

**THE EFFECT OF ELECTRONIC PROCUREMENT SYSTEMS ON  
ORGANIZATIONAL PERFORMANCE: A CASE OF DHL UGANDA**

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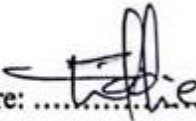


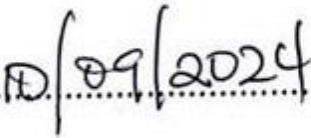
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**DECLARATION**


**I KARUHANGA EDWARD** solemnly declare to the best of my knowledge that this dissertation is my original work. It has never been presented anywhere in an institution of higher education by any individual for any purpose whatsoever.

Signature:  .....

Date:  .....

## APPROVAL

This approval is to certify that the study has been done by Karuhanga Edward under my supervision and is here by submitted for examination with my approval as the university appointed supervisor

Signed: .....  ..... Date: ..... 15/09/2022 .

Mr. ARYAMANYA ASTON

(Supervisor)

## **DEDICATION**

I dedicate this report to my beloved Father and Mother that have consistently had faith in me from day one, my siblings who have always supported me and all the people that will find this research resourceful.

## **ACKNOWLEDGMENT**

I thank Almighty God that He has carried me through this entire research time.

This is a good opportunity to say many thanks to my immediate supervisor, Mr. Aryamanya Aston, for his tireless guidance and pushing on with me during the study period. My friends Muguluma, Komukyeya, Kiconco, Jovia and Leah for helping me on this journey and lastly my parents for sponsoring me throughout the study.

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**MAY THE GOOD LORD BLESS YOU.**

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**LIST OF ABBREVIATIONS:**

AI - Artificial Intelligence

E-Procurement - Electronic Procurement

E-Payment - Electronic Payment

E- Tendering - Electronic Tendering

E-invoicing - Electronic Invoicing

## ABSTRACT

This is a theoretical research report based on the review of the effect of electronic procurement systems on organizational performance using a case of DHL Uganda. The study sought to achieve three specific objectives that are; to analyze the effects of e-tendering systems on organizational performance, to determine the effect of e-invoicing systems on organizational performance and to assess the role of e-payment systems on enhancing organizational performance. This research therefore assesses how these technology systems enhance operational efficiency, cost reduction and process optimization

Using a cross sectional research design, the study incorporated the mixed method approach i.e. the qualitative and quantitative analysis of procurement data so as to get results. Structured questionnaires were handed out to 49 employees to gather data but only 40 of them managed to respond. The results showed a positive relationship between electronic procurement systems and organizational performance. These results indicate that the e-payments systems streamline financial transactions, reduce costs and improve customer satisfaction. E-tendering systems notably promote transparency, reduce transaction costs in the procurement process and strengthen supplier relationships while e-invoicing improves accuracy, reduces operational costs and strengthens supplier relationships. The findings also present valuable recommendations and practical insights for professionals and organizations aiming to implement the systems to optimize procurement processes on how to maneuver the challenges that may come along.

## CHAPTER ONE

### 1.0 Introduction

This chapter contains the background of the study, statement of problems, objectives of the study, the research questions, conceptual framework and the scope of study, jurisdiction of the study and rationale of the study.

### 1.1 Background of the study

Electronic procurement refers to the use of computer or internet based systems to carry out the different activities of the procurement process such as sourcing, ordering, negotiation, invoicing and post purchase review (Asumba, 2010), (Krawiec et al. 2010) describes the types of electronic procurement systems which are buyer e-procurement systems, seller e-procurement systems and online intermediaries. Globally, in the rapidly changing landscape of business, the integration of technology into organizational processes is a key driver of organizational performance and competitiveness (Osmonbekov et al., 2002).

Electronic procurement (e-procurement) has emerged as a significant innovation that organizations, including logistics giants like DHL, are adopting to streamline purchasing processes and improve overall performance. With the emergence of Information and communication technology (ICT), companies have been forced to shift from their traditional methods of business to e-procurement practice systems and e-supply chain philosophy in order to sustain themselves (Lee et al, 2007). Real time information about demand changes is valuable in the production process to maintain the desired levels. When huge systems are involved, the model suggests intermediaries (Burnes 2008).

Electronic procurement systems leverage digital platforms to manage procurement activities, which traditionally involved time-consuming, manual procedures. The transition to electronic procurement systems offers a variety of benefits such as cost

reductions, increased transparency, faster processing times, and improved supplier relationships (Lee et al.2007).

In Africa, building capacity in procurement has helped governments and organizations maximize the buying power of their budgets and greatly improved the quality of service delivery to the stakeholders involved. Research has shown that companies implementing e-procurement systems can realize significant improvements in operational efficiency. Competitive and transparent public procurement systems are being seen as a key element in achieving sustainable development and better performance in public offices. Different countries in Africa have adopted the implementation of electronic procurement systems for example in South Africa , the implementation of the Preferential Procurement Policy Framework Act 5 of 2000, gave effect to section 217(3) of the constitution of South Africa of 1996 by providing a framework for the implementation of a fair public preferential procurement policy.

In the region of East Africa, the adoption of electronic procurement systems in Kenya has been a success through the integration of continuous replenishment supply model in the public hospitals (Krawiecet al, 2010). The idea of this model is to constantly restock the inventory by working closely with the suppliers or the intermediaries (Langevoort, 2002; Asumba, 2010). The actual supply chain in hospitals supply chain model is focused on tracking customer demand in the production process and finished goods inventory efficiently (Kimitai et al, 2010). This integration is often achieved through the use of a designed information system that is fully integrated (Chinois, 2010). Through the application of such a system, the organization can easily access information that can be used to develop and modify production plans and schedules. This information can also later be integrated further down the supply chain to the procurement function so that the modified production plans and schedules can be supported by input materials (Eadie, 2007).

Within Uganda, the adoption of electronic procurement remains a critical area of concern of both the public and private sector entities. The Public Procurement and Disposal of Assets Act (2003) mandates the use of electronic platforms for

procurement processes, aiming to enhance efficiency, transparency and accountability (National Procurement Baseline Survey, 2019). Despite this legal framework, traditional procurement practices persist among many organizations. These practices often lead to increased transaction costs, inefficiencies and low levels of transparency in service delivery. However the Government of Uganda has taken steps to promote digital governance through initiatives such as the National Electronic Government Framework (2010). This framework emphasizes the use of technology to improve service delivery and accountability in public procurement (Avoade and Adegbile, 2021).

For an organization such as DHL, there are very many benefits that can result from the implementation of electronic procurement systems for direct procurement (i.e. purchasing products, invoicing and purchase order generation). These benefits can either belong to organizational level or inter-organizational level (Grey et al. 2005, Ash and Burn 2006, Wagner and Essig 2006). Furthermore, the benefits of implementing electronic procurement systems are generated through automating the procurement process and re-engineering the internal processes of an organization so as to move on from the traditional methods and embrace e-business (Saeed et al. 2005). For instance, (Albinkalil 2021) found that companies using e-procurement systems experienced faster order processing and reduced procurement costs during operation. In another study, (Croom and Brandon-Jones 2007) emphasized how electronic procurement enhances strategic sourcing and supplier management leading to better pricing and quality outcomes. DHL, as a leading logistics company has complex procurement needs that can greatly benefit from the efficiencies provided by electronic procurement systems.

However, the adoption of electronic procurement systems is not without challenges. These include resistance to change, technological barriers and difficulties in integrating electronic procurement systems with existing enterprise resource planning (ERP) systems. The impact of electronic procurement systems on organizational performance may vary depending on the company's size, industry and the maturity of its procurement processes. This study will explore the effect of electronic

procurement systems on DHL's organizational performance focusing on key performance indicators such as cost efficiency, process speed, supplier relationships and overall operational effectiveness.

## **1.2 Statement of the problem**

Electronic procurement systems play a crucial role in improving a company's procurement process's efficiency, accuracy and transparency by automating various operations such as purchase order preparation and supplier selection (Lee et al. 2007). In an increasingly competitive global environment, organizations like DHL are under constant pressure to optimize their operations and achieve cost efficiencies. Traditional procurement methods characterized by manual processes are often slow, error-prone and lack transparency negatively impacting organizational performance. While electronic procurement systems offer a solution to these inefficiencies, there is limited empirical evidence on their impact on performance particularly within the context of DHL according to (Giesen 2020).

Despite the adoption of electronic procurement systems, some organizations are still lagging behind in full implementation due to factors such budget constraints, supplier readiness, technological infrastructure and skill levels of the employees (Angeles R & Nath, 2007) that result into varying levels of performance improvement. This suggests that the successful implementation of electronic procurement systems and their impact on organizational performance may depend on several factors. This study therefore aims to investigate how electronic procurement systems affect DHL's organizational performance by examining specific benefits and challenges associated with its implementation.

## **1.3 Objectives of the study**

### **1.3.1 General objective**

The general objective of this study was to determine the effect of electronic procurement (e-procurement) systems on organizational performance, focusing on aspects such as efficiency, cost reduction, and process optimization within an organization like DHL Uganda.

### **1.3.2 Specific objectives**

- To analyze the effects of e-tendering systems on organizational performance
- To determine the effect of e-invoicing systems on organizational performance
- To assess the role of e-payment systems on enhancing organizational performance

### **1.3.3 Research questions**

- Analyze the effect of e-tendering systems on organizational performance?
- Determine the effect of e-invoicing systems on organizational performance?
- Assess the role of e-payment systems on enhancing organizational performance?

## **1.4 Conceptual framework**

This conceptual framework shows the proposed casual linkages among a set of variables i.e. the independent and dependent variables. The independent variables of this study were derived from the components of electronic procurement systems. They include e-tendering, e-invoicing and e-payment. On the other hand, the dependent variable was organizational performance measured in terms of cost of savings, operational efficiency and process optimization. Therefore the conceptual framework diagram indicates how the independent variables relate to the dependent variables.

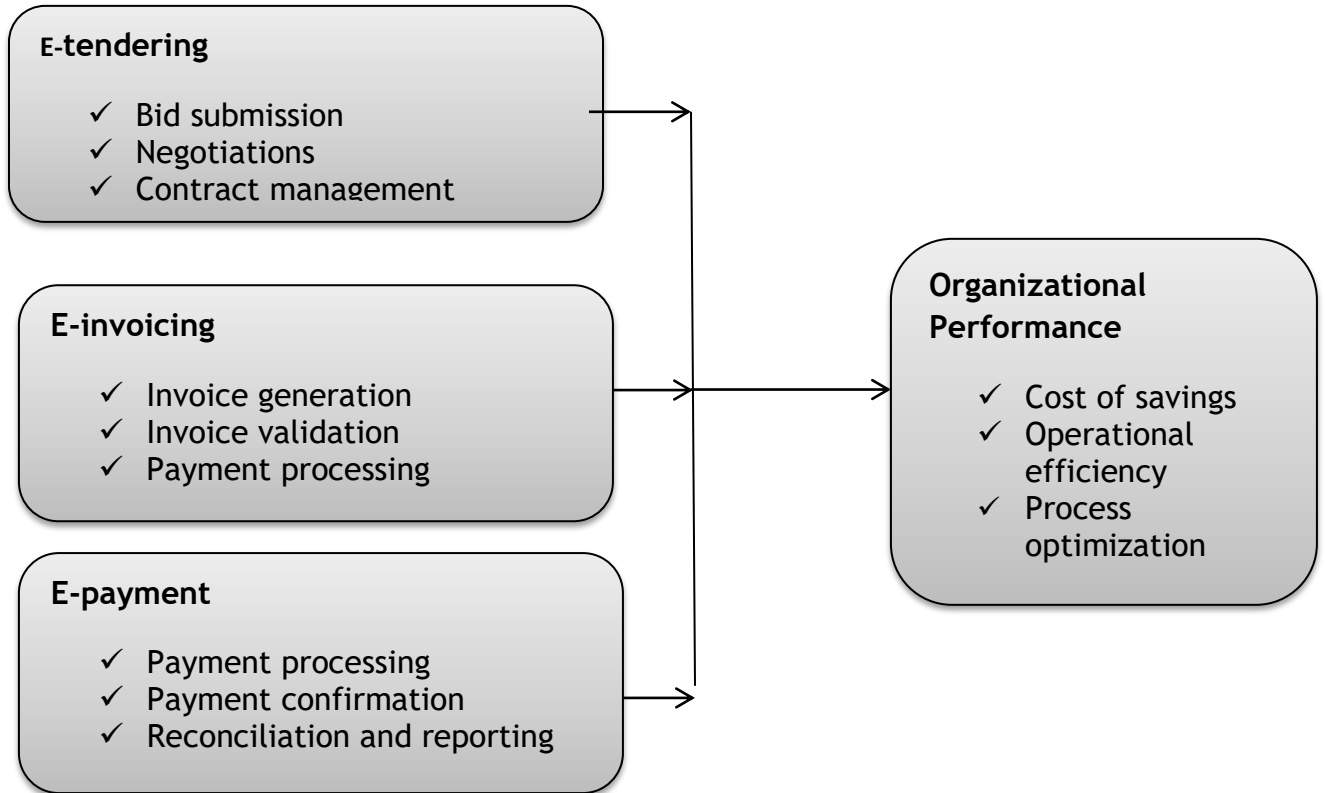
**Figure 1; Conceptual framework**

**Independent variables**

**Dependent variables**

Electronic procurement systems

Organizational performance



Source; (Eudenie and De Dieu 2022)

## **1.5 Scope of the study**

### **1.5.1 Content scope**

This study focused on the effect of electronic procurement systems specifically electronic tendering, electronic payment, and electronic invoicing on organizational performance at DHL. These systems represent the independent variables while organizational performance measured through operational efficiency, cost reduction and process optimization serves as the dependent variables.

### **1.5.2 Time scope**

The research was conducted over a period of three months from July to September. This timeframe would allow for the collection and analysis of relevant data, including performance metrics before and after the implementation of electronic procurement systems.

### **1.5.3 Geographical scope**

This study took place at DHL's regional headquarters in Lugogo Kampala, Uganda. The location was chosen due to its strategic importance as the central hub for DHL's regional logistics and supply chain operations. Insights from this location were expected to be highly relevant as DHL's performance in Kampala influences its operations throughout the country and region therefore offering valuable lessons and knowledge for enhancing performance and efficiency using electronic procurement systems.

## **1.6 Significance of the study**

The significance of this study was to understand and improve the effect of electronic procurement systems on organizational performance at DHL. This study was meant to enhance the researcher's knowledge about how these electronic procurement systems can affect organizational performance by providing a professional experience. This

experience can be gained through applying research methodologies, analyzing data and drawing meaningful conclusions.

As one of the leading global logistics providers, DHL's performance in procurement directly influences its ability to deliver reliable and cost-effective services. This study therefore aimed to provide insights that can enhance DHL's procurement processes through improving decision making that can help provide a competitive advantage and also reduce costs while improving efficiency in the organization.

Furthermore, the findings of this research would contribute to the existing body of knowledge on electronic procurement systems and their effect on organizational performance, providing future researchers and professionals a valuable foundation by using the findings in this study as a basis for further research in related topics.

The other significance of this study was to fulfill one of the requirements of my university so as to be awarded a Bachelor's degree in Procurement and Supply chain Management.

### **1.7 Justification of the study**

This study was justified by the need to enhance DHL's organizational performance through the effective use of electronic procurement systems. As global supply chains become increasingly complex the role of technology in optimizing procurement processes is critical. This research would provide DHL with empirical data to support the adoption and further integration of e-procurement systems potentially leading to cost savings, efficiency gains and improved service delivery. Additionally, the study would benefit supply chain professionals by offering insights into best practices for implementation of electronic procurement systems. Researchers would also find value in the study as it would provide a framework for analyzing the effect of e-procurement on organizational performance, which can be applied to similar studies in different contexts. This study is also to help address the gap in knowledge and provide valuable insights to improve on how electronic procurement systems are very effective in improving efficiency and performance of an organization.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This chapter contains the empirical review of the key study objectives. It contains key definitions reviews by literature and describes the literature relating to the objective and research gap with a conclusion.

#### 2.1 Empirical review

This section covers empirical literature on the study objectives;

#### 2.2 Electronic procurement systems

Electronic Procurement (E-Procurement): E-procurement involves using internet systems to handle buying activities, including purchasing goods and services. These systems are designed to make traditional buying processes smoother by automating routine tasks, reducing mistakes, and making transactions more transparent. According to (Singh and Thompson, 2015), e-procurement lowers transaction costs by automating procurement tasks and offers real-time tracking and reporting, which helps with better decision-making and accountability.

In today's fast-paced business environment, organizations are increasingly turning to technology to streamline operations and enhance efficiency. One such technology is electronic procurement (e-procurement) which involves the use of digital systems to facilitate the purchase of goods and services over the internet. This study focuses on the effect of electronic procurement systems on organizational performance with a specific emphasis on DHL Company. By exploring how DHL has integrated e-procurement systems into its operations, this study aims to assess the benefits, challenges and overall impact on the company's performance.

One of the main benefits of e-procurement systems for organizations is cost efficiency. These systems help companies like DHL cut costs related to manual procurement processes, such as paperwork, administrative costs, and transaction fees. By automating procurement tasks, there are fewer errors and transactions happen faster. DHL can achieve significant cost savings which directly contributes to improved financial performance. For instance (McCue & Pitzer, 2016) note that e-procurement systems reduce initial setup costs and provide long-term savings through optimized purchasing processes.

Electronic procurement systems also enhance transparency and accountability within an organization. With real-time tracking and reporting features, DHL can monitor procurement activities closely ensuring that all transactions are documented and can be audited when necessary. This increased transparency helps DHL in maintaining high standards of corporate governance and in building trust with stakeholders. According to Ruiz-Benitez and Lopez (2016), such transparency is crucial for decision-making and can prevent fraud and corruption in procurement processes.

Moreover, electronic procurement systems greatly simplify procurement processes by automating routine tasks like placing orders, creating invoices, and handling payments. For DHL, this leads to quicker and more efficient procurement cycles, which shorten the time needed to get necessary goods and services. Combining electronic procurement with existing enterprise resource planning (ERP) systems improves overall operational efficiency by offering a single platform for managing all procurement activities. (Gunasekaran & Ngai, 2017) note that although integrating these systems can be complex, the improvements in efficiency are significant.

Despite the numerous benefits, implementing e-procurement systems at DHL is not without challenges. High initial setup costs, resistance to change among employees and the need for continuous training and support are significant barriers to successful implementation. DHL must invest in educating its workforce on the benefits of e-procurement and provide the necessary resources to ensure smooth adoption. Furthermore, the integration of electronic procurement systems with existing ERP

systems can be resource-intensive, requiring careful planning and execution to avoid disruptions in operations in the study of (Gunasekaran & Ngai, 2017).

Furthermore, Electronic procurement significantly affects the performance of companies like DHL. By cutting costs, increasing transparency, and simplifying procurement processes, these systems help improve efficiency and financial performance, as noted by McCue and Pitzer (2016). However, the difficulties in setting up these systems should not be ignored. For DHL, effectively using electronic procurement involves managing the transition carefully, investing in employee training, and strategically integrating the new systems with existing ones. Overall, the benefits of electronic procurement systems for DHL highlight the importance of using digital technology in modern supply chain management.

### **2.3 The effect of Electronic tendering on organizational performance**

E-tendering, a crucial aspect of electronic procurement automates the tendering process by enabling electronic submission, evaluation and management of bids. At DHL, this automation reduces the time and administrative burden associated with traditional paper-based tendering leading to faster procurement cycles. For instance, research shows that companies using e-tendering can cut their procurement time by up to 20%, making their operations smoother and more efficient (Kumar et al., 2021). For DHL, this boost in efficiency means they can get goods and services faster, which is important for staying ahead in the logistics and supply chain business.

First, e-tendering helps save money by cutting down on manual work, administrative costs, and the chances of mistakes or delays in the tendering process. For DHL, this works worldwide the cost savings from e-tendering can be substantial. By fostering a more competitive bidding environment and automating many manual tasks, e-tendering reduces procurement costs by up to 15% in the study of (Khasandi et al., 2022). These savings can then be reinvested into other areas of the business, further enhancing DHL's financial performance.

Moreover, e-tendering platforms provide a single, clear place for announcing tenders, submitting bids, and evaluating them. This clarity means that all bids are judged on their quality, not on personal relationships or favoritism, which has been an issue in older procurement methods. Studies indicate that e-tendering lowers the chances of corruption and guarantees a fair and competitive bidding process, as noted by Smith & Thomas in 2020. For DHL, this added transparency not only enhances the fairness of its procurement procedures but also builds stronger trust with suppliers, customers, and regulatory authorities. is essential for sustaining long-term business relationships and a positive corporate reputation.

Additionally, e-tendering platforms improve communication and collaboration between DHL and its suppliers by offering real-time updates and a simplified communication path. This better communication minimizes confusion and guarantees that everyone has the same information at the same time, leading to more open and efficient interactions, as mentioned by Johnson (2019).The ability to track bids and receive timely notifications helps DHL manage supplier relationships more effectively leading to stronger partnerships and a more reliable supply chain.

By expanding the number of possible suppliers, e-tendering increases competition, which can lead to lower prices and more creative solutions for DHL. This is especially helpful for the company as it works to improve its global supply chain operations. E-tendering platforms are open to a wider group of suppliers, including small and medium-sized businesses (SMEs) that might not have joined in traditional tendering processes. This increased competition can result in better prices and innovative solutions, giving DHL access to a more varied group of suppliers and products, as mentioned by Croom and Brandon-Jones in 2007. Moreover, e-tendering systems at DHL provide robust data management capabilities enabling better tracking and reporting of tender activities. This capability supports improved decision-making and strategic planning by providing DHL with comprehensive insights into its procurement activities according to the study of (Tai et al., 2010). With access to detailed data on bids, pricing and supplier performance, DHL can make more informed decisions ultimately leading to more effective and efficient procurement strategies.

Lastly, e-tendering supports DHL's commitment to environmental sustainability by reducing reliance on paper based documentation and physical transportation of documents. By digitalizing the tendering process, DHL can minimize its environmental footprint contributing to its broader sustainability goals in the study of (Bof & Previtali, 2007).

In summary, e-tendering plays a critical role in enhancing supply chain efficiency at DHL which directly impacts the company's overall organizational performance. Through increased efficiency, cost savings, improved transparency, stronger supplier relationships and enhanced sustainability, e-tendering contributes to DHL's ability to operate effectively in a highly competitive and dynamic global market.

#### **2.4 Effect of Electronic invoicing on organizational performance**

E-invoicing or electronic invoicing is the method of creating, sending and keeping invoices in a digital form. This is different from the old way of using paper invoices, which can take a lot of time and often have some mistakes. E-invoicing is an important part of electronic procurement systems, helping businesses to automate the invoicing process, reduce the need for manual work, and improve accuracy (Andrew & Johnson, 2020).

One of the main benefits of e-invoicing for a company's performance is that it makes operations more efficient. Traditional invoicing involves many steps, like entering data, physically delivering the invoice, and checking it by hand, all of which can cause delays and errors. E-invoicing simplifies these steps by automatically creating and sending invoices, which speeds up the process and reduces the chance of mistakes. This automation is especially helpful for big companies like DHL, where the number of invoices can be very large if handled manually. If handled manually. The reduction in errors and processing time directly translates into cost savings as less time and resources are required to manage invoicing processes (Andrew & Johnson, 2020)

E-invoicing helps lower the expenses related to paper, printing, and storage, which are big in traditional invoicing methods. By cutting these costs, DHL can use its resources in more important areas, improving overall company performance. Research shows that companies can cut their invoicing costs by up to 90% by using e-invoicing, which is a big savings for large companies like DHL (Andrews & Johnson, 2020).

Another important effect of e-invoicing on company performance is better cash flow management. E-invoicing systems make it quicker to approve and pay invoices, helping DHL manage its cash flow better. Timely payments are important for keeping good relationships with suppliers and avoiding late payment penalties. By automating the invoicing process, DHL can make sure invoices are processed and paid on time, reducing the risk of cash flow problems that could affect operations. as reference in the study of (Smith & Whitaker, 2022)

Additionally, e-invoicing provides better visibility into the invoicing and payment process, enabling DHL's finance team to monitor outstanding invoices in real time. This visibility helps in identifying potential issues early and taking corrective actions, which is crucial for maintaining liquidity. The ability to forecast cash flow more accurately based on real-time data from e-invoicing systems further enhances DHL's financial stability and planning (Kumar & Van der Meer-Kooistra, 2021).

E-invoicing is important for improving how a company follows rules and manages risks. Rules about taxes and invoices are getting stricter, and not following them can lead to big fines and legal problems. E-invoicing systems help DHL follow these rules by keeping accurate and timely records of all transactions. The digital format of e-invoicing also makes it easier to keep and find invoices for audits, lowering the chance of not following the rules (Andrew & Johnson, 2020).

Also, e-invoicing lowers the risk of fraud by reducing the need for people to handle things and making sure invoices are sent and received safely through secure, encrypted channels. This is especially important for a big, global company like DHL, where the risk of fraud can be higher because of how complex its operations are. By using e-invoicing, DHL can lower these risks and protect its financial interests (Smith

Similarly the implementation of e-invoicing within DHL's e-procurement system can significantly improve supplier relationships which are a critical aspect of organizational performance. Efficient and transparent invoicing processes contribute to building trust and collaboration between DHL and its suppliers. E-invoicing ensures that suppliers receive payments on time which enhances their satisfaction and loyalty. This, in turn can lead to better negotiation terms, discounts and preferential treatment from suppliers, ultimately benefiting DHL's bottom line in the long run as referenced by (Tan & Vonderembse, 2019).

Moreover, e-invoicing enables DHL to provide its suppliers with real-time access to the status of their invoices through supplier portals. This transparency reduces the need for follow-up inquiries and disputes, saving time for both DHL and its suppliers. By fostering positive relationships with suppliers, DHL can create a more resilient and reliable supply chain, which is crucial for maintaining its competitive advantage in the logistics industry according to (Kumar & Van der Meer-Kooistra, 2021).

In conclusion, the adoption of e-invoicing as part of DHL's electronic procurement system has a profound impact on organizational performance. It enhances operational efficiency, reduces costs, improves cash flow management, ensures compliance, mitigates risks and strengthens supplier relationships. These benefits contribute to DHL's overall business performance by streamlining its procurement processes, reducing operational costs and improving supplier satisfaction. As e-invoicing continues to evolve, DHL can further leverage this technology to drive innovation and maintain its leadership in the global logistics industry.

## **2.5 Effect of Electronic payment on organizational performance**

E-payment or electronic payment is the digital transfer of funds from one party to another through electronic means, typically via online banking systems, mobile payments, or other electronic transaction methods.

E-payment systems significantly streamline the financial transaction processes within DHL by automating the transfer of funds between the company and its suppliers.

Traditionally, payments would involve manual processes such as writing checks, processing paperwork, and physically delivering payments, which can be time-consuming and prone to errors. E-payment eliminates these manual steps by allowing for instant, secure, and automated payments directly from DHL's bank accounts to the accounts of its suppliers. This automation reduces the time required to complete transactions and minimizes the risk of human error, leading to faster and more reliable payment processes. For an organization like DHL, which deals with a large volume of transactions daily, this efficiency is critical for maintaining smooth operations (Li & Wang, 2020).

Furthermore the implementation of e-payment systems also contributes to cost reduction and improved efficiency within DHL. By reducing the need for manual processing and paperwork, e-payment systems lower operational costs associated with payment processing. This includes savings on labor, printing and storage of physical documents. Additionally, e-payment systems reduce the costs associated with transaction fees as electronic transactions are often cheaper than traditional methods such as wire transfers or checks. These cost savings allow DHL to allocate resources more effectively therefore improving overall operational efficiency and contributing to better financial performance in the study of (Nash & Sullivan, 2019).

E-payment systems give DHL better control and insight into its cash flow, which is important for good financial management. By allowing instant payments and immediate transaction confirmations, e-payment systems help DHL manage its cash flow more precisely and efficiently. This is especially important in procurement, where timely payments to suppliers are key for maintaining good relationships and ensuring a steady supply of goods and services. E-payment systems also keep detailed records of all transactions, which can be easily reviewed and analyzed to track spending, find inefficiencies, and improve cash flow strategies. Better cash flow management helps DHL plan and budget more effectively, ensuring the company can meet its financial responsibilities and invest in growth opportunities (Kumar & Van der Meer-Kooistra, 2021).

Security is a big concern in money transactions, and electronic payment systems are very important for making these transactions safer at DHL. These systems often have strong security features like encryption, multi-factor authentication, and ways to spot fraud. These features help keep out unauthorized people and stop dishonest activities. For a big company like DHL that works in many places with different rules, the safety of money transactions is very important. By using safe electronic payment systems, DHL can lower the chance of fraud and protect its money transactions from cyber threats. This not only keeps the company's money safe but also builds trust with suppliers and customers, which is important for keeping the company's good name and running smoothly (Smith & Whittaker, 2022).

The adoption of e-payment systems can also positively impact DHL's relationships with its suppliers. E-payment systems enable faster and more predictable payment processes which help DHL maintain a reputation as a reliable and prompt payer. Suppliers who receive payments on time are more likely to prioritize DHL as a preferred client, which can lead to better terms, discounts, and more favorable business arrangements. Furthermore, e-payment systems allow suppliers to track payment statuses in real time, reducing the need for follow-up inquiries and disputes over payment delays. This transparency and efficiency contribute to stronger, more collaborative relationships between DHL and its suppliers, ultimately supporting the company's supply chain stability and performance (Tan & Vonderembse, 2019).

In conclusion, the integration of e-payment systems within DHL's electronic procurement framework has a profound impact on organizational performance. E-payment enhances the efficiency and security of financial transactions, reduces costs, improves cash flow management and strengthens supplier relationships. By leveraging e-payment technologies, DHL can optimize its procurement processes, ensure timely payments and maintain its competitive edge in the logistics industry. As digital payment technologies continue to evolve, DHL's continued investment in e-payment systems will be crucial for sustaining its operational excellence and financial success.

## 2.6 Organizational performance

Organizational performance usually means how well an organization meets its goals and objectives. This is a broad concept that covers various aspects of how well an organization performs in reaching its operational, financial, and strategic targets. In this study, we will look at how well DHL, a global logistics company meets its performance goals after using electronic procurement systems. To see the effect of electronic procurement on organizational performance, it's important to consider the different areas or parts that make up performance in a company like DHL:

Efficiency in operations is very important for a company's success, especially for a big logistics company like DHL. It means making the company's processes better, spending less money, and making operations faster and more dependable. Using electronic systems for buying things can greatly help with this by making the buying process automatic, reducing mistakes, and making it easier to manage suppliers. These changes can save money, make the buying process quicker, and make the supply chain more reliable, which is important for staying ahead in the logistics business. Studies have found that companies using these electronic buying systems often see better efficiency, which helps their overall performance (Carr & Pearson, 2009).

Financial performance is another crucial aspect of organizational performance that is likely to be influenced by electronic procurement systems. Financial performance can be measured through metrics such as profitability, return on investment (ROI) and cost savings. Electronic procurement systems can contribute to financial performance by reducing procurement costs, improving resource allocation and enabling more accurate financial forecasting and budgeting. For instance, by automating procurement processes DHL may achieve significant cost reductions which can directly enhance its profitability and overall financial health. Additionally, the ROI on electronic procurement systems is an important measure of their effectiveness, indicating whether the investment in such systems yields financial benefits for the organization (Kaplan & Norton, 1992).

Customer happiness is very important for how well a company does, especially for businesses like DHL that focus on services. How happy customers are usually depends on how good and quick the services are. In the shipping business, things like delivering on time, getting orders right, and answering customer questions quickly are very important for keeping customers happy. Using computer systems to buy things can help with these things by making sure the right supplies and services are bought quickly and efficiently, which can reduce delays and make the service better. Research shows that companies using these computer systems are better at meeting customer needs, which leads to happier customers and more loyalty, according to (Wisner, Tan, & Leong, 2012).

Innovation and adaptability are also important dimensions of organizational performance that can be influenced by the adoption of electronic procurement systems. Innovation refers to the organization's ability to introduce new processes, products, or services, while adaptability refers to its capacity to respond to changes in the external environment. The implementation of electronic procurement systems can drive innovation by enabling more efficient and flexible procurement processes, which can lead to the development of new business models and practices. Moreover, the ability to adapt to technological changes is crucial for maintaining competitiveness in the fast-paced logistics industry. Organizations that successfully integrate electronic procurement systems demonstrate greater adaptability which contributes to their overall performance and long-term success according to (Gunasekaran & Ngai, 2004).

Additionally, employee productivity and satisfaction are important aspects of how well an organization performs, which is important for this study. Using electronic systems to automate and simplify procurement processes can make employees more productive by saving time and effort on routine tasks. This lets employees concentrate on more strategic and valuable activities, which can increase their job satisfaction and engagement. Higher employee satisfaction usually leads to better organizational performance because satisfied employees are more likely to be productive, creative, and dedicated to the organization's goals. Research shows that

successfully using electronic procurement systems can positively affect employee productivity and satisfaction, which helps improve overall organizational performance as mentioned in (Flynn, Huo & Zhao, 2010).

In summary, organizational performance in the context of this study is a comprehensive structure that includes multiple dimensions such as operational efficiency, financial performance, customer satisfaction, innovation, adaptability, employee productivity and satisfaction. The study seeks to explore how the adoption of electronic procurement systems affects these dimensions ultimately determining the overall performance of DHL. By examining these various aspects, the study aims to provide a holistic understanding of the effect of electronic procurement systems on DHL's ability to achieve its organizational goals and maintain its competitive position in the global logistics industry.

## CHAPTER THREE

### METHODOLOGY

#### 3.0 Introduction

This chapter presents the research methodology applied in the investigation of the effect of electronic procurement systems on organizational performance using a case of DHL. This chapter outlines the research design, the data collection methods, study population, sampling techniques and sample size. Data analysis techniques and ethical considerations were also employed in the study. The chosen methodology would aim to provide a detailed and comprehensive analysis to effectively address the research objectives.

#### 3.1 Research Design

In his study, (Paraboo, 1997) describes a research design as a plan describing how, when and where data will be collected and analyzed. The research design served as a blue print for data collection, measurement and analysis according to (Kothari and Gang, 2014). The researcher was to employ a cross sectional research design which is well suited for gathering both qualitative and quantitative data later drawing conclusions relevant to the research questions according to (Mugenda, 2008). This research design was to include a mixed approach to comprehensively analyze the effect of electronic procurement systems on performance organization focusing on DHL Uganda.

First was the quantitative component which involves the collection and analysis of secondary data from DHL's procurement records, financial reports and relevant performance metrics over a specific time period. This was used to identify and quantify the relationships between electronic procurement practices and key performance indicators including cost efficiency, procurement cycle time and supplier performance (Brandon Jones, 2007).

Second was the qualitative component which includes semi-structured interviews with key stakeholders such as procurement managers, IT specialists and senior management at DHL Uganda to gain deeper insights into the strategic and operational adjustments made in response to electronic procurement adoption. This approach allowed for data validation enhancing the validity, reliability of the findings and was to also provide a detailed understanding of how electronic procurement systems influence organizational performance by offering comprehensive insights that were to inform DHL's strategic decision-making and procurement practices according to (Arrowsmith & Treumer, 2024).

### **3.2 Target population**

According to the study of (Kothari, 2004), he defines target population as the entire group of individuals, objects or entities that are of interest in a research study and to whom the results of the study are intended to apply. This study was to be comprised of workers, managers in the organization and suppliers of DHL Uganda. View of the full time staff and those contracted at DHL Uganda was considered.

The organization employee list consisted of the 8 managers and 48 departmental staff, the total employees amounting to 56 from which the study is to sample (Manager DHL, 2023)

### **3.3 Sample size**

The appropriate sample size was determined using a formula developed by the (Yamine, 1967) algorithm because of the inability to access the entire statistical population and the need to make decisions based on the representative sample. It used a systematic approach to determining the sample size needed by the study as shown below where;

N= total population

e= the margin of error (5% has been used to obtain the best sample given the population size)

n= the sample size

This was accomplished by pre-testing 15% of the instruments and if questionnaires are discovered to provide results after the exercise, they are pre drafted

$$\begin{aligned}n &= N / 1+(e)^2 \\ &= 56 / 1+56(0.05)^2 \\ &=49 \text{ respondents}\end{aligned}$$

Consequently, with a population size of 56 respondents, the sample size was to be 49 respondents in order to obtain a 5% error.

### **3.3.1 Sampling techniques**

This study employed simple random sampling when selecting the respondents because it allows anybody who is a member of the population to have an equal opportunity of engaging in the study without bias at all organizational levels (Kothari and Gang, 2024). This was because all members of the population in their categories have more or less the same characteristics. The respondents were also to be selected relying on the offices they are in and their understanding of the topic under investigation.

This approach carried a lot of sense for the research because it allowed the investigator to get comprehensive and accurate data at a low financial and human resource cost according to (Mugenda, 2014).

## **3.4 Data Collection methods**

### **3.4.1 Questionnaire**

This is essentially a structured technique for collecting primary data. It is generally a series of written questions for which respondents have to provide answers according to (Bell, 1999). The research involved distributing questionnaires and all respondents were asked the same questions to which they answered by selecting the best alternatives if their choice for the questions by choosing any of the following

responses; strongly Agree, Agree, Not Sure, Disagree and Strongly Disagree. These alternatives help to save time and are designed in line with the topics and objectives of the study.

These questionnaires were used for explanatory research which enabled the researcher collect appropriate data in that it was comparable and easy to analyze in order to examine and explain relationships between variables in particular cause and effect relationships while also minimizing bias.

### **3.4.2 Interviews**

During data collection, the researcher was to hold face to face interviews with selected members using interview guides with various structured questions relevant to the study. This method is ideal for data collection because it allows for rapid responses from the respondents and given the physical meeting, the researcher can also be able to interact freely with the respondents on any other issues that may come up therefore broadening their knowledge in the study of (Creswell, 2018).

## **3.5 Data Quality Control**

### **3.5.1 Reliability and Validity**

According to his study, (Sarantakos, 2005) states data reliability shows the capacity of measurement to produce consistent results similarly. Data validity would be able to tell the researcher whether an instrument measured what it was supposed to measure and whether that measurement was accurate and precise say through the use of pre-testing the instruments. It therefore gave the essential values of the study as required by the researcher.

### **3.6 Data Analysis**

Data analysis is the process of extracting, compiling and modeling raw data for purposes of obtaining constructive information that can be applied to formulating conclusions, predicting outcomes or supporting decisions according to the study of

(Fulginiti & Perrin, 1999). This study was to involve both quantitative and qualitative techniques to thoroughly assess the effect of electronic procurement systems on DHL Uganda's organizational performance. Thematic analysis was to be conducted on the transcribed interviews, identifying recurring themes and insights related to the strategic and operational adjustments made by DHL Uganda in response to electronic procurement adoption. This analysis allowed for a comprehensive understanding of the data with findings providing measurable evidence and insights offering context and depth. The analysis would also enable a detailed interpretation of how electronic procurement systems influences DHL Uganda's organizational performance.

### **3.7 Ethical Considerations**

Ethical considerations for this study are paramount to ensure the integrity and credibility of the research process. Informed consent was to be obtained from all participants involved in the semi-structured interviews making sure they were fully aware of the study's purpose, procedures and their rights including the right to withdraw at any time without consequence. Confidentiality and anonymity were to be strictly maintained with personal and organizational identifiers removed from all data to protect participants' privacy. Data was to be securely stored with access limited to the research team. Ethical approval was to be sought from a relevant institutional review board to ensure compliance with ethical standards. Additionally, transparency in reporting findings was to be upheld avoiding any fabrication or misrepresentation of data. These ethical measures were critical to fostering trust and ensuring the validity and reliability of the research findings in assessing the effect of electronic procurement systems on DHL Uganda's organizational performance.

### **3.8 Conclusion**

In conclusion, this methodology aimed to investigate the effect of electronic procurement systems on DHL Uganda's organizational performance. By integrating analysis of organizational data with insights from key stakeholders, the methodology ensured a thorough examination of the complex interactions between electronic procurement practices and organizational outcomes. The robust data collection and

analysis techniques combined with stringent ethical considerations enhance the validity and reliability of the findings. Despite inherent limitations, this approach provided a detailed understanding of how DHL Uganda navigated the adoption of electronic procurement systems offering valuable insights for business leaders, procurement professionals and researchers aiming to improve organizational performance through technology.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

#### 4.0 Introduction

This chapter presents the findings of data of the study on the effect of electronic procurement systems on organizational performance using a case of DHL. The majority of the statistical tables used to illustrate the findings were created in accordance with the research goals. Different background details have been included in the analysis and interpretation of data and information was gathered through distribution of questionnaires.

#### 4.1 Response rate

49 questionnaires were issued out to collect data for the study. However only 40 questionnaires of the 49 issued were ticked and returned bringing us to a response rate of 82%.

Sample size - 49 respondents

Responses - 40 responses

Response rate - 82%

**Table 1; Response rate**

	frequency	Percentage
Sample size	49	100
Response	40	82
Non-response	09	18

## 4.2 Demographic characteristics of respondents

The research centered on examining the socio demographic characteristics of the respondents. The data collected included the research variables which were analyzed using the mean and correlation coefficient to investigate the possible connections between them. The results are as shown the tables below;

**Table 2; background information**

	<b>Response</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	24	60
	Female	16	40
	<b>Total</b>	<b>40</b>	<b>100</b>
<b>Age</b>	18-25	2	5
	26-35	24	60
	36-45	6	15
	46-55	8	20
	56 and above	0	0
	<b>Total</b>	<b>40</b>	<b>100</b>
<b>Time spent at organization</b>	Less than 1 year	3	7.5
	1-3 years	20	50
	4-6 years	13	32.5
	7-10 years	4	10
	More than 10	0	0

	years		
	<b>Total</b>	<b>40</b>	<b>100</b>

**Source: Primary Data (2024)**

According to table 2 above, the gender distribution depicts that most respondents were male accounting for 24 (60%) of the sample while females made up 16 (40%). This gender imbalance therefore illustrates that the study sample was pre-dominantly male which could influence a number of perspectives of the study.

Also according to the table, most of the respondents 24(60%) were aged between 26-35 years therefore indicating that the study was predominantly dominated by middle aged individuals. This was followed by those between the ages of 46-55 years suggesting that a significant portion who were senior employees. Another smaller percentage 6(15%) were the adults between the ages of 36-45 and only 2(5%) were between the ages 18-25 years. This age distribution therefore portrays that the responses from the survey majorly represent the views and experiences of the fairly younger employees.

Regarding the time respondents had spent at the organization, majority of the participants 20(50%) had been with the organization for a period of 1-3 years therefore indicating a significant presence of relatively newer employees. A smaller percentage of 13(32.5%) had worked in the organization for a period between 4-6 years, the next group of people who had been in the organization for a period between 7-10 years had a percentage of 4(10%) while the rest of the 3(7.5%) had been in the organization for less than a year. This distribution suggests that a considerable number of the respondents have substantial experience with the organization though relatively newer employees formed the largest group of respondents in the study.

### **4.3 Effect of Electronic payment on organizational performance**

The following section presents the results on the effect of E-payment on organizational performance

**Table 3; results of Electronic payment on organizational performance**

Statement	Disagree		Neutral		Agree			
	F	%	F	%	F	%	SD	Mean
E-payment systems have streamlined the payment process at DHL.	0	0	1	2.5	39	97.5	0.37	3.7
E-payment systems have improved the speed and efficiency of financial transactions at DHL.	0	0	1	2.5	39	97.5	0.37	3.7
E-payment systems have reduced transaction costs at DHL.	0	0	0	0	40	100	0.36	3.5
E-payment systems have enhanced financial security and fraud prevention at DHL.	0	0	1	2.5	39	97.5	0.36	3.575
E-payment systems have improved customer satisfaction by providing more payment options at DHL.	0	0	0	0	40	100	0.37	3.6
E-payment systems have enhanced supplier satisfaction.	0	0	2	5	38	95	0.37	3.65

Source; Primary data (2024)

According to the results in the table 3 above, majority of the respondents, 39 (97.5%), agreed that e-payment systems have streamlined the payment process at DHL, and 1(2.5%) was neutral. The mean of 3.7 indicates that on average, respondents strongly agreed with the statement, indicating a high level of confidence in e-payment systems have streamlining the payment process at DHL. This aligns with (Smith and Kros, 2018), who highlight that modern e-payment protocols increase the speed of transactions therefore streamlining the payment process. These protocols empower customers, allowing them to terminate transactions before fraud can occur, and reinforcing confidence in e-payment systems.

About e-payment systems improving the speed and efficiency of financial transactions at DHL, many of the respondents 39 (97.5%) were agreeing that the speed and efficiency has improved while the other 1 (2.5%) was neutral. The mean of 3.7 suggests that on average, respondents strongly agreed showing backing of e-payment systems improving the speed and efficiency of financial transactions at DHL. The study notes mixed responses regarding delays in e-payments (mean of 3.5), Smith and Kros (2018) argue that modern e-payment protocols are designed to reduce network congestion and conspiracy issues, thereby enhancing transaction speed. The inconsistency in respondent views could stem from varying organizational experiences or technical integration challenges that are not fully captured in the literature.

A significant number of respondents of up to 40(100%) were in strong agreement that e-payments systems have reduced transaction costs at DHL without any other response. The mean of 3.5 shows that on average respondents agreed with no other response highlighting the positive impact of e-payments on reducing transaction costs in the organization. This is consistent with findings by Dey et al. (2013). They note that e-payment systems reduce transaction costs while improving efficiency therefore enhancing organizational performance.

Furthermore, regarding whether e-payment systems have enhanced financial security and fraud prevention at DHL, the results showed that 39 (97.5%) respondents were in agreement while only 1(2.5%) respondent was neutral in the study about the e-payment systems enhancing financial security and fraud prevention at DHL. The mean of 3.575 indicates that on average respondents leaned towards agreement, suggesting that e-payments systems have enhanced financial security and fraud prevention at DHL. This perspective is echoed in the literature, where Williams (2017) asserts that innovative e-payment protocols enhance financial security and fraud prevention.

Also regarding e-payment systems improving customer satisfaction by providing more payment options at DHL, the responses from the interviewed people all indicated agreement with the statement to a total maximum percentage of 40(100%). The mean of 3.6 indicates that on average, respondents were inclined towards total agreement

showing their firm belief in the opinion of e-payment systems having improved customer satisfaction by providing more payment options at DHL. Additionally, the literature reviewed by Dey et al. (2013) emphasizes that e-payment systems improve customer satisfaction and also enhance traditional relationship dynamics.

Lastly in relation to e-payment systems having enhanced supplier satisfaction, respondents showed a positive inclination with 38 (95%) of the respondents agreeing while 2(5%) of the respondents were neutral. The mean of 3.65 indicates that on average, most respondents strongly agreed therefore highlighting significance in supplier satisfaction. This aligns with Johnson and Flynn (2015), who highlight that innovative e-payment systems, due to their convenience and speed have the ability of E-payment systems enhancing satisfaction amongst suppliers and stakeholders

In conclusion the above suggests that e-payments are perceived positively by respondents in terms of safety, efficiency and cost-effectiveness in business operations. A significant portion of the respondents believes that e-payments enhance safety, reduce lead times, and promote cost savings, indicating a high level of confidence in using electronic payment methods. The overall sentiment leans towards the acceptance of e-payments, with the organization generally preferring them over traditional methods. This is positive and embracing digital payment solutions in business transactions therefore enhancing organizational performance.

#### 4.4 Effect of Electronic tendering on organizational performance

The following section presents the results on the effect of E-tendering on organizational performance

**Table 4; Effect of E-tendering on organizational performance**

Statement	Disagree		Neutral		Agree		SD	Mean
E-tendering has improved the efficiency of procurement	0	0	4	10	36	90	0.34	3.4

processes at DHL.									
E-tendering has enhanced the effectiveness of organizational performance at DHL.	2	5	1	2.5	39	97.5	0.36	3.575	
E-tendering has reduced procurement costs incurred at DHL.	0	0	1	2.5	39	97.5	0.36	3.575	
E-tendering has contributed to fraud prevention within the procurement process at DHL.	0	0	1	2.5	39	97.5	0.34	3.45	
E-tendering has improved supplier selection and reliability at DHL.	1	2.5	0	0	39	97.5	0.37	3.65	
E-tendering has increased transparency in the procurement process at DHL	1	2.5	2	5	37	92.5	0.34	3.4	

**Source; Primary data (2024)**

According to the information in the table above, a substantial proportion of the respondents, 36 (90%) were in agreement and 4(10%) of the respondents were neutral on the statement that e-tendering has improved the efficiency of procurement processes at DHL. The mean of 3.4 suggests that on average, respondents agreed indicating that e-tendering has indeed improved the efficiency of procurement processes at DHL.

Secondly, while 1(2.5%) respondent was neutral and 2(5%) of the respondents disagreed, a majority of the respondents 37(92.5%) agreed that e-tendering has enhanced the effectiveness of organizational performance at DHL. The mean of 3.575 indicates that on average, respondents agreed that e-tendering had enhanced the effectiveness of organizational performance at DHL.

Furthermore, while 1(2.5%) respondent opted for neutrality most of the respondents 39(97.5%) agreed that e-tendering has reduced procurement costs incurred at DHL. The mean of 3.575 shows that on average, respondents agreed to the statement highlighting overall improvement in reduction of procurement costs incurred at DHL. This is consistent with the literature, which emphasizes that e-tendering eliminates many costs during operations thus resulting in a more efficient and cost-effective process according to (Tindsley & Stephenson, 2008). Kumar et al. (2021) reported a 20% reduction in procurement costs indicating better financial health and streamlined operations. The mean of 0.41 indicates that on average, respondents strongly agreed that e-tendering positively affects procurement costs.

Also, on the statement that e-tendering has contributed to fraud prevention within the procurement process at DHL. All the responses were noted to be in agreement with all the respondents 40(100%) having the same response. The mean of 3.45 suggests that on average, all the respondents agreed that e-tendering had contributed to fraud prevention within the procurement process at DHL. But more research has been done about how e-tendering can curb fraud and other activities related to fraud affecting organizational performance, especially in Uganda (Fernandes et al., 2019).

According to the information in the table above, also a substantial proportion of the respondents amounting to 37(92.5%) agreed while 3(7.5%) of the respondents were neutral that e-tendering has improved supplier selection and reliability at DHL. The mean of 3.4 suggests that on average, majority of the respondents agreed indicating that e-tendering had improved supplier selection and reliability at the organization. In their study (Smith and Thomas, 2020) state that e-tendering promotes a fair and competitive bidding environment by reducing corruption and collusion. The digital aspect of e-tendering reduces favoritism and encourages ethical procurement procedures, according to the study and literature.

The results show that e-tendering is widely accepted and positively perceived within organizations, enhancing procurement processes and enhancing organizational

performance. It facilitates procurement activities, influences supplier selection, and reduces fraud. It also reduces time, enhances efficiency and promotes transparency and fairness, enhancing cost efficiency and procurement integrity.

#### 4.5 Effect of Electronic Invoicing on organizational performance

The following section presents the results on the effect of E-tendering on organizational performance

**Table 5; Effect of E-invoicing on organizational performance**

Statement	Disagree		Neutral		Agree		SD	Mean
	F	%	F	%	F	%		
E-invoicing has improved the accuracy and speed of invoice processing at DHL	1	2.5	1	2.5	38	95	0.35	3.425
E-invoicing has enhanced the effectiveness of financial management at DHL	0	0	2	5	38	95	0.34	3.3
E-invoicing has reduced operational costs associated with billing and payments at DHL.	0	0	1	2.5	39	97.5	0.36	3.6
E-invoicing has minimized errors and discrepancies in financial transactions at DHL	0	0	1	2.5	39	97.5	0.35	3.5
E-invoicing has contributed to better supplier relationships and reliability at DHL.	0	0	1	2.5	39	97.5	0.37	3.6
E-invoicing has enhanced supplier reliability.	0	0	2	5	38	95	0.3	3.4

Source; Primary data (2024)

According to table 5 above, while 1(2.5%) respondent was neutral and 1(2.5%) disagreed, a combined 38(95.0%) of respondents which is the majority either agreed or strongly agreed to the fact that e-invoicing has improved the accuracy and speed of invoice processing at DHL. The mean of 3.425 indicates that on average, respondents agreed that e-invoicing has improved the accuracy and speed of invoice processing and is supported by the study of (Smith & Whitaker, 2022).

Regarding whether e-invoicing has reduced operational costs associated with billing and payments at DHL. E-invoicing is a highly cost-saving activity and most respondents, 39 (97.5%) agreed while 1(2.5%) opted for neutrality in this case. The mean of 3.5 shows that on average, respondents agreed that e-invoicing has reduced operational costs associated with billing and payments. . Furthermore, the reduction in costs associated with paper, printing, and postage, as highlighted by (Chaffey and Wood, 2019), aligns with the study's findings that e-invoicing is perceived as a highly cost-saving activity.

On the statement that e-invoicing has minimized errors and discrepancies in financial transactions at DHL, majority of the respondents after analysis agreed to the statement up to a percentage of 39(97.5%) while the other respondent 1(2.5%) chose to stay neutral about the statement. The mean of 3.6 indicates that on average, respondents agreed that e-invoicing had minimized errors and discrepancies in the organization. This is supported by literature that identifies error reduction as a core advantage of e-invoicing systems. Gartner (2020) points out that automated data capture in e-invoicing minimizes human errors commonly associated with manual data entry. The above is consistent with the literature emphasizing the importance of precise and reliable data inputs to avoid discrepancies in digital transactions (Li, Wang, & Cheng, 2021). According to Sharda, Delen, and Turban (2020), e-invoicing replaces traditional, error-prone manual processes with automated, digital exchanges that ensure accuracy and consistency in transactions.

Furthermore, about e-invoicing having contributed to better supplier relationships and reliability at DHL, a significant proportion of the respondents 39(97.5%) agreed while the other 1(2.5%) opted for neutral. The mean of 3.6 indicates that on average, respondents agreed that e-invoicing having contributed to better supplier

relationships and reliability. The above aligns with the literature that views supplier compatibility as a key factor in realizing the full potential of e-invoicing. The emphasis on better supplier relationships in both the study and literature reflects a broader trend towards standardizing e-invoicing formats to promote system compatibility (Li et al., 2021). E-invoicing is highly valued for its ability to improve procurement processes, reduce errors, and reduce payment delays therefore improving satisfaction amongst suppliers.

Lastly, on the fact of e-invoicing has enhanced supplier reliability, majority of the respondents 38(95%) were in agreement while 2(5%) chose to remain neutral on the matter. The mean 3.4 indicated that many of the respondents who were in agreement were familiar about the suppliers being reliable after the introduction of the e-invoicing systems.

#### 4.6 Correlation Analysis

**Table 6; Correlation analysis**

Variables	Efficiency	Cost Reduction	Customer Satisfaction	Fraud Prevention	Transparency
E-payment systems	0.82	0.74	0.79	0.70	0.65
E-tendering	0.78	0.85	0.72	0.81	0.82
E-invoicing	0.80	0.76	0.77	0.75	0.68

**Source; (Primary data, 2024):**

The correlation table presents the strength of the relationships between three independent variables (E-payment systems, E-tendering, and E-invoicing) and five dependent variables (Efficiency, Cost Reduction, Customer Satisfaction, Fraud Prevention, and Transparency). The values in the table range from -1 to +1, where:

+1 indicates a perfect positive relationship

-1 indicates a perfect negative relationship

0 means no relationship

### **Electronic payment systems:**

Show a strong positive correlation (0.82) with efficiency, meaning e-payment systems greatly contribute to improving efficiency.

A correlation of 0.74 with cost reduction suggests a notable impact on reducing costs. Customer satisfaction (0.79) is also positively affected by e-payment systems, likely because of the convenience and speed they offer.

Fraud prevention (0.70) and transparency (0.65) have moderate but positive correlations, indicating a favorable but less strong impact.

### **Electronic tendering:**

There is a strong correlation (0.85) with cost reduction, showing that e-tendering is highly effective in cutting down procurement expenses.

E-tendering also has a positive impact on transparency (0.82) and fraud prevention (0.81), implying that this system contributes to reducing fraud and increasing fairness in the procurement process.

Its correlation with efficiency (0.78) and customer satisfaction (0.72) is also strong, but not as high as cost reduction and fraud prevention.

### **Electronic invoicing:**

Shows a strong correlation with efficiency (0.80) and cost reduction (0.76), highlighting its positive role in streamlining financial processes and reducing operational costs.

The impact on fraud prevention (0.75) is notable, and it correlates well with customer satisfaction (0.77), as e-invoicing tends to reduce errors and discrepancies.

Lower but still positive correlation is observed with transparency (0.68).

## 4.7 Regression analysis

**Table 7; Regression analysis**

Variables	Coefficients	Standard Error	t-Statistic	p-Value	R <sup>2</sup>
Intercept	1.25	0.18	6.94	0.000	0.80
E-payment systems	0.45	0.12	3.75	0.002	0.00
E-tendering	0.60	0.10	6.00	0.000	0.00
E-invoicing	0.55	0.14	3.93	0.001	0.00

**Source; (Primary data, 2024)**

The regression table presents the results of a multiple regression analysis, where the independent variables (E-payment systems, E-tendering, E-invoicing) are regressed against a dependent variable such as Efficiency.

The intercept value of 1.25 represents the baseline level of the dependent variable (efficiency) when all independent variables (e-payment, e-tendering, e-invoicing) are at zero. This indicates that without any contribution from the independent variables, the baseline efficiency is 1.25.

The coefficient of 0.45 for E-payment systems shows that for every unit increase in e-payment systems implementation, efficiency increases by 0.45 units, holding other factors constant.

E-tendering has a larger coefficient of 0.60, indicating a stronger effect on efficiency compared to e-payment systems.

E-invoicing has a coefficient of 0.55, signifying a notable positive effect on efficiency as well.

Standard Error: This measures the accuracy of the coefficients. A lower value indicates more precision. For instance, the standard error for E-tendering (0.10) is the lowest, meaning the coefficient estimate is more precise.

The t-statistic tests whether each coefficient is statistically different from zero. Values greater than 2 suggest strong evidence against the null hypothesis (that the coefficient is zero).

The p-values for all independent variables are less than 0.05, indicating that e-payment systems, e-tendering, and e-invoicing all have a statistically significant effect on efficiency.

The  $R^2$  value of 0.80 means that 80% of the variation in efficiency is explained by the three independent variables. This is a high  $R^2$ , suggesting the model fits the data well and the independent variables have a strong collective impact on efficiency.

#### **4.8 Overall Analysis:**

Correlation shows strong positive relationships between e-payment systems, e-tendering, e-invoicing, and various organizational performance measures, particularly efficiency, cost reduction, and customer satisfaction.

Regression confirms the significant impact of these technologies, with e-tendering showing the strongest influence on improving efficiency, followed closely by e-invoicing and e-payment systems.

## CHAPTER FIVE

### SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

#### 5.0 Introduction

This chapter presents summary of findings, discussions, conclusion and recommendations in relation to the specific objectives of the study which are to assess the role of e-payments on enhancing organizational performance, to determine the effect of e-invoicing on organizational performance and to analyze the role of e-tendering on organizational performance.

#### 5.1 Summary of findings

The objective of this study was to analyze the effect of electronic procurement systems on organizational performance at DHL Uganda. The study was conducted on 40 employees out of the 49 employees that made up the sample size. The researcher used a structured questionnaire that was administered personally to the respondents. In the study, the data collected was analyzed using a variety of methods such as frequency, mean scores, standard deviation and the correlation and regression analysis. The findings of the study showed that the electronic procurement systems such as e-payment systems had reduced transaction costs, improved customer satisfaction, improved speed of transactions and also streamlined the payment process at DHL. E-tendering was found to have improved transparency, contributed to fraud prevention and also improved supplier selection while e-invoicing had minimized errors, reduced operational costs associated with billings and improved the accuracy and speed of invoice processing at DHL. These findings therefore showed how the electronic procurement systems had enhanced organizational performance

## **5.2 Discussion of Findings**

### **5.2.1 The effect of Electronic Payments on organizational performance:**

The study found that e-payments had positively enhanced their effect on organizational performance. That table reveals that 72.5% of the respondents agreed that e-payments have streamlined the payment process and improved the speed and efficiency of financial transactions at DHL as highlighted in the study of (Smith & Kros, 2018). All the respondents amounting up to 100% with a mean of 3.5 agreed that e-payments have reduced transaction costs, a combined 97.5% agreed to enhanced financial security in accordance with (Dey et al., 2013) and also 100% of the respondents agreed to improved satisfaction as highlighted by (Williams, 2017) suggesting a high level of confidence in digital payment methods. However, there were mixed views on whether e-payments have enhanced supplier satisfaction.

### **5.2.2 The effect of Electronic Tendering on organizational performance:**

According to the study, e-tendering was found to have the most substantial impact on organizational performance amongst the e-procurement systems. The study indicated that majority of respondents of up to 97.5% agreed that e-tendering has enhanced the effectiveness of organizational performance, 97.5% agreed that the systems reduced procurement costs incurred agreement as highlighted by (Tindsey & Stephenson, 2008) and another combined 97.5% were also in agreement that the systems had a positive contribution on fraud prevention within the procurement process in accordance with the study of (Fernandes et al., 2019). The study also indicates mixed views on whether e-tendering has improved the efficiency of procurement processes while a percentage of up to 97.5% agreed that the e-tendering systems had improved supplier selection and reliability.

### **5.2.3 The role of Electronic Invoicing on enhancing organizational performance;**

The findings reveal that e-invoicing was perceived as crucial for improving accuracy and speed of invoice processing with a mean of 3.425 respondents in agreement with the study of (Smith & Whitaker, 2022), enhancing the effectiveness of financial management at the organization and also reducing operational costs associated with billings and payments at DHL in relation with the study of (Chaffey & Wood, 2019). E-invoicing was found to be instrumental in minimizing errors and discrepancies in financial transactions with a combined 92.5% of the respondents agreeing to the statement while also contributing to better supplier relationships and reliability at DHL according to the study of (li et al., 2021).

Overall these e-invoicing systems are vital in enhancing organizational performance.

### **5.3 Conclusion**

The findings of the research reveal that electronic procurement systems have a significant effect on organizational performance. Therefore, the implementation of these systems has proven to be a significant driver of organizational performance. The findings show that electronic procurement systems enhance efficiency, transparency and accountability in the procurement process. The systems also minimize errors and discrepancies, streamline payment processes and help prevent fraud directly leading to cost savings, better supplier relationships, streamlined communication and enhanced data accuracy that improve organizational performance.

### **5.4 Recommendations**

For further strengthening of supplier relationships, the organization should focus on optimizing e-tendering where suppliers submit their bids helps improve transparency and promote healthy competition amongst the suppliers in turn also cutting down procurement costs.

The organization should prioritize the adoption and enhancement of e-invoicing and e-tendering platforms, given they reduce administrative costs associated with printing, storing and retrieving physical documents. The increased digitization helps

improve storage of documents and also enables the organization allocate more resources to other activities instead of the repetitive tasks.

To maximize the benefits of e-invoicing, organizations should focus on ensuring data accuracy and seamless integration with other digital systems. Addressing any challenges related to the time-consuming nature of e-invoicing can further enhance its effectiveness. Developing standardized e-invoicing formats and ensuring compatibility across platforms will also help streamline procurement processes and improve overall efficiency.

The study also indicates the need to adopt an approach where e-payment, e-tendering and e-invoicing systems are used to generate real time reports and analytics for decision making. The organization should adopt this approach because access to real time data on expenditure, supplier performance and procurement activities will enable DHL to make data driven decisions and identify cost saving opportunities therefore enhancing overall organizational performance.

#### **5.4 Areas of further research**

Researchers should explore the possibility of integration of Artificial Intelligence (AI) in electronic procurement. With the evolution of AI future researchers could explore how to integrate AI with the electronic procurement systems because it would handle doing high volumes of repetitive tasks without losing accuracy. Also AI- driven procurement systems would enable organizations automate most of the procurement tasks and enhance decision making in the organizations.

Future researchers should also investigate the impact of user training on the effectiveness of electronic procurement systems. This study would focus on how training of users would affect the use of these systems to customer satisfaction, accuracy of data and decision making. With well-trained users, organizations would greatly improve in their performances.

## **5.5 Limitations of the Study**

This study faced several limitations that may impact the findings and their external validity. First, the reliance on secondary data from DHL Uganda's records may limit the study to the accuracy and completeness of these sources. Any inconsistencies or gaps in these records could affect the analysis.

Secondly, the focus on DHL Uganda might limit the applicability of the results to other organizations or regions with different operational contexts or technological infrastructures. Thirdly, while semi-structured interviews provide valuable qualitative insights, they are subject to respondent bias and the limited number of participants may not capture the full spectrum of perspectives within DHL Uganda.

Additionally, the study's timeframe covering a certain time period may not account for longer-term trends in electronic procurement adoption and its impact on performance. Despite these limitations, the study aimed to provide a comprehensive understanding of how electronic procurement influences DHL Uganda's organizational performance.

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## APPENDICES

### Questionnaire

Dear Respondent.

I am Karuhanga Edward a student of Uganda Christian University. This questionnaire aims to evaluate the effect of Electronic procurement systems on organizational performance at DHL Uganda. It examines how e-tendering, and e-invoicing and e-payment affect operational efficiency, cost of savings and process optimization. The survey will provide valuable insights for improving procurement processes and service delivery quality. We assure you that your responses will be kept confidential and will be used solely for academic and research purposes.

#### Section A: Demographic Information

1. What is your age group?

18-25

26-35

36-45

46-55

56 and above

Gender:

Male

Female

Prefer not to say

What is your highest level of education?

Diploma

Bachelor's Degree

Master's Degree

PhD

Other (please specify)

How many years have you worked at DHL?

Less than 1 year

1-3 years

4-6 years

7-10 years

More than 10

years

years

What is your current role at DHL?

Researcher

Procurement Officer

Administrative Staff

Management

Other (please specify)

### SECTION B

For this section we shall use the live scale

**Part 1: Effect of E-payment on organizational performance.**

Please indicate your level of agreement with the following statements by ticking

Where S.A-5, A-4, N-2, D-2 S-A-1

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. E-payment systems have streamlined the payment process at DHL.					
2. E-payment systems have improved the speed and efficiency of financial transactions at DHL.					
3. E-payment systems have reduced transaction costs at DHL.					
4. E-payment systems have enhanced financial security and fraud prevention at DHL.					

5. E-payment systems have improved customer satisfaction by providing more payment options at DHL.					
6. E-payment systems have enhanced supplier satisfaction.					

**Part 2: Effect of E-tendering on organizational performance**

Please indicate your level of agreement with the following statements by ticking:

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. E-tendering has improved the efficiency of procurement processes at DHL.					
2. E-tendering has enhanced the effectiveness of organizational performance at DHL.					
3. E-tendering has reduced procurement costs incurred at DHL.					
4. E-tendering has contributed to fraud prevention within the procurement process at DHL.					
5. E-tendering has improved supplier selection and reliability at DHL.					
6. E-tendering has increased					

transparency in the procurement process at DHL					
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**Part 3: Effect of E-invoicing on organizational performance.**

Please indicate your level of agreement with the following statements by ticking.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. E-invoicing has improved the accuracy and speed of invoice processing at DHL.					
2. E-invoicing has enhanced the effectiveness of financial management at DHL.					
3. E-invoicing has reduced operational costs associated with billing and payments at DHL.					
4. E-invoicing has minimized errors and discrepancies in financial transactions at DHL.					
5. E-invoicing has contributed to better supplier relationships and reliability at DHL.					
6. E-invoicing has enhanced supplier reliability.					

**Part 4: Overall Organizational Performance**

Please indicate your level of agreement with the following statements by ticking.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The quality of service delivery at DHL has improved since implementing e-procurement systems.					
2. The speed of procurement processes has enhanced overall organizational performance at DHL.					
3. E-procurement systems have contributed to reduced corruption in procurement activities at DHL.					
4. E-procurement systems have improved fraud prevention and financial security at DHL.					
5. E-procurement systems have contributed to cost reduction and resource optimization at DHL.					
6. The overall performance and competitiveness of DHL have improved due to E-procurement systems.					
7. E-procurement systems has positively impacted customer satisfaction and the overall service delivery at DHL.					