement practices of e-tendering, e-sourcing and e-ordering significantly improved procurement performance, while e-payments has positive but insignificant impacts on the procurement process. E-notices, e-selection, e-mailing and e-evaluation were the main e-tendering practices adopted. E-awarding was noted to have an insignificant impact on public procurement performance. The study addressed e-procurement within universities and not on retail supermarkets.

In a study by Ongola (2017) on the influence of e-procurement on supermarkets' procurement performance, it was established that only 56% of supermarkets had adopted e-procurement practices, with most having adopted them for less than a year. Practices such as e-tendering, e-requisitioning and e-sourcing were determined to be the most influential and widely adopted e-procurement practices and the study associated them with cost efficiency through reduction of resources wastage on items such as paper printing during the supplier sourcing process, reduction of lead times through improved departmental and network integration and enhanced

communication between branches and with suppliers, creditors and stakeholders. The study addressed procurement performance while the current study addressed the influence of e-procurement practices on operational performance.

In a study investigating the impact of e-procurement practices on supply chain performance of sugar processing firms, Oteki (2018) adopted a mixed research design. The study focused on managers from the sugar companies' procurement, communications, strategic, manufacturing, sales and marketing departments. The study determined that e-tendering, e-order processing e-material management are associated with improved supplier relationship management. Costs went high and operational efficiency decreased with increased investment into e-supplier relationship management practices. The study noted that e-procurement practices resulted in faster supplier registration, authorized bud submission and evaluation, improved ordering, confirmation and payment, orders processing, and compliance. This study investigated e-commerce adoption among sugar processing firms, which belong to supermarket suppliers while the current investigated the practices within the retail supermarkets themselves.

2.3.2 E-sourcing and Operational Performance

E-sourcing is the use of web-based systems in collecting and comparing supplier-related information to enable selection of appropriate business partners. E-sourcing technologies enables all bidding information to be uploaded into a single site/platform where the procurer can carry out extensive evaluation of competing bids, sieve out unqualified bidders and award contracts to winning bidders (Campbell & Du Preez, 2017). It incorporates a range of interconnected interfaces such as the bid opportunity advertising platform, the contract development templates, the e-bidding document construction platform, the contract procurement language platform, the workflow and data management platform, the award platform and the bid lodgment system. These platforms allow for creation of pre-purchase questionnaires, invitation to tender documents, request for and evaluation of quotations, e-auction and e-contracting (awarding of contracts to qualified bidders).

E-sourcing has been associated with cost reduction through evaluation and selection of bids from a wide range of suppliers and incorporation of e-auctioning strategies which reduce the need for large procurement teams (Langat, 2019). Through automatic evaluation of received bids, e-sourcing has been efficient in reducing the time required to award contracts. E-sourcing portals have also enhanced information sharing and transparency between procurers and suppliers,

enabling suppliers to track tender opportunities, status and deadlines. Increased transparency is beneficial to the firm since it bolsters compliance to regulatory procedures.

Bharadwaj (2019) carried out a literature review on the relationship between supply chain management and e-commerce in the retail industry. The paper focused on Amazon.com company and adopting a descriptive and exploratory research, collecting secondary data from published report to determine how in house supply chain management promotes e-commerce success. The study determined that e-commerce facilitated Amazon's growth due to its convenience in enabling paperless exchange of business-related information through Electronic Data Exchange (EDI), Electronic Mailing (e-mail), Electronic Bulletin Boards, Electronic Fund Transfer (EFT) and other network-based technologies. The study showed that although initial adoption costs may be high, strategic supply chain management can promote e-commerce through promoting inventory management, promoting security and reliability payments, reduced transport cost per item and faster communication between business partners. The study also found that e-systems adoption improved order sourcing decisions, saving the company costs on transportation of non-in-demand products. The study focused on the relationship between supply chain management in an online retail store while the current focused on e-procurement systems' adoption among all retail stores.

In a review of the end-to-end procurement system adopted by the Indian government, Panduranga (2016) assessed the relationship between e-procurement and transparency. The study focused on investigating the features of the Central Public Procurement Portal launched to be applied in all government procurement programs and its impact on government procurement. The study noted the online platform enabled online registration of procurement entities and vendors, tender creation and publishing, supported online submission, resubmission and withdrawal of bids, enabled publishing of technical and financial details, evaluation and awarding of contracts. The introduction of the system resulted in wide publicity, increased public participation, introduced a bottleneck on corruption practices in the tendering process and ultimately improved the rate of transparency of government procedures. The increase in number of participants was also coupled with an increase in the quality of floated bids. The study addressed the relationship between e-procurement and transparency which is one of the measures of operational performance.

Mafini, Dhurup and Madzimure (2020) investigated the nexus between e-procurement, supplier integration and supply chain performance among small businesses in Gauteng province, South

Africa. The study investigated the impact of e-design, e-negotiation, e-sourcing, e-informing and e-evaluation on supplier integration. The study adopted a cross-sectional survey design and analyzed collected data using the structural equation modelling (SEM). Confirmatory and multivariate techniques were applied to determine the causal relationships between the study variables. The analysis determined that e-design, and e-negotiation have a significant and positive relationship with supplier integration. However, e-sourcing, e-evaluation and e-informing were noted to have an insignificant impact on supplier relations. Supplier relations were found to positively influence SME operations, thereby showing that e-design and e-negotiation have a positive relationship with SME performance. This study addressed SMEs adoption of e-procurement and not specifically on retail stores. The research was conducted within South Africa while this research focused on the operational performance of retail supermarkets in Kenya.

In an analysis on the impact of Procurement Technology Implementation on procurement practice, Pradana, Asdar and Sudirman (2020) carried out a case study focusing on PT. Semen Tonasa in Pangkep Regency. The study adopted a causal research design whereby analysis involved path analysis with data being evaluated using normality tests, multicollinearity tests, heteroscedasticity tests, and linearity tests. Analysis revealed that e-procurement has a positive and significant effect on procurement of goods and service at PT. Semen Tonasa in Pangkep Regency. E-procurement practices resulted in more competitive pricing and increased fairness in the negotiation process. The study determined that conducting vendor/partner evaluation through online sources and socializing feedback was a cheap and fast means of facilitating communication. However, some aspects of procurement such as e-invoicing was still manually carried out implying that some of the procurement was carried out manually, thereby impacting the firm's ability to realize the full potential of e-procurement services. The study recommended increased public sensitization on electronic payment modes to encourage public participation in online bidding and payment. This was a case study addressing one firm's performance; the current will address multiple business entities.

In another study on government institutions' performance, Hannah and Nani (2021) investigated the impact of electronic integration to procurement performance among local municipalities in Ghana's Ashanti region. The study sought after the weakness of the current system and the introduction of electronic technologies would address these weaknesses; and how this impacts

procurement performance. The study adopted a descriptive research design in determining the weaknesses of the current system. The study noted that too much paperwork, political influence, long transaction time/process or bureaucracy and lack of well-established monitoring guideline were significant impediments to the efficiency of the procurement process. The current systems were also lacking in transparency and accountability. The analysis showed that by adopting e-procurement practices, the municipalities would reduce unnecessary paperwork/bureaucracy, improve the application, processing and approval process, maintain proper documentation and promote green living by promoting a paperless environment. Thus, the application of e-procurement would lead to improved capacity to attain both financial and non-financial goals. The study addressed e-procurement adoption within municipalities while the current addressed retail stores' adoption of e-procurement practices.

Makali (2015) used a descriptive research design and adopted a census survey in investigating the relationship between e-procurement adoption and procurement performance of Kenyan supermarkets. The study focused on six retail stores in the capital city, Nairobi. Analysis revealed that e-procurement was adopted due to its impact on streamlining the e-tendering, e-requisitioning and e-sourcing process. The study established a strong and significant relationship between the two study variables. The Enterprise Resource Planning Software (ERP) was associated with increased efficiency due reduced POS errors and transaction time, significantly improving customer satisfaction. The ability to integrate performance measures across branches through system integration was also reported to be among the key drivers of e-procurement since it enabled internal capacity building from evaluation and performance monitoring. E-tendering was also associated with reduced lead-time which was essential for ensuring product availability and enhanced inventory management. E-procurement adoption was found to reduce transport and postage costs, provide cheaper means of interacting with suppliers and significantly reduced failure costs. The study applied specified their study on six supermarkets while the current study expounded on this by involving more supermarkets.

Akoth (2017) investigated the effect of adopting e-procurement on service delivery among county governments. The study specifically examined e-contracting, e-ordering, e-information sharing and e-sourcing and their impact on service delivery. The study adopted a correlational research design and was anchored on the Resource Based View and Innovation Diffusion theories.

Respondents were selected using purposive, cluster and random sampling techniques. Analysis involved Pearson's correlation and multiple regressions. Findings showed that e-sourcing, e-contracting, e-ordering and e-information sharing significantly improved service delivery. The study reported that e-sourcing practices such as searching and evaluating new suppliers from their previous transactions, delivering and signing contractual documents online, receiving supplier bids and tracking goods in transit significantly impact firm's ability to enhance effectiveness and efficiency of delivered services in among local governments. This study did not address e-procurement adoption within supermarkets as this study investigated.

Upon focusing on supply chain performance of fast-moving consumer goods (FMCG) companies in Kenya, Njuguna and Ndolo (2021) determined that warehouse management systems and inventory management systems were influential in improving the firms' supply chain performance. A descriptive research design was adopted for this study. The study adopted a census survey in selection of logistics and IT managers from 37 FMCG firms in Kenya. A multiple linear regression model was utilized in testing the significance of the relationship between the study variables. The study showed that bar codes, pick to light systems, vendor management inventory systems, warehouse robotic technologies, fixed quantity systems (Q- systems), automated tracking and logistics management systems all resulted in improved firm performance. These systems integrated information technologies into the transport management systems, warehousing, order fulfillment, inventory management, supply/demand projection and materials handling systems resulting in improved forecasting, inventory management, transportation management and human resources management. The study focused on warehouse management and inventory management and their relationship with procurement performance, while the current study will address the influence of e-payment, e-sourcing and e-tendering practices on operational performance.

2.3.3 E-payment and Operational Performance

E-payment is the use of online systems to facilitate transactions (Mahdillou & Akbary, 2014). E-payment is enabled by online payment systems or electronic payment technologies. It enables remote purchasing of good and services through online mediums. Online payment systems have become popular in recent years due to the developments in internet-based banking and online shopping. Financial technologies have also been key to driving e-payment adoption. Popular e-payment methods include credit and debit payment systems. However, electronic wallets, bank

transfers, smart cards and bitcoin wallets are emerging as alternative payment methods. Mobile technologies have dominated e-payment systems in some countries (Lai, 2018). Adoption of e-payment systems has resulted in increased convenience to consumers, improved expenses control, lowered transaction costs and enhanced security. Time-stamping and funds verification have also resulted in increased confidence and reliability of electronic transactions (Akoth, 2017).

Gupta (2014) assessed the application of e-commerce in today's business environment in a literature review paper. The study determined that e-commerce involves multiple e-infrastructure such as logistics, application service providers, auction solutions software and content management software, noting the importance of integrating these various systems for successful supply chain management. The study determined that e-commerce improves operational performance by reducing information searching costs, transaction costs, improving online inventory management and logistics and transparency in pricing. E-commerce improves supply chain management by improving product flow, information flow and finances flow in terms of timely payment scheduling, better credit terms and goods ownership arrangements. The study did not focus on investigating e-commerce practices within the retail industry, a gap that the current study sought to address.

Using a cross-sectional qualitative methodology, Seethamraju and Diatha (2018) investigated the factors determining adoption of digital payment systems among retail stores in India. Guided by the Technology-Organization-Environment framework, the study determined that digital technologies' adoption was constrained by users' perceived loss of control, high cost of acquiring and operating the technologies, users' low knowledge on e-systems and their potential advantages, low push for adoption from the suppliers side, taxation and security implications, bureaucracy and other legal requirements, poor development of internet infrastructure, lack of trust in the regulatory and external environment, and poor reliability of digital trading platforms. This study focused on challenges to adoption of digital payment practices in small retail stores; the current study expounded this by addressing the impact of e-tendering and e-contracting technologies adoption on performance of retail stores of all sizes.

Harelimana (2018) sought after the impact of electronic procurement on the performance of public institutions in Rwanda, focusing on performance in the country's Ministry of Finance and Economic Planning. The study adopted a descriptive research design and correlational study

design in assessing e-procurement impacts on MINECOFIN. Chi-square tests revealed e-procurement in terms of electronic bidding, electronic supplier registration, electronic billing and electronic payment is significantly related to the performance in MINEFCOFIN. E-bidding was revealed to offer more efficient means of communication, facilitating optimization of information flow among public service institutions at reduced transactional costs. The analysis showed a reduction in procurement expenses from 24.4 million in 2015 to 18.6 million in 2016. Further, online supplier registration and e-payment practices were related with increased efficiency in terms of reduced computational errors, automatic bill storage, ease of access to supplier details, and reduced time wastage. E-bidding resulted in an increase in the number of bidders, increasing the reach of the government marketplace. The study was based on a government institution and not on private businesses.

According to Sarpong, Jianguo, Musah and Boamah (2018), knowledge and use of information communication technologies has led to the transformation of business practices and impacted how organizations create and preserve competitive advantage. The study carried out an evaluation of e-procurement systems and procurement practices adopted by health institutions in Ghana and their impact on performance. The study adopted the bootstrapping technique in investigating the statistical significance of the study variables. The study hypothesis was tested using the Smart PLS-SEM. The inner model analysis showed statistically significant impact of e-payment, e-sourcing and e-systems use on performance of hospital procurement processes. Enhanced operations was denoted by increased efficiency, hospital supply chain management, increased sales performance improved relationship development, reduced cost of materials purchased, reduced inventory levels and reduced transactional costs in hospital supply chain management. The study did not address retail stores.

Waithaka and Kimani (2021) carried out a literature review in establishing the effect of electronic procurement practices on supply chain performance among county governments in Kenya. The study was anchored on the dynamic capability theory and the value chain theory. The review concluded that e-procurement processes which include e-payment, e-advertisement, e-communication e-contacting, e-sharing, e-submission, e-evaluation, e-tracking and e-monitoring significantly improve supply chain performance. Electronic resource procurement systems were associated with reduction of transaction costs to business partners, reduction in human-related

errors, improved efficiency in payment procedures, improved internal expenses control, better funds disbursement, and sourcing of suppliers. E-invoicing was reported to improve acquisitions by providing transaction information which can be used to leverage on agreements, thus ensuring that firms are able to get value for money after every transaction. E-tendering and e-payment was reported to enhance audit trials, therefore increasing transparency and reducing corruption within county governments.

Mapendo, Mutuku and Musau (2020) investigated the impact of e-procurement practices on organizational performance of Tuskys supermarket chain. Specifically, the study adopted an effective research design in investigating how e-payment, e-sourcing and e-tendering affect performance of the supermarket. 30 employees were selected from a population of 90 employees. The variables were determined to all have a significant positive effect on organizational performance. E-sourcing provided the firm with a wide range of suppliers from which to select at a reduced cost while e-tendering improved speed and efficiency of partner selection. E-payment usage resulted in reduced transaction costs and improved record keeping. These improvements led to reduced risk of fraud, increased security, confidence and competitive advantage of the supermarket chain store. The study above was a case study while the current study explored e-procurement practices within all retail chain stores in the county.

Keana (2015) adopted a descriptive research design in a research into the impact of automation of procurement systems on supermarkets' performance in Nairobi County. A census survey was adopted in selection of the respondents and correlation and regression analyses was applied on the collected data. The study revealed that electronic mailing and automated identification bar-coding systems were the most adopted procurement strategies, providing for a faster and cheaper means for the firms to communicate with their suppliers on orders and authenticating payments. The systems were associated with increased order accuracy and delivery as evidenced by reduced order-associated errors such as multiple ordering. The study, however reported high cost of systems acquisition and integration, slow user acceptance, inadequate IT infrastructure and skills, lack of management support and poor employee and associated partners' IT skills were among the main factors hindering full systems acceptance. As such, some of the services that could be automated had to be carried out semi-manually, adding cost due to acquisition of support staff.

This study based itself on automation while the current will focus on e-procurement systems' use within the supermarkets.

Chegugu and Yusuf (2017) investigated the relationship between electronic procurement and organizational performance of county hospitals in Kenya. The study specifically sought after the impact of e-tendering, e-invoicing and e-payment on hospital performance and adopted a descriptive research design. The study applied the Yamane formula and simple random sampling in selection of the respondents. The study established a positive relationship between the study variables. E-tendering was noted to significantly improve competitiveness of the tendering process. E-payment was reported to have a significant impact on the cost of carrying out transactions while e-invoicing was crucial for information sharing and ensured that customers were able to track price changes. The three practices were reported to increase service delivery, operational efficiency and customer satisfaction levels. E-payment and e-invoicing were noted as key determinants of organizational transparency which was essential for customer and county government satisfaction. The study investigated e-procurement adoption within county hospitals.

2.4 Gaps in the Literature

The empirical review presented other studies that focused on e-procurement practices application in various organizations. Some of the studies presented showed conflicting effects of the various practices. Building from the reviewed literature the study was able to identify a number of empirical and methodological gaps that are summarized as follows on Table 2.1 below;

Table 2.1 Summary of Empirical Literature Gaps

Author	Title	Findings	Research Gap	Type of Gap
Jayawardhena and Jayaratne (2019)	Evaluation Of Adopting E-Procurement And Its Impact On Performance In Apparel Supply Chain In Sri Lanka.	E-procurement adoption reduced customer complaints, reduced reverse logistics cost, improved fill rate and lead time reduction.	The study focusses on drivers and impediments of e-procurement implementation and not specifically on the impact of adoption.	Contextual gap

Sunmola and Shehu (2021)	A Case Study on Performance Features of Electronic Tendering Systems.	E-tendering platform's multi-user feature, multi-language feature, unlimited auction duration, free test auctions, security, real-time first interface, review capability and feedback reports resulted in increased satisfaction and absorption among customers	The study adopted a Kano model in analysis	Methodological gap
Mafini, Dhurup and Madzimure (2020)	E-procurement, supplier integration and supply chain performance in small and medium enterprises in South Africa.	Findings determined that e-design, and e-negotiation have a significant and positive relationship with supplier integration.	The research was conducted within South Africa while this research focused on the operational performance of retail supermarkets in Kenya.	Empirical gap
Mustapha (2018)	E-Payment technology effect on bank performance in emerging economies– evidence from Nigeria	Implementation of e-procurement practices resulted in short-term reduced income, but enhanced long term security, reliability and minimal risk exposure in the long-term.	The study does not specifically evaluate other aspects of e-procurement	Empirical gap
Harelimana (2018)	The impact of e-procurement on the performance of	E-procurement adoption resulted in increased	The study focused on a review of e-procurement	Methodological gap

public institutions in Rwanda.	transparency, efficiency and increased participation in the bidding process.	within a single government institution.

2.5 Conceptual Framework

The technology acceptance model (TAM) posits that adoption of key features of e-procurement can be critical to expanding the performance of enterprises. As such, this study sought to examine how various e-procurement practices conceptualized in this research impact the operational performance of retail supermarkets. This is perceived as an interlink of various variables under the study and the extent to which the relate in an entity. The main role of a conceptual framework herewith is to illustrate e-procurement and its anticipated effect to the firm. This leaves a need to prove right if what is anticipated is true in the due course of the study and dissertation writing. This conceptual framework is therefore presented in Figure 2.1 of this section.

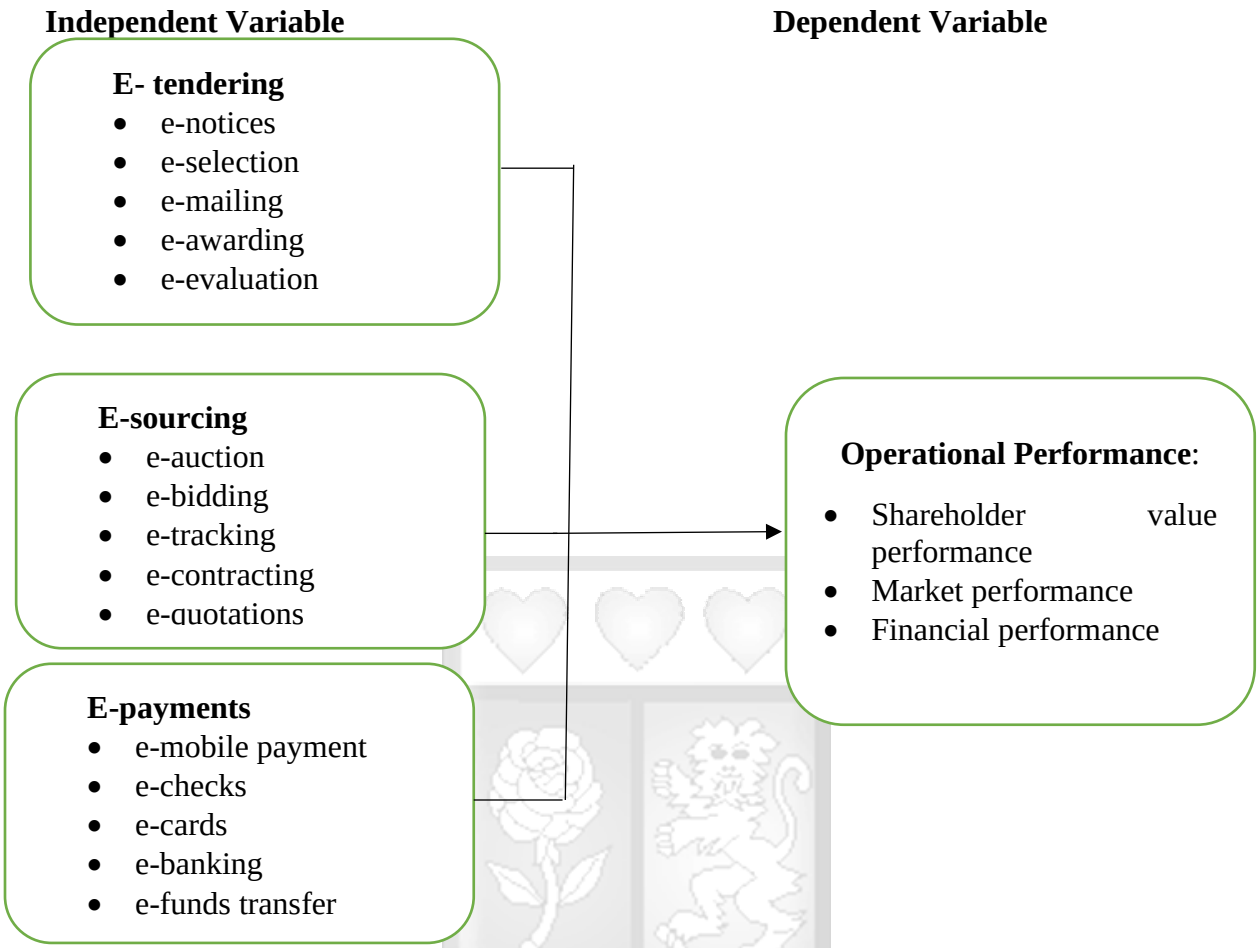

Figure 2.1 Conceptual Framework

The conceptual framework in Figure 2.1 shows e-procurement as an independent variable while the operational performance as a dependent variable. It shows that e-procurement has been used in different ways like in purchasing, tendering, requisitioning and auctioning, which all lead to the performance of a farm in different ways. The functioning of e-procurement is well theorized by the TAM2 with the main emphasis of cognitive of an individual and the community. In fact, although being used by a firm, e-procurement serves the people who demands and later become supplied. The conceptual framework shows that various factors influence operational performance as presented as intervening variable. The operationalization of the variables is captured in Table 2.2 below.

Table 2.2 Operationalization of Study Variables

Variable	Variable Measures	Research Instrument	Data Analysis
E-tendering	• e-notices • e-selection • e-mailing • e-awarding • e-evaluation	Ordinal Scale (Likert Scale)	Descriptive statistics Correlation tests Regression tests
E-sourcing	• e-auction • e-bidding • e-tracking • e-contracting • e-quotations	Ordinal Scale (Likert Scale)	Descriptive statistics Correlation tests Regression tests
E-payment	• e-mobile payment • e-checks • e-cards • e-banking • e-funds transfer	Ordinal Scale (Likert Scale)	Descriptive statistics Correlation tests Regression tests
Operational performance	• Shareholder value performance • Market performance • Financial performance	Ordinal Scale (Likert Scale)	Descriptive statistics Correlation tests Regression tests

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sought to outline the procedure and methodology of the study in quest for impact of e-procurement practices on the operational performance of Retail Supermarkets in Nairobi City County, Kenya. The chapter described the research design and philosophy underpinning this study, the study site, the target population, the sampling design, the data collection instruments as well as data collection methods, the ethical considerations, limitations as well as the assumptions of the study.

3.2 Research Philosophy

Research philosophy is majorly divided into three: epistemology, ontology, and axiology (Lewis-Beck, Bryman, & Liao, 2003). These parameters influence the way research is undertaken from design to conclusion. This study employed a positivism philosophy: the research objective and questions were determined, the research designs, methods, measuring instruments, and ultimately the outcome of this research work (Scholtens & Kang, 2013). The philosophy was selected for this study allowed for the use of a quantitative approach in the course of examining the link between the study variables.

3.3 Research Design

According to Scholtens and Kang (2013), a research design is plans and techniques for research that range the choices from expansive suppositions to explicit strategies for information assortment and examination. This sought the adoption of a descriptive design in attempt to examine impact of e-procurement practices on the operational performance with the Retail Supermarkets in Nairobi City County, Kenya. The study adopted a descriptive research approach which involved the measurement, classification, analysis and interpretation of the findings which were collected from the 94 Supermarkets operating within the county. The rationale for adopting this research design was informed by the study objectives. A study on the firms sought to add information on the existing body of knowledge about such independent variable upon a dependent variable. The

impact of the practices which are being used in Retail Supermarkets in Nairobi City County, Kenya is important in the knowledge arena and to the firms in which this study was carried out.

3.4 Target Population

The target population consists set of elements, events, individuals or groups of things or households of interest to a researcher to generalize the implementation (Kerlinger & Lee, 2007). The study targeted all the registered retail supermarkets within Nairobi City County. According to the Retail Trade Association of Kenya there are 94 retail supermarkets that are registered and in operational within Nairobi City County (Retail Trade Association of Kenya, 2020). The study targeted the procurement managers within each of the retail supermarkets. The selection of the procurement managers was informed by their role in guiding procurement practices within the supermarkets and their knowledge of the operational performance of the institutions.

3.5 Sampling Design and Sample Size

Sampling denotes the selection of participants from within a statistical population with a view to estimating characteristics of the whole population (Orodho, 2003). The importance of sampling emanates from the fact of the limited time and resources to carry out the study. It is therefore the duty of the researcher to identify and measure items in the target population and include any one of them in the sample. The research adopted a census sampling and the sample size for the study was 94 respondents drawn from the participating retail supermarkets.

3.6 Data Collection Instruments

The research relied on quantitative research data. As such primary data was more preferred due to the nature of data required for this study. The primary data for the research was collected using structured questionnaires. The instruments for data collection choice are crucial to the success of the research. It is, therefore, essential for the researcher to take into consideration the type of the topic, response rate, time, and the targeted population (Kerlinger & Lee, 2007). The study employed a structured research questionnaire in the data collection process. The structured questionnaire was developed based on the reviewed literature and operationalization of the study variables. Through review of previous literature, the study was able to formulate various statements aligned to the constructs of the research variables and included in the questionnaire.

This informed the development of the instrument using a Likert scale that used a a 5-point scale. The instrument was developed in line with the research variables in four main sections.

3.7 Data Collection Procedures

The structured questionnaire survey method was used to collect data over the participants from retail supermarkets in Nairobi City County. The study used a drop and pick method dominantly in the data collection process due to the ease of access of the retail supermarkets. Where not possible the study employed Google forms to reinforce electronic data collection process. This most importance of this method is presented from the advantage of confidentiality between participants and the researcher. It also helps to reduce bias on the side of the researcher since the questions have been administered by either a researcher or a research assistant. The study pretested the research instrument with 10% (n=9) of procurement managers who were not involved in the main study. This supported the validity and reliability testing of the study instrument.

3.7.1 Validity Tests

Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are (Kerlinger & Lee, 2007). The researcher sought to ascertain the validity of instruments using sample of 9 questions in a pilot study in which the ambiguity relating to the questions was amended. The content validity index was calculated to determine if the instrument was worth to use. The content validity of the instrument was ascertained by involving the research supervisor in the development of the research questionnaire. The supervisor assisted in reviewing the statements and correcting any errors in the instrument that may have impacted the content validity of the questionnaire.

3.7.2 Reliability Tests

On the other hand, reliability is the extent to which results are consistent over time and an accurate whenever similar instruments are used by the researcher (Kerlinger & Lee, 2007).. Cronbach's coefficient alpha (α) as recommended by Amin, (2005) was used to test the reliability of the research instrument. The instrument was deemed reliable if reliable of 0.7 and above is obtained and therefore, it was adopted for use in the data collection.

Table 3.1 Reliability Statistics

Variable	Cronbach's Alpha	N of Items
E-tendering	.836	6
E-souring	.862	6
E-payment	.841	5
Operational Performance	.889	9

The findings of the study showed that the study variables had a Cronbach alpha greater than 0.7 which ensured there was internal consistency in the study instrument.

3.8 Data Analysis and Presentation

Data analysis denotes the process through which a researcher inspects, cleans, transforms and presents data in an orderly manner or approach that is well acceptable to all (Kerlinger & Lee, 2007). The study adopted quantitative approach to data analysis. Quantitatively, data was corded, organized and later entered into Microsoft Excel and later transferred to SPSS 25 for analysis. The quantitative analysis techniques involved descriptive approach using frequencies, percentages and mean values. Further, correlation analysis was adopted to determine the relationship between the study variables. Lastly, a multiple linear regression was adopted to determine the magnitude of impact of e-procurement practices on operational performance of retail supermarkets in Nairobi City County, Kenya. The analyzed research data was presented using charts and tables. The regression model to be utilized in the research is as shown below;

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon}$$

Where;

Y = Dependent variable (operational performance of retail supermarkets in Nairobi County)

α = the model intercept

β_{1-4} = Coefficient of independent variables

$\mathbf{X_1}$ – e-tendering

$\mathbf{X_2}$ – e-sourcing

$\mathbf{X_3}$ – e-payment

$\boldsymbol{\varepsilon}$ = Error Term

3.9 Ethical Considerations

In cognizant of important ethics in research and in regard to protecting the study, a letter of introduction was received from Strathmore University Nairobi, Kenya before going to the field study. This was used to introduce the researcher as a university student carrying out an academic study. Before the study would ensue, informed consent from all participants was done, in the due course, the study promised respect the right and privacy of participants and allow them to withdraw from the study at any time of their wish. Participants were informed that there was no financial award due to participating in this study. Participants were also anonymized. Lastly, the study sought and obtained the National Commission for Science Technology and Innovation license. The study guaranteed that all the responses obtained were to be utilized only for academic purposes.

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presented the various findings extracted from the analysis of the study data. The chapter comprised of the demographic results, the summary of the descriptive results and the inferential tests applied in determining association of the study variables.

4.2 Response Rate

The target for this study were the 94 retail supermarkets in Nairobi County that are members of the Retail Trade Association of Kenya. The study participants were the procurement managers drawn from the supermarkets. Google forms were applied in the data collection. The study received a response rate of 88% (n=83) with only 12% of the sample participants not able to respond to the research. The results of the study are presented in Figure 4.1.

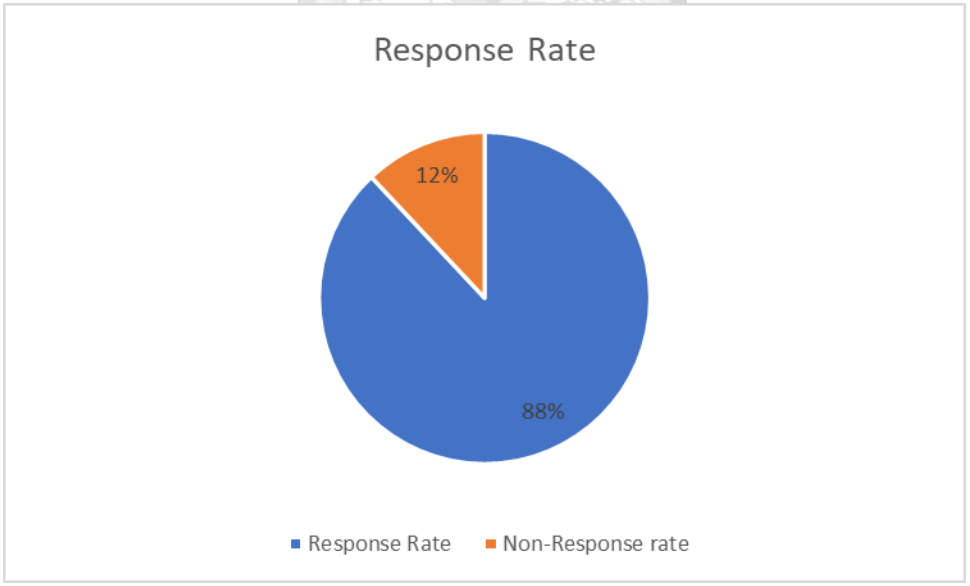

Figure 4.1 Response Rate

4.3 Background Information

The study analyzed the profile of the participants in this section focusing on their gender, age, education and the work experience.

4.3.1 Gender of Procurement Managers

The findings revealed that most of the respondents 52% (n=48) were male procurement managers while only 48% (n=35) of the participating employees were females as shown on Figure 4.2.

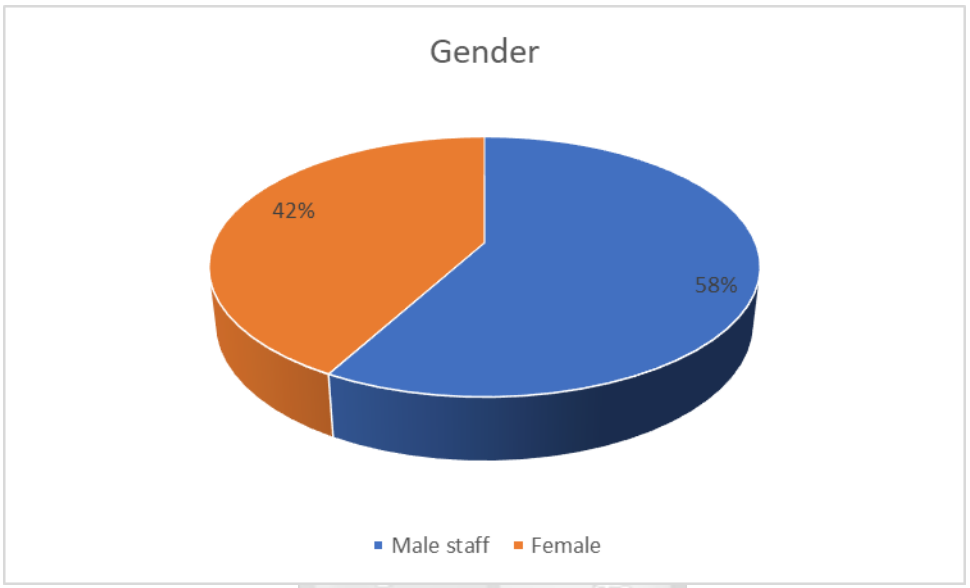

Figure 4.2 Gender of Procurement Managers

4.3.2 Age of Procurement Managers

The research was also interested in examining the age diversity of the participants and responses obtained showed that 85% (n=71) of the respondents were below 35 years of age, 11% (n=9) were between 36-45 years of age and only 4% were between 46-55 years. This implied that most of the procurement managers were youthful population. The results are presented in Figure 4.3.

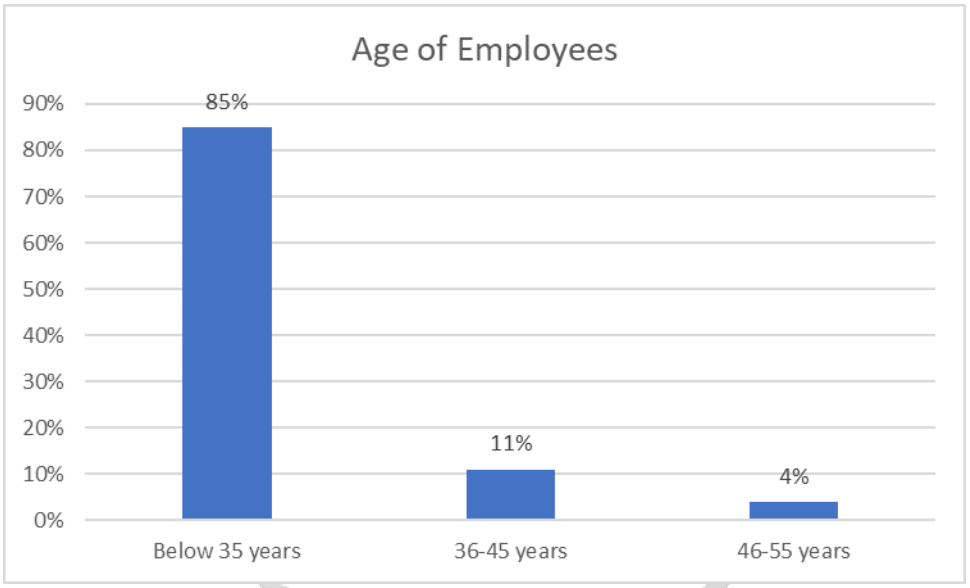

Figure 4.3 Age of Procurement Managers

4.3.3 Education Level of Procurement Managers

This examination was further interested in understanding the education attainment of the respondents and findings were that at least 46% of the respondent had a diploma education, 29% had a graduate degree while only 25% had a postgraduate degree as shown on Figure 4.4.

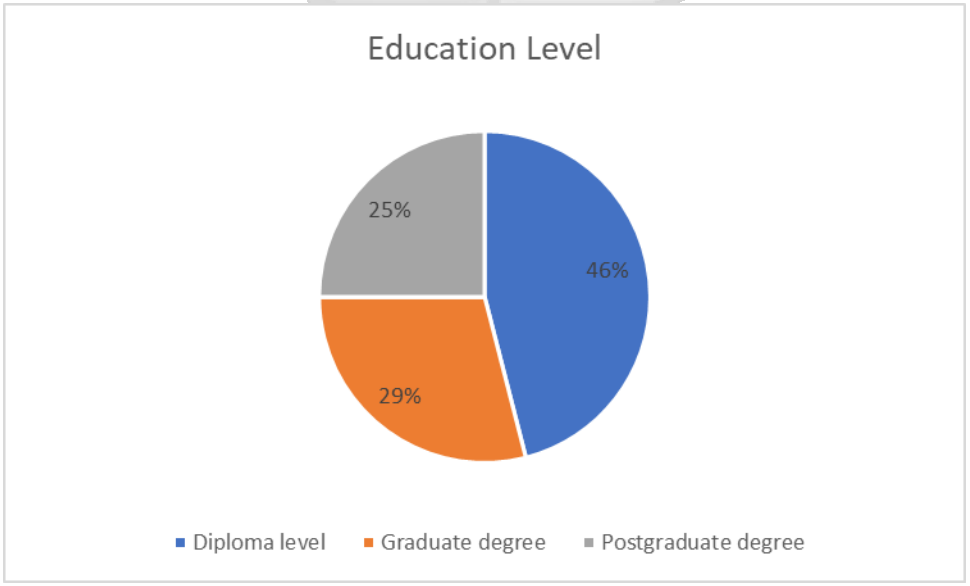

Figure 4.4 Education Level of Procurement Managers

4.3.4 Work Experience of Procurement Managers

The study results indicated that 72% (n=60) had worked for between 2-4 years within the supermarket, 22% (n=18) were in the procurement manager position for less than 2 years while 6% (n=5) had worked for over 5 years.

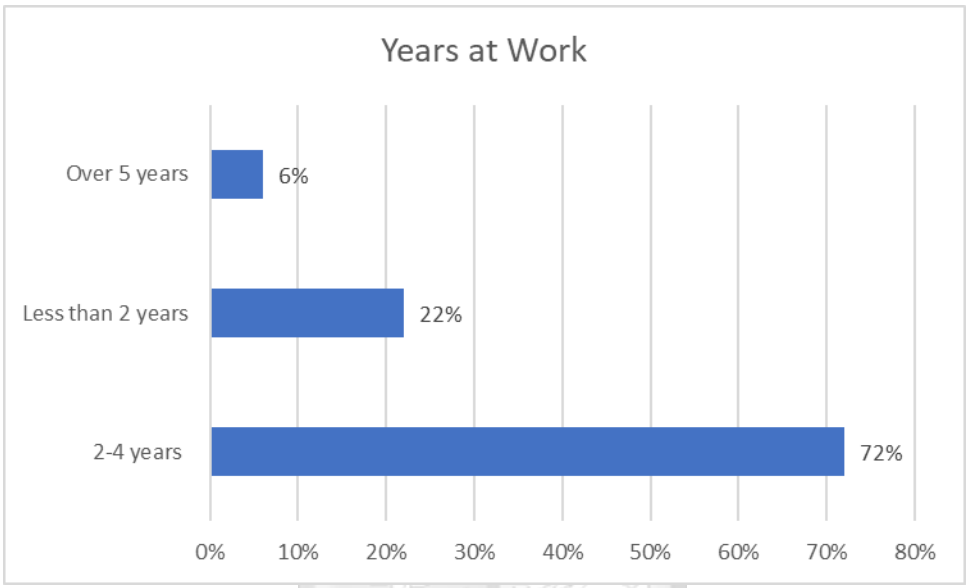

Figure 4.5 Work Experience of Procurement Managers

4.4 Operational Performance of Retail Supermarkets

The study dependent variable reviewed the operational performance of the retail supermarkets in Nairobi County. The survey relied on various descriptive measures such as frequency, mean, standard deviation and sum in the analysis. The study applied the following scale in the interpretation of the mean; (5.00-4.21) indicates strongly agree, (4.20-3.41) indicates agree, (3.40-2.61) indicates neither agree nor disagree, (2.60-1.81) indicates disagree, and (1.80-1.00) indicates strongly disagree (Norman, 2010). The findings are presented in Table 4.1.

Table 4.1 Descriptive Analysis of Operational Performance of Retail Supermarkets

	N	Sum	Mean	Std. Deviation
E-procurement reduces landed cost of products and services	83	306.00	3.6867	1.15745
E-procurement reduce the operating and inventory cost	83	301.00	3.6265	1.25631
E-procurement streamline transactions with suppliers	83	328.00	3.9518	1.09214
E-procurement platforms enhance the organizations' sourcing of quality goods	83	315.00	3.7952	1.15568
E-procurement enhances the organization's order tracking and tracing of sourced goods and services	83	328.00	3.9518	1.02295
E-procurement enhances internal and external compliance to integrity requirements of procurement	83	326.00	3.9277	1.07956
E-procurement increase financial growth of a firm	83	325.00	3.9157	1.07300
E-procurement has increased the shareholder value growth of a firm	83	338.00	4.0723	.93422
E-procurement has significantly improved the market share served by the firm	83	334.00	4.0241	.98743

The responses noted an agreement that e-procurement has reduces the landed cost of products and services in the retail supermarkets (mean = 3.6867, dev = 1.157). The analysis revealed an agreement that e-procurement enhances the organization's order tracking and tracing of sourced goods and services (mean = 3.9518). The procurement managers also agreed (mean = 4.0723, dev = .93422) that e-procurement has increased the shareholder value growth of a firm. Further, the managers agreed that e-procurement has significantly improved the market share served by the firm as noted by mean of 4.0241 and deviation of .98473. The results also indicated agreement that e-procurement streamline transactions with suppliers as showed by mean of 3.9518.

4.5 Influence Of E-Tendering on Operational Performance Among Retail Supermarkets

The first objective of the study focused on examination of the influence of e-tendering on operational performance among Retail Supermarkets. The results of the participants response are shown in the Table 4.2.

Table 4.2 Descriptive Analysis of E-Tendering Among Retail Supermarkets

	N	Sum	Mean	Std. Deviation
The supermarket relies on e-notices in communicating with suppliers on new tender offers	83	328.00	3.9518	1.05811
The supermarket utilizes e-selection processes in identification and recruitment of new tender participants	83	307.00	3.6988	1.21710
The supermarket relies on electronic mailing in communications regarding the tendering process	83	322.00	3.8795	1.23365
The supermarket utilizes digital processes in the awarding and selection of new tenders	83	317.00	3.8193	1.17021
The supermarket has invested in electronic technologies that support the evaluation of all tenders submitted	83	330.00	3.9759	1.04736
The supermarket routinely reviews the e-tendering processes for conformity to internal procurement policies	83	302.00	3.6386	1.32129

Findings revealed the procurement managers were in agreement that the supermarket has invested in electronic technologies that support the evaluation of all tenders submitted as noted by a mean of 3.9759 with high variation in responses. The study also noted agreement that the supermarket relies on e-notices in communicating with suppliers on new tender offers as shown by mean of 3.9518 and high deviation of 1.059. Participants also agreed that the supermarket routinely reviews the e-tendering processes for conformity to internal procurement policies as revealed by mean of 3.6386. The result also showed agreement that the supermarket utilizes digital processes in the awarding and selection of new tenders as indicated by mean of 3.8193.

4.5.1 Correlation between E-tendering and Operational Performance

The research instrument was created using an ordinal Likert scale thus a Spearman rank correlation was appropriate to determine association between the variables. The results are shown below in Table 4.3.

Table 4.3 Correlation analysis between E-tendering and Operational Performance

			Operational Performance	E-tendering
Spearman's rho	Operational Performance	Correlation Coefficient	1.000	
		Sig. (1-tailed)	.	
		N	83	
	E-tendering	Correlation Coefficient	.659**	1.000
		Sig. (1-tailed)	.000	.
		N	83	83

**. Correlation is significant at the 0.01 level (1-tailed).

In line with the findings above the study ascertained that e-tendering had a strong positive effect on the operational performance of the retail supermarkets in Nairobi County (Rho = .659, Sig = .000<.05).

4.6 Effect of Using E-Sourcing on Operational Performance Among Retail Supermarkets

The second objective of the study focused on examination of the effect of e-sourcing on operational performance among Retail Supermarkets. The results of the participants response are shown in Table 4.4.

Table 4.4 Descriptive Analysis of E-Souring among Retail Supermarkets

	N	Sum	Mean	Std. Deviation
The supermarket has been utilizing e-auction systems to select suitable procurement partners	83	313.00	3.7711	1.33732
The supermarket utilizes e-bidding platforms to select the most cost-effective procurement partners	83	331.00	3.9880	1.13152
The supermarket utilizes e-bidding platforms to evaluate the suitability of the procurement partners in relation to the supermarket supply demands	83	314.00	3.7831	1.14815
The supermarket relies on e-tracking technologies to monitor the movement of supplies to the retail stores	83	334.00	4.0241	1.07040
The supermarket has adopted e-contracting which ensures there is efficiency in the selection and sourcing of new suppliers	83	324.00	3.9036	1.04315
The supermarket relies on e-quotations in the selection of suppliers thus limiting the costs associated with sourcing goods and services	83	327.00	3.9398	1.10817

The participants noted in consensus that the supermarket relies on e-tracking technologies to monitor the movement of supplies to the retail stores (mean = 4.0241, dev = 1.07). The results revealed agreement that the supermarket utilizes e-bidding platforms to select the most cost-effective procurement partners as noted by mean of 3.988 with high deviation of 1.131. The responses noted agreement among procurement managers that the supermarket relies on e-quotations in the selection of suppliers thus limiting the costs associated with sourcing goods and services as shown by mean of 3.9398 and strong deviation of 1.108.

4.6.1 Correlation between E-Sourcing and Operational Performance

The research instrument was created using an ordinal Likert scale thus a Spearman rank correlation was appropriate to determine association between the variables. The results are shown in the Table 4.5.

Table 4.5 Correlation analysis between E-Sourcing and Operational Performance

			Operational Performance	E-sourcing
Spearman's rho	Operational Performance	Correlation Coefficient	1.000	
		Sig. (1-tailed)	.	
		N	83	
	E-sourcing	Correlation Coefficient	.742**	1.000
		Sig. (1-tailed)	.000	.
		N	83	83

**. Correlation is significant at the 0.01 level (1-tailed).

The correlation analysis above established that e-sourcing had a strong positive effect on the operational performance of the retail supermarkets in Nairobi County (Rho = .742, Sig = .000<.05).

4.7 Effect of E-Payment on Operational Performance of Retail Supermarkets

The third objective of the study focused on examination of the effect of e-payment on operational performance among Retail Supermarkets. The results of the participants response are shown in the Table 4.6.

Table 4.6 Descriptive Analysis of E-Payment among Retail Supermarkets

	N	Sum	Mean	Std. Deviation
The supermarket has adopted e-mobile payment solutions to enhance the convenience in the supply process	83	334.00	4.0241	1.14738
The supermarket utilizes e-checks in clearing of supply orders thus reducing the lead time	83	331.00	3.9880	1.12069
The supermarket has implemented electronic cards in the purchase process thus enhancing the speed of procurement process	83	330.00	3.9759	1.08173
The supermarket utilizes e-banking platforms which foster the management of supply payment processes	83	327.00	3.9398	1.16189
The supermarket relies on electronic funds transfers to process the procurement invoices which fosters the management of the retailer's accounts	83	345.00	4.1566	.94329

The study showed that respondents agreed (mean = 4.1566, dev = .94329) that the supermarket relies on electronic funds transfers to process the procurement invoices which fosters the management of the retailer's accounts. The participants agreed that the supermarket has implemented electronic cards in the purchase process thus enhancing the speed of procurement process as noted by mean of 3.9759 with high deviation of 1.0817. Further, the managers revealed agreement that the supermarket utilizes e-banking platforms which foster the management of supply payment processes as noted by mean of 3.9398 and deviation of 1.16189.

4.7.1 Correlation between E-Payment and Operational Performance

The research instrument was created using an ordinal Likert scale thus a Spearman rank correlation was appropriate to determine association between the variables. The results are shown on Table 4.7.

Table 4.7 Correlation analysis between E-Payment and Operational Performance

			Operational Performance	E-payment
Spearman's rho	Operational Performance	Correlation Coefficient	1.000	
		Sig. (1-tailed)	.	
		N	83	
	E-payment	Correlation Coefficient	.784**	1.000
		Sig. (1-tailed)	.000	.
		N	83	83

**. Correlation is significant at the 0.01 level (1-tailed).

The study results showed there was a strong positive effect of E-payments on the operational performance of the retail supermarkets in Nairobi County (Rho = .784, Sig = .000<.05).

4.8 Diagnostic Analysis

The research applied a linear regression to determine the impact of the independent variables on the dependent variable. As a standard, the regression analysis has to meet various assumptions to ensure the observations are suitable for application of the inferential tests. Thus, to meet this aim the study conducted autocorrelation test, normality tests and collinearity tests.

4.8.1 Autocorrelation Tests

The adoption of regression analysis needs there to be no or minimal autocorrelation in the used data (Debarsy & Ertur, 2010). The results of the test are shown in the Table 4.8.

Table 4.8 Autocorrelation Results

Model	Std. Error of the Estimate	Durbin-Watson
1	4.20214	2.165

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

b. Dependent Variable: Operational Performance

The study implemented the Durbin Watson test to check for autocorrelation (Debarsy & Ertur, 2010). The accepted values of D-W should be between $1.5 < d < 2.5$ which is an indicator of the absence of auto-correlation. The findings of the autocorrelation test showed a D-W of 2.165 which was an indication that there was no autocorrelation problem in the study model.

4.8.2 Collinearity Tests

The research adopted the collinearity tests to check whether the strength of the association between variables affected further statistical analysis, particularly the use of the highly correlated variables as independent variables in regression analysis (Kerlinger & Lee, 2007). The findings of the collinearity tests are shown on Table 4.9.

Table 4.9 Collinearity Results

Model		Collinearity Statistics	
		Tolerance	**VIF**
1	(Constant)		
	E-tendering	.421	2.377
	E-sourcing	.356	2.808
	E-payment	.508	1.970

a. Dependent Variable: Operational Performance

The tolerance level of all independent variables is required to be above 0.1 together with the variance inflation factor (VIF) to be less than 10. The findings on table 4.9 indicated that the tolerance values were above 0.1 meeting the first standard measure of lack of collinearity. Secondly, the VIF values were less than 10 which was an indication there was no association between the independent variables adopted in the model.

4.8.3 Normality Tests

The study adopted the normality testing to examine whether the observations being adopted in the research are from a normal distribution. The results are shown on Table 4.10.

Table 4.10 Normality Results

		Statistic	Std. Error
E-tendering	Skewness	-.281	.264
	Kurtosis	-.808	.523
E-sourcing	Skewness	-.423	.264
	Kurtosis	-.847	.523
E-payment	Skewness	-.542	.264
	Kurtosis	-.551	.523
Operational Performance	Skewness	-.167	.264
	Kurtosis	-.868	.523

As a rule of thumb skewness value should be between -2 to 0 indicated that there would be no excessive skewness in that data while the kurtosis value should be between -1 to +2 would indicate that there was no excessive skewness in the data. The above findings show that across the variables the Skewness and Kurtosis statistics was within the above stated limits. This was an indication that the research data was from a normally distributed population.

4.9 Regression Model

The study used a multiple linear regression model to review the impact of e-procurement practices on operational performance of retail supermarkets in Nairobi City County, Kenya. The regression results are shown on Table 4.11.

Table 4.11 Regression Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.815[a]	.665	.652	4.20214	2.165

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

b. Dependent Variable: Operational Performance

The regression results showed a computed r-square of .665. This was an indication that 66.5% of the changes in the operational performance of retail supermarkets were as a result of e-procurement practices. This showed that holding other factors constant E-payment, E-tendering, E-sourcing were responsible for 66.5% of the changes in operational performance of retail supermarkets in Nairobi City County, Kenya.

Table 4.12 ANOVA Summary

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2768.827	3	922.942	52.268	.000[b]
	Residual	1394.980	79	17.658		
	Total	4163.807	82			

a. Dependent Variable: Operational Performance

b. Predictors: (Constant), E-payment, E-tendering, E-sourcing

The study conducted the ANOVA testing of the model to ascertain whether the relationship established was significant. The results showed a yielded ANOVA f-statistic = 52.268, Sig = .000<.05. This signified there is a positive and statistically significant impact of e-procurement practices on operational performance of retail supermarkets in Nairobi City County, Kenya.

Table 4.13 Regression Coefficients

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	5.511	2.419		2.279	.025
	E-tendering	.158	.078	.116	2.025	.002
	E-sourcing	.459	.147	.340	3.111	.003
	E-payment	.751	.152	.451	4.933	.000

a. Dependent Variable: Operational Performance

$$Y = 5.511 + .158X_1 + .459X_2 + .751X_3 + 2.419$$

With regard to the first objective the study sought to examine the influence of e-tendering on operational performance among Retail Supermarkets. The regression coefficients indicated a significant coefficient **β_1 = .158 (Sig = .002<.05)** which implied that changing the e-tendering practices by a single unit will lead to a .158 change in the operational performance of the retail supermarket in Nairobi County. Concerning the second objective the research examined the effect of e-sourcing on operational performance among Retail Supermarkets. The regression test resulted in a significant coefficient **β_2 = .459 (Sig = .003<.05)** which implied that changing the e-sourcing practices by a single unit will lead to a .459 change in the operational performance of the retail supermarket in Nairobi County. Lastly, the third objective examined the effect of e-payments on operational performance among Retail Supermarkets. The regression test resulted in a significant coefficient **β_3 = .751 (Sig = .000<.05)** which implied that changing the e-payment practices by a single unit will lead to a .751 change in the operational performance of the retail supermarket in Nairobi County.

4.10 Summary

The survey aimed at examining the relationship between e-procurement practices and the operational performance of retail supermarkets in Nairobi County. In the recent past the retail supermarket industry has witnessed the collapse of major retailers such as Nakumatt, Uchumi, Ukwala and Tuskys. At the core of the failure of these supermarkets were procurement and supplier management challenges that led to poor operational performance. Thus, to advance the available empirical evidence this study focused on how e-tendering, e-sourcing and e-payment affect the operational performance of the supermarkets. The study adopted a quantitative approach with descriptive research design employed. The research relied on a quantitative research tool in the data collection.

The study findings revealed that 88% of the sample participants were involved in the research with most of them having served within the retail sector for between 2-4 years. The correlation tests revealed there is a significant strong positive effect of e-tendering, e-sourcing and e-payment on the operational performance of the retail supermarkets. The study conducted tests for linear regression assumptions which indicated the study observations were valid to be utilized in regression testing. The regression findings revealed that 66.5% of the changes in operational

performance of retail supermarkets in Nairobi City County, Kenya are a function of the e-procurement practices. The study further revealed a positive significant effect of the predictor variables e-tendering, e-sourcing and e-payment on the operational performance of retail supermarkets in Nairobi City County.

CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The discussion of the research findings, the conclusions made and recommendations drawn from the research will be presented in this section. The above are presented in the same order.

5.2 Discussion of Findings

This section presents a more detailed discussion of the research findings on the relationship between the research variables. The analysis showed that e-procurement practices of e-tendering, e-sourcing and e-payment all had a positive and significant effect on the retail stores' operational performance, noting that adoption of the above practices results in a significant increase in customer, employee and shareholder satisfaction and realization of organizational goals. The study showed that the above factors were associated with increased reduced costs in the procurement department, improved and faster sourcing of suppliers, improved relationship management, more secure order tracking, compliance, reduced procurement timelines, and higher financial returns. Studies by Mohd Nawi et al., (2017), Oppong (2020), Mafini, Dhurup and Madzimure (2020), Akoth (2017), Harelimana (2018), and Chegugu and Yusuf (2017) all reported improved performances on different metrics upon the introduction of various electronic procurement practices into their various organizations.

5.2.1 Effect of E-tendering on Operational Performance

The results showed that the retail stores had invested significantly in electronic technologies to promote the tender evaluation process and on electronic notices to enhance communication with suppliers. Sunmola and Shehu (2021) showed how e-tendering technologies are associated with improved managerial control, integrity and compliance with regulations. Jayawardhena and Jayaratne (2019), in their study associated e-procurement adoption with reduced reverse logistics costs, reduced paperwork and paperwork-associated costs, and lead time reduction. The analysis also showed significant investment in electronic mailing practices and that the supermarkets utilized digital services during tender awarding and selection processes thus reducing communication costs and costs associated with dubious tendering practices as suggested in the study by Oppong (2020). However, regression analysis showed that e-tendering had the least

impact on the eventual operational performance of retail stores in Kenya, with Munyao and Moronge's (2018) study showing that it is essential to combine various e-procurement practices for a firm to realize full benefits of the new system.

5.2.2 Effect of E-sourcing on Operational Performance

The analysis revealed a strong positive relationship between electronic sourcing practices and operational performance, showing that retail stores rely on electronic cargo tracking technologies and electronic bidding platforms as a means of promoting inventory management and acquiring cost-effective partners. Panduranga (2016) demonstrated how electronic tender advertising, evaluation and selection streamlined the tendering process and improved firm communication with suppliers. In the study by Mafini, Dhurup and Madzimure (2020), it was revealed that electronic procurement pactices such as e-sourcing were instrumental in influencing the relationship between a firm and its supply chain, allowing for better inventory control. The study also showed that electronic quotation technologies and electronic contracting technologies were in high utilization due to their reliability and assurance of relationships developed as postulated by Pradana, Asdar and Sudirman (2020) who showed that introduction of e-procurement services improved vendor/partner evaluation and facilitated communication between trading parties. In the public sector, the study determined that e-sourcing reduced unnecessry bureauacracy, enabled proper records management and improved firm's green initiatives. The regression findings showed that e-sourcing practices had a moderate but significant impact on operational performance of retail stores in Kenya as demonstrated by Akoth (2017) who showed that electronic procurement practices improved effectiveness, efficiency and reliability of service delivery.

5.2.3 Effect of E-payment on Operational Performance

The study revealed that electronic funds transfer systems and electronic mobile payments were the most adopted electronic payment systems due to their transparency, reliability and cost effectiveness on reducing transaction and paper invoicing costs. Mustapha (2018) showed how e-payment technologies led to cost reduction, minimized risk exposure to fraudulent payments, reduced transaction costs and enhanced supplier payment record keeping and enable firms to have an accurate way of evaluating their suppliers. The analysis also revealed that electronic cards, electronic checks and mobile banking platforms were in high usage within supermarkets' payment options. Munubi, Kinana and Ondiba (2017) showed how e-payment reduces computational and

human errors, enables payment record keeping and promotes automatic bill storage. The study also noted how e-payment enables firms to have accurate supplier payment records that can easily be accessed thus enhancing purchase decisions. The study by Chegugu and Yusuf (2017) indicated that e-payment and e-invoicing were the main indicators of the procurement processes' transparency and operational efficiency. Makali (2015) indicated that e-systems improved operational reliability, enhanced supply chain management and reduced transaction costs of the procurement process. The regression results showed that e-payment practices had the most significant impact on the operational performance of retail supermarkets in Kenya. Waithaka and Kimani (2021) and Evans et al., (2018) showed how e-payment was associated with higher levels of transparency, reduced costs, better supplier relationship management and enhanced audit performance.

5.3 Conclusions

The study concludes that electronic procurement practices have a significant impact on retail supermarkets performance, showing that adoption of e-payment, e-tendering and e-sourcing practices resulted in reduced costs, enhanced communication, supplier evaluation and selection, cargo tracking, transparency and reliability of the procurement process. The study concludes that it is necessary for retail stores to integrate these technologies into their procurement processes due to their influence in improving the processes efficiency, reliability and legitimacy. The study concluded that having online records of transactions and previous dealers and bidders is essential to improving managerial decisions. The study concluded that adoption of e-procurement practices within supermarkets improves financial management, relationship management and long-term goal realization. All the e-procurement strategies were associated with reduced paperwork and errors originating from paperwork mistakes, improved time management, streamlined systems integration, increased compliance with regulations, transparency and better client and cargo management. However, it is necessary to ensure that the staff within an institution have adequate skills and that systems integration is facilitated to ensure connectivity across various platforms.

5.4 Recommendations

5.4.1 Recommendations to the Management

Retail stores are advised to scale down on traditional procurement practices to realize full benefits of e-procurement. Additionally, the firms should increase their focus to streamlining e-tendering, e- sourcing and e-payment practices due to their strong association with the supermarkets' performance The study recognizes the important role played by the management in initiating and facilitating e-procurement systems adoption within various institutions and recommends that the management ensures that there is adequate internal assessment to identify processes that need to be automated. Internal assessment is necessary to ensure that the staff is equipped with necessary skills to utilize emerging technologies. In this relation, the study recommends regular training to improve staff capabilities since this will increase the ease of acceptance and adoption of proposed technologies. Further, the study recommends that managers ensure that adopted technologies are compatible with existing systems and resources to ensure compatibility and usability. The study also recommends that the management invest in appropriate technologies and ensure that these technologies are easy to use and can be integrated across different stores and used with different devices since procurement processes involve multiple stakeholders with vested interests.

5.4.2 Recommendations to Policymakers

Based on the findings recommendations to policy makers in the ICT sector to formulate policies and programs designed to enhance ICTs use within Kenya's retail industry. This can be done through public-private partnerships and equipping SMEs with ICT skills for engaging in e-procurement processes. The study recommends that policy makers campaign to promote infrastructural development to increase widespread use of e-procurement systems. Improving internet and introducing policies that would encourage public training on procurement would significantly increase participation of the public in the tendering process. The Kenyan government is also implored to institute policies concerning data safety to enhance the application of electronic procurement practices within smaller businesses. The supermarkets should also ensure they maintain working websites, working internal and external mail and application of all E-procurement modules in order to reduce procurement process time, costs and errors. Suppliers should also have access credentials and notification options to enhance communication and to increase buyer and supplier access to information.

5.5 Suggestions for Further Studies

The study suggests that further research be carried out to establish the role played by the management in facilitating technology selection and adoption within retail stores. Further studies should also strive to find out the role played by owners in initiating technology adoption within chain retail stores. The study also suggests for more investigation into the role of e-procurement services within private businesses in the region.

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APPENDICES

Appendix A: Participant Informed Consent Form

Participant Information and Consent Form

Title of the Proposed Study:

Impact of E-Procurement Practices on Operational Performance of Retail Supermarkets In Nairobi City County, Kenya

Section I:

Investigator:

HUSSEIN MOHAMED HAJIR

MBA 110030

Institutional Affiliation: **Strathmore University Business School (SBS)**

Section II: Information Sheet–The Study

2.1: Why is this study being carried out?

The research is being undertaken as a partial requirement for the academic award of Master of Business Administration Degree. The intent of the research will be purely for the academic purposes and no research data sought will be utilized beyond that parameter. The results of the study was shared with relevant retail supermarkets to improve their utilization of e-procurement practices and operational performance.

2.2: Do I have to take part?

No, your participation in the study is upon your own willingness. Even upon consent to take part in the study, the respondent can decline to take part in the study at any point within the course of the exercise. The study will ensure that all participants are aware of their rights to cease their participation at any point of the research.

2.3: Who is eligible to take part in this study?

The study will only be open to the procurement managers of the retail supermarkets within Nairobi City County.

2.4: Who is not eligible to take part in this study?

The research will not consider staff members within the firms who do not meet the threshold for the unit of observation. Further the study will not be open to people not working within the registered supermarkets in Nairobi City County, Kenya.

2.5: What will taking part in this study involve for me?

The researcher will only seek your opinion in filling up selected items on the **Impact Of E-Procurement Practices on Operational Performance of Retail Supermarkets in Nairobi City County, Kenya**. The researcher will require you to go through the items in the questionnaire and respond to them to the best of your knowledge and without bias.

2.6: Are there any risks or dangers in taking part in this study?

The study poses no risk whatsoever to the participants of this research.

2.7: Are there any benefits of taking part in this study?

The findings of the research are expected to be of importance to multiple stakeholders within the retail supermarket industry. The study is beneficial to the procurement manager within the retail supermarkets.

2.8: What will happen to me if I refuse to take part in this study?

There is no risk to non-participants whatsoever. Participation in the study is entirely voluntary.

2.9: Who will have access to my information during this research?

All the accessed research data shall be treated with utmost confidentiality and will not be disclosed to any person who is not party to the research process. The study will ensure that all the responses obtained are securely protected using cloud storage services. The results of the study will further be only accessed by Strathmore University for examination purposes only. The participants will also not be required to indicate their identities to ensure that their anonymity is maintained throughout the study process.

2.10: Who can I contact in case I have further questions?

Any query can be directed to me Hussein Hajir. Any further information can be sought from my Research Supervisor **Dr. Bernard Shibwabo through the Strathmore Business School.**

If you want to ask someone independent anything about this research please contact:

The Secretary–Strathmore University Institutional Ethics Review Board, **P. O. BOX 59857**, **00200**, Nairobi, email **ethicsreview@strathmore.edu** Tel number: **+254 703 034 375**

I, _____, have had the study explained to me. I have understood all that I have read and have had explained to me and had my questions answered satisfactorily. I understand that I can change my mind at any stage.

Please tick the boxes that apply to you;

Participation in the research study

I AGREE to be part of the research ( )

I DO NOT AGREE to be part of the research ( )

Storage of information on the completed questionnaire

I AGREE to have my completed questionnaire stored for future data analysis ( )

I DON'T AGREE to have my completed questionnaire stored for future data analysis ( )

Participants Name: ……...

Participants Signature: ……. Date: ……..

I, _____ (Name of person taking consent) certify that I have followed the SOP for this study and have explained the study information to the study participant named above, and that s/he has understood the nature and the purpose of the study and consents to the participation in the study.

Signature: …….. Date: …….

Name: **Hussein Hajir**

MBA- Strathmore University

Appendix B: Research Questionnaire

This questionnaire is particularly designed to Assess the Impact of E-Procurement Practices on of performance of Retail Supermarkets in Nairobi City County, Kenya. I kindly request you to answer/provide information that is useful in contributing to the writing of an academic research dissertation. All the information provided was confidential and strictly for the purpose of this research.

1) **What is your Age Bracket?**

   Below 35 years [ ]

   36 – 45 years [ ]

   46– 55 years [ ]

   56 years and above [ ]

2) **What is your Gender?**

   Male [ ]

   Female [ ]

3) What is your Education Level?

   Diploma [ ]

   Graduate [ ]

   Postgraduate [ ]

4) How long have you worked within the supermarket?

   Less than 2 years [ ] 2-4 years [ ] Over 5 years [ ]

E-PROCUREMENT PRACTICES

Part B: E-Tendering Process

Please indicate in the table with a tick (√) or across (×) with a scale of

5= strongly agree 4= Agree 3= Moderately agree 2= Disagree 1= Strongly Disagree

No	E-Tendering	5	4	3	2	1
1.	The supermarket relies on e-notices in communicating with suppliers on new tender offers					
2.	The supermarket utilizes e-selection processes in identification and recruitment of new tender participants					
3.	The supermarket relies on electronic mailing in communications regarding the tendering process					
4.	The supermarket utilizes digital processes in the awarding and selection of new tenders					
5.	The supermarket has invested in electronic technologies that support the evaluation of all tenders submitted					
6.	The supermarket routinely reviews the e-tendering processes for conformity to internal procurement policies					

Part C: E-Sourcing

Please indicate in the table with a tick (√) or across (×) with a scale of

5= strongly agree 4= Agree 3= Moderately agree 2= Disagree 1= Strongly Disagree

No	E-Sourcing	5	4	3	2	1
1.	The supermarket has been utilizing e-auction systems to select suitable procurement partners					
2.	The supermarket utilizes e-bidding platforms to select the most cost-effective procurement partners					
3.	The supermarket utilizes e-bidding platforms to evaluate the suitability of the procurement partners in relation to the supermarket supply demands					

4.	The supermarket relies on e-tracking technologies to monitor the movement of supplies to the retail stores					
5.	The supermarket has adopted e-contracting which ensures there is efficiency in the selection and sourcing of new suppliers					
6.	The supermarket relies on e-quotations in the selection of suppliers thus limiting the costs associated with sourcing goods and services					

Part D: E-Payments

Please indicate in the table with a tick (√) or across (×) with a scale of

5= strongly agree 4= Agree 3= Moderately agree 2= Disagree 1= Strongly Disagree

No	**E-Payments**	**5**	**4**	**3**	**2**	**1**
1.	The supermarket has adopted e-mobile payment solutions to enhance the convenience in the supply process					
2.	The supermarket utilizes e-checks in clearing of supply orders thus reducing the lead time					
3.	The supermarket has implemented electronic cards in the purchase process thus enhancing the speed of procurement process					
4.	The supermarket utilizes e-banking platforms which foster the management of supply payment processes					
5.	The supermarket relies on electronic funds transfers to process the procurement invoices which fosters the management of the retailer's accounts					

Part E: Operational Performance

Please indicate in the table with a tick (√) or across (×) with a scale of

5= strongly agree 4= Agree 3= Moderately agree 2= Disagree 1= Strongly Disagree

No	Operational Performance	5	4	3	2	1
1.	E-procurement reduces landed cost of products and services					
2.	E-procurement reduce the operating and inventory cost					
3.	E-procurement streamline transactions with suppliers					
4.	E-procurement platforms enhance the organizations' sourcing of quality goods					
5.	E-procurement enhances the organization's order tracking and tracing of sourced goods and services					
6.	E-procurement enhances internal and external compliance to integrity requirements of procurement					
7.	E-procurement increase financial growth of a firm					
8.	E-procurement has increased the shareholder value growth of a firm					
9.	E-procurement has significantly improved the market share served by the firm					

Thank You for Your Time and Cooperation

Appendix C: Institutional Ethics Permit

Strathmore UNIVERSITY

31st August 2021

Mr Hajir Hussein,
hussein.hajir@strathmore.edu

Dear Mr Hajir,

RE: Impact of E-Procurement Practices on Operational Performance of Retail Supermarkets in Nairobi City County, Kenya

This is to inform you that SU-IERC has reviewed and **approved** your above **SU-master's** research proposal. Your application reference number is **SU-IERC0917/20.** The approval period is **31st August 2021 to 30th August 2022.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-IERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-IERC within 48 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-IERC within 48 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to SU-IERC.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and also obtain other clearances needed.

Yours sincerely,

for: Dr Virginia Gichuru,
Secretary; SU-IERC

STRATHMORE UNIVERSITY INSTITUTIONAL ETHICS REVIEW COMMITTEE
(SU-IERC)
31 Aug 2021
TEL: +254 (0)70303400
P.O BOX 59857-00200
NAIROBI-KENYA

Cc: Prof Fred Were,
Chairperson; SU-IERC

Appendix D: NACOSTI Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **193727**

Date of Issue: **16/July/2021**

RESEARCH LICENSE

This is to Certify that Mr.. HUSSEIN MOHAMED of Strathmore University, has been licensed to conduct research in Nairobi on the topic: IMPACT OF E-PROCUREMENT PRACTICES ON OPERATIONAL PERFORMANCE OF RETAIL SUPERMARKETS IN NAIROBI CITY COUNTY, KENYA for the period ending : 16/July/2022.

License No: **NACOSTI/P/21/11846**

193727

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix E: List of Supermarkets

1. Naivas Supermaket
2. Quickmart Supermarket
3. Magunas Supermarket
4. Maathai Supermaket
5. Cleanshelf Supermarket
6. Kassmart Supermarket
7. Carrefour Supermarket
8. Galmart Supermarket
9. Tumaini Supermarket
10. Safeway Hypermarkets Ltd
11. Uchumi Supermarkets
12. Chandaria Foodplus Supermarket
13. Grit Supermarket
14. EastMatt Supermarket
15. Safamart Supermarket Kenya
16. Acacia Supermarket Limited
17. Ranchoplus
18. Village Supermarket
19. Choppies Supermarket
20. Genesis Supermarkets Kenya
21. Shoprite Westgate Nairobi
22. Vishal Kenya Limited
23. Quickmart Supermarket
24. Fun & Shop Supermarket Kenya
25. Bansi Supermarket
26. Galnart Supermarkets
27. Karrymart Supermarket
28. Seraben Supermarket
29. Wall Mart Supermarket
30. SweetBay Supermarket
31. Builders Supermarket
32. Uchumi Supermarket
33. Day to Day Supermarket
34. Rikana supermarket
35. Souk Supermarket
36. Jack & Jill Supermarket
37. Muindi Mweusi Supermarket
38. New Italycor Supermarket
39. Guestcare Supermarket
40. Cleanshelf Supermarket
41. Ukwala Supermarket
42. G-Mart Supermarket
43. Jawa's Supermarket Ltd, Nairobi
44. Janamu Supermarket, Nairobi
45. Jack and Jill Supermarket Ltd, Nairobi
46. Fairdeal Shop and Save Ltd, Nairobi
47. Happy Valley Supermarket Ltd, Nairobi
48. Homechoice Supermarket, Nairobi
49. Fairdeal Shop and Save Ltd, Nairobi
50. Continental Supermarket Ltd, Nairobi
51. Kassmart Supermarket
52. Tumaini Supermarket
53. Titanic Supermarket and Bakery
54. Mumtaz Supermarket
55. Twiga Mart Supermarket
56. Magunas Supermarket
57. Amazing Grace Supermarket
58. Famcon Supermarket
59. Family Choice Supermarket
60. Shujaa Mall
61. Shoprite Supermarket
62. Skymart Supermarket
63. Mathai Supermarket
64. Mulleys Supermarket
65. Barwako Supermarket
66. Neibas Supermarket
67. Khetia's Supermarkets
68. Budget Supermarkets
69. Ebrahim & Co Ltd
70. K & A Self Selection Store Ltd
71. Fairlane Supermarkets Ltd
72. Rikana Supermarkets
73. Homecare Enterprises Ltd, Nairobi
74. Elipa Supermarket, Nairobi
75. Jazeer Supermarket Ltd, Nairobi
76. Horyal Supermarket, Nairobi
77. Cosby Supermarket, Nairobi
78. Marketways supermarket, Nairobi
79. DnD Supermarket
80. Bluemart supermarket, Nairobi
81. Woolmatt Ltd,
82. Vantage Supermarket Ltd, Nairobi
83. Uthiru Wayside Supermarket, Nairobi
84. Trolleys and Baskets, Nairobi
85. Sunshine Supermarket, Nairobi
86. Satellite Supermarket Ltd, Nairobi
87. Broadway Supermarket, Nairobi
88. Savannah Selfridge Supermarket, Nairobi
89. Safeway Hypermarkets Ltd, Nairobi
90. Rosjam Supermarket, Nairobi
91. Parklands Pricerite Ltd, Nairobi
92. New Westland Stores Ltd, Nairobi
93. Raken Supermarket Ltd, Nairobi
94. Rikana Supermarkets, Nairobi