

**AUTOMATED PROCUREMENT SYSTEMS ON PERFORMANCE OF SERVICE
INDUSTRY IN KENYA- A CASE OF KENYA AIRWAYS.**

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**A RESERCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE
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DECLARATION AND APPROVAL

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This research project is my original work and has not been presented for a degree in any other university or for any other award.

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DEDICATION

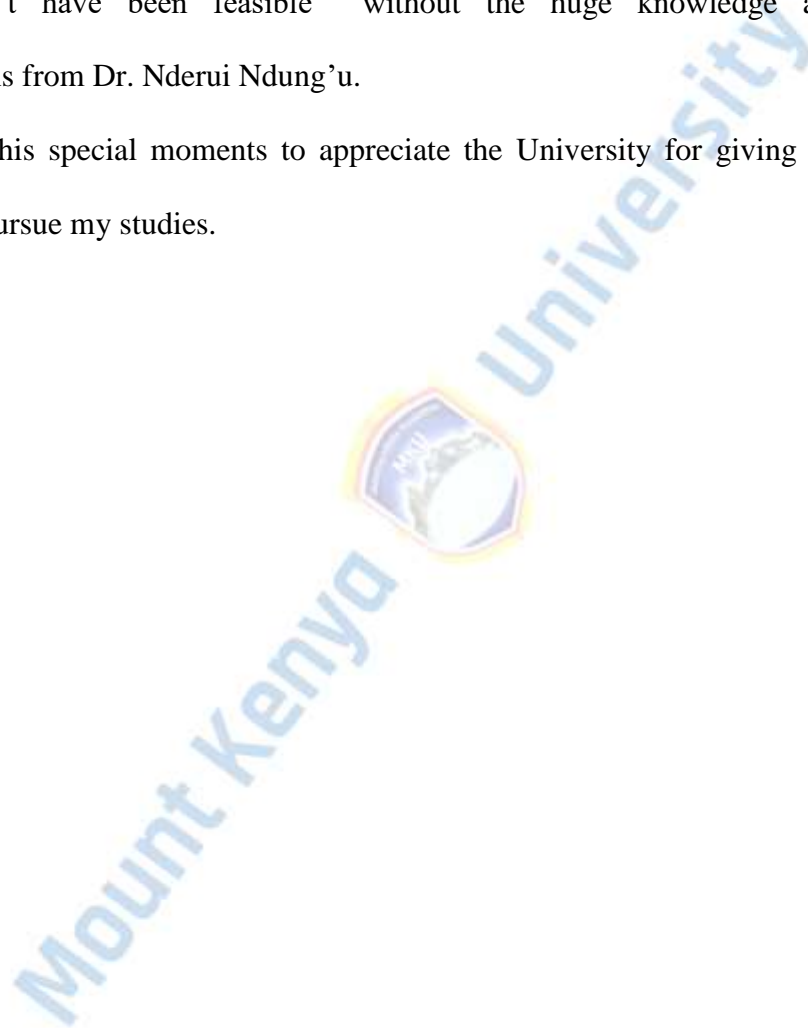
This work is dedicated to my family and friends. A special feeling of gratitude to my husband Mr Paul Ayaya, my children Kimberly and Jayden for your time and words of encouragement through out the journey. Your support is invaluable and I shall forever be indebted. God bless you.



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I take this opportunity to sincerely thank the almighty God for his immense care and adoration. Secondly, I appreciate my family for the courage and support offered throughout the project by ensuring that I pursue my studies to this level. Special thanks is due to my supervisor, Dr. Nderui Ndung'u for bringing in the weight of his considerable expertise to the project. This project wouldn't have been feasible without the huge knowledge and insightful recommendations from Dr. Nderui Ndung'u.

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ABSTRACT

The research aimed at analyzing the effects of automated procurement systems in the service sector in Kenya in reference of Kenya airways. The study recognizes the importance of effective procurement performance in enhancing operational efficiency and service quality in service based institutions. By use of a systematic and comprehensive automated procurement system, the research aimed to provide valuable insights into improving procurement performance in the service sector in Kenya. Specifically, the study sought to establish the effect of automated procurement systems on procurement performance of Kenya Airways. The study adopted a descriptive research design. The target population of the study was 80 staff working in the Supply Chain department of Kenya Airways at its headquarters in Embakasi, Nairobi County. The research utilized primary data, that was gathered from the self-administered questionnaires. During data analysis, the research info was assessed via descriptive statistics utilizing the SPSS version 28.0 (statistical Package for Social Science) as well as being presented via standard deviation, mean, frequencies as and percentages. Furthermore a linear regression assessment was utilized towards analyzing the relation between the variables of the research. The results revealed that the study respondents agreed that use of bar coding systems helped to ease inventory retrieval process, e-auctioning transactions disregarded discrimination as well as prejudice in the selecting the suppliers; desktop purchasing improved the level of competitive bidding and e-catalogue services improved supplier/customer relationships and communication. Thus, the study concluded that automated coding systems, e-auctioning transactions, desktop purchasing and e-catalogue services as e-procurement practices that played a significant role in enhancing procurement performance of Kenya Airways. The study recommended that Kenya Airways, and other all other parastatals and government departments by extension, should adopt a holistic approach in reforming their procurement processes that will not only be limited to automation of various procurement aspects but also building the capacity of their staff and suppliers on how to work on various e-procurement platforms. Therefore, the study concludes that automated coding systems, electronic auction transactions, computerized purchasing services and electronic catalogs are e-procurement activities that have played an important role in improve Kenya Airways' supply chain performance.

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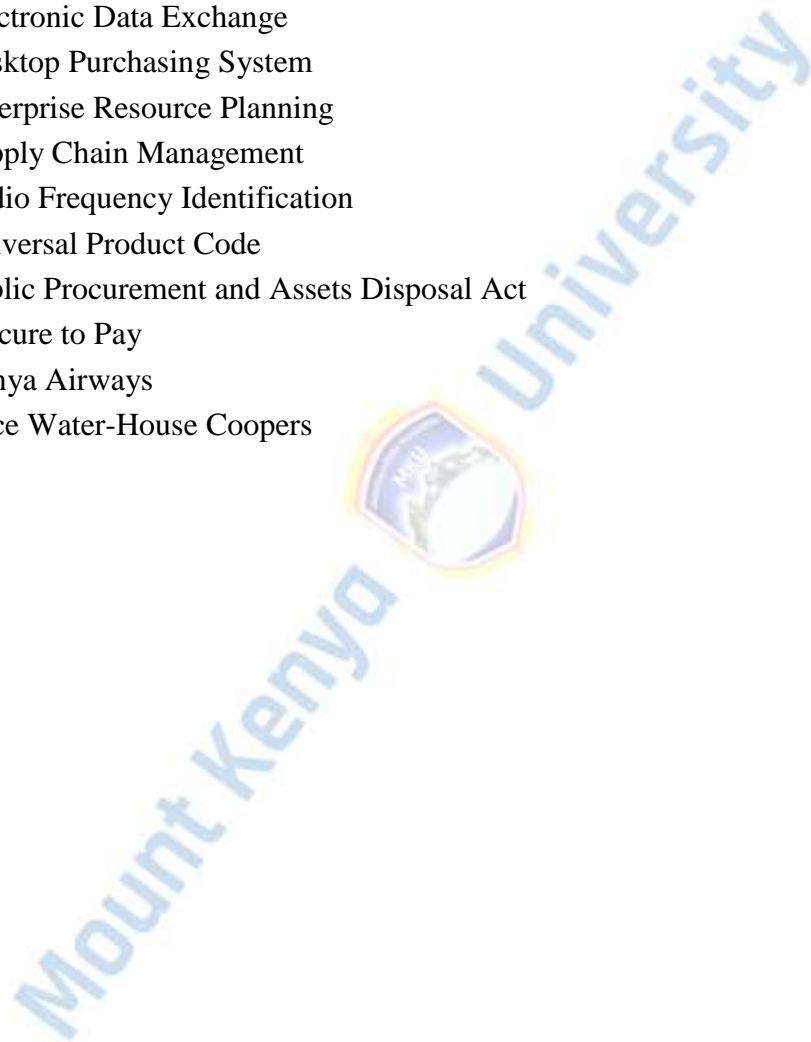
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LIST OF ABBREVIATIONS AND ACRONYMS

ADS	Automated Dispensing Systems
BI	Behavioral intention
CPOE	Computerized Physician Order Entry
CSM	Customer service management
APS	Automated Procurement System
AIS	Automatic Identification System
EDE	Electronic Data Exchange
DPS	Desktop Purchasing System
ERP	Enterprise Resource Planning
SCM	Supply Chain Management
RFID	Radio Frequency Identification
UPC	Universal Product Code
PPADA	Public Procurement and Assets Disposal Act
P2P	Procure to Pay
KQ	Kenya Airways
PCW	Price Water-House Coopers



CHAPTER ONE : INTRODUCTION

1.0 Introduction

The Chapter One provides an introduction to research, which explains its background, purpose, objectives, reasoning for this project, study questions, as well as important and delineations and assumptions.

1.1 Background of the Study

Every community must mingle and socialize with its neighbors so as to operate in harmony. Different communities used to engage in trading activities so that they would get access to what they could not produce or what they did not have, this has happened since the barter trade period and it still happening now.

During the barter trade period, the world didn't have standard units of measure; therefore it took a lot of time to decide on who owned what and especially those products and commodities that had more value hence leading to trade imbalances. Consequently, only valuable or practical items were considered to increase estimation or reduce the possibility of them becoming dead debts. Thus, the decision on the most effective approach that can minimize the inventory and key unique feature has remained a significant difficulty. The use and employment of APS has led to the success of companies from different regions and industries. Nevertheless, determining the most effective method to control inventory loss, which is both primary and distinct, has consistently presented a significant challenge.

Globally, Garcia(2021) studied the automated procurement system's impact on Qatar Airways' procurement performance. The results show that Qatar Airways embraced the use of automated procurement systems in its supply chain operations. As a result, there were significant advantages, which included improved communication in the procurement department. Furthermore, the user department and the procurement department had a cordial engagement

due to the on time sharing of information through the use of a complete automated procurement system. Thus, there has been significant growth in the procurement department, and the financial aspect has increased. Through the use of the automated procurement system, there has been a demonstration that partnerships can be forged to develop a stable SCM working environment.

In the regional perspective, Kumar (2021) examined the used of automated procurement system in business management for Air Rwanda. The goals of this research are to identify the impacts of the automated procurement systems on Air Rwanda. The findings illustrate that there have been significant cost savings in Air Rwanda than when they were using the manual system. The savings identified included low-cost managerial expenses, speedier procurement and execution periods, and a boost in operative efficiency. Kamarra (2023) indicated that inventory tracking to acquire vendor expenditures led to increased financial savings. Furthermore, maintenance costs have been reduced due to the automated procurement systems because the company can identify suppliers who are convenient through the system. As a result, it leads to an increased pool of reliable vendors.

In local perspective, Kenya Airways is a leading parastatal that plays an essential role in the GDP of Kenya's economy. Due to this, its procurement accomplishments incorporate public procurement and are thus administrated by the Public Procurement and Assets Disposal Act, 2015, an Act of Parliament that gives an effect to Article 227 of the Constitution of Kenya 2010. In addition, the Public Procurement Regulations on Disposal of Assets 2020 operationalize the above act on the organization of procurement and retention processes.

The guidelines for public procurement have evolved from treasurer circulars, which were common in the 1950's. In 1970, the supply manuals took over, and they were used till the year 2000. Through an act of parliament, the first legal framework on public procurement was

enacted in 2005 (PPDA, 2005). The Public Procurement and Disposal Act created rules and guidelines that were to be used during the purchase and disposal of goods. Furthermore, the act clarified the methods to be used during procurement, the procedures and guidelines to be followed, and the disposal procedures of assets.

Numerous companies from various industries and regions have experienced positive outcomes after adopting automated procurement systems. According to Edwards (2022) he gives the example of a home appliance manufacturer that saved millions by using a reverse option when purchasing a single component of product.

In accordance with Lyons and Farrington (2021), any activity that involves the buying and leasing so as to acquire goods and services is known as procurement. It is the objective and goal of all firms wishing to maximize their profit, this for them to achieve their aspirations, they have to increase their rate of productivity as well as aiming to reduce their cost rates. However, for this to be realized, it is only when goods and services are obtained at the right price as well as in proper time to facilitate easy transit (Baily, Jessop, and Jones, 2023). There has been a significant improvement in Inventory management; this is due to the introduction of the automated procurement systems.

The primary idea of introducing the automated procurement systems borrowed from the diversity of inventories is linked through Information and Communication Technology (ICT) adoption via internet technology. As a result, a lot of inventories can be managed from a remote distance; this will therefore lead to an increase in workplace efficiency. Automation plays a significant role in procurement; this is because it enables businesses to increase their target market strategies and thus resulting to the increase in competitiveness. Obiero (2023) elucidates that procurement is a multifarious set of operations that is made up of risk management,

business, legal operations, as well as information communication technology. The main purpose of procurement in the organizations is helping them to meet their objectives and needs. The main goal of a business venture is aimed at increasing its profit margin, which can be realized through procurement, where outstanding goods and services are sourced at a low cost.

Elements that are very essential only help in the successful implementation of automated procurement systems in procurement, this entails a commitment to monetary as well as technological support (Held, 2021). According to (Croom, 2022), He stated that Organizational and information technology infrastructure are some of the critical issues that can be used to improve supply chain efficiency by adopting an automated procurement system and therefore, automated procurement systems are very popular in the large firms, where procurement contracts are in place to manage spending activity.

The effectiveness of an automated procurement system is dependent on certain essential factors. Among them are financial and technological aid (Held, 2021). Additionally, Croom (2023) highlights the need for organizational and information technology infrastructure to overcome obstacles that may impede the implementation of an automated procurement system in order to improve efficiency. In order to control spending, large organizations prefer using automated procurement systems over purchasing contracts. By reducing the amount of time employees spend processing invoices, these businesses can reap significant returns. Automated procurement systems are a clear way to save both time and facility operational cost, as stated by Lyson and Farrington (2021).

The EACC (Ethics and Anticorruption Commission) financial year 2014–2015 ascertained that almost eighty percent of the reports they received involved procurement matters and in

collaboration with other department like users and account were found more culpable in the integrity complex. Due to this, a report was constituted for further research by the SC to identify measures that could reduce the unethical procedures in procurement. Corruption and bribery in procurement increase the cost of running businesses, and thus, low-quality goods are brought into the market. Baileys, (2023) examined the effect of the automated procurement system in procurement in relation to the NGOs in the capital. According to the study, there was a significant improvement in the control of the assists of the organizations. Researchers will, in the future, aim to examine the role of automated procurement systems in procurement to ascertain that procurement will be cost-effective.

1.1.1 Procurement

Procurement entails the process of sourcing goods and services from external sources through the bidding process. Additionally, the process of procurement is highly characterized by controlling the goods and services as received from the supplier and transporting them to reach the consumer. The supply chain management tries to introduce inventory reduction and elucidates that goods should only be made available for immediate use. The process of procurement is vital in supply chain management, as illustrated by Ram and Harrison (2021). There are other supply chain links, and they include the processing of raw products to complete refined products Furthermore, there is the delivery of the finished goods to the customer.

According to Kumar. (2023), supply chain management is made of four significant components, and they include production, distribution, sales, and procurement. Procurement can therefore, be identified as a branch of supply chain management. Procurement, according to Trust (2021), is the procedure of sourcing materials required by operations. On a basic level, procurement can be defined as the process of sourcing goods and services from suppliers. Payment can be

made by cash or bank transfer, and negotiations are imminent for a discount. Thus, the goal of procurement is to source goods and services at a low cost to increase the profit margin.

Automated procurement systems have been applied to make sure that inventories that have been acquired through the procurement process are monitored as well being managed appropriately. According to Hawking et al., (2022) the scholars say that there has been a slow inventory control management, the main cause of this slowness is due to lack of automated procurement system. Furthermore, procurement processes are complex and thus they require the accomplishment of different tasks that overrides functional as well as organizational restrictions. They may include examining of new suppliers, supervising the performance of the suppliers, as well as obtaining different inputs. For the organizations to thrive, interpersonal interactions have to be necessitated. This is due to the fact that, through cooperation, the organizations can identify their strengths as well as weaknesses and thus have an upper hand as compared to their competitors.

The Kenya Institute of Supplies Management (KISM) has developed a code of ethics as it seeks to promote the required practices in procurement and supply chain management. The code of ethics advances ideas of professionalism, and through these, only suppliers that are more competent are tasked to take part in procurement procedures. The main reason for carrying out this step is to cut out corrupt suppliers misuse the opportunity by taking advantage of the system, which leads to increased costs and the production of poor-quality materials. The Kenya institute of supply management carries out seminars as well as workshops so as to ensure that professional is reminded of their obligations and also new ideas as well as innovations in supply chain management (Simco, 2023). The seminars and workshops have always acted as a guide towards the professionals to align themselves with the automated procurement systems for the

proper management of inventories. According to KISM, storage facilities should adopt the use of automated procurement system in the classification of their goods.

The management of the inventory helps companies to have clear records of the goods received in and issued out of their storage facilities. Stevenson (2021) elucidates that automated procurement systems in procurement are effective in businesses that have adapted labor and purchasing practices in order to manage inventories. Furthermore, it does not matter whether a company uses the automated procurement system on its own or whether it is integrated as a component of supply resource management, what is of value is that the automated procurement system is essential in saving time, reducing management costs, and improving the efficiency of doing business (Larby, 2023).

A lot of the countries in the world have managed to identify the critical role that technology plays in procurement activity and more so in coding. With the speedy development of the internet, many governments in the world have been in a position to offer their services via online platforms. As a result, delivery of service to the citizens has seen a significant increase through the exchange of information (Mania, Halimah, and Hazman (2021). The government of Kenya and the ministries have been able to develop IFMIS, which they use it to track as well as implementation of procurement services online. Through this process, they are in a position to oversee the P2P module, thus improving the country's public sector (Walker, 2021).

ICT plays a crucial role in automated procurement activities in many countries. Different governments have managed to improve the delivery of service by encouraging exchange of information, as seen in Kenya's use of IFMIS for tracking as well as implementing procurement activities online Maniam, Halimah, and Hazman (2023). The tracking system has made it easy for the Kenyan government to fast-track developments. Furthermore, ICT has also been used to improve the process of procurement in the public sector, and managing inventories

effectively. This has improved on-time delivery and is cost-effective. The essential procedures in managing inventories includes the requirement of identification, payment processing, as well as management of contracts. This has led towards an improved delivery of service and improved service delivery in the public sector.

The user departments at Kenya Airways rely on automated procurement systems for timely and dependable inventory availability. The coding system ensures that this a vital job accomplished as well as there is guarantee towards accessing of the information in such way that is both cost-effective as well as location-independent. These systems ensure cost-effective and location-independent information access, ensuring accurate data collection and customer satisfaction. The goal of every company is to ensure that their customers are satisfied. Therefore, inventory availability through the automated procurement system has increased transparency, which could not be authenticated by users before. PPADA 2015 emphasizes accountability, transparency, and integrity in procurement.

For procurement to be successful, the data collected has to be relied upon as authentic. According to Novack and Simco (2020), utilization of ICT has led to acceleration in the development of automated procurement systems, hence making the processes to be dynamic as well as customizable to meet the needs of the users. The quick capacity of ICT to handle as well as analyzing large amounts of inventory makes it essential in procurement, making sure that the satisfaction of the customer is met as well as promoting the values of procurement which for this case are accountability, transparency, and integrity.

1.1.2 Automated Procurement Systems

Automated systems are the essential tools that are used in procurement operations, these tools are utilized to identify as well as classifying the materials, services, and parts. According to

Waters (2018) explains that these tools are often used to manage and monitor stocks that have been acquired through open processes of procurement.

According to Jacobs (2021), states that there are two main categories of procurement systems: these are, automated procurement and standard procurement. These systems are commonly found in ERP or accounting software products and are widely accessible. A typical procurement automated system application includes processing purchase orders, buying requisitions, goods receipts, as well as invoices (King, 2023). Additionally, these systems also provide a number of reporting levels for inventories. Overall, automated procurement systems play a crucial role in procurement operations, this is due to the fact that they help to save time as well as are more cost-effective.

An automated procurement system can be explained as software that allows stock control staff to manage and regulate the number of stocks by issuing and approving stock invoices. According to Kasosi,(2023), he argues that an automated system regulates stocks in the warehouse. The employees are in a position to identify goods that are most needed in the market as well as the one that are of high value. By identifying this, they will be able to source markets for their products and increase their production. Also this system helps the company in selecting materials, specifying accounts to be charged for items, as well as using codes that are associated with all inventories in the accounting system in order to construct a requisition note.

Automated procurement systems streamline the purchasing process for big buyers and thus enhance supply chain efficiency. Lyson and Farrington (2020) elaborate that these systems help to negotiate good deals with providers as well as improving supply chain efficiency. However, for successful implementation, companies need to select industry professionals willing to assist in making procurement more efficient, as noted by Simco (2020). Darlington (2023) explains

that the procurement system, which is a crucial component of any business, can significantly enhance its efficiency as well as profitability by making use of ERP data collection technology. Simco, (2020) indicates that this method is effective when combined with data collection technologies, and can efficiently manage and convey data across various industries, including the retail, package distribution, storage, shipping, and point-of-service applications.

Desktop buying systems (DPS) are essential tools that are utilized for supporting internal activities such as licensing, product receipt, as well as accounting control. According to Stevenson (2021), these systems expand the support for the concrete purchase process offered by catalog systems and online marketplaces. Desktop buying systems gives room for staff members to be able to complete administrative tasks by using the same interface as purchasing.

Automated procurement systems simplify online marketplace auctioning in both forward as well as backward directions. Vendors list goods and facilities for sale in forward auctions, while buyers who appear to be potential enter into bids in reverse auctions. According to King (2020) He describes an automated procurement system as a software that enables buyers to access suppliers' catalogs online and accept electronic invoices. Buyers choose products. . All activities that are related to procurement activities are completed in the electronic system, this has led to the reduction of paperwork as well as increasing the efficiency.

1.1.3 Kenya Airways Procurement Performance

The service sectors go through a lot of challenges when they are carrying out procurement activities. Kenya Airways, which is a key player in the Kenyan economy, has a high potential for growth and do contribute significantly to the GDP of the country. The Kenya Airways

company is also faced by various challenges in procurement due to its high variability, complexity of service specifications, and high dependence on human resources. However, the company has also high exposure to risks as well as uncertainties. Kenya Airways organizational functioning syndicates ideas such as statistical quality control at the operational and individual levels of employee.

The company relies on automated systems solutions in order to attain significant cost advantages such as decreasing the cost of inventory as well as curbing the long procurement and fulfilment cycles. Facing out the manual processes helps to boost efficiency of the employees. According to Johnstone *et al* (2022) He acknowledges that by identifying and checking levels of inventory so as to obtain vendor repayments can also result in considerable financial investments by automated purchases. As a result, it leads to an improvement in the operational accuracy; this has resulted to the reduction of minimal errors to a significant level. This is due to the fact that, the employees do not need documents that are hand written so as to fill in data. Johnstone *et al* (2023), in his study explains that Kenya Airways is rapidly adopting electronic purchasing ideas such as EDI, electronic mail (Email), as well as digital photography to reduce ordering errors and improve real-time inventory counts.

Due to increased growth and expansion in technology, currently we have paperless methods of carrying out different business. They therefore allow information transmission as well as saving without the use of papers or files. Automated procurement system significantly saves processing time and improves efficiency by addressing errors that are made during manual requisition efforts. During manual authentication, a lot of errors commit by human beings can lead to a mix-ups, this will also lead to customers not attaining satisfaction. This results in cost savings and a more effective company. Lyson and Farrington (2021) elucidate that the system model emphasizes the means that are necessary to achieve specific ends; they include inputs,

resource acquisition, as well as processes, while not discounting the significance of endpoints, as explained by Yuchtman and Seashore (2023).

According to Walker (2021), there is also a reduction in errors when a company is making orders. Automated coding system may connect the use to the need; this is aimed at enabling the company or organization to keep proper-time inventory counts. Today information technology is providing a paperless methodology of carrying out or managing business. The information can be transferred as well as being saved without being printed on papers or stored in files (Walker, 2021). Kenya Airways had quickly embraced paperless transaction activities like EDI, electronic mail (E-mail), as well as digital photography. Automatic procurement coding frameworks save important processes, research, as well as other time. It offers a chance to put into order the skirmishes done during manual requisition efforts. There is effective saving of money by the company when it adopts this system. A lot of mock-ups have been produced so as to get hold of the complexities of the organization. This is in the support of the research done by Lyson and Arrington (2023).

Consequently, the open scheme approach in organization design views inputs, renovation procedures, as well as outputs as an entire component rather than separate entities. This approach emphasizes the organization as a logical collection of arrangements that is aimed at achieving goals and results, with an exclusive focus on achieving goals, objectives, and targets, as explained by Goodman et al. (2023). Furthermore, this approach helps to gauge the effectiveness of the organization on whether it can achieve the targets that have been set. The study seeks to investigate the various types of automated procurement systems implemented on performance in the service sector, with a specific focus on their potential to enhance the efficiency as well as effectiveness of procurement at Kenyan Airways.

1.2 Statement of the Problem

Automated procurement systems such as the desktop purchasing, barcode systems, online auctioning and e-catalogue are widely used in big companies, where contracts have already been set to regulate the processes of procurement spending. The procurement activities that have been employed have saved much time for the employees, which forms an excellent slot for socializing the returns on investments. On the other hand, automation of purchases is one of the simplest methods of improving operational performance, as pointed out by Lyson and Farrington in their 2023 review. By using automated procurement systems, an organization can begin processing the purchasing and buying processes more quickly.

As a result of the COVID-19 impact in the country and worldwide, the national carrier has been on a rescue, requiring taxpayers funds as bailout from its sunk financial. The National Treasury has published Kes 20 billion loss in the financial year 2021/2022 and Kes 30 billion in the financial year 2022/2023 for the running of this institution. The negotiation to resuscitate the struggling airline began in December 2022 when President William Ruto led a delegation to Washington DC to sell a vast/entire Government controlling stake at Kenya Airways that currently stands at 48 % to the arms of the American investors which are ready to support Kenya Airways with funds to make it first class airline company.

Since the airline majorly involved in international trade, an efficient and effective supply chain management is essential and regular supply chain performance assessment and appraisals are crucial in identifying any emerging challenges to improve performance. Upon the realization that there is need for more enlightenment on how these systems work in service companies such as Kenya Airways, more research needs to be done on automated identification barcode and its

impacts. This study, therefore, addresses the gap by examining the effects of automated procurement systems on the procurement performance of the service industry.

1.3 Purpose of the Study

The goal of this research is aimed to ascertain the manner in which the automated procurement system affects performances of service industry such as Kenya Airways. The research majors on the effect identified in efficiency, cost, accuracy, as well as satisfaction of customers.

1.4 Research Objectives

- i. To determine the various effects brought about by automated bar coding on procurement performance at Kenya Airways;
- ii. To analyze the impacts realized from use of desktop purchasing on the performances of Kenya Airways,
- iii. To assess the impacts associated with the use of e-catalogue on the procurement performances of Kenya Airways.
- iv. To determine the impacts caused by inventory auctioning on procurement performance at Kenya Airways;

1.5 Research Questions

- i. What are the effects of bar coding on procurement performance at Kenya Airways?
- ii. What are the effects desktop purchasing on the performance of Kenya Airways?
- iii. How does e-catalogue affect the performance of procurement in the Kenya Airways?
- iv. What are the effects of inventory auctioning in procurement performances at the Kenya Airways?

1.6 Significance of the Study

The findings of the study offer advice on the way Kenya Airways can make use of the automated procurement systems to enhance its delivery of services as well as leading to a boost towards the economy of the country. Academicians and researchers shall utilize the research to lay a framework for forthcoming studies on the topic and also borrow strategies that they can incorporate into their future studies. The findings will also be vital in the handling of automated procurement systems as well as delivery of services to the clients at the airport. The staff of the Kenya Airways will also gain from this study, this is because the outcomes would be utilized to reduce related costs of procurement as well as optimizing the use of resources so as to properly serve their customers. (the staff encompasses of the entire procurement managers, operation supervisors and their equivalent in Kenya Airways)

The research will also be utilized by future researchers towards furthering their studies in this niche through doing a review on the empirical literature as well as establishing the gaps in the research. Additionally, scholars will be able to find the research as being important this is because it seeks to spotlight the sections for further analysis. Moreover the findings will contribute towards gaining new knowledge. Lastly, scholars that are charged with imparting of know-how to different shareholders thus finding the research to be very important.

1.7 Scope of the Study

This research was strictly carried out in Kenya Airways headquarters located at Embakasi, Nairobi County. It established the role of automated systems on procurement performance. For the collection of primary data, this research project utilized structured questionnaires that had been designed by the researcher. The study was carried out from month of November to Feb 2024. The research was conducted by using qualitative as well as quantitative methods, with a sample of 80 Kenya Airways employees selected through random sampling. The study aimed

to provide insights into the relation between automated system as well as procurement performances.

1.8 Limitation of the Study

The scholar was unable to gather back all the needed info, this is because uncooperative nature of some respondents and did not return their questionnaires. In addition, there was fear of disclosure of information by some the respondents with some questions having not been answered. The researcher however ensured that adequate time was provided to allow filling of the entire questionnaire and the participants were assured that the information being gathered was for academic purposes only.

1.9 Delimitations

The study focused on the service sector and ignored other sectors, thus focusing on automated procurement system as a critical factor affecting procurement performance. Furthermore, the study overlooked the leadership and organizational structure, which are crucial for procurement functionality. The study measured performance using KPIs like compliance rate and therefore not include stakeholder feedback or other key result areas.

1.10 Assumptions of the Study

There was the expectation that the respondent that was picked shared their truthful opinions in the course of the research. In addition, there was the presumption that Kenya airways provided all the required documentation and records for the study. Finally, the research study took into consideration the data collected was only for academic purposes only.

1.11 Operational Definition of Key Terms

E- Commerce practice: This expression alludes to the processes of transacting various things across computer networks, particularly the Internet. E-commerce enables businesses to carry

out a variety of critical tasks, including mobile commerce, e-funds transfer, and supply chain management (SCM). It also provides vital support for Internet marketing and automated data collection platforms. The World Wide Web is used in today's complex e-commerce systems. However, researchers have found that it frequently leverages other technologies, such as e-mail. (Wagner & Sweeney, 2020).

Electronic desktop purchasing: The use of technical techniques like the FREID (radio frequency identification) as well as bar coding towards tracking products from purchases to deliveries. The supervisors utilise electronic gadgets towards tracking the cartons, vehicles, packages or containers that are being transported to deliveries and the different goods to customers. This strategy offers companies or organisations with the best inventory control, traceability, productivity as well as security.

E-sourcing: This phase involves the development and improvement of procurement processes as well as the placement of orders through online applications. It also involves the receipt of the requested goods and services. The act of creating and approving purchase requests, placing orders, as well as receiving the ordered goods and services.

Electronic procurement practice: This supply chain activity occurs when the Internet and other IT systems, such as Enterprise Resource Planning, are utilized to facilitate business-to-government, business-to-customer, and business-to-business transactions. Several distinct components exist across the e-procurement value chain. The primary ones include invoice management, catalogue management, e-informing, e-tendering, e-auctioning, vendor management, Purchase Order Integration, Order Status, contract management, e-payment, Ship Notice, and e-invoicing.

Electronic supplier management: The notion of electronic supplier management guarantees that supply chain systems correctly collaborate with suppliers during sourcing activities. Furthermore, they thoroughly evaluate supplier responses and make the finest options. To

attain this purpose, the managers employ a wide range of modules, including electronic bidding, reverse auction, and forward auction. Bid tabulation and transaction audit trail. Contract management, supplier response scoring, sealed bidding, efficient bid document dissemination, and RFI/RFP/RFQ templates are examples of prevalent practices. Managers can reduce risk and ensure compliance by proactively managing supplier engagements.

E-procurement solution: This paradigm refers to a web-based server that automates the procurement operation. Organizations have many options and can use various solutions to complete all procurement-related duties, such as indirect purchases, auctioning, sourcing, and tendering.

Supply chain management: The effectiveness of a supply chain is dependent on managers' capacity to supervise the use of goods, information, and financial resources across the chain

Automated Procurement System: This is a computerized system and software that is used to handle the purchase process.

Suppliers Code: This is where store employees use the suppliers' codes in their transactions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The conceptual foundations of the implementation of automated procurement system, the empirical examination of automated system alongside procurement performances APS as well as, the theoretical groundwork for a further in-depth examination and conception of the purpose of automated procurement systems as well as its effect on procurement performances at KQ is captured in this chapter. In addition, the chapter covers past studies, critical review, conceptual framework and a recap which highlighting the key issues raised in the study.

2.2 Theoretical Review

2.2.1 The Strategic Purchasing Theory

Conferring from Chen, Paulraj, and Lado (2023), a supply chain that is effective must purchase desktop devices. From this standpoint, purchasing desktop products can provide a company with specialized competitive advantages by fostering effective working relationships with select distributors, establishing transparent relationships among supply chain colleagues, and pursuing equal opportunities. Chen et al. The e-catalogue will result in communication with a limited number of distributors and pose enduring challenges. Chen et al. (2022) – On the importance of each linkage. The notion is that desktop purchasing and e-catalogues can be a crucial link in the supply chain that enhances the satisfaction of internal users and improves financial performance. This research examines the impact of automated technologies on Kenya's procurement performance. This theory is based on the effects of automated procurement systems on procurement performances.

2.2.2 Purchasing Effectiveness and Purchasing Efficiency Theory

The purchasing effectiveness and buying efficiency are two metrics that Van Woole (2021) considers when evaluating purchasing performance. The concept of purchasing efficiency is based on the resources required to make a purchase, and purchasing effectiveness is determined by what has already been done. Van Wools (2023) argues that bar coding and inventory auctioning are the key factors for determining efficiency and efficacy. Kenya Airways' procurement performance is analyzed using automated technologies in this study. The study seeks to demonstrate that the use of automated systems can impact purchasing effectiveness and efficiency.

A proprietary automated procurement system has been implemented by Kenya Airways, resulting in less manual work for suppliers managing contracts and making requests. The procurement department plays a role in the project's organization. Whether these technological advancements played a role in buying Kenya Airways is still undetermined. The store's efficiency, office layout, and warehouse organization will be altered, but the rules and procedures governing the purchase of Walker (2021) will also experience changes

2.2.3 Organizational Performance

Organizational performance is undoubtedly the most extensively utilized dependent variable in contemporary organizational research, yet it is also one of the most ambiguous and weakly defined terms. The external environment presents the most significant challenge to organizational performance. Every organization operates inside an external environment. The external environment might present political, economic, sociocultural, environmental, and technological problems (Snider & Rendon, 2023). The concept of organizational performance refers to the change in which an organization's managers and governing body implement and

manage a program that measures the organization's current level of performance and then generates ideas for changing organizational behavior and infrastructure to achieve higher output.

The primary aims of organizational performance are to increase organizational effectiveness and efficiency, hence improving the organization's ability to supply goods and/or services. Another aspect of organizational performance that occasionally focuses on continuous improvement is organizational efficacy, which is the process of establishing organizational goals and objectives in a continuous cycle. Statistical quality control is a common approach used to improve organizational or individual employee performance. At the organizational level, performance typically involves softer forms of measurement, such as customer satisfaction surveys, which are intended to acquire qualitative information about performance from the perspective of customers, (Kaplan & Norton, 2023).

According to Johnstone *et al.*, (2022) Organizational performance is the results or output of a company as compared to anticipated results (or objectives and goals). Monetary performance profits, returns on assets, as well as returns on investments are 3 different dimensions of the organization output which contributes to organizational performance. Measuring of a product's market performance can be done through shareholder returns, market share and sales (total shareholder return, economic value added). Organizational performance is one of the most ill-defined and vague idea, despite being perhaps the dependent variable utilized in organizational study the most frequently currently. The greatest threat towards the performance of an organization comes from the external surroundings. Every organization works under specific outer surrounding. The external environment may cause problems in technology, sociocultural, economic and political environment (Rahman, 2022).

The main objectives of an organizational performances are aimed at increasing the efficacy and effectiveness of the organizational so as to improve the capacity of the organization towards supplying goods as well as services. Organizational efficacy entails putting up goals and objectives for the organization. Another component of performance which regularly stresses the developments that are currently going on is the Organizational continuous cycle. The organizational performances normally put together some activities such as statistical quality control at the individual or operational level of employee. In order to gather qualitative performance information from customer's perception performance assessment at the organizational level oftentimes encompass softer rules such as satisfaction of the customer surveys by (Kasosi, 2023).

2.3.4 Bar Cording on Procurement performance

According to (Held, 2021), bar codes have become integral to modern procurement processes, streamlining operations and improving efficiency. A barcode is a series of black lines and spaces symbolizing data in a machine-readable format. Each product or item has a unique barcode assigned to it. When an item needs to be tracked or recorded, the barcode is scanned using the hand held or integrated scanner at various points along the supply chain to facilitate its identification. The scanner reads the information encoded in the barcode and sends it to a central database or inventory management system. The database then retrieves relevant information about the item, such as its description, price, stock level, and location. This real-time data allows businesses to monitor inventory levels accurately, track shipments more efficiently, and make informed purchasing decisions (Ivak, 2021).

Adebayo and Evans (2022) examined the application of automatic bar-code systems in the Nigerian Public Sector Perspective. According to the research, numerous procurement professionals in Nigeria's public sector were not trained on using bar code systems. Makafui and Ackah (2023) analyzed the significance of barcodes systems in elevating the organizational performance of Coca Cola Company Limited in Ghana. The study findings revealed that the use of automated barcodes systems had a significant enhanced impact on the performance of the Coca Cola Company in Ghana.

Amanii (2018) endeavored to gauge the impact of the computerized bar codes system on the organizational performance of Applied Technology Company in Dar es Salaam. Applied Technology Company's organizational performance and efficiency were significantly enhanced by the effective collaboration with inventory bar codes systems. A potential of data technology in public technical training colleges for procurement positions was explored by Wanyonyi (2020) at Kisumu County. The performance of e-procurement operations among technical training colleges in the county was positively impacted by the use of automated bar coding systems to manage supply chain functions, according to the study. The study findings revealed that adoption and implementation of an automated bar coding systems in managing supply chain functions had positive effect on the performance of the e-procurement function among the technical training institutions in the county.

Chirchir (2023) studied the relationship between adoption of automated bar codes systems and normal inventory management software's in supply chain management practices in Tea Firms in Kenya. The results indicated that automated inventory systems had enhanced transparency in purchasing the farm inputs. Prasad (2023) studied the impact of using e-procurement systems

in India. In his study, he noted the fact that when key information like e-cost center and e-commodity codes are implemented in the procurement process the users were able to dramatically reduce coding errors and provide highly detailed and easily accessible data. Researchers found that by examining primary information such as electronic cost centers, feasibility codes, and other relevant data during the procurement process, users could access extremely detailed and easily available data. The gradual erosion of organizational performance was due to the fact that inventory management and data payment were consolidated and easily accessible.

According to Rodin-Brown (2021) who studied e-procurement in Oslo, Norway, a successful e-procurement implementation provides high quality, detailed management information and will negate the need for data warehousing or resource-heavy data mining. He found no significant effect on organizational performance. From the above review, it is clear that majority of the studies indicate that automated barcode systems positively influence performance.

2.3.5 Desktop Purchasing

The commonly used procurement system in supply chain management is the Desktop Purchasing Systems, which results towards a conformity that increased towards the strategies of Procurement as well as processes. The desktop purchasing makes sure there is dedication as well as precision to established policies and procedures, thus increasing transaction accuracy. By providing automated email signups, budget tracking, electronic invoicing, business intelligence tools, and the ability to forward requests for support via email, modern encryption systems take purchasing to a whole new level.

Amuhaya (2020) intended to investigate the influence of state Corporations' procurement performance on Kenya's customer service level and buyer/supplier collaboration. According to the study, state corporations in Kenya had a positive correlation between their procurement performance and their level of customer services on the electronic procurement strategies.

Further, Chirchir (2021) sought to establish the influence of e-purchasing adoption on partnership, information sharing and supply chain integration practices in tea firms in Kenya. The study found that e-purchasing adoption positively influenced supply chain integration practices of the selected Kenyan Tea Firms. According to the study, state corporations in Kenya had a positive correlation between their procurement performance and their customer service level on e-procurement strategy.

Another study Chepng'etich (2023) focused on the influence of e-purchasing on Organizational performance of state corporations in Kenya using Kenya Power as its case study. The study found that Kenya power's performance was heavily influenced by supplier relationship management, early supplier involvement, contract management and supplier development. In 2019, Croom and Brandon-Jones conducted research on how Desktop purchasing affects performance in UK companies.

Hendriks (2021) evaluated the impact of e-purchasing systems on organizational performance among companies in South Africa. He discovered that e-sourcing/purchasing had a significant positive effect in that it facilitated supplier discovery, sourcing and supplier management, requisitioning, procurement, order receiving and contract management. This empirical review indicates that Desktop Purchasing has a positive effect on procurement performance

Desktop Purchasing offers significant financial advantages through reduced administrative expenses, procurement, and fulfillment time by using an automated procurement system, Kenya

Airways can reduce inventory costs and enable purchasing staff to locate and prioritize other suppliers. The use of desktop Purchasing in large corporations with frequent departmental or location shifts can enhance purchasing power by consolidating orders, reducing costs, and leading to substantial volume reduction (Crump, 2023). This empirical review indicates that Desktop Purchasing has a positive effect on procurement performance.

DPS furthers the support for the real and exact process of purchasing that was offered by the catalogue system as well as virtual places of markets towards other inner procedures, accounting control, receiving of goods, or licensing Stevenson(2021). Such employee-facing suites allow workers to utilize the same interface that was utilizes for buying, for report forecasting and expenses, attendance sheet and time, benefits forms and personnel's and various administrative jobs.

Online auctioning, both reverse as well as forward is also likely with automated procurement. When undertaking a forward auctioning, the seller posts the products or services they are willing to dispatch. On the other hand potential a buyer submits his or her bid for the product or service. When undertaking a reverse auctioning, a potential buyer posts a request for quotes for the product he/she wants to purchase as well as numerous sellers submitting their bids. Lyson and Farrington (2022).

Interchange of electronic information is the computer-computer exchange of routine document transaction utilizing pre-established standards (or sets of transactions) agreed upon by the activities of the company as well as their partners in trading. Transactions on EDI perform better than link computers. This is because they help to integration applications. Lyson and Farrington(2022).

Subramanian and Shaw (2022) defined e-procurement system as a Web based server/client application that is utilized in replacement of manual processes of procurement. According to Subramanian & Shaw (2022) e-procurement simply mean the buying of goods and services through the use of internet. E-procurement solutions address 3 main areas of procurement: market-making, Procurement management and transactions.

2.3.6 E- Catalogue on Procurement Performance

Larby (2022) states that e- catalogue revolutionize procurement processes by providing accurate tracking capabilities while minimizing errors commonly associated with manual data entry methods. With their ability to streamline operations from warehouse handling to point-of-sale transactions, it's no wonder why more businesses are adopting these efficient technologies into their daily workflows. Time is saved by updating product controls using e-catalogue techniques. By using a mouse, tasks that usually take hours or even days can be completed. Held *et al* (2021) explain that employees no longer waste time reconciling receipts and deliveries, defining unnecessarily complicated invoices, or entering useless data into inventory. Similarly, Joshi (2023) predicted that buyers will spend more effort analyzing the budget and communicating effectively with the suppliers and less time processing details. According to Joshi (2021), the process of filing improves business models by eliminating unnecessary and time-consuming processes and increasing profitability.

The purpose of Amin (2022) was to determine the prevalence of e- procurement among state corporations and examine the impact of an internet marketplace on local businesses in Kenya. The study found that e-catalogue has resulted in lower expenses, greater transparency, and increased accountability for Kenya's commercial state corporations.

In another study, Chipiro (2022) examined on the impacts of e-catalogue on the performance of an organization in Zimbabwe. The scholar found that e-catalogue did not significantly affect performance in that top management did not seem part of the process. The study concluded that it was significant towards ensuring that the upper management provided a complete support for the implementation of the e-catalogue as part of e-procurement practice systems, the capacity of the staff on how to use the system is enhanced and that the change management process was well articulated and participative.

In a study to review best practices in fiscal reform and economic governance with regard to introduction of e-procurement systems, Rozner (2023) asserted that the most convenient method of overcoming change resistance with respect to use of new ICT systems is by ensuring that there is clear communication, education and training and also via 'quick wins' that demonstrate the benefits of the change. Similarly, Rodin-Brown (2021) in a study that aimed to discuss the best practices for designing and implementing e-procurement systems and how to implement them in developing and transitional countries concluded that top management commitment, change management, staff capacity and IT infrastructure must be addressed early in the needs assessment phase of e-procurement system implementation.

In their study to determine the impact of e-procurement practices on the improvement of organizations in Ghana, Makafui and Ackah (2023) did a case study of Coca Cola Company in Ghana. Their study revealed that e-catalogue did not have a significant impact on the Coca Cola Company in Ghana. Also, Darin (2021) studied e-procurement in the public sector. He investigated the effect of e-catalogue on the performance of public institutions in Zambia. He observed that e-catalogue is a multi-buyer, multi-supplier electronic procurement domain,

which allows government agencies to function as independent buying entities under a single buying organization. This had greatly improved performance in the sector.

E-catalogue is a practical choice for departments with restricted margins and frequent visits from multiple departments. The classification of this group, as stated by Atkinson (2010), comprises large multi-property chains and small specialty stores. By implementing automated systems, businesses can maintain compliance while decreasing inventory costs and time-saving measures, as well as improve accuracy and supplier negotiations. Effort enhancement, wider procurement selections, and superior supply chain supervision are the outcomes.

2.3.7 Inventory Auctioning and Procurement Performance

During e-auction, negotiations between the buyer and the seller are expedited, and there is also a “dynamic alternative” to final negotiations in the bidding process (Dagg, 2021). Interest in e-reverse auctions is on the rise within online procurement (Saprikis 2021). E-reverse auctions are gaining more popularity among e-procurement alternatives (Saprikis 2023). In ERA, suppliers submit their bids electronically to compete with each other in real time online, following a customer’s request for quotes. In 2017,. Many of the transactions that were previously possible through face-to- meetings are now able to be processed through real-time, online auctions (Williams, Dobie 2023).

Karanja (2023) analyzed the performance of organizations in Kenya’s Private Sector through e-procurement practices using Guaranty Trust Bank Kenya as a case study. In Kenya, the study found that e-procurement practices like E-auctioning had an organizational benefit for the Private Sector. Agaba (2021) aimed to enhance the relationship between e-procurement and service organizations in Uganda. According to the study, e-procurement had led to reduced

performance of some Service Organizations in Uganda. Muriukis (Murisius (2023)) conducted research on the obstacles faced by Government Ministries in Kenyan countries in implementing e-curement systems, with emphasis on how a system of 'explicit and transparent' procurement methods enabled the detection of fraud.

Horticultural Firms in Kenya were investigated by Mutuku (2022) on the basis of e-procurement practices. The research found that e-catalogue improved the performance of organizations by eliminating ghost suppliers and labor. Ndiiri (2020) examined the implementation and performance of E-procurement by county governments in Kenya. The county governments' performance was not significantly impacted by the implementation of e-auction in public auctions, as per Soudry (2022).

In the research, by Njuki, he examined the reasons behind the adoption of e-procurement by county governments, with a focus on Nairobi County. The study revealed that the majority of collection methods were automated, resulting in improved revenue collection for assets auctioned in the County. In addition, Prasad (2021) conducted an investigation on e-add in India. He pointed out that e-auctioning offers superior data accessibility and convenience, which is crucial for processing payments. As a result, both the financial and organizational aspects had been improved. The study found that e-auctioning significantly improved the efficiency of auctioning payments made by bidders, while also reducing errors.

By means of inventory auctioning, manual data entry can be eliminated and human errors are reduced in managing inventory. Companies that use inventory management can minimize the costly mistakes that arise from human intervention. Hence, it enhanced both the organizational

performances as well as financial performance. The research found out that e-auctioning had significantly enhanced the effectiveness of auctioning payments through the bidders whereas at the same time minimized errors.

Therefore, to simplify inventory management, inventory auctioning helps in elimination of human mistakes linked with manual entry of data. By using Inventory management, organisations may minimise the costly errors that are resulted from oversight. Moreover, this system may be incorporated with other business software solutions such as CRM and ERP. Through this integration, data can be shared across various organizational levels for improved coordination and decision-making.

Moreover, inventory auctioning in POS systems and supply chain management software is possible due to its versatility, as stated by Philip (2023). Your organization's interdependence ensures efficient communication across multiple departments. The act of auctioning inventory is the business's means of coordinating its efficient management of those stocks. This seamless integration facilitates for a smooth communication between different types departments in the organizations. Normally, inventory auctioning emerges as an assistant to the business when handling inventory effectively. Inventory auctioning helps to report the movement of stock like item wise profitability, aging assesment and stock summary resulting to an inventory management that is seamless (Crump, 2023).

2.4 Empirical Literature

Various studies have been done within this context, and numerous scholars and writers have carried out numerous experiments to demonstrate the role of automated procurement systems in an organization.

2.4.1 Empirical Literature Review

The rapid development of organization procurement role in terms of sufficient administration as well as financial performance has been impacted by various theories, a number of which are still significant currently. Various theories can be utilized to analyze the PMC (purchasing management concept) in a company, that helps to understand the manner in which automated procurement system as well as processes enhance inventory control level at various levels.

Different theories, some of them, have had a great influence on the way strategic procurement approaches are viewed about. According to Chen, Paulraj, and Lado (2021), Strategic Inventory Control is a vital connection at a functional supply chain mechanism. This therefore suggests a strict control of an Organization's procurement procedures via strategic inventory control management hence offering competitive edge to an organization. In order to attain cost-saving enhancements, encouraging accountability amongst the store chain partners as well as cultivating a partnership that is long-term in strategic perceptions. Chen et al.(2019), states that strategic procurement results to effective communication concerning inventory control between the workers in the warehouse and security department.

Practitioners and researchers have reasoned that the automated system benefits procurement performance. Jau-Jeng et al. (2022) carried out a research study on the influence of the automated system on institutional procurement performances. The study showed that automation between the user and procurement departments comes from fixing automated

procurement system . Through information sharing, a user department develops a good rapport with the procurement department through an automated system and sharing technology. Through the partnering of departmental relationships, there is an effect on the procurement performances as well as financials. This demonstrates clearly that solid partnerships lay a foundation that is very strong for a firm SCM environment.

The research done by Akoth M. (2021) found that ICT usage in procurement in NGOs in Nairobi has improved organizational performance by promoting accountability, facilitating competitive bidding, and improving information flow. However, there are challenges such as poor quality of information, lack of support from management, engagement with the suppliers, poor staff training, and lack of adherence to best practices. Automation systems increased efficiency, improved transparency, and stipulated accountability. The findings of their study only apply to the Non governmental Organisations (NGOs) in Nairobi that have implemented automated procurement systems as well as incorporating supply chain.

Most manufacturers in Nairobi have adopted inventory automated systems for procurement, focusing on online tender submissions and inventory control levels, according to Mose et al. (2020). A sample of 46 participants from 455 big manufacturing businesses was used to analyze the success factors. Management and employee commitment, supplier performance, reliability on IT, performance monitoring of performance, users acceptability of using APS as well as, high leadership managerial supporting are the factors that were identified as critical towards their success. However, issues such as the unwillingness of the employee, lack of board permission for acquisitions, old and outdated apparatus for IT and lack of proper managerial assistance were also identified. The research recommends the of implementing automated

procurement systems automated procurement systems as well as encouraging staff to make use of them.

Larby (2023) did a study on the performance of organizations and procurement of electronics in public parastatals. However, in as much as most companies in Kenya have adopted automated procurement systems, we still have got other tasks that should be done manually. They, therefore, compromise the shortlisting of suppliers, suggestion requests, and procedures for tenders. Additionally, it has been proven that automated procurement systems have led to a reduction in costs and increased accountability. These results show that state corporations can respond to customer needs and market input. Additionally, Trust, (2023) explains that automation in procurement has improved procurement in parastatals. Firms using automated procurement systems in their procurement sector have received much research from internal academicians, fostering much development.

Chirchir, Ngeno and Chepkwony (2020) studied the relationship between the chain of supply management systems in tea companies and automation procurement systems. It was a descriptive research design. The use of APSs can enhance supply chain integration techniques. Because the study was limited to tea companies, we cannot apply the results to an aviation company. The airline industry's performance is influenced by e-marketplaces and business-to-business transactions, as per Smyth's upcoming research on automated procurement systems in the aviation sector. Additionally, this study broadens the focus to include other features of APSs.

In a study on the impact of computerized procurement system in manufacturing company organizational performances, Kituzi (2023) discovered 'positive statistical significance' with respect to data transit, supplier/buyer relationship, procurement management system, and

billing department. However, this study is conducted in a different context than the one previously examined. Automation is not a common feature in procurement systems, unlike in the aviation sector.

Several research and study have been conducted on automated procurement systems. However, these investigations are confined to particular areas such as NGO and supermarket premises, thus the data collected cannot be considered universal. Additionally, automated procurement systems in the service industry do not encompass all of them. Most of the limitations have been noticed within services. Future research should focus on the impacts of APS performances in the procurement department. The significance of this study is emphasized.

Many research and studies have been done on automated procurement systems. However, these researches have been limited to specific scopes like Non-Governmental Organizations and Supermarkets, thus, the data collected cannot be considered universal. Furthermore, some aspects are not featured in automated procurement systems in service industry. These limitations have mostly been noted in the service industry. Much improvement has to be made in future research on how automated procurement systems affect performance in the procurement department. This forms the reason why this study is essential.

2.5 Research Gaps

E-procurement is a vital tool of IT management which can both enhance and harmonize various tasks across the institution. The integration within the institution can enhance its current implementation and also improves future executions. This system has the potential to boost confidence levels for both internal and external stakeholders. The provision of services by suppliers who do not pass extensive quality control is also one way in reducing the cost of

quality. The system can help to reduce quality costs by ensuring that all purchased components are not used as sources of complaints for the final products.

According to the literature, there has been no research on e-procurement and its effects on the implementation of an institution in the Kenyan service sectors. The literature reviewed above indicates that there are many studies on this topic that have already been conducted, but few have been found in other areas like service sectors. This research is solely focused on the impacts of APSs on a procurement department performance, as well as further studies requires significant enhancement.

2.6 Critiques of Existing Literature

Table 1: Critique of Existing Literature

Scholar(s)	Focus of the study	Major Findings	Major Contribution	Knowledge and Gap
Kasosi(2023)	Conducted a comprehensive literature review and identified the key research issues and gaps in automated procurement systems	Proposed a research framework that takes into consideration of the volume, width and depth of automated procurement systems	The study contributed to the theoretical study and practical understanding of automated procurement systems and provided directions for futures studies	There is need for future studies on issues and gaps in automated procurement systems

<p>Johnstone <i>et al.</i>, (2022)</p>	<p>To ascertain how web-based automated procurement systems impacts organizational performance</p>	<p>The use of an automated procurement system may result in improved collaborations across various company departments.</p>	<p>The study places a strong emphasis on the role that automated procurement systems in terms of both supplier and buyer performance.</p>	<p>There is a need for research to examine how procurement collaboration in a value-trusted network may be impacted.</p>
<p>Held <i>et al.</i>,(2023)</p>	<p>To determine the automated procurement systems practices adopted by manufacturing firms.</p>	<p>The majority of large-scale firms have utilized automated procurement systems practices</p>	<p>The study explains the automated procurement systems practices adopted by Firms.</p>	<p>The study focuses only on manufacturing Companies in Nairobi. The important success variables for e-procurement systems in the service industry must be studied.</p>

Rahman (2022)	To Examine the challenges faced in Public automated procurement systems implementation	By using technological-organization environment TOE, found out that most of the challenges are related to human and contextual issues	The study contributed to the factors affectingly er automated procurement systems success	There is need for more studies on public automated procurement systems implementation
Cuccuru <i>et al.</i> (2021)	Proposed use of a novel platform for automated procurement systems management based on block chain technology	The platform can enhance the security, transparency and efficiency of automated procurement systems and reduce the risk of corruption, fraud and collusion	The study contributed to the innovation and development of automated procurement systems solutions and provided a proof of concept for the application of block chain technology in automated	There is need for more studies on block chain technology on automated procurement systems

			procurement systems	
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2.6 The Conceptual Framework

The dependent variable is the procurement performance while the independent variables are barcode identification, Desktop purchasing, Electronic catalogue and Inventory Auctioning.

Independent Variables

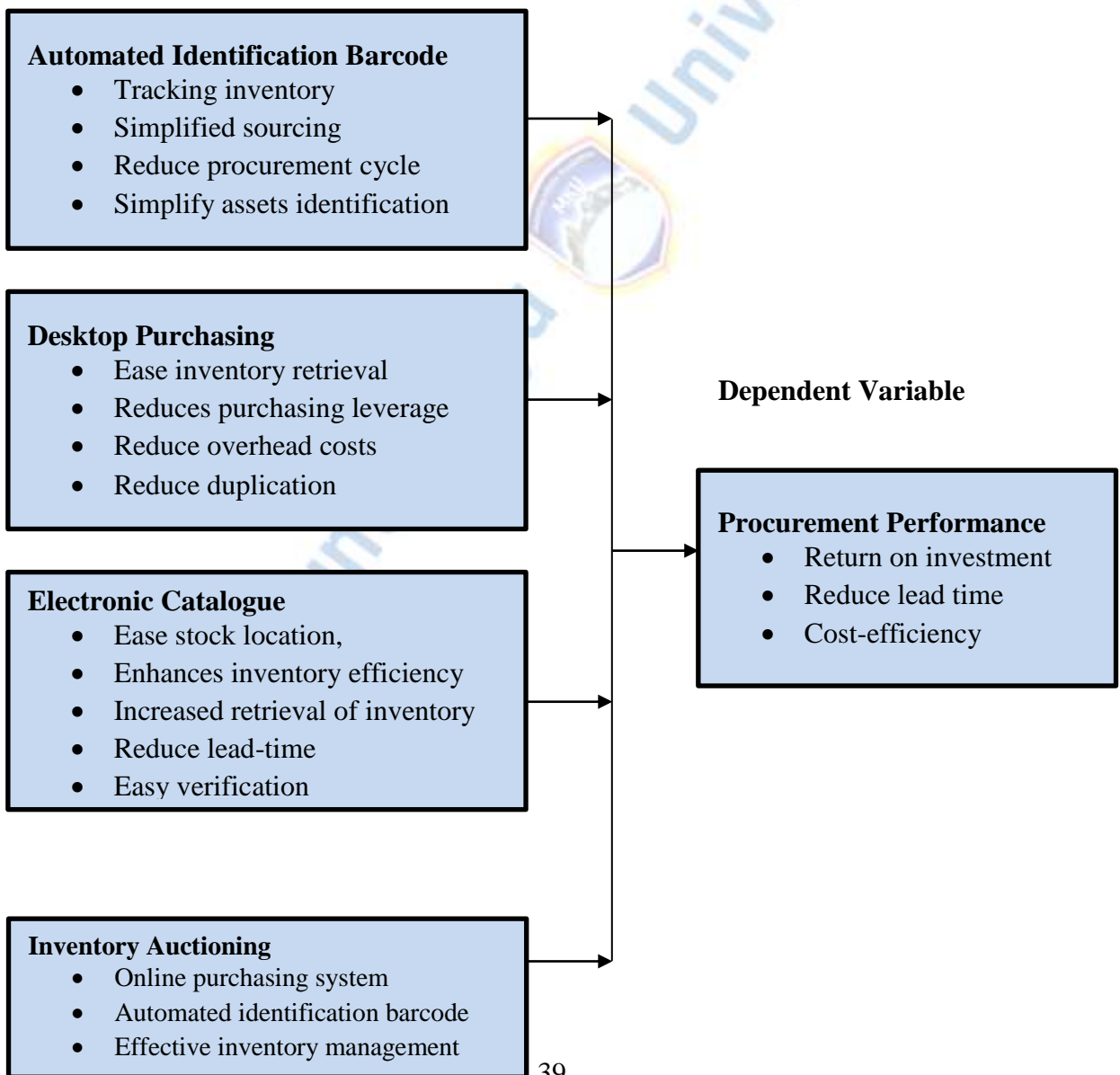


Figure 1: Conceptual Framework

2.8 Recap of Literature Review

The use of automated procurement systems in procurement may offer big advantages, but it is not without its own challenges and potential risks. Smart (2021) highlights the significant difficulty of establishing the ROI of IT money and convincing people to adopt it. The use of automated systems necessitates a detailed plan from companies.

According to Angeles and Noah (2022) analysis, the implementation of automated systems is impeded by three main factors: the interplay between systems and organizational conflicts, purchasing services' maturity with end-user resistance from automated procurement systems, purchasing of maverick as well as the integrating capacity of e-commerce alongside various procedures. The business of buying remains a technique that is still advancing, but with limited studies to do a comparison, it is still an organizational and system-incompatible process. Invoices, payment agreements, and inventory management are not considered software functions that must be developed if they are non-essential. Moreover, companies should be mindful of any unexpected expenses that may arise from using solutions of inventory management like the system setup, gathering of information alongside restructuring, cataloging, as well as the searching engine optimization.

The license and software maintenance can be five to ten times more expensive than these expenses, as noted by Angeles and Noah (2021) among other authors. Also, the absence of vendors' support, inexperience with automated procurement systems service providers, and user disruptions that impede solutions are also present. Service providers with limited experience may require assistance to provide adequate services, particularly for complex

encryption procedures and public procurement implementation projects. Lack of experience and preparation from suppliers is another issue that many organizations face. The invoicing system, electronic purchase order management, and catalogue generation skills are essential for suppliers, as stated by Angeles and Nath (2022). Davila et al. suggest that the network effect is crucial in automated procurement systems resolutions, but it will be more effective when multiple players adopt the same technology. In addition, the organization's suppliers are a crucial factor. Another problem for many organizations is the lack of experience and preparation on the part of their suppliers.

The solution to end-user problems in procurement systems is a secondary concern. Kamarra (2023) suggest that companies can prevent this by providing end users with comprehensive education and training on new automated procurement systems technologies. remember always citing a paraphrase.

2.9 Challenges of Implementing Automated Procurement Systems

Although the advantages of adopting e-procurement solutions can be many there exists some external and internal risks and challenges connected to the adoption of this system. According to Smart (2021) the scholar argued that there has existed a long-term challenge with ascertaining the value from IT investments as well as in the creation of a scenario for IT introduction in general. This is the reason for firms to require a plan that is clear for enacting these e-procurement systems. According to Angeles and Nath (2023) the researchers managed to identify 3 critical issues to e-procurement implementation: the first challenge were; Unavailability of system standardization and integration issues, lack of maturity of e-procurement-based markets Services as well as end user resistance, maverick purchasing as well as complexity in integrating E-procurement with other systems.

Lack of system standardization as well as integration issues connects to the fact that e-procurement is still relatively new business application and it is no normal to get a good place of benchmark able reference model. Also, lack of certain major aspects such as invoicing, payment reconciliation or proper management of various geographical jurisdiction, currencies, tax structures and software immaturity is a big challenge. Additionally, organizations are required to be keen and aware of any probability of hidden expenses linked with the enactment with the solutions of e-procurement, like the integration of the system, aggregation of the content as well as catalog, rationalization, and maintenance of Search engine, enablement of suppliers, training of the end users and processes of procurement re-engineering. These expenses may easily go beyond software licensing as well as maintenance expenses by even 5 to 10 times Rahman(2022).

Another challenging issue is immaturity of providers of e-procurement services as well as unavailability of suppliers proper preparation, and the resistance of end-users solutions. For a scenario of having a service provider that is immature, one can not be in a position to offer a complete suite of services, specifically for advanced or multifaceted e-procurement enactment projects. A lot of companies are suffering from immaturity of a supplier and the lack of proper preparation.

Above all, a supplier is required to learn how to produce electronic purchasing orders, catalogs, how to utilize invoicing mechanisms amongst other jobs Held *et al* (2021). Encompassing firms preferred suppliers is critical as according to Davila et al. (2023) the success of e-procurement solution depends on the network effectiveness that will be very effective when sufficient users are implementing the same technology. Lastly, another issue is related to the resistance of end-users to operate the e-procurement solutions. Towards preventing such, Simco(2020), stated

that firms need to encourage as well as motivate the workers to use new e-Procurement technologies via intensive education and training with end users.

Table 2
Summary from previous studies, knowledge Gaps

Scholars	Focus of the research	Main findings	Main contributions	Knowledge gaps
Nepelski (2023)	To explore the manner in which electronic procurement systems impact procurement costs as well as the sourcing approach.	The electronic procurement leads towards a lot of market businesses.	The study clearly points out the benefits of implementing and using new technologies to companies.	The focus of this study was on 2 aspects of procurement. Need to assess the impact on the whole process of procurement.
Jaujeng et al., (2023)	Towards determining the impact of web based	The implementation of web based e-procurement could result to improved	This analysis emphasized on the contributions of web-based	Need for a study towards Exploring the manner in which

	e-procurement on the performance of the organization.	working relationships between suppliers and buyers	procurement on performance of both the buyers and the suppliers.	collaborative behavior in procurement can be impacted inside the value trusted network.
Mose et al.,(2023)	To ascertain the various practices of e-procurement that have been implemented by the manufacturing and service firms	A number of big manufacturers and service providers in Nairobi Kenya having implemented e-procurement with various e-procurement activities.	This research elaborates the activities of e-procurement that have been implemented by firms.	The main focus of the study was on KQ company in Nairobi. Necessity for carrying out the research was to address the crucial factors of success for

				e-procurement.
Akoth M (2023)	To explore on the connection between e-procurement as well as the performances of an organization and NGOs in Nairobi	E-procurement has let to sourcing, Accountability and, competitive bidding as well and enhanced flow of data	The research states clearly that e-procurement has positive impacts on companies.	This research needs to be extended to other firms and industries so as to be able to get the differences and similarities.

Source author (2024)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter includes the strategies that the researcher used to collect data, the methods of data analysis and presentation. It also includes the study design, target group, sampling design, data collection instrument and tools. The focus was on the approaches used to obtain the results.

3.2 The Research Methodology

According to Blunt (2023), research methodology is based on a philosophical position or worldview, which resolves the purpose, design, methods, and interpretation of the results. Data can be qualitative in the form of words or quantitative in numbers form. Qualitative research postulates information and comprehension, while quantitative research attempts to clarify this data in figures (Perry 2022). A complete account of events, processes, and viewpoints arising in normal settings is often essential to making precise situational choices.

Qualitative and quantitative research methodologies was employed in this study since, it describes the situation and prescribes a solution (Ghauri and Gronhaug, 2021). This approach was used to explain the points in E-procurement systems and procurement performance, as well as moderating the e- procurement practices such as automated bar cord, desktop purchasing, e-auctioning and e- catalogue. In addition, questionnaires were taken from Kenya Airways supply chain department to determine their supply chain performance, which is relevant to the efficiency of the firm.

3.3 Research Design

The research findings form the basis for the collection and analysis of data in this study. According to (Obiero, 2023), descriptive research designs are methods explicitly designed to

measure characteristics described in research questions. As identified by Robson (2023) the descriptive design was best for supporting this research because the researcher can collect data, making it easier to compare various studies with less manipulation. This study employed descriptive research design to examine how automated procurement systems affect the procurement performance of Kenya Airways, Nairobi. The independent variables for the research included automated barcode, e-purchasing, e-auctioning and e- catalogue. The dependent variable was performance of procurement function.

3.4 Location of the Study

This study was conducted within the precincts of Kenya Airways, Nairobi City County. This location was chosen as it had the necessary data required for the study. The supply chain management system of the airline is receiving an overhaul to increase productivity. Furthermore, the company's location is in Embakasi within the city. The researcher, therefore, had ample time to access the location as it is near the campus.

3.5. Target Population

Demographic research refers to exciting activities with similar values or groups of people, which is a topic of research interest (Kothari, 2023). Cooper and Schindler (2021) explained that the research target population are all people, events, or things that the researcher focuses on. The the target population was supply chain staff from Kenya Airways in Nairobi, Kenya. This research focused on all employees in the procurement department of Kenya Airways . However the sample size of the study was 80 staff in the supplychain of Kenya Airways.

3.6 Sampling Procedure and Techniques

Koul (2021) defined sampling as the process of selecting individuals, objects, or events to determine the general population from which it was selected. Wiersma (2022) elucidates that a

sample is a small percentage of a population of the target population selected using a systematic study. Kasosi (2023) states that a good sample should be enough for the researcher to be confident that a different sample from the same method can produce similar results. The sampling technique of this study was Purposive sampling. The researcher adopted this procedure because the population under consideration had similar characteristics and the researcher emphasized on the depth in order to gain a better understanding of the study. In addition, this sampling technique allowed the researcher to make a generalization from the sample. This method was used since the study required officers who have practiced e-procurement and are aware of e-procurement. This made the researcher to conveniently and purposely select the most convenient respondents within the target population. The sampling size was 80 staff from the Supply Chain Staff.



3.7 Sample Population

Purposive sampling method was used on the Kenyan Airways staff ranging from different ages, education levels, and gender.

Table 3:
Sample population

Category	Number of workers (f)	Percentage
Heads of Departments	2	2
Purchasing and Supplies managers	1	1
Inventory managers	2	2
Store workers	50	63
IT Clerk	25	32
Total	80	100

Source: Researcher, (2024)

3.8 Construction of Research Instruments

A questionnaire using a seven-point Likert scale was utilized to collect the main data as it gives room for multiple options to be selected. A Pilot study was administered with of 10% of the total population. The question paper had four sections. Standard ideas about the participants in the meeting were covered in section A. Data on the automated system used by Kenya Airways was collected in the section B. The Airways' procurement performance formed section C of the analysis of the effectiveness of the automated procurement system will be section D. The questionnaire was preferred because of its flexibility since the respondents' ha the time to fill them at their own time and this boosted the overall response rate.

3.9 Data Collection Methods and Procedures

According to Kothari (2022), data collection is the act of gathering evidence that can be used to obtain new results or gain more insight into a problem and provide answers to research questions. The researcher will use questionnaires to collect information. This is consistent with Mugenda Mugenda who asserted that questionnaires are commonly used to obtain information about the population. Further, the questionnaire had a standardized set of questions which enhanced reliability and reduced bias. The questionnaire consisted of five sections, part one dealt with general information of the respondents, part two dealt with automated barcodes, part three dealt with desktop purchasing, part four with E-auctioning and part five dealt with e-catalogue.

In addition, anonymity and confidentiality are crucial aspects of a questionnaire that will lead to a high level of transparency and authenticity of the data to be collected. The survey questions were left with the respondents and were retrieved later to allow time saving and give the respondents time to give their views. The questionnaire was piloted to help the researcher uncover any problematic or vague questions, and re-examine the wording to ensure that they are ready and adequate for the survey.

3.10 Testing for Validity and Reliability

The researcher will start an official study by issuing a questionnaire that will characterize the research issues. A pilot study of 10% of the total population was administered. The selected participants were presented with the questionnaire and were required to go through them and identify any errors. Through the responses, the researcher was able to identify the questions that were not well structured and make amendments. Thereafter, the researcher analyzed the results to identify any influence of the independent variable on the dependent variable and, thus, evaluated the authenticity of the information.

Conferring from the the definition of Simco (2023), reliability is explained as the consistency of an instrument when it is used for several times in similar situations. Through using a test-retest technique to determine if there is a trivial difference in results when repeated study materials are used. Data from the pilot and final studies were compared to determine the reliability. Prior to proceeding with the analysis as well as the next presentation, the researcher had approved the validity of the materials used in the study.

3.11. Data Analysis Techniques and Presentation

The screening of the questionnaires was for their accuracy as well as continuity prior to being distributed to the participants. Different categories of responses were used to categorize the data. The method of processing the data in the study was based on descriptive statistics. This process was carried out by utilizing the tables of frequency distributions, mean, and standard deviations for reference.

SPSS software was utilized by the researcher. Kenya Airways' performance was impacted by the adoption of automated procurement systems, as determined through regression and correlation analysis. The Kenya Airways study was the model for a linear regression analysis, which we applied to investigate the correlation between the factors. This study utilized a linear regression technique towards establishing the relationships between the independent and dependent variables. Understanding linear regressions has become simpler due to their convexity.

In Kenya, service sector companies were impacted by the impact of e-procurement on their performance, which led to the development of an 'econometric' regression analysis. The regression equation that was utilized is shown below.

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Whereby:

- Y : Performances of the KQ
- β_0 it's the interpretation of Y
- X_1 : represents the identification of Automated barcode
- X_2 : it is the online/electronic catalog
- X_3 : represents the Desktop Purchasing System
- X_4 : Inventory Auctioning
- ε : Error term

The analysis methodology as from the variables of this study' are offered in the table.below,

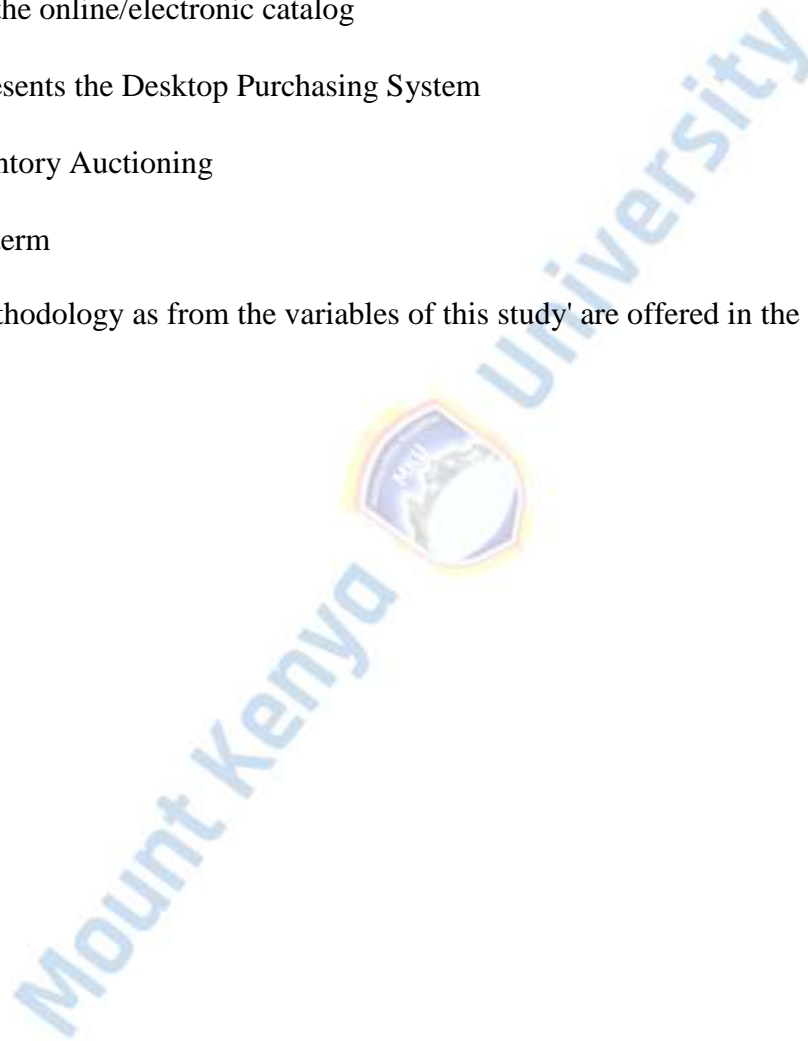


Table 4:

Data analysis matrix

The Objective of the study	The Study Questions	Methodology of analyzing
Background information	Part A	Descriptive
Automated procurement system used by the KQ.	Part B	Descriptive
Impacts of automated procurement systems in procurement Performances	Part C	Regression and correlation

Source: Researcher (2024)

3.12 Ethical Considerations

Informed consent from the respondents were sought prior to receiving the questionnaire, as well as the researcher made arrangements on how to collect the data and obtain all the information that was being required. According to Sekaran (2021), he stated that the confidentiality of the collected data should be met, the dignity of the person or the respondent should not be violated, the participation of the respondent should not be forced, as well as the data collected during the study should not be misplaced or changed.

CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This fourth section provides a summary of the study's assessment of its findings. These findings highlight the impact that automated procurement had on KQ.

4.2. The Discussions, Interpretations and the Presentation of the research according to the Objectives rate of response.

The survey was aimed at a specific department, with primarily its staff members who operate inside the supply Chain Department of Kenya Airways' head offices in the county of Nairobi. Number of survey forms that were issued was 72 times and the remaining 80 were submitted correctly, resulting in the total number of completed questionnaires being revealed. Table 4 reveals the percentage of zero responses. A figure of 1 is positioned below. Besides the statistics, it was adequate and comparable, thus in agreement with Mugenda and Mugenda(2003)'s argument that an initial fifty percent (50%) response rate is sufficient to capture and report an analysis.

Table 4:
Response Rate

	Frequency	Percent
Responses received	72	90.00
No response	08	10.00
Total	80	100.0

Source: Researcher (2024)

4.2.1 Demographic Information

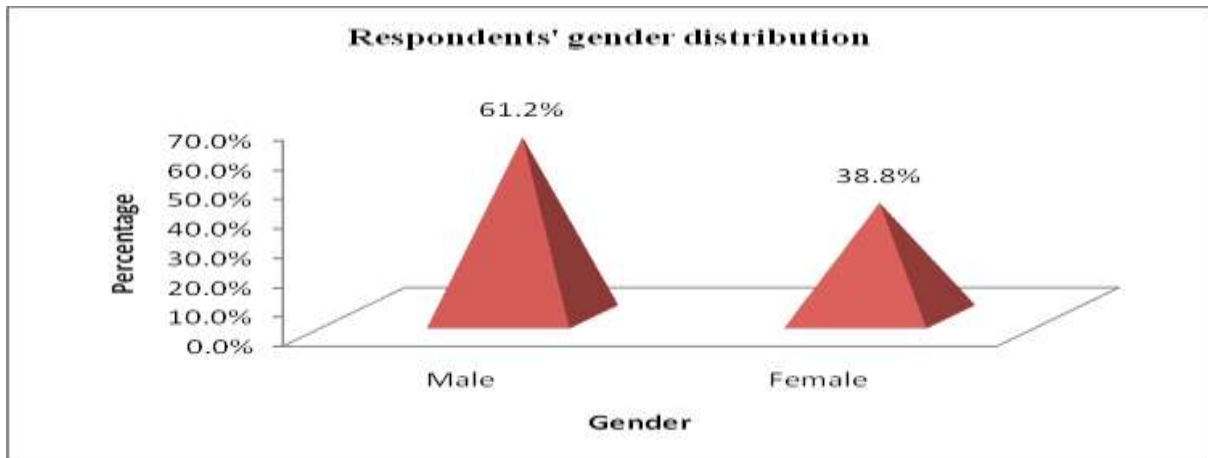


Figure 2: Gender Distribution Response

Source: Researcher (2024)

The graph, above shows that the males overwhelmingly outnumber the females with a percentage rate of 61.2, the remaining is 38.8, were females. Due to this, we can say that the study achieved gender parity by making use of two genders where, the male gender came out as the highest percentage compared to the opposite gender.

4.2:2: Education Level of the Respondents

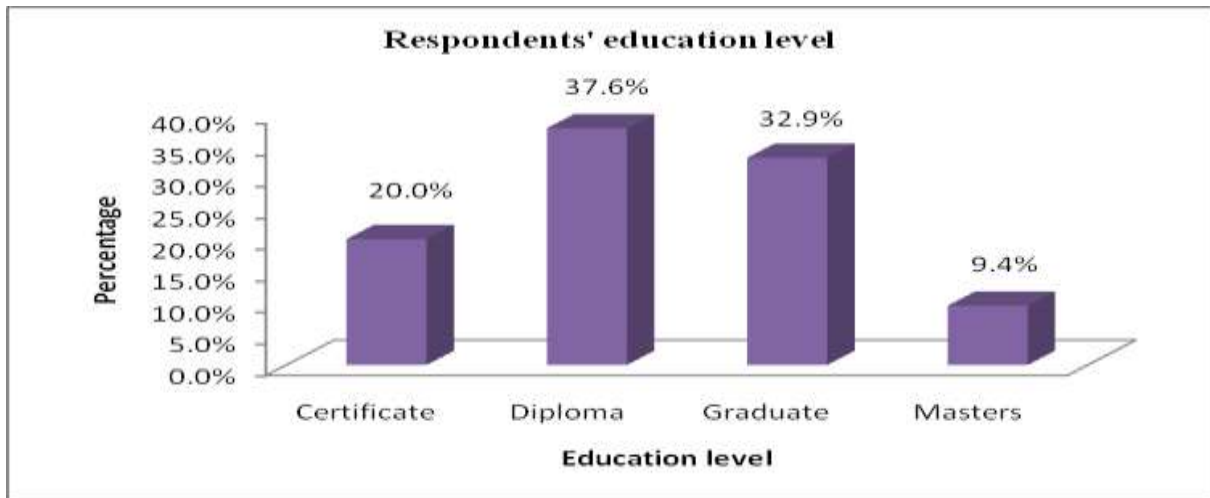


Figure 3: Education Level of the respondents

Source: Researcher (2024)

As per the above diagram, it is vividly observed that persons having certificates, diploma, undergraduate degree and postgraduate degree education were 20%, 37.6%, 32.9% and 9.4% respectively. It was indicated that educational level had a significant insight into the procurement process thus this also played a role towards the enhanced procurement performance of the Kenya Airways Company.

4.2.3: Education Level of Respondent

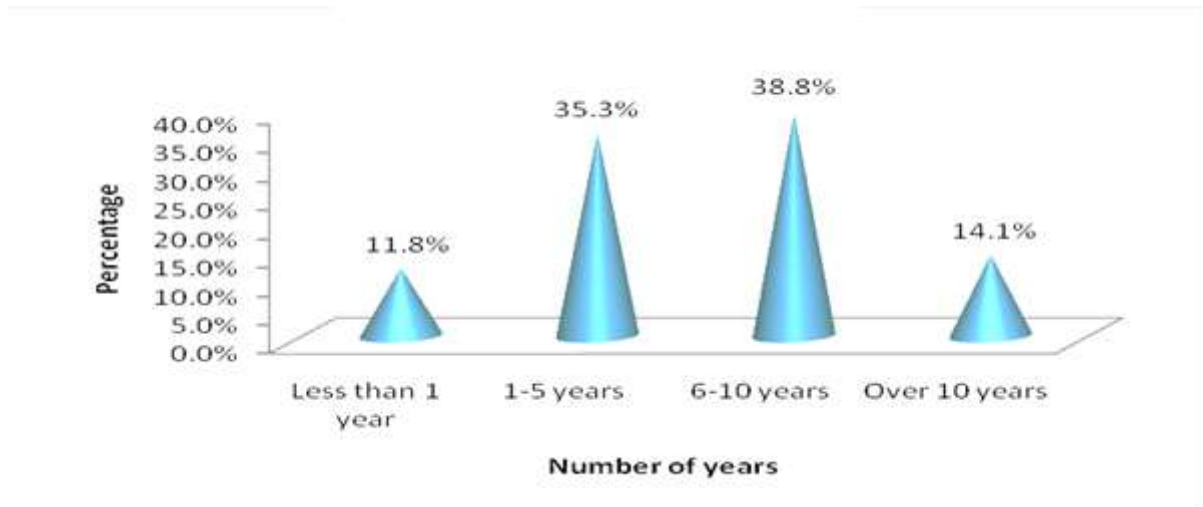


Figure 4: Years Worked at Kenya Airways

Source: Researcher (2024)

According to the information from the above diagram, those with above, 11.8% of these workers had work for the airline for less than a year, 35.3% were working for the firm for between 1 to 5 years, 38.8% were for a period of 6-10 years while 14.1% who had worked for more than 10 years. Consequently, the majority of interviewees had been engaged with the company for a fairly long time hence had a deep knowledge concerning the various effects brought about by the automated procurement systems on the Kenya Airways procurement operations

4.3 Discussion of Individual Objectives

4.3.1 Automated Bar code and Procurement Performance

Kenya Airways' first goal was to evaluate the influence of barcode systems on their procurement performance, and this study was initiated to accomplish this. The aim of the study was to determine the degree to which bar code systems' effect on procurement performance was consistent with the questionnaire respondents' responses. The study evaluated the

respondents 'level of agreement with different statements on the usage of bar-coding system as a practice of e-procurement utilizing the scale of one-five where five-firmly agreed, four-agreed, three-neutral, two-two-disagreed as well one-firmly disagreed. The findings are as illustrated in Table 5.

Table 5:
Respondents'Level of agreement with statements on bar coding systems

Statements	Mean	Std.Dev
Used of Bar-coding ease in inventory retrieval	4.259	0.5153
Use of bar coding enables ease in inventory tracking	3.941	0.6788
Used of bar-coding system reduced procurement cycle	4.271	0.6434
Used of bar-coding simplifies sourcing of inventories	4.388	0.5995
The use of bar-coding systems provides an effective audit trail of inventories	4.329	0.6247

Source: Researcher (2024)

The Staff of Kenya Airways did agree that bar-coding ease in inventory retrieval (mean= 4.388); the used of bar codes enables ease in inventory tracking (mean = 4.329); system reduced procurement cycle (mean =4.271); Used of bar-coding simplifies sourcing of inventories (mean = 4.259) and that use of bar-coding systems provides an effective audit trail of inventories (mean =3.941). This implied that Bar code systems as an e-procurement practice played a significant role in enhancing the performance of Kenya Airways.

4.3.2 Inventory E-Auctioning and Procurement Performance

The other goal of this study was to ascertain how the e-auctioning process is impacting in KQ's procurement performance in Kenya. Two approaches were employed in order to do the research: e-auction participant and procurement performance assessment. Rating on a scale of 1-5 that consists of strongly agreed (five), agree (four), neutral (three), disagree (two) and disagreed strongly (one). The results are what are shown in the Finding 4.4 section.

Table 6:

Respondents' level of agreement with statement on e-auctioning

Statements	Mean	Std.Dev
E-auctioning provides buyers and sellers an open environment	3.988	0.9697
E-auctioning facilitates financial savings in an organization	4.294	0.6514
E-auctioning enhances improved procurement process such as time savings.	4.282	0.7337
E-auctioning removes physical barriers in search of supplies	3.165	1.1217
E-auctioning allows a quick evaluation of possible suppliers	3.859	0.9778

Source: Researcher (2024)

The study results shown on Table 7 above indicate that the staff of Kenya Airways were in agreement that e-auctioning provides buyers and sellers an open environment (mean = 4.294); E-auctioning facilitates financial savings in an organization (mean = 4.282); E-auctioning enhances improved procurement process such as time savings (mean = 3.988) and that E-auctioning removes physical barriers in search of suppliers (mean = 3.859). However, the staff of Kenya Airways neither agreed nor disagreed with the statement that E-auctioning allows a quick evaluation of possible suppliers (mean = 3.165). This implied that e-auctioning sourcing as an e-procurement practice was integral in efforts to enhance the performance of procurement function in Kenya Airways.

4.3.3 Desk Top Purchasing and Procurement Performance

The 3rd aim of this research was to evaluate the influence of procurement desk-based purchasing on Kenya Airways' procurement department. The investigation evaluated the support of customers for different numbers of statements on a scale of one to five, with strong agreeing, agreeable or not, neutral or non-replying. The findings are as illustrated in Table 7.

Table 7:
Respondents' Level of Agreements with statements on desktop purchasing

Statements	Mean	Std.Dev
Desk top purchasing contributes increased accuracy in invoicing	4.141	0.6753
Desktop purchasing can aid in dispute handling	4.353	0.6850
Desk top purchasing can lead to improved supplier/customer relationships	4.388	0.5793
Desk top purchasing can lead to improved visibility of procurement dealings	4.047	0.7385
Desk top purchasing enables faster payments while reducing associated invoicing costs	4.212	0.6564

Source: Researcher (2024)

Kenya Airways respondents agreed that desk top purchasing can lead to improved supplier/customer relationships (mean=4.388);desktop purchasing aid in dispute handling (mean=4.353);desktop purchasing can facilitate faster payments while reducing associated invoicing costs (mean = 4.212);also desktop purchasing contributes to increased accuracy in invoicing (mean = 4.141) and that desk top purchasing can lead to improved visibility of procurement dealings (mean=4.047).This clearly showed that desk top purchasing as an e-procurement practice was critical in the efforts to enhance the procurement performance of the firm.

4.3.4 E-catalogue and Procurement Performance

The ultimate aim was to determine if the e- catalogue enhances Kenya Airways' procurement performance in Kenya. On a scale of 1-5, respondents were being requesting to show whether they approve or reject statements on e-catalog, such as e-procurement site, the results were five

agreed strongly, four agreed, three were neutral, two didn't agree while one-firmly disagreed.

The results are as shown in Table 8.

Table 8:
Respondents' level of agreement with statement on e- catalogue

Statements	Mean	Std.Dev
Use of e-catalogue has simplified on line negotiations	4.247	0.7854
Use of e-catalogue simplifies supplier identification	3.835	0.8570
Use of e-catalogue enhances internal coordination	3.977	0.9509
E-catalogue enables firm to communicate with potential suppliers	4.282	0.5693
E-catalogue is essential in contract monitoring	4.141	0.7891

Source: Researcher (2024)

Based on the results shown on Table 9 above, the Kenya Airways staff concurred that e-catalogue has simplified online negotiations (mean =4.282); use of e-catalogue had simplified supplier identification (mean=4.247); e-catalogue enhances internal coordination (mean=4.141);use of e-catalogue enables firm to communicate with potential suppliers (mean= 3.977) and that use of e-catalogue catalogue is essential in contract monitoring (mean = 3.835).This implied that e-catalogue as an e-procurement practice played an important role in helping enhance the procurement performance of Kenya Airways.

4.4 Regression Analysis

Regression analysis was conducted to determine the degree of correlation between the different variables that were being examined by the researcher. This was done by regressing the

independent variables (bar codes systems, e-auctioning, desktop purchasing and e-catalogue) against the dependent variable (procurement performance). Below is a summary of the results;

Table 9:

Model summary

Model	R	RSquare	Adjusted Square	R	Std. Error of the Estimate
1	.845 ^a	0.714	0.700		.7378

Source: Researcher (2024)

Predictors: (Constant), bar codes systems, e-auctioning, desktop purchasing and e-catalogue

Basing on the results of Table 10 above, R square is the determination Coefficients shows the variations in the dependent variables, this is because of alterations in the independent variables. Therefore the results of 4.10 above, the value of R square was 0.714 which means that 71.4% variation in the procurement performance of Kenya Airways was due to variations in bar codes systems, e-auctioning, desktop purchasing and e-catalogue. Hence, 28.6% of variation in the procurement performance of Kenya Airways was explained by other factors not in the modeler not focused on in the current study.

Table 10:
ANOVA{Analysis of variance}

Model	Sum of Squares	df	Mean Square	F	Sig.	
	Regression	114.088	4	28.522	50.528	.0000 ^a
1	Residual	45.723	81	0.5645		
	Total	159.811	85			

Source: Researcher (2024)

Predictors (Constant), bar codes systems, e-auctioning, desktop purchasing and e-catalogue
 Dependent Variable: Procurement performance
 Analysis of Variance (ANOVA) comprises of procedures that offers info in regard to levels of variability in regression model as well as being a base for testing of importance. In the F column, there is an F statistic which is used for testing the null hypothesis that $\delta=0$ (Weisberg,2005). The result could be confirmed by the computed t-value, 0.0000, which is lower than 0.05. As a result, the model statistically crucial in forecasting the impact of e-auctioning, barcoding systems, e-catalogue and desktop purchasing on procurement performance in Kenya Airways. Also, the result that was found significant at a 5% level was F critical with 6.26. Critical (F critical=6.26) was lower than model (F calculated = 50.528) that validated the model being significant

Table 11:
Regression Analysis Results

standadised

Unstandadised Cefficient	coefficients.			t	sig.
	B	Std. Error	Beta		
(Constant)	4.793	.612		7.832	.0000
Automated bar coding[X1]	0.742	.161	.577	4.609	.0000
E- catalogue[X2]	0.639	.279	.452	2.290	.0246
Desktop purchasing[X3]	0.705	.198	.519	3.561	.0006
Inventory Auctioning [X4]	0.660	.251	.481	2.629	.0102

Source: Researcher (2024)

Functions of the obtained results displayed at Table 4.12 show that the model is now; $Y=4.793+0.742X_1+0.639X_2+0.705X_3+0.660X_4+\varepsilon$

From the table, on the regression analysis of Kenya airways' procurement performance increased when bar codes, e-auctioning, and desktop purchasing are excluded. 0.742. The findings indicate that a one-unit addition in bar-codes will lead to 0.000 improvement in procurement performance. The significance level or confidence level of a barcode automation system is set at least to 0.000 an e-catalogue has a number that falls between 0.000 and 0. Purchasing desktops had an A1 level of 0246. In contrast to the 0. 0102 degree.

4.5 Coefficient of Determination Analysis (Dependent Variable)

Table 12:
Procurement Performance Coefficients

Model	Unstandardize		Standardize		Sig.
	d Coefficients		d	t	
	B	Std. Error	Beta		
(Constant)	1.521	0.251		6.057	0.000
Automated barcodes	0.971	0.041	0.828	23.49	0.000
Desktop purchasing	0.606	0.04	0.654	16.84	0.000
E-auctioning	0.603	0.067	0.494	9.059	0.000
E-catalogue	0.546	0.133	0.249	4.096	0.000

a. Dependent Variable: Procurement Performance

Source Researcher, 2024

By putting into consideration all aspects, the equation from the regression found out that (Barcodes system, E –auction, E - Catalogue and Desktop purchasing) constant at zero, Procurement performance would have a positive influence as illustrated through the coefficient of ($\beta_0 = 1.521$) which is much considerable at ($p = 0.000$). From the analysis, we can deduce that barcode systems has a significant effect on procurement performance ($\beta_1 = 0.971, p = 0.000$).

This mathematically shows that any slight alteration in a single standard deviation that is being in use of barcodes leads to a (0.971) standard deviations increase in procurement performance of Kenya Airways . Generally, if the KQ embraces more use of barcode systems then their procurement performance would be enhanced positively.

Moreover, the findings established that Desktop purchasing has a major impact in the performance of procurement in the organization ($\beta_2=0.606$, $p = 0.000$). Therefore, this mathematically shows that any slight changes in the standard deviation in Desktop purchasing leads to a (0.606) standard deviation increase in procurement performances of Kenya Airways .Therefore, if the firm were to embrace the use of Desktop purchasing then, their procurement performance would be enhanced positively.



Further, the analysis as presented above implies that E-auctioning has a positive impact on procurement performance ($\beta_2=0.603$). This implies that any slight shift in a single standard deviation of the E-auctioning leads to a (0.603) standard deviation increase in procurement performances at Kenya Airways. Ideally, this means that, if KQ implemented further E-auctioning execution, then their procurement performances can be positively improved.

To sum up, E-catalogue has a critical effect on procurement performance ($\beta_2= 0.546$). Thus mathematically indicating that any slight alteration in a single standard deviation in e-catalogue leads to a (0.546) standard deviation increase in procurement performance of Kenya Airways. However if the KQ practices more e-catalogue then their procurement performances can be positively improved.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMENDATIONS

5.1 Introduction

This research focuses investigating the effect of automated procurement systems on the service sector, with Kenya Airways being particularly noteworthy. The supply chain department of Kenya Airways received a questionnaire that was structured to meet these objectives among its employees. This section contains the researchers suggestions, conclusions, findings as well as summary. Moreover, it presents the proposed fields for extra investigation The outcome summary of the findings.

5.2: Summary of Result Findings.

5.2.1 Bar Coding Systems and Procurement Performance;

According to the survey, the barcodes system made it easier to find things. In addition, the automated bar code system produced a precise inventory audit trail. Inventory cycle counts were found to be reduced as a result of bar code systems and improved management accountability, according to the respondents. By using regression models, it was discovered that barcode systems and KQ performance (measured by Beta value of 0) were highly effective. P 0.74. The most crucial factor (05) was present. The use of bar coding systems in electronic procurement methods had an important effect on the performance of KQ procurement. Makafui and Ackah's (2021 article) argues that the utilization of bar codes in e-procurement had a big effect on the growth of an organization in Ghana, as they made inventory retrieval effortless and cost-effective.

5.2.2 Inventory E-Auctioning and Procurement Performance;

According to the results of the study, it showed that the staff of Kenya Airways were in agreement that inventory E-auctioning provides buyers and sellers an open environment, E-auctioning enhances improved procurement process such as time savings, E-auctioning facilitates financial savings in an organization, E-auctioning removes physical barriers in search of supplies and E-auctioning allows a quick evaluation of possible suppliers. Regression statistics revealed that Kenya Airways' procurement performances were positively associated with e-auctioning (beta 0). If p is negative, the answer will be 660. 05. The study found that e-auctioning as an underlying 'e-procurement practice' was highly beneficial for procurement purposes. This was established by way of Shalle et al.(2021) e-auctioning was declared as the primary method of enhancing online procurement, which could result in quality products and reducing corruption by accepting those with higher bids instead of being treated like a victim.

5.2.3 Desktop Purchasing and procurement Performance

Research has shown that desktop purchasing leads to improved invoicing, dispute resolution, and customer/supplier collaboration with greater accuracy. The study found that desktop purchasing results in more accurate invoicing, quicker dispute resolution, and improved collaboration between customers and suppliers. By enabling people to monitor their procurement transactions and payments, the use of desktop purchasing could address the problem of inadequate visibility. Moreover, the use of desktop procurement reduces the time required for payment and lowers expenses associated with invoice processing. Through regression analysis, it was discovered that the connection amid Kenyan Airlines e-desktop purchases and procurement performance was huge and proven. A numerical value of p is equal to 0. 05. The success rates of the procurement system of Kenya Airways were based on desktop procurements as an indicator of e-procurement practice. Amin (2022) verified that the DPS has resulted towards the cost-cutting, enhanced accountability and transparency in the management of public enterprises in Kenya. Additionally, Rozner suggests that the utilization of desktop

purchasing as an e-procurement tool will yield several benefits, including better transaction visibility, better customer/supplier relationships, efficient resolution of disputes, improved due processing for suppliers, and accurate invoice submission. Similarly, Rozner (2021) argued that application of desktop purchasing as an e-procurement tool would lead to benefits such as improved visibility of procurement dealings, improved supplier/customer relationships, better dispute management, better facilitation of supplier dues settlement and increased accuracy in invoicing.

5.2.4 E-catalogue and Procurement Performance

KQ staff and participants agreed that e-catalogue has simplified the process of online negotiations, improved internal coordination, communication with potential suppliers, and an important role for presentation and revision of overall regression analysis. The regression analysis results further illustrated that there was a big positive relation between e-catalogue and procurement of Kenya Airways (shown by a beta value of 0.660, $p < 0.05$). This meant that e-catalogue as an e-procurement practice played a crucial responsibility in aiding to improve the procurement performance of Kenya Airways. A p-value of 0 and 660 are insignificant. 05. It was revealed that e-catalogues played a crucial role in improving the airline's procurement performance. Kahari (2019) and Njuki (2018) found that the study's results correlate with a higher level of dependence on e-catalogue electronic methods and revenue collection performance.

5.3 Conclusions

As per the research analysis, implementation of bar coding systems as a crucial resource and enhanced the organization's procurement performance. The study revealed that Kenya

Airways' barcode system and procurement have a positive correlation of 0.97 which indicates the highest factor in the variables. Further, the questionnaire results indicated that desktop purchasing variable was second leading factor in enhancing Kenya Airways' procurement performance. E-auctioning as per the analysis was found to have a significant importance in shaping the procurement performance. Finally, e-catalogue, has been demonstrated to have a significant impact on airline procurement performance in Kenya with a correlation of 0.545. The concluding data indicates a significant interdependence between the implementation of automated procurement systems and Kenya Airlines' triumph. The study also concluded that desktop purchasing as an e-procurement practice was critical in the efforts to enhance the procurement performance of Kenya Airways. In addition, the study concluded that there existed a significant positive relationship between desktop purchasing and the procurement performance of Kenya Airways. Further, the study concluded that e-catalogue as an e-procurement practice played an important role in helping enhance the procurement performance of Kenya Airways. In addition, the study concluded that there existed a significant positive relationship between e-catalogue and the performance of Kenya Airways.

5.4 Recommendations

Given that bar coding systems as an e-procurement practice relates positively towards the procurement performances of Kenya Airways, the research recommends that KQ needs to adopt a holistic approach in reforming its inventory management that will not only be limited to automation of the inventory processes but also building the capacity of its staff and suppliers on how to work with the automated bar coding systems.

Given that e-auctioning as an e-procurement practice relates positively towards the procurement performances of Kenya Airways, the research recommends that Kenya Airways needs to deploy its e-auctioning platform to attract new suppliers and bidders who offer better terms of

trade to the while also performing regular evaluations of its existing suppliers to ensure that they continually meet the set qualifications for doing business with Kenya airways.

Given that desktop purchasing as an e-procurement practice relates positively towards the procurement performances of Kenya Airways, the research recommends that Kenya Airways needs to consider rolling out the use of desktop purchasing in all its purchase activities.

Given that e-catalogue as an e-procurement practice relates positively towards the procurement performances of Kenya Airways, the research recommends that the KQ needs to leverage on existing e-catalogue modes such as Eicher catalogue to enables its suppliers to view the company's requisitions and needs.

Also, the KQ management should undertake some changes in their management training to their workers towards training and educating them on the advantages of shifting to APS this is due to the fact that it will aid them to Reduce their resistance to inventions hence driving up their performances. The KQ management should also require to consider providing complete support towards inventions, this is aimed at reducing costs as well as wasted time by utilizing traditional form of procurement procedures. Through such initiatives, Kenya Airways will be in a position to sustaining their grip on the market and therefore be competitive and substantial in coming years. Kenya Airways should make sure that they offer enough infrastructure that is required for complete automation of procurement systems.

Currently, Kenya airways is faced with challenges which have resulted to complexities in smooth running of their operations. While carrying out the research it was difficult to get full responses from all the workers of Kenya Airways as some of them were skeptical about being interviewed. Also the airways industry is very big and busy, hence it was not easy to collect data from all departments at once. The data collection should be a yearly exercise. However because of limited time it wasn't achievable.

5.5 Suggested Areas for Further Research

Since this research explored on the effects brought about by the performance of e-procurement systems on of Kenya Airways, the recommendations of the study suggests that same research need to carried out in different departments as well as ministries on the government in the country for the purposes of making comparisons as well as and allowing for the generalization of the outcomes on the various effects of adoptions of procurements systems on the performance of parastatals. In addition, with the emergence of Artificial Intelligence (AI) a research needs to be done on how to integrate AI in the procurement processes. The government of Kenya of late is the process of introducing a new technology called Government procurements system called E-GP System indepart from manual systems and IFMIS System that has faced a lot of challenges including graft, delayed project completion and loss of public funds.

The implimatation and application of this will result in reduced cost of goods and services, improve the element on the accountability and monetary control. This also will improve on enhanced audit trails. In this regard further studies into the combination of use in both AI and e-GP System and Automated Procurement system is recommended.

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Appendix I: Consent Form

Dear (Participant's Name)

I kindly request your participation in a research study conducted by Roseanne Kiende Murungi, a student pursuing a Master of Science degree in Procurement and Supplies Management at Mount Kenya University. The purpose of this study is to investigate the impact of Automated Procurement Systems on Performance of Service Industry in Kenya –Case of Kenya airways.

Your involvement in the study is voluntary, and you have the right to withdraw at any given time without any consequences. Please note that your decision to participate or withdraw will not affect your relationship with Mount Kenya University or any other entity involved in this study in any way.

I hereby assure you that privacy and confidentiality of your personality and the data provided will be strictly maintained throughout the study and with outmost secrecy and will be restricted to the researcher and the supervisor(s). In addition, your identity will remain anonymous unless the participants personally chooses to do so.

You are informed that the study will not provide any immediate benefits to you and that your views and opinions need necessarily not align with those of other participants in this study. You are however encouraged to freely express your views in order to meet the study's objectives.

If at any point in time, you feel that certain matters are sensitive and poses a risk to your personality, safety or profession, kindly inform the researcher and appropriate measures will be taken to mitigate the situation.

Should you require any assistance, the Researcher, Roseanne Kiende Murungi will be available. Signing this form confirms that you understand the purpose, nature and your intention to voluntarily participate in the study.

Participants' Information

Name:

Signature:

Appendix II: Questionnaire

Section A - General Information

The purpose of the questionnaire is to determine how automated procurement systems affect procurement performance at Kenya Airways in Nairobi, Kenya. Three sections make up the questionnaire. The given information will be handled with the utmost discretion.

Section B: Background Information

What is your gender?

- i) Male ii) Female

How long have you worked in Kenya Airways?

i) Less than 5years	<input type="checkbox"/>	ii) between 6 to 10years	<input type="checkbox"/>
iii) Between 11 to 15years	<input type="checkbox"/>	iv) between 16 to 20years	<input type="checkbox"/>
v) Above 20years	<input type="checkbox"/>		

What is your highest level of education?

- i) PhD ii) Masters iii) Bachelors
 iv) Higher Diploma v) Diploma vi) Certificate
 vii) Other, please specify.....

How long have you been in the current position?

i) Less than 5years	<input type="checkbox"/>	ii) between 6 to 10years	<input type="checkbox"/>
iii) Between 11 to 15years	<input type="checkbox"/>	iv) between 16 to 20years	<input type="checkbox"/>
v) Above 20years	<input type="checkbox"/>		

Has your company adopted e-procurement?

- i) Yes ii) No

Section C: Automated Bar Code and Procurement Performance

To what extent does the use of automated barcoding influence performance of procurement function in your organization?

Very great extent	<input type="checkbox"/>
-------------------	--------------------------

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

	<i>To what extent do you agree with each of the following statements regarding the effects of automated barcodes on performance of procurement function in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A=agree; SA=strongly agree.</i>	Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly Agree(5)
2.	Easy inventory retrieval					
3.	Inventory tracking					
4.	Reduced procurement cycle					
5.	Simplified sourcing					
6.	Simplified assets identification					

Section D: Inventory-auctioning Process

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

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

<i>To what extent do you agree with each of the following statements regarding the effects of E-auction process on performance of procurement function in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A-agree; SA=strongly agree.</i>		Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly Agree(5)
8.	E-auctions provide to buyers and sellers an open environment where they can compare the true value of their products.					
9.	It facilitates financial savings in the organization.					
10.	It enhance s improved procurement process efficiency which includes the time savings for both the buyers and sellers.					
11.	It facilitates to access to a larger supplier base.					
12.	It improves transparency of the whole procurement process.					

Section E: Desk-Top Purchasing Process

13. To what extent does Desk-top purchasing process influence performance of procurement function in your organization?

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

<i>To what extent do you agree with each of the following statements regarding the effects of Desktop Purchasing process on performance of procurement function in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A=agree; SA=strongly agree.</i>		Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly Agree(5)
14.	Compared with traditional paper invoices, thee-invoice can help businesses achieve paperless, transparent transactions.					
15.	There is secure and low cost procurement transaction.					
16.	Use of e-invoice reduces payment time to suppliers since time taken for delivery of service has reduced.					
17.	It offers greater security of data in the organization.					
18.	There is faster and better communication between suppliers and buyers.					

Section F: E-Catalogue Process

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

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

	<i>To what extent do you agree with each of the following statements regarding the effects of e-catalogue on performance of procurement function in your organization? Use the following ranking: SD=strongly disagree; D=disagree; N=neutral; A=agree; SA=strongly agree.</i>	Strongly disagree(1)	Disagree(2)	Neutral(3)	Agree(4)	Strongly Agree(5)
20.	Enhances Online negotiations					
21.	Simplifies Supplier identification					
22.	Enhances Internal coordination					
23.	Enables firm to Communicate with potential suppliers.					
24.	Essential in Contract monitoring.					

25. Indicate other ways through which E- procurement practices have influence procurement performance

SECTION G: Procurement Performance

Procurement Performance		1	2	3	4	5
26.	E-Practices reduces purchasing costs					
27.	Improves effectiveness in procurement process.					
28.	Standardizes purchasing process across the organization					
29.	Reduces administrative cost with better effectiveness					
30.	Improves effectiveness of supply chain processes					
31.	Reduces discretion & increases transparency					
32.	Improves supply chain managers decision making					
33.	Minimizes order transmission errors					
34.	Reduces procurement corruption					
35.	Inventory minimization					
36.	Stronger buyer-vendor relationship					

End - Thank you for taking time to fill the questionnaire

Appendix 111: Introduction Letter



DIRECTORATE OF GRADUATE STUDIES

MPSM/2022/52004

18th January, 2024

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki Way, Upper Kabete,
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,


RE: ROSEANNE KIENDE MURUNGI- REGISTRATION NO. MPSM/2022/52004

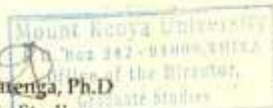
The purpose of this letter is to introduce the above named student who is pursuing **Master of Science in Procurement and Supplies Management** in the **Department of Management** in the school of **Business and Economics**

The title of the research is "**Automated Procurement Systems on Performance of Service Industry in Kenya- A Case Study of Kenya Airways**". It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **January, 2024 and March, 2024**.


Any assistance accorded to the student will be highly appreciated.

Thank you.


Dr. Samuel M. Katenga, Ph.D
Director, Graduate Studies
Enc.



Appendix IV: ERC Certificate



Mount Kenya University

REF: MKU/ISERC/3420
TO: ROSEANNE KIENDE MURUNGI
REG: MPSP/2022/52004

Date: 10 January 2024

Dear Sir/Madam,

RE: AUTOMATED PROCUREMENT SYSTEMS ON PERFORMANCE OF SERVICE INDUSTRY IN KENYA - A CASE OF KENYA AIRWAYS.


This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2464**. The approval period is **10/01/2024 - 09/01/2025**.

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 **Mount Kenya University**
- 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 **Mount Kenya University** within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 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 **Mount Kenya University**

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,





The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Tel: 020-2878 000, Cell: +254 709 153 000
Email: info@mku.ac.ke, Web: www.mku.ac.ke
Chartered and ISO 9001 : 2015 Certified Institution.
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Appendix V: Research Permit


REPUBLIC OF KENYA


NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION


Ref No: **100080** Date of Issue: **24/January/2024**

RESEARCH LICENSE




This is to Certify that **Ms. ROSEANNE KIENDE MURUNGI** of **Mount Kenya University**, has been licensed to conduct research as per the provision of the **Science, Technology and Innovation Act, 2013 (Rev.2014)** in **Nairobi** on the topic: **AUTOMATED PROCUREMENT SYSTEMS ON PERFORMANCE OF SERVICE INDUSTRY IN KENYA - A CASE OF KENYA AIRWAYS**, for the period ending : **24/January/2025**.

License No: **NACOSTI/P/24/32723**


Director General
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION

Applicant Identification Number
100080

Verification QR Code



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See overleaf for conditions

Appendix VI: Map and Location of Kenya Airways



Mount Kenya Unive

Appendix VII: Extract of the Similarity Report

**AUTOMATED PROCUREMENT
SYSTEMS ON PERFORMANCE
OF SERVICE INDUSTRY IN
KENYA- A CASE OF KENYA
AIRWAYS.**

by Roseanne Kienda

Submission date: 07-May-2024 09:28AM (UTC+0300)

Submission ID: 2360197599

File name: Roseanne_Murungi_Final_Project.docx (4.88M)

Word count: 20114

Character count: 117925

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AUTOMATED PROCUREMENT SYSTEMS ON PERFORMANCE OF SERVICE INDUSTRY IN KENYA- A CASE OF KENYA AIRWAYS.

ORIGINALITY REPORT

17%	17%	3%	6%
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