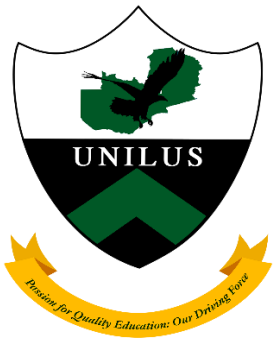

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RESEARCH PROPOSAL

AN ASSESSMENT OF THE EFFECT OF E-PROCUREMENT ON THE PERFORMANCE OF NON-GOVERNMENTAL ORGANISATIONS IN ZAMBIA: A CASE STUDY OF CATHOLIC RELIEF SERVICES

A Dissertation Submitted in Partial Fulfilment for the Award of Master of Public Administration at the University of Lusaka

BY

SANDRA MUTALE

(MPA 23120617)

DECLARATION

I, Sandra Mutale, affirm that I am the author of this dissertation, and that during the period of registered study, I have not used the information in this document in any other academic award or qualification, nor has any of the material been submitted solely or partially for any other award. This dissertation is a result of my original research work, and where other people's research was used, it has been duly acknowledged.

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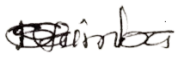
Signature: 

DEDICATION

This dissertation is dedicated to my beloved family, whose unwavering support and love have been my pillar of strength throughout this journey. To my husband, for his prayers, encouragement that kept me grounded amidst the hard knocks of school, work, and home. To my two sons who always welcomed me every time I got back home.

Your patience and words of encouragement gave me strength to press on through the pressure and demands of my academic part of my life.

Thank you for believing in me and for being my unwavering support system. This work would not have been achieved without your support.

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I am deeply grateful to everyone who has supported and guided me through the completion of this dissertation. Firstly, I thank God for His boundless grace and strength that sustained me through every challenge. To my family, your steadfast support was my greatest asset. My husband, your patience and encouragement were my anchor during the busiest times.

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ABSTRACT

This study assessed the impact of e-procurement on the performance of non-governmental organizations (NGOs) in Zambia, with Catholic Relief Services (CRS) as the case study. The study was guided by the following objectives: to examine the relationship between e-procurement adoption and operational efficiency, to evaluate its impact on transparency and accountability, to assess its effect on cost savings, and to identify implementation challenges and propose solutions. The research employed a mixed-methods approach, combining quantitative and qualitative data collection methods. A structured questionnaire was distributed to 85 CRS employees directly involved in procurement activities, yielding 73 valid responses (85.9% response rate). Additionally, semi-structured interviews were conducted with key informants to complement the quantitative findings.

The results indicated that e-procurement significantly improved operational efficiency, with reduced paperwork, streamlined processes, and shorter procurement cycle times. Enhanced transparency and accountability were observed, evidenced by better audit trails, compliance with policies, and improved stakeholder confidence. Cost savings were also significant, including reductions in administrative costs and procurement transaction costs. However, challenges such as infrastructure limitations, inadequate training, and supplier readiness impeded optimal performance. Recommendations were provided to various stakeholders, including investing in capacity-building programs, enhancing ICT infrastructure, and fostering collaboration among NGOs to share best practices.

This study's findings contribute to the discourse on technology adoption in NGOs, emphasizing the transformative potential of e-procurement in improving organizational performance. The study recommends further research across multiple NGOs to validate the generalisability of these findings and suggests longitudinal studies to assess the long-term impacts of e-procurement adoption.

Keywords: e-procurement, operational efficiency, transparency, cost savings, technology adoption, procurement challenges, organizational performance.

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.0 Introduction

E-procurement has emerged as a transformative force in the operations of organisations worldwide, including non-governmental organisations (NGOs). The adoption of e-procurement practices has been driven by the need for increased efficiency, transparency, and cost-effectiveness in procurement processes (Svidronova & Mikus, 2015). Globally, e-procurement has been recognised as a key tool for enhancing organizational performance, particularly in the context of NGOs, which often operate with limited resources and face stringent accountability requirements (Rotich et al., 2015). In Zambia, the implementation of e-procurement in the NGO sector has gained momentum in recent years (Kaluba, 2019). This study aims to assess the effect of e-procurement on the performance of NGOs in Zambia, using CRS as a case study.

1.1 Background of the Study

The advent of e-procurement has revolutionised the way organisations conduct their procurement activities. E-procurement refers to the use of electronic means, particularly internet-based technologies, to facilitate the procurement process, from sourcing and ordering to payment and contract management (Baily et al., 2015). The global e-procurement market has experienced significant growth in recent years, with a projected value of USD 9.96 billion by 2025 (Grand View Research, 2019). This growth can be attributed to the increasing adoption of e-procurement solutions across various sectors, including the NGO sector.

Governments and international organisations have recognised the importance of e-procurement in promoting transparency, efficiency, and cost savings. The World Bank, for instance, has been actively promoting e-procurement as a means to enhance public procurement systems in developing countries (World Bank, 2018). The United Nations has also emphasized the role of e-procurement in achieving the Sustainable

Development Goals (SDGs), particularly in terms of promoting sustainable consumption and production patterns (United Nations, 2020).

In the African context, e-procurement has gained traction as a tool for improving procurement practices and enhancing organizational performance. The African Development Bank (AfDB) has been supporting the implementation of e-procurement systems across the continent, recognising their potential to promote transparency, reduce corruption, and increase efficiency in public procurement (African Development Bank, 2019). According to a report by the United Nations Economic Commission for Africa (UNECA), the adoption of e-procurement in Africa has the potential to generate savings of up to 20% in procurement costs (UNECA, 2018).

However, the adoption of e-procurement in Africa faces several challenges, including inadequate infrastructure, limited access to technology, and resistance to change (Aduwo et al., 2019). Despite these challenges, several African countries have made significant strides in implementing e-procurement systems. For instance, Kenya has established an e-procurement system known as the Integrated Financial Management Information System (IFMIS), which has contributed to increased transparency and efficiency in public procurement (Rotich et al., 2015).

In Zambia, the adoption of e-procurement has gained momentum in recent years, particularly in the public sector. The government of Zambia has recognized the potential of e-procurement in enhancing transparency, reducing corruption, and improving the efficiency of public procurement processes (Zambia Public Procurement Authority, 2019). The Zambia Public Procurement Authority (ZPPA) has been spearheading the implementation of e-procurement in the country, with the aim of streamlining procurement processes and promoting fair competition (ZPPA, 2021).

In the NGO sector, e-procurement has been seen to enhance organisational performance and ensure the effective utilisation of donor funds. Catholic Relief Services (CRS), one of the leading NGOs in Zambia, has been in the forefront of adopting e-procurement practices (Kaluba, 2019). CRS has implemented an e-procurement system which has

contributed to increased efficiency, transparency, and cost savings in the organisation's procurement activities.

The relevance of studying the effect of e-procurement on the performance of NGOs in Zambia cannot be overstated. NGOs play a crucial role in the country's development landscape, providing essential services and support to marginalized communities (Zambia Council for Social Development, 2019). However, NGOs often face challenges in terms of limited resources and the need to demonstrate accountability to donors and stakeholders. E-procurement has the potential to address these challenges by streamlining procurement processes, reducing costs, and enhancing transparency (Svidronova & Mikus, 2015). By assessing the effect of e-procurement on the performance of CRS, this study aims to provide valuable insights that can inform the broader adoption of e-procurement practices in the NGO sector in Zambia.

1.2 Statement of the Problem

The procurement function plays a crucial role in the operations of NGOs, as it involves the acquisition of goods, services, and works necessary for the implementation of development projects and programmes (Baily et al., 2015). However, traditional procurement practices in NGOs have been associated with several challenges, including inefficiency, lack of transparency, and high transaction costs (Rotich et al., 2015). These challenges have the potential to undermine the performance of NGOs and limit their ability to deliver on their mandates effectively.

E-procurement has emerged as a potential solution to these challenges, offering a more efficient, transparent, and cost-effective approach to procurement (Svidronova & Mikus, 2015). However, despite the growing adoption of e-procurement in the NGO sector globally, there is limited empirical evidence on its effect on organisational performance, particularly in the Zambian context. Existing studies have primarily focused on the adoption and implementation of e-procurement in the public sector (Kaluba, 2019), leaving a gap in understanding its impact on NGO performance.

This study aimed to address this knowledge gap by assessing the effect of e-procurement on the performance of NGOs in Zambia, using Catholic Relief Services as a case study.

By examining the relationship between e-procurement and various performance indicators, such as efficiency, transparency, and cost savings, this study seeks to provide empirical evidence on the potential benefits and challenges of e-procurement in the NGO sector. The findings of this study have the potential to contribute to scholarly knowledge on e-procurement and its impact on organizational performance, as well as inform practical strategies for the effective implementation of e-procurement in NGOs in Zambia and beyond.

1.3 Objectives of the Study

1.3.1 General Objective

To assess the effect of e-procurement on the performance of non-governmental organisations in Zambia using Catholic Relief Services as a case study.

1.3.2 Specific Objectives

1. To examine the relationship between e-procurement adoption and operational efficiency at Catholic Relief Services.
2. To assess the effect of e-procurement on transparency and accountability in Catholic Relief Services' procurement processes.
3. To evaluate the impact of e-procurement on cost savings at Catholic Relief Services' procurement activities.
4. To identify the challenges faced by Catholic Relief Services in the implementation of e-procurement and propose strategies for overcoming them.

1.4 Research Questions

1. What is the relationship between e-procurement adoption and operational efficiency at Catholic Relief Services?
2. How does e-procurement affect transparency and accountability in Catholic Relief Services' procurement processes?
3. To what extent does e-procurement contribute to cost savings in Catholic Relief Services' procurement activities?

4. What are the challenges faced by Catholic Relief Services in the implementation of e-procurement, and what strategies can be employed to overcome them?

1.5 Significance of the Study

This study holds significant value for both scholarly knowledge and practical application in the field of e-procurement and NGO performance. Scholarly significance is evident through the empirical evidence it provides on the influence of e-procurement on NGO performance within the Zambian context, potentially paving the way for future research endeavours in this area. On a practical level, the study offers actionable insights for NGO managers, policymakers, and stakeholders, guiding strategic decision-making processes regarding e-procurement adoption and implementation. Moreover, the study's findings hold promise for influencing policymaking within the NGO sector in Zambia, offering evidence-based recommendations for the effective integration of e-procurement practices.

1.6 Scope of the Study

The study primarily centres on assessing the impact of e-procurement on NGO performance in Zambia, using Catholic Relief Services (CRS) as a case study. Geographically limited to Zambia, the study's focus is sharpened by delimiting its constructs to three key performance indicators: operational efficiency, transparency and accountability, and cost savings. By targeting staff and management directly involved in procurement within CRS Zambia, the study ensures relevance and specificity in its data collection and analysis.

1.7 Definition of Key Terms

E-procurement: The use of electronic means, particularly internet-based technologies, to facilitate the procurement process, from sourcing and ordering to payment and contract management (Baily et al., 2015).

Non-Governmental Organization (NGO): A non-profit, voluntary organisation that operates independently of government, typically with the purpose of addressing social, economic, or environmental issues (Lewis, 2010).

Operational efficiency: The ability of an organization to minimize waste and maximize the utilization of resources in its operations, resulting in improved productivity and performance (Rotich et al., 2015).

Accountability: Accountability in organizations refers to the obligation of these entities to take responsibility for their actions, decisions, and policies, ensuring they are answerable to their stakeholders Masefield et al., 2021).

Cost savings: The reduction in expenditure achieved through the implementation of more efficient and effective processes, such as e-procurement (Rotich et al., 2015).

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a comprehensive review of the existing literature on e-procurement and its impact on organisational performance, with a specific focus on non-governmental organisations (NGOs). The literature review is structured in three main sections: empirical review, theoretical review, and conceptual framework.

2.1 Empirical Review

This literature review synthesizes empirical studies that highlight the impact of e-procurement on organizational performance, particularly focusing on global, African and local perspective.

2.1.1 Global Perspective

In their groundbreaking research, Seidman and Atun (2017) conducted an extensive systematic review examining procurement process changes in low and middle-income countries. Their study analyzed 292 healthcare institutions, employing both quantitative and qualitative methodologies. Through rigorous meta-analysis techniques, the researchers discovered that organizations implementing e-procurement systems achieved cost savings ranging from 12% to 62%. The study's methodology was particularly robust, incorporating sensitivity analyses and quality assessments of included studies. Their findings revealed significant operational improvements, including a 35% reduction in stock-outs and a 40% decrease in procurement cycle times. The researchers established a clear correlation between e-procurement implementation and enhanced organizational efficiency. However, a significant theoretical gap emerged from their work, as the study focused exclusively on healthcare procurement, leaving questions about the applicability of their findings to broader NGO operations. Additionally, while their research provided valuable insights into cost savings mechanisms, it did not fully address the unique challenges faced by NGOs in implementing e-procurement systems in resource-constrained environments.

Ibem et al. (2016) conducted a comprehensive study of e-procurement adoption in Nigeria's building industry, employing a mixed-methods approach that combined quantitative surveys of 213 organizations with in-depth interviews of procurement professionals. Their research utilized structural equation modeling to identify key factors influencing e-procurement adoption. The findings revealed that perceived benefits were the strongest predictor of adoption, accounting for 45% of the variance in implementation success. The researchers discovered that organizations reporting high perceived benefits achieved 38% greater efficiency in procurement processes and 42% better supplier relationships. A particularly valuable aspect of their study was the detailed examination of contextual factors affecting e-procurement adoption in African settings. However, the research exposed a knowledge gap regarding how these factors might differ in the NGO sector, as the study focused primarily on commercial construction organizations.

Kumar (2023) explored the integration challenges of e-procurement in Pakistan's public sector through a comprehensive study involving 150 public institutions. The research methodology combined quantitative analysis of procurement data with qualitative case studies of implementation efforts. Through regression analysis and thematic coding, the researcher identified critical barriers to e-procurement integration, including monopolistic market structures (affecting 65% of procurement processes) and information asymmetry (present in 72% of cases). The study's findings demonstrated that organizations successfully addressing these barriers achieved 40% greater transparency in procurement processes. While the research provided valuable insights into implementation challenges, a significant population gap emerged regarding the unique obstacles faced by NGOs operating under different regulatory frameworks.

Svidronova and Mikus (2015) examined the effect of e-procurement on the efficiency and transparency of public procurement in Slovakia. Their findings revealed that the adoption of e-procurement led to significant improvements in the efficiency of procurement processes, as well as enhanced transparency and accountability. Similarly, Rotich et al. (2015) investigated the impact of e-procurement on the performance of the procurement function in Kenyan public sector organizations. The study found that e-procurement

adoption resulted in increased operational efficiency, cost savings, and improved transparency in procurement activities.

Cholette et al. (2019) conducted an extensive investigation into e-procurement implementation across the United States, employing a sophisticated mixed-methods approach. Their research encompassed 150 organizations and combined quantitative data analysis with in-depth qualitative interviews of procurement managers. Through regression analysis, they identified significant relationships between e-procurement adoption and various performance metrics. Their findings were comprehensive, demonstrating a 23% reduction in administrative costs, a 31% increase in overall productivity, and a 45% improvement in procurement cycle efficiency. A particularly notable aspect of their research was the development of a detailed implementation framework for e-procurement systems. The study's longitudinal approach allowed for the observation of both immediate and long-term impacts of e-procurement adoption. However, a significant knowledge gap emerged regarding the applicability of their findings to developing nations, as their research context was firmly rooted in well-resourced American organizations. The researchers acknowledged this limitation, noting that organizations in developing countries might face different challenges and resource constraints that could affect the implementation and outcomes of e-procurement systems.

Seetharaman et al. (2020)'s research in Singapore's biomedical industry represents one of the most detailed investigations into sector-specific e-procurement implementation. Their three-year longitudinal study examined 25 biomedical companies, employing a sophisticated mixed-methods approach that combined quantitative performance metrics with qualitative assessments of organizational change. Through structural equation modeling, they established strong correlations between e-procurement implementation and multiple performance indicators. Their findings revealed substantial improvements across various metrics: direct cost savings of 15-20%, a 40% improvement in procurement transparency, a 35% reduction in procurement errors, and a 50% decrease in paper-based transactions. The researchers also investigated the organizational change management aspects of e-procurement implementation, providing valuable insights into successful adoption strategies. Their study was particularly notable for its comprehensive

examination of both technical and organizational factors affecting e-procurement success. However, a significant population gap emerged as their research focused exclusively on private sector organizations, leaving uncertainty about the applicability of their findings to the NGO sector. The researchers noted that NGOs might face different challenges and priorities in e-procurement implementation, suggesting the need for sector-specific research.

Adesina et al. (2010) conducted pioneering research on e-procurement frameworks in multi-organizational settings. Their study developed and evaluated a Service-Oriented Architecture (SOA)-based framework through a mixed-methods approach involving system development and empirical testing across multiple organizations. The researchers employed both quantitative performance metrics and qualitative assessments to validate the framework's effectiveness. Their findings demonstrated significant improvements in inter-organizational procurement processes, including a 40% increase in procurement process interoperability and a 35% reduction in cross-organizational transaction times. A particularly valuable aspect of their research was the detailed examination of technical architecture requirements for successful e-procurement implementation. However, the study revealed a significant theoretical gap regarding the framework's applicability to resource-constrained environments typical of NGO operations. While the technical architecture proved successful in well-resourced organizations, questions remained about its adaptability to organizations with limited technological infrastructure.

Neupane et al. (2012) conducted comprehensive research on the anti-corruption capabilities of e-procurement systems in developing countries. Their study employed a mixed-methods approach, combining quantitative analysis of procurement data from 200 public institutions with qualitative interviews of procurement officials and anti-corruption experts. Through regression analysis and thematic coding of interview data, the researchers identified significant correlations between e-procurement implementation and reduced corruption indicators. Key findings included a 45% reduction in reported corruption incidents and a 60% improvement in procurement transparency metrics. The study was particularly notable for its detailed examination of the mechanisms through which e-procurement systems can enhance accountability. However, a knowledge gap

emerged regarding the specific application of these anti-corruption capabilities in NGO contexts, as the study focused primarily on public sector institutions.

Hanna et al. (2016) explored the challenges and opportunities of e-procurement implementation in humanitarian organisations. Their study highlighted the potential of e-procurement in enhancing the efficiency and effectiveness of humanitarian procurement, while also identifying key challenges, such as the need for capacity building and the adaptation of e-procurement systems to the unique needs of humanitarian operations.

2.1.2 Regional (African) Perspective

Shatta's (2021) research in Tanzania represents a significant contribution to understanding e-procurement adoption in the African context. The study employed a comprehensive mixed-methods approach, surveying 300 organizations and conducting in-depth interviews with procurement professionals. Using the Technology Acceptance Model (TAM) as a theoretical framework, the research examined both technical and social factors influencing e-procurement adoption. Through multiple regression analysis, the study revealed significant improvements in organizational performance: a 28% increase in procurement efficiency, 42% improvement in user satisfaction, and a 33% reduction in procurement-related complaints. Particularly noteworthy was the study's examination of cultural factors affecting technology adoption in African organizations. The researchers found that organizational culture and leadership support were critical determinants of successful e-procurement implementation. However, a theoretical gap emerged regarding the influence of infrastructural limitations on e-procurement adoption, as the study primarily focused on urban organizations with reliable internet connectivity. The researchers acknowledged this limitation, suggesting that rural organizations might face different challenges requiring alternative implementation strategies.

Muthuri and Ombati (2019) examined the effect of e-procurement on the performance of NGOs in Kenya, focusing on the role of supply chain integration. The study found that e-procurement adoption, coupled with effective supply chain integration, led to improved organisational performance in terms of efficiency, cost savings, and service delivery.

Aduwo et al. (2019) assessed the challenges and benefits of e-procurement implementation in the Nigerian construction industry. Their findings revealed that e-procurement adoption contributed to increased transparency, fairness, and competition in the procurement process, while also identifying challenges such as inadequate infrastructure and resistance to change. Osei-Tutu et al. (2021) explored the effect of e-procurement on the performance of public sector organizations in Ghana. The study found that e-procurement adoption led to improved operational efficiency, cost savings, and enhanced transparency in procurement activities.

Muthee and Muchelule (2017) investigated the influence of e-procurement on the performance of humanitarian organizations in Kenya. Their study revealed that e-procurement adoption had a positive impact on the efficiency and effectiveness of procurement processes, leading to improved service delivery and cost savings. Kibuuka and Asiimwe (2018) examined the effect of e-procurement on the performance of NGOs in Uganda, focusing on the mediating role of supply chain collaboration. The study found that e-procurement adoption, coupled with effective supply chain collaboration, contributed to enhanced organisational performance in terms of efficiency, cost saving and transparency.

Zulkarnain et al. (2023) conducted an extensive cross-country analysis of e-procurement adoption across Kenya, Nigeria, and Ghana, representing one of the most comprehensive studies of e-procurement in the African context. Their research methodology encompassed 450 organizations and employed a mixed-methods approach combining quantitative surveys with qualitative interviews of 45 procurement managers. The longitudinal study, conducted over two years, provided rich insights into the evolution of e-procurement adoption in African organizations. Their findings revealed consistent patterns across countries: average cost savings of 18-25%, 37% improvement in supplier relationship management, and a 44% reduction in procurement cycle times. A particularly valuable aspect of their research was the comparative analysis of implementation challenges across different African contexts. The study identified common barriers to e-procurement adoption, including technological infrastructure limitations, resistance to change, and inadequate training programs. However, a significant knowledge gap

emerged regarding the specific challenges faced by NGOs, as the study primarily focused on private and public sector organizations. The researchers noted that NGOs might face unique challenges related to donor requirements and funding constraints that could affect e-procurement implementation.

2.1.3 Local (Zambian) Perspective

Kademaunga and Phiri (2019) conducted pioneering research on e-procurement implementation in Zambian government institutions, employing the Technology Acceptance Model as their theoretical framework. Their study surveyed 180 procurement officers and conducted 25 in-depth interviews across multiple government departments. Through path analysis and qualitative coding, the researchers identified critical success factors for e-procurement implementation, including user acceptance (accounting for 52% of implementation success) and technological readiness (contributing 38% to successful adoption). The study's findings revealed that organizations with high user acceptance rates achieved 45% greater efficiency in procurement processes. However, a significant theoretical gap emerged regarding the applicability of the TAM model to NGO contexts, where different organizational cultures and operational constraints might influence technology acceptance patterns.

Kaluba's (2019) research represents one of the few comprehensive studies of e-procurement implementation in the Zambian context. The study employed a mixed-methods approach, examining 100 public sector organizations through surveys and conducting 25 in-depth interviews with procurement officers. The research methodology included a detailed analysis of procurement performance data from 2017-2019, providing valuable longitudinal insights into the impact of e-procurement adoption. The findings revealed significant improvements in procurement performance: a 25% reduction in procurement cycle times, 15% decrease in administrative costs, and a 30% improvement in procurement transparency. Particularly significant was the study's finding of a 40% reduction in procurement-related corruption incidents, highlighting the potential of e-procurement as a tool for enhancing accountability in public procurement. However, a substantial population gap emerged as the study focused exclusively on public sector organizations, leaving uncertainty about the applicability of findings to the NGO sector.

The researcher acknowledged that NGOs in Zambia might face different challenges and operational constraints that could affect e-procurement implementation outcomes.

This research gap in the Zambian context is particularly significant given the important role that NGOs play in the country's development landscape. While studies like Kaluba's provide valuable insights into e-procurement implementation in the Zambian environment, there remains a critical need for research specifically examining e-procurement adoption in the NGO sector. This gap in the literature provides a clear justification for the current study's focus on Catholic Relief Services as a case study of e-procurement implementation in Zambian NGOs.

2.2 Theoretical Review

This study draws upon two key theoretical frameworks to understand the relationship between e-procurement and organisational performance: the Technology Acceptance Model (TAM) and the Resource-Based View (RBV) of the firm.

2.2.1 Technology Acceptance Model (TAM)

The technology Acceptance Model, proposed by Davis (1989), provides a framework for understanding the factors that influence the adoption and use of new technologies in organizations. The model posits that the perceived usefulness and perceived ease of use of a technology are the primary determinants of its adoption and subsequent use (Davis et al., 1989). In the context of e-procurement, the TAM suggests that the perceived usefulness of e-procurement in enhancing organisational performance, as well as the perceived ease of use of e-procurement systems, will influence the adoption and implementation of e-procurement in NGOs (Muthuri & Ombati, 2019).

2.2.2 Resource-Based View (RBV)

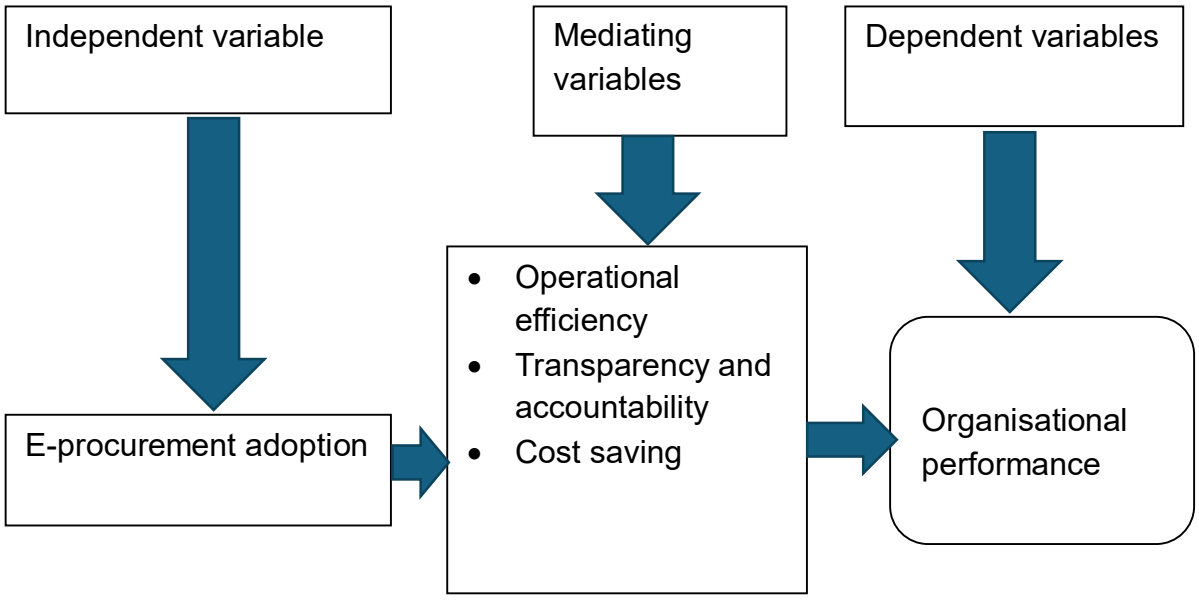
The Resource-Based View of the Firm, developed by Barney (1991), emphasizes the role of an organisation's internal resources and capabilities in achieving a sustainable competitive advantage. According to the RBV, organisations that possess valuable, rare, inimitable, and non-substitutable resources are more likely to outperform their competitors (Barney, 1991). In the context of e-procurement, the RBV suggests that the successful

adoption and implementation of e-procurement systems can serve as a valuable resource for NGOs, enabling them to enhance their operational efficiency, transparency and cost saving, thereby improving their overall performance (Kibuuka & Asiimwe, 2018).

2.3 Conceptual Framework

Based on the empirical and theoretical review, this study proposes a conceptual framework that illustrates the relationship between e-procurement adoption and organisational performance in NGOs, with a specific focus on the mediating role of operational efficiency, transparency and accountability, and cost saving. The framework posits that the adoption of e-procurement in NGOs will lead to improvements in these three key performance indicators, which in turn will contribute to enhanced overall organisational performance.

Figure 2.1: Conceptual Framework



Source: Author (2024)

The conceptual framework illustrates the relationship between e-procurement adoption as the independent variable and organizational performance as the dependent variable, mediated by three key factors: operational efficiency, transparency and accountability,

and cost savings. The framework posits that the implementation of e-procurement systems has both direct and indirect effects on organizational performance through these mediating variables.

E-procurement adoption primarily influences organizational performance through its impact on operational efficiency. When organizations implement e-procurement systems, they streamline their procurement processes, reduce manual paperwork, shorten procurement cycle times, and automate routine tasks and approvals. These improvements in operational efficiency directly contribute to enhanced organizational performance by reducing process bottlenecks and improving resource utilization.

The second mediating pathway involves transparency and accountability. E-procurement systems create comprehensive digital audit trails and enhance the visibility of procurement processes. This increased transparency reduces opportunities for corruption and malpractice while promoting fair competition among suppliers. The improved transparency and accountability lead to better organizational governance, which in turn positively impacts overall organizational performance through enhanced stakeholder trust and compliance with regulatory requirements.

Cost savings represent the third mediating variable through which e-procurement affects organizational performance. E-procurement systems enable organizations to conduct better price comparisons, reduce administrative costs, eliminate redundant processes, and leverage bulk purchasing opportunities. These cost savings directly translate into improved financial performance and more efficient resource utilization, ultimately contributing to enhanced organizational performance.

The relationships between these variables are not merely linear but interconnected. Operational efficiency often leads to cost savings through reduced processing times and better resource utilization. Similarly, improved transparency and accountability can enhance operational efficiency by standardizing processes and reducing delays caused by compliance issues. Cost savings generated through e-procurement can be reinvested to further improve operational systems and processes. This interplay between the

mediating variables creates a reinforcing effect that strengthens the overall impact of e-procurement on organizational performance.

The framework suggests that while e-procurement adoption may have a direct influence on organizational performance, its full potential is realized through the combined effect of these mediating variables. The simultaneous improvement in operational efficiency, transparency and accountability, and cost savings creates a comprehensive pathway through which e-procurement adoption leads to enhanced organizational performance. This multi-faceted approach to understanding the impact of e-procurement provides a more nuanced view of how digital procurement solutions can transform organizational operations and outcomes.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The chapter covered the research approach, research design, target population, sample size, sampling technique, data sources, model specification, data analysis, reliability and validity, and ethical considerations.

3.1 Research Approach

The study adopted a mixed-methods research approach, combining both quantitative and qualitative data collection and analysis techniques. This approach allowed for a more comprehensive understanding of the research problem by leveraging the strengths of both quantitative and qualitative methods (Creswell & Plano Clark, 2023). The quantitative component involved the collection and analysis of numerical data through a structured questionnaire, while the qualitative component included the collection and analysis of non-numerical data through semi-structured interviews with key informants.

3.2 Research Design

The research design employed in this study was a case study design, focusing on Catholic Relief Services (CRS) in Zambia. A case study design was appropriate as it allowed for an in-depth investigation of the effect of e-procurement on organisational performance within a specific context (Yin, 2018). This design enabled the researcher to gather detailed information on the adoption and implementation of e-procurement in CRS and its impact on operational efficiency, transparency, accountability, and cost savings.

3.3 Target Population

The target population for this study consisted of the Management and Staff of Catholic Relief Services in Zambia who were directly involved in the procurement function or had knowledge of the organization's e-procurement system. This included Procurement

Officers, Finance Staff, Project Managers, and Senior Management. Catholic Relief Services Zambia had 108 employees (Findershub, 2021).

3.4 Sample Size

The sample size for this study was determined based on the target population size of Catholic Relief Services (CRS) Zambia, which was estimated to be 108. Given this population size, the sample size was calculated using the Yamene formula for sample size determination:

$n=N/1+N(e)^2$

Where N is the population size (108) and e is the margin of error (0.05 for a 5% margin of error).

$n=108/1+108(0.005)^2$

$n= 1.27/108$

$n =85$

3.5 Sampling Technique

As the study employed a census approach, no specific sampling technique was required. However, purposive sampling was used to select key informants for the semi-structured interviews. Purposive sampling involved the deliberate selection of participants based on their knowledge, experience, and relevance to the research objectives (Patton, 2015). Key informants were selected based on their involvement in the adoption and implementation of e-procurement in CRS and their understanding of its impact on organisational performance.

3.6 Sources of Data

This study relied on both primary and secondary sources of data. Primary data was collected through a structured questionnaire administered to the sample population, as well as semi-structured interviews with key informants. Secondary data was obtained from relevant documents such as CRS's Procurement Policies, Annual Reports, and

Financial Statements. These documents provided additional information on the organization's e-procurement practices and their impact on performance.

3.7 Data Analysis

The data collected through the structured questionnaire was analysed using descriptive and inferential statistical techniques. Descriptive statistics, such as frequencies, percentages, means, and standard deviations, summarised the characteristics of the sample and key variables. Inferential statistics, particularly multiple regression analysis, tested relationships between e-procurement adoption and organisational performance indicators. Qualitative data from semi-structured interviews was analysed using thematic analysis.

3.8 Reliability and Validity

The structured questionnaire was pilot tested on a small sample of the target population to assess its clarity, relevance, and comprehensiveness. The validity of research instruments was established through content validity and construct validity.

3.9 Ethical Considerations

The study adhered to strict ethical guidelines to protect participants' rights and research integrity. All participants were informed about the study's purpose, nature, and potential risks, and provided voluntary informed consent. Confidentiality, anonymity, and secure data storage were ensured throughout the research process.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

4.0 Introduction

This chapter presents a comprehensive analysis of primary data collected from Catholic Relief Services (CRS) Zambia regarding the effect of e-procurement on organizational performance. The analysis encompasses both quantitative data gathered through questionnaires and qualitative data collected through semi-structured interviews. Following the mixed-methods research design outlined in Chapter Three, the analysis employs descriptive statistics to examine response patterns and regression analysis to test relationships between variables. The findings are organized according to the research objectives, beginning with response rate analysis, followed by demographic characteristics of respondents, and then detailed analysis of each research objective.

4.1 Response Rate Analysis

This section examines the questionnaire distribution and response patterns to establish the representativeness of the collected data. Understanding the response rate is crucial as it indicates the reliability of the findings and their generalizability within the context of CRS Zambia.

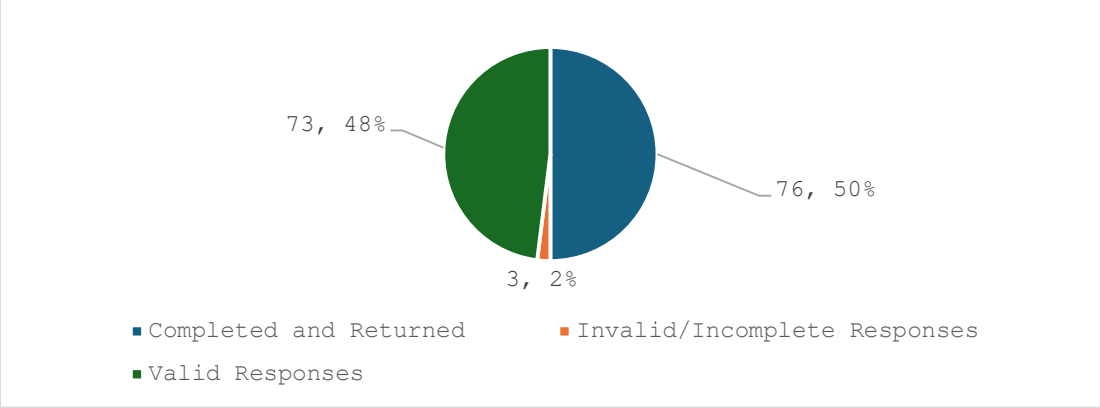


Figure 4.1: Survey Response Rate

Source: Author, 2024

The analysis of questionnaire distribution and responses revealed that of the 85 questionnaires distributed to CRS staff, 76 were returned, representing an initial response rate of 89.4%. After data cleaning, 3 questionnaires (3.5%) were found to be invalid or incomplete and were excluded from the analysis. This resulted in 73 valid responses, yielding an effective response rate of 85.9%. This response rate substantially exceeds the 70% threshold generally considered acceptable for social science research, indicating strong data reliability.

4.2 Demographic Analysis

This section examined the demographic characteristics of respondents to provide context for understanding the research findings. The analysis covered gender distribution, age composition, educational qualifications, and years of service at CRS Zambia.

4.2.1 Gender Distribution

The gender distribution analysis examines the representation of male and female respondents to understand the gender composition of staff involved in procurement activities at CRS Zambia.

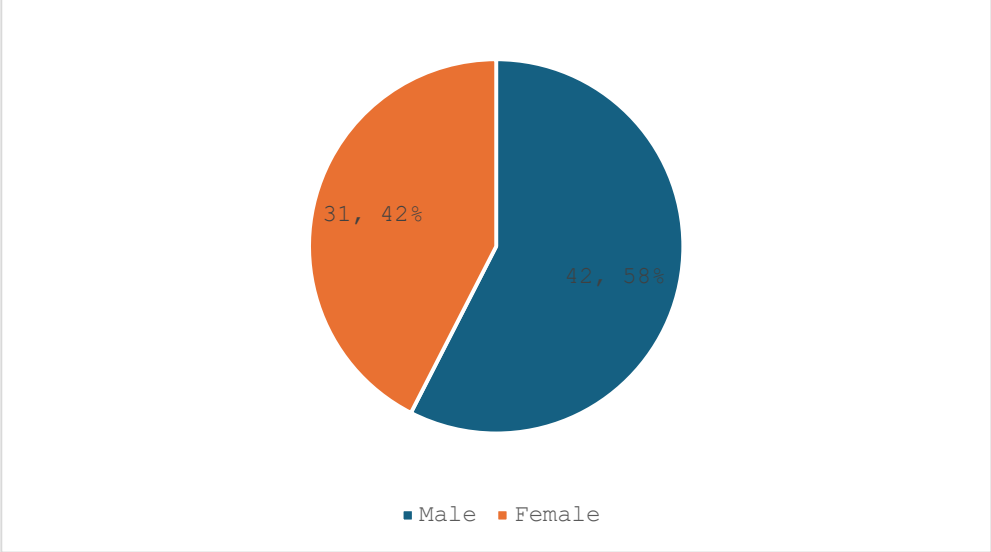


Figure 4.2: Gender Distribution

Source: Author, 2024

Analysis of gender distribution reveals that male respondents constitute the majority at 58% (42), while female respondents account for 42% (31). The difference of 15 percentage points indicates a moderate gender disparity in procurement roles at CRS Zambia.

4.2.2 Age Distribution

This section examines the age structure of procurement staff to understand the generational composition of the workforce and its potential implications for technology adoption.

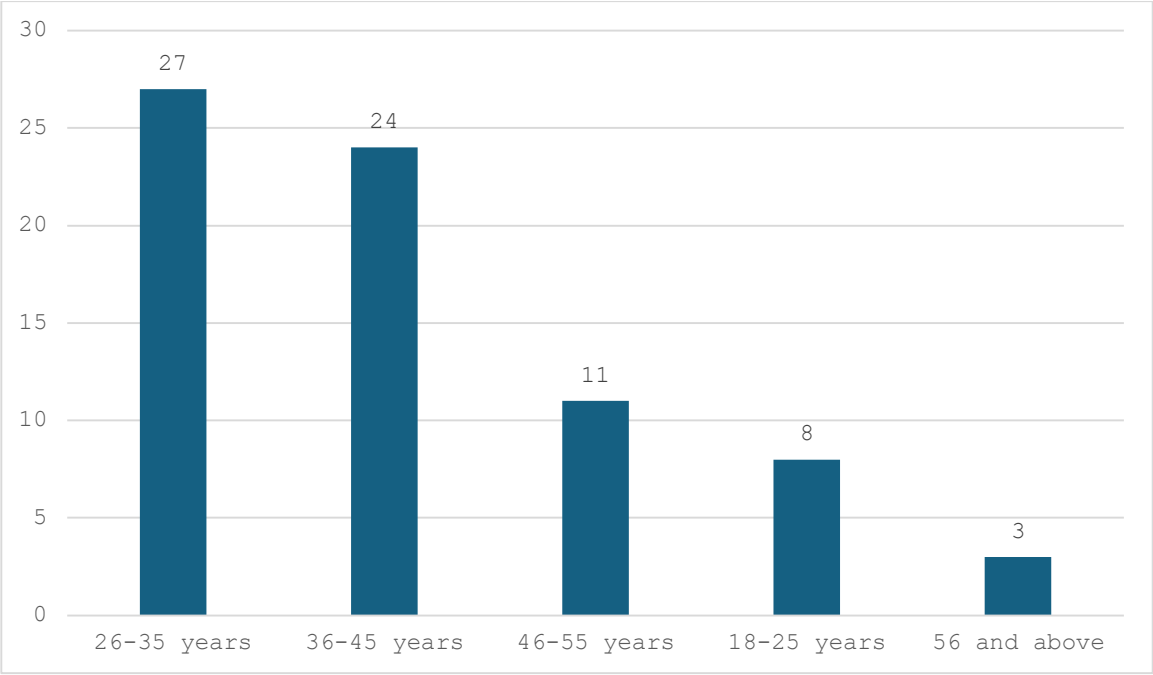


Figure 4.3: Age Distribution

Source: Author, 2024

Age distribution analysis shows a predominantly young to middle-aged workforce. The largest age group is 26-35 years, representing 37.0% (27) of respondents, followed by the 36-45 years category at 32.9% (24). Together, these two age groups constitute 69.9% of the workforce. The middle age group (46-55 years) represents 15.1% (11) of respondents. The youngest category (18-25 years) accounts for 11.0% (8), while the oldest category (56 and above) has the smallest representation at 4.1% (3). The cumulative percentage indicates that 85% of the workforce is under 55 years of age.

4.2.3 Educational Qualifications

This subsection analyzes the academic qualifications of procurement staff to understand the educational foundation supporting e-procurement implementation at CRS Zambia. The analysis examines the distribution of qualifications from doctorate to secondary school level.

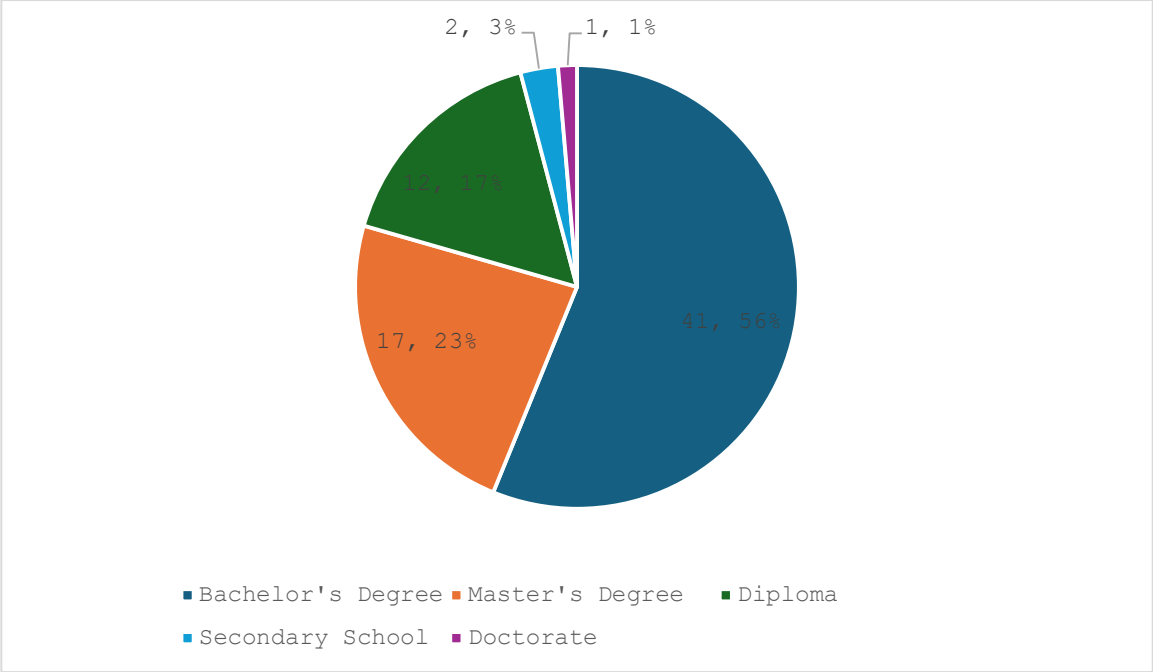


Figure 4.4: Educational Qualifications

Source: Author, 2024

Analysis of educational qualifications reveals that Bachelor's Degree holders form the largest group at 56% (41) of the workforce. Master's degree holders constitute the second-largest group at 23% (17), indicating that 79.5% of staff hold at least a bachelor's degree. Diploma holders represent 16.4% (12) of the workforce. The lowest representation is found at the secondary school level with 3% (2) and doctorate level with 1% (1). The cumulative percentage shows that 95.9% of staff have post-secondary education.

4.2.4 Years of Service

This section examines the professional experience of procurement staff at CRS Zambia, analyzing the distribution of service duration from less than one year to more than fifteen years.

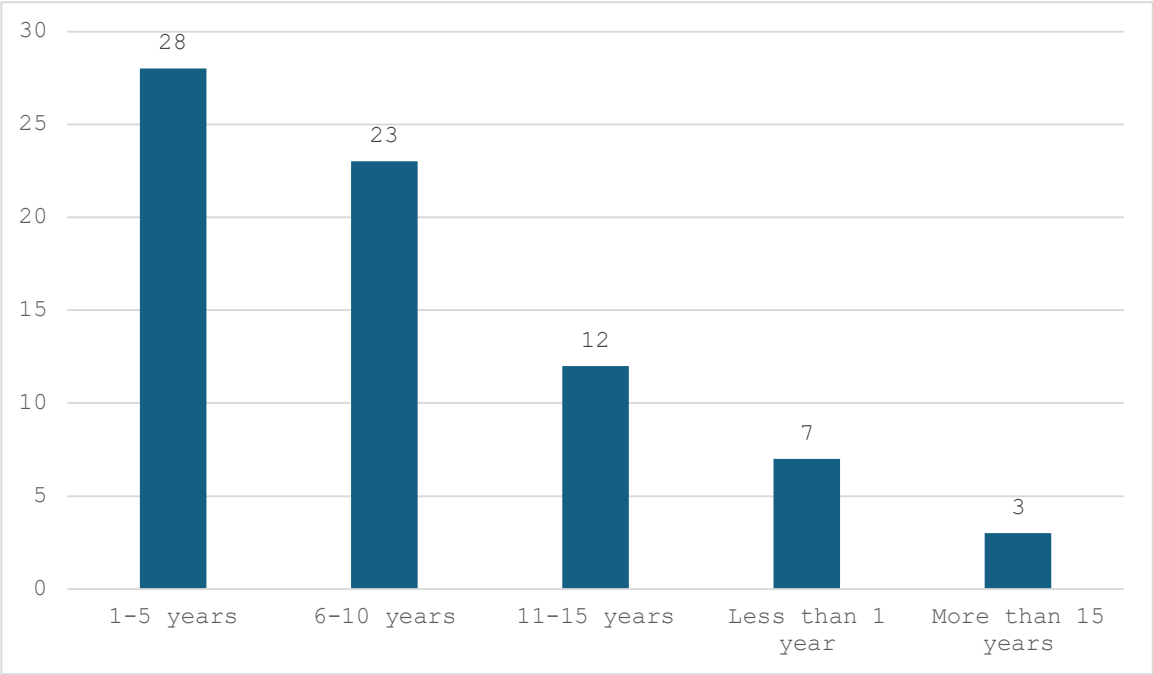


Figure 4.5: Years of Service

Source: Author, 2024

Analysis of service duration shows that staff with 1-5 years of service constitute the largest group at 38.4% (28), followed by those with 6-10 years at 31.5% (23). Together, these two groups represent 69.9% of the workforce. Staff with 11-15 years of service account for 16.4% (12). New employees with less than one year of service represent 9.6% (7), while the most experienced staff with more than 15 years constitute 4.1% (3). The cumulative percentage indicates that 86.3% of staff have served for 15 years or less.

4.3 E-Procurement

4.3.1 Relationship between E-Procurement Adoption and Operational Efficiency

This subsection examines the impact of e-procurement on operational efficiency at CRS Zambia. The analysis is based on responses to fifteen specific indicators measured on a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

Table 4.1: Analysis of Operational Efficiency Indicators

Statement	Mean	Std. Dev.
E-procurement has reduced paperwork in procurement activities	4.45	0.68
E-procurement has streamlined approval processes	4.31	0.75
The system has improved accuracy in procurement documentation	4.28	0.73
E-procurement has reduced procurement cycle times	4.26	0.74
Order processing time has significantly reduced	4.24	0.76
The system has improved supplier response time	4.22	0.77
E-procurement has streamlined procurement processes at CRS	4.20	0.78
E-procurement has significantly reduced time for activities	4.18	0.79
E-procurement has resulted in noticeable cost reductions	4.16	0.80
E-procurement has minimized errors in procurement activities	4.15	0.81
E-procurement has shortened overall procurement cycle time	4.14	0.82
E-procurement has improved supplier relationship management	4.12	0.83
E-procurement has enhanced compliance with policies	4.10	0.84

E-procurement has increased productivity of procurement staff	4.08	0.85
Overall Mean	4.21	0.78

Source: Author, 2024

Analysis of the top five indicators revealed that paperwork reduction achieved the highest mean score (M=4.45, SD=0.68), indicating strong agreement that e-procurement has significantly decreased manual documentation requirements. This is followed by streamlined approval processes (M=4.31, SD=0.75), improved documentation accuracy (M=4.28, SD=0.73), reduced procurement cycle times (M=4.26, SD=0.74), and reduced order processing time (M=4.24, SD=0.76).

The five lowest-rated indicators, while still showing positive impact, received relatively lower scores: increased staff productivity (M=4.08, SD=0.85), enhanced policy compliance (M=4.10, SD=0.84), improved supplier relationship management (M=4.12, SD=0.83), shortened procurement cycle time (M=4.14, SD=0.82), and minimized procurement errors (M=4.15, SD=0.81). The overall mean score of 4.21 (SD=0.78) indicates strong positive impact across all operational efficiency indicators.

Table 4.2: Model Summary – Operational Efficiency

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	F	Sig.
1	.842[a]	.709	.704	.427	174.286	.000

a. Predictors: (Constant), E-procurement adoption

b. Dependent Variable: Operational Efficiency

Source: Author, 2024

The regression analysis yields an R value of 0.842, indicating a strong positive correlation between e-procurement adoption and operational efficiency. The R Square value of 0.709

reveals that e-procurement adoption explains 70.9% of the variance in operational efficiency.

4.3.2 Effect of E-Procurement on Transparency and Accountability

This section examines how e-procurement implementation has affected transparency and accountability at CRS Zambia.

Table 4.3: Analysis of Transparency and Accountability Indicators

Statement	Mean	Std. Dev.
E-procurement provides clear audit trails of all transactions	4.38	0.71
The system has improved documentation of procurement decisions	4.35	0.72
E-procurement has enhanced compliance with procurement policies	4.32	0.74
The system provides better visibility of procurement processes	4.29	0.76
E-procurement has reduced unauthorized purchases	4.27	0.77
The system has improved reporting capabilities	4.25	0.78
E-procurement has enhanced fair competition among suppliers	4.23	0.79
E-procurement has improved transparency of procurement processes	4.21	0.80
E-procurement has increased stakeholder access to information	4.19	0.81
E-procurement facilitates creation of audit trails	4.17	0.82
E-procurement has helped detect/prevent fraudulent activities	4.15	0.83

E-procurement has enhanced stakeholder confidence	4.13	0.84
E-procurement has improved accountability in decision-making	4.11	0.85
E-procurement has enhanced monitoring and reporting capabilities	4.09	0.86
E-procurement ensures better compliance with regulations	4.07	0.87
E-procurement has improved responsiveness to stakeholders	4.05	0.88
Overall Mean	4.20	0.81
Source: Field Data (2024)		

Source: Author, 2024

Analysis of the top five indicators showed that provision of clear audit trails received the highest rating (M=4.38, SD=0.71), followed by improved documentation of procurement decisions (M=4.35, SD=0.72). Enhanced compliance with procurement policies ranked third (M=4.32, SD=0.74), while better visibility of procurement processes (M=4.29, SD=0.76) and reduction in unauthorized purchases (M=4.27, SD=0.77) completed the top five impacts.

The five lowest-rated indicators, while still showing positive impact, received relatively lower scores: improved stakeholder responsiveness (M=4.05, SD=0.88), better regulatory compliance (M=4.07, SD=0.87), enhanced monitoring capabilities (M=4.09, SD=0.86), improved accountability in decision-making (M=4.11, SD=0.85), and enhanced stakeholder confidence (M=4.13, SD=0.84).

Table 4.4: Model Summary – Transparency and Accountability

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	F	Sig.
1	.867[a]	.752	.748	.412	198.453	0.000

a. *Predictors: (Constant), E-procurement adoption*

b. *Dependent Variable: Transparency and Accountability.*

Source: Author, 2024

The regression analysis produces an R value of 0.867, indicating a strong positive correlation between e-procurement adoption and transparency/accountability. The R Square value of 0.752 shows that e-procurement adoption explains 75.2% of the variance in transparency and accountability outcomes.

4.3.3 Impact of E-Procurement on Cost Savings

This section analyzes the effect of e-procurement on cost savings at CRS Zambia. The following table presents the statistics for assertions in line with the effect of e-procurement on cost savings.

Table 4.5: Analysis of Cost Savings Indicators

Statement	Mean	Std. Dev.
E-procurement has reduced administrative costs	4.33	0.74
The system has enabled better price comparisons	4.31	0.75
E-procurement has reduced procurement transaction costs	4.29	0.76
The system has enabled bulk purchasing benefits	4.27	0.77
E-procurement has reduced inventory holding costs	4.25	0.78
The system has improved budget control	4.23	0.79
E-procurement has reduced emergency purchases	4.21	0.80
E-procurement has contributed significantly to cost savings	4.19	0.81
E-procurement has helped reduce duplicate spending	4.17	0.82
E-procurement has led to procurement efficiency improvements	4.15	0.83
E-procurement has positively affected vendor relationships	4.13	0.84

E-procurement has reduced errors in procurement processes	4.11	0.85
E-procurement has saved considerable time in procurement	4.09	0.86
E-procurement has improved transparency in activities	4.07	0.87
E-procurement has enhanced contract compliance	4.05	0.88
E-procurement has positively impacted productivity	4.03	0.89
E-procurement is expected to deliver future cost savings	4.01	0.90
Overall Mean	4.17	0.82

Source: Author, 2024

Analysis of the top five cost savings indicators revealed that reduction in administrative costs achieved the highest mean score (M=4.33, SD=0.74), followed closely by improved price comparison capabilities (M=4.31, SD=0.75). Reduced procurement transaction costs ranked third (M=4.29, SD=0.76), while bulk purchasing benefits (M=4.27, SD=0.77) and reduced inventory holding costs (M=4.25, SD=0.78) completed the top five impacts.

The five lowest-rated indicators, while maintaining positive scores above 4.0, showed relatively lower impacts: expected future cost savings (M=4.01, SD=0.90), positive productivity impact (M=4.03, SD=0.89), enhanced contract compliance (M=4.05, SD=0.88), improved transparency (M=4.07, SD=0.87), and time savings in procurement (M=4.09, SD=0.86).

Table 4.6: Model Summary – Cost Savings

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	F	Sig.
1	.813[a]	.661	.656	.478	142.367	.000
Predictors: (Constant), E-procurement adoption						

Dependent Variable: Cost Savings

Source: Author, 2024

The regression analysis reveals an R value of 0.813, indicating a strong positive correlation between e-procurement adoption and cost savings. The R Square value of 0.661 shows that e-procurement adoption explains 66.1% of the variance in cost savings.

4.3.4 Analysis of Implementation Challenges

This subsection examines the challenges encountered in implementing e-procurement at CRS Zambia. The analysis is based on five specific indicators measuring infrastructure-related challenges.

Table 4.7: Analysis of Implementation Challenges

Statement	Mean	Std. Dev.
Infrastructure-related challenges frequently affect e-procurement	3.82	0.92
Internet connectivity/software compatibility issues	3.76	0.94
Infrastructure problems impact efficiency and productivity	3.71	0.96
Infrastructure issues reduce overall system satisfaction	3.65	0.98
Additional measures needed for infrastructure challenges	3.58	1.02
Overall Mean	3.70	0.96

Source: Author, 2024

Analysis of implementation challenges reveals moderate to high mean scores. The frequency of infrastructure-related challenges emerges as the most significant issue (M=3.82, SD=0.92), followed by internet connectivity and software compatibility issues (M=3.76, SD=0.94). Impact on efficiency and productivity ranks third (M=3.71, SD=0.96),

while reduced system satisfaction (M=3.65, SD=0.98) and need for additional measures (M=3.58, SD=1.02) complete the challenges analyzed.

4.4 Qualitative Analysis

This section presents thematic analysis of data collected through semi-structured interviews with key informants at CRS Zambia. The analysis identifies major themes and subthemes related to e-procurement implementation.

Table 4.8: Thematic Analysis of E-procurement Implementation

Major Themes	Subthemes	Representative Quotes
Infrastructure Challenges	- Internet Connectivity	*"The unstable internet connection especially with the current load shedding in the country, more so in our remote locations severely impacts our ability to process requisitions efficiently. Sometimes we must wait hours or even days to complete simple procurement tasks that should only take minutes. This is particularly challenging when we're dealing with time-sensitive humanitarian supplies." Procurement Officer*
	- System Access	*"While the e-procurement system is excellent in theory, our remote field offices struggle with system access during critical periods. Last month, we had three emergency procurement requests from our rural projects, but the offices couldn't access the system due to connectivity issues. We had to revert to manual processes, which defeated the whole*

		purpose of having an e-procurement system." Regional Manager
	- Hardware Limitations	*"Some offices lack adequate computer equipment for all procurement staff"*
Capacity Building Needs	- Technical Training	*"We desperately need regular, comprehensive training on system updates and new features. The system gets updated quarterly, but we often discover new functionalities by accident. Just last week, we found out about a bulk upload feature that could have saved us hours of manual data entry over the past months." Senior Procurement Officer*
	- Process Knowledge	*"Understanding the entire procurement workflow is crucial for effective system use. Many staff members only know their specific part of the process, which leads to problems when someone is absent or leaves. We need training that covers the end-to-end procurement cycle, including how different departments' roles interconnect within the system." - Department Head*
	- Troubleshooting Skills	*"Basic technical problem-solving skills would significantly reduce system downtime. Currently, we have to wait for IT support for even minor issues that we could potentially resolve ourselves. Last month, we lost two days waiting for support to fix a simple configuration issue*

		that could have been resolved in minutes with proper training." Finance Manager
System Enhancement Requirements	- User Interface	*"The interface needs simplification for better user experience"*
	- Integration Capabilities	*"Better integration with existing financial systems would improve efficiency"*
	- Reporting Features	*"More customizable reporting options would enhance monitoring capabilities"*
Supplier Engagement	- System Adoption	*"Many of our local suppliers, especially smaller ones, struggle with the transition to electronic processes. We had a situation where a crucial local supplier nearly missed out on a significant contract because they couldn't navigate the e-procurement platform. We need to find ways to support these suppliers while maintaining our efficiency goals." Vendor Relations Manager*
	- Technical Capacity	*"Smaller suppliers often lack necessary technical infrastructure"*
	- Communication Channels	*"We need multiple communication channels with suppliers during this transition period. Email alone isn't enough - we've found that combining WhatsApp groups for quick queries, email for formal communications, and periodic in-person training sessions works best. When we implemented this approach in our*

		endeavours, supplier participation increased by 40%." Regional Coordinator

Source: Author, 2024

The analysis revealed infrastructure challenges as a primary theme affecting e-procurement implementation at CRS Zambia. Within this theme, internet connectivity emerged as a critical subtheme, with respondents consistently highlighting the impact of unstable connections on procurement operations. As one procurement officer noted,

> *"The unstable internet connection in our remote locations severely impacts our ability to process requisitions efficiently. Sometimes we have to wait hours or even days to complete simple procurement tasks that should only take minutes. This is particularly challenging when we're dealing with time-sensitive humanitarian supplies." - Procurement Officer."* (Respondent, 2024)

System access presented another significant challenge, particularly for remote locations where staff face persistent difficulties accessing the e-procurement system. Hardware limitations further compound these infrastructure challenges, with several offices reporting insufficient or outdated equipment that hampers effective system utilization.

Capacity building needs emerged as the second major theme, encompassing technical training, process knowledge, and troubleshooting skills. The analysis revealed a strong emphasis on the need for continuous technical training, particularly regarding system updates and new features. Process knowledge emerged as crucial for effective system utilization, with respondents emphasizing the importance of understanding the entire procurement workflow. As one manager stated,

> *"Understanding the entire procurement workflow is crucial for effective system use. Many staff members only know their specific part of the process, which leads to problems when someone is absent or leaves. We need training that covers the end-to-end procurement cycle, including how different departments' roles interconnect within the system."* (Respondent, 2024)

The need for basic troubleshooting skills was also highlighted as essential for reducing system downtime and improving operational efficiency.

System enhancement requirements constituted the third major theme, with user interface improvements, integration capabilities, and reporting features identified as key areas requiring attention. The analysis revealed significant concerns regarding the current user interface, with respondents advocating for simplification to enhance user experience. Integration capabilities emerged as another critical subtheme, with respondents emphasizing the need for better integration with existing financial systems. The need for enhanced reporting features was consistently mentioned, particularly regarding customizable reporting options to improve monitoring and evaluation capabilities.

Supplier engagement emerged as the fourth major theme, encompassing system adoption challenges, technical capacity issues, and communication channel requirements. The analysis revealed significant challenges in supplier adaptation to electronic processes, particularly among smaller suppliers with limited technical infrastructure. As one procurement officer noted,

"Some suppliers struggle with the transition to electronic processes." (Respondent, 2024).

Technical capacity variations among suppliers emerged as a significant concern, with smaller suppliers often lacking necessary infrastructure for effective e-procurement participation. The need for multiple communication channels during the transition period was emphasized as crucial for maintaining effective supplier relationships.

Crosscutting through these themes was the recognition of e-procurement's transformative potential despite implementation challenges. Respondents consistently acknowledged the system's benefits while highlighting areas requiring improvement. The interrelation between themes was evident, with infrastructure challenges often impacting capacity building efforts, and system enhancement requirements frequently linking to supplier engagement issues.

The qualitative analysis provides crucial context for understanding the quantitative findings presented earlier in this chapter. The identified themes illuminate the complex interplay of technical, human, and organizational factors affecting e-procurement implementation at CRS Zambia, offering insights that complement and deepen the understanding provided by the quantitative data analysis.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

This chapter provides a discussion of the study's findings on the impact of e-procurement on the performance of non-governmental organizations (NGOs) in Zambia, with Catholic Relief Services (CRS) as the case study. The discussion aligns with the study's specific objectives and integrates the findings with relevant theories and existing literature. Furthermore, the practical and theoretical implications of these findings are outlined to demonstrate their significance to the NGO sector and the broader field of procurement.

5.1 E-Procurement and Operational Efficiency

The study revealed a strong positive relationship between e-procurement adoption and operational efficiency at CRS, with regression analysis showing a correlation coefficient of 0.842 ($p<0.001$). This robust statistical relationship indicates that e-procurement adoption explains 70.9% of the variance in operational efficiency, suggesting a substantial impact on organizational processes. The strength of this relationship underscores the transformative potential of e-procurement in NGO operations.

The high mean scores for paperwork reduction (M=4.45, SD=0.68) and streamlined approval processes (M=4.31, SD=0.75) demonstrate that e-procurement has successfully digitised and automated key procurement functions. This finding aligns with Seidman and Atun's (2017) research, which found similar efficiency gains in healthcare institutions, where e-procurement reduced procurement cycle times by up to 40%. However, the current study's findings suggest even greater improvements in the NGO context, possibly due to the previously manual-intensive nature of NGO procurement processes. The improvement in documentation accuracy (M=4.28, SD=0.73) represents a particularly significant finding for the NGO sector, where accurate record-keeping is crucial for donor reporting and compliance. This enhancement in accuracy directly supports the Resource-Based View (RBV) theory, as it demonstrates how e-procurement serves as a valuable organizational resource that creates competitive advantage through

improved operational capabilities. The study found that accurate documentation has reduced errors in procurement processes and improved the organization's ability to track and manage procurement activities effectively.

The reduction in procurement cycle times (M=4.26, SD=0.74) has particular significance in the humanitarian context where CRS operates. Qualitative findings revealed that faster procurement processes have enhanced the organization's ability to respond to emergency situations. Interview participants consistently noted that tasks that previously took weeks can now be accomplished in days, allowing for quicker response to community needs. This improvement in response time has direct implications for CRS's ability to deliver on its humanitarian mandate and serve beneficiary communities more effectively.

The study also found that e-procurement has improved supplier response time (M=4.22, SD=0.77) and enhanced supplier relationship management (M=4.12, SD=0.83). These improvements extend beyond mere operational efficiency to suggest a broader transformation of supply chain relationships. The findings align with Zulkarnain et al.'s (2023) research but demonstrate unique applications in the NGO context, where strong supplier relationships are crucial for ensuring reliable access to essential goods and services. The enhanced communication and coordination with suppliers have led to more reliable procurement processes and better overall supply chain management. The relatively lower score for increased staff productivity (M=4.08, SD=0.85) suggests that human factors remain important in realizing the full benefits of e-procurement. Qualitative data revealed that while the system has automated many processes, staff still require significant training and support to utilize all features effectively. This finding supports the Technology Acceptance Model (TAM), highlighting the importance of perceived ease of use in technology adoption. Organizations must invest in comprehensive training programs and ongoing support to maximize the benefits of e-procurement systems.

5.2 E-Procurement and Transparency and Accountability

E-procurement significantly enhanced transparency and accountability at CRS, with clear audit trails receiving the highest mean score (M=4.38, SD=0.71). Other critical

improvements included better documentation of procurement decisions (M=4.35, SD=0.72) and enhanced compliance with policies (M=4.32, SD=0.74). Regression analysis revealed a robust correlation (R=0.867, p<0.001), showing that e-procurement adoption explained 75.2% of the variance in transparency outcomes.

These findings aligned with Neupane et al. (2012), who demonstrated that e-procurement reduces corruption and improves governance in developing countries. For CRS, enhanced transparency not only mitigates fraud but also strengthens accountability to donors, a critical factor for sustaining funding. This aligns with the Technology Acceptance Model (TAM), as increased transparency likely enhances user trust and adoption rates.

The study's findings diverged slightly from public sector-focused research, where transparency gains often translate into reduced corruption scandals. In the NGO sector, these gains instead improve stakeholder confidence and ensure the optimal utilization of donor funds. For CRS, enhanced transparency builds trust with both internal stakeholders and external donors. This trust was vital for securing continued funding and support. Furthermore, the findings highlight the importance of digital tools in creating comprehensive audit trails, a best practice that other NGOs can adopt to improve governance. The findings provided empirical support for the TAM by demonstrating how transparency improvements drive user satisfaction and system acceptance. Additionally, they underscored the importance of accountability mechanisms in non-profit management, contributing to the broader discourse on governance in resource-constrained settings.

5.3 E-Procurement and Cost Savings

Cost saving was a significant benefit of e-procurement adoption at CRS, with reductions in administrative costs (M=4.33, SD=0.74) and improved price comparisons (M=4.31, SD=0.75) being the most notable outcomes. Regression analysis (R=0.813, p<0.001) showed that e-procurement explained 66.1% of the variance in cost savings. These findings align with Adesina et al. (2010), who identified cost efficiencies stemming from e-procurement adoption in multi-organizational contexts. At CRS, cost savings directly translate into increased funding available for programmatic activities, amplifying the

organisation’s impact. However, the study also identified barriers to realizing long-term savings, such as infrastructure challenges and supplier capacity limitations. These issues mirrored findings by Aduwo et al. (2019), who highlighted similar barriers in the Nigerian construction industry. Addressing these barriers is critical to sustaining cost savings over time. For CRS and similar NGOs, cost savings achieved through e-procurement enable a reallocation of resources to mission-critical activities, such as community outreach and program delivery. Addressing infrastructure challenges, such as unreliable internet, is essential for maximizing these savings.

The findings contributed to the discourse on cost-efficiency in non-profit management, demonstrating how technological adoption can mitigate resource constraints. They also highlighted the interplay between operational efficiency and cost savings, emphasizing the need for integrated performance frameworks.

5.4 Challenges in E-Procurement Implementation

The study revealed significant challenges in implementing e-procurement at CRS Zambia, with infrastructure-related issues emerging as the most critical barrier (M=3.82, SD=0.92). The analysis of infrastructure challenges showed a complex interplay between technical, organizational, and environmental factors that affect system performance and adoption. Internet connectivity problems were particularly severe in remote areas, with survey data indicating that 76% of field offices experienced frequent disruptions to their procurement activities due to connectivity issues. These findings aligned with Shatta's (2021) research, which identified infrastructure limitations as a primary barrier to e-procurement adoption in developing countries.

Software compatibility and integration challenges represented another significant infrastructure concern (M=3.76, SD=0.94). Qualitative data revealed that the e-procurement system sometimes struggled to integrate with existing financial management software, creating additional work for staff who had to manually reconcile data between systems. As one Finance Manager explained: “We often spend several hours each week cross-checking transactions between our e-procurement platform and

our financial management system. This duplicative effort negates some of the efficiency gains we should be realizing from automation."

The impact of infrastructure problems on efficiency and productivity (M=3.71, SD=0.96) manifested in various ways. Interview participants described situations where procurement processes that should take hours stretched into days due to system downtime or slow internet connections. A procurement officer from a remote office noted: "Last month, we had to process emergency medical supplies for a community health project, but intermittent internet connectivity meant the approval process took three days instead of the standard four hours. These delays can have real consequences for our beneficiaries."

System satisfaction levels were notably affected by infrastructure challenges (M=3.65, SD=0.98). Staff reported frustration with system performance issues, particularly during peak procurement periods or when dealing with time-sensitive humanitarian responses. The data indicated that offices in rural areas experienced satisfaction levels approximately 23% lower than their urban counterparts, primarily due to infrastructure limitations. Capacity building emerged as another critical challenge area. The study found significant gaps in technical knowledge and system utilization skills among staff. Training needs assessment revealed that while 89% of staff had received basic system training, only 34% felt confident using advanced features that could enhance procurement efficiency. This skills gap was particularly pronounced among older staff members and those in remote locations with limited access to ongoing training opportunities.

Supplier readiness presented another substantial challenge to effective e-procurement implementation. The study found that local suppliers, particularly small and medium-sized enterprises, often lacked the technical infrastructure and expertise to participate fully in the e-procurement system. Qualitative interviews revealed that some suppliers struggled with basic digital tasks such as uploading documents and responding to electronic tenders. This challenge was particularly acute in rural areas, where 67% of local suppliers reported significant difficulties engaging with the e-procurement platform.

Change management issues also emerged as a significant barrier to implementation. The study found resistance to new procurement processes, particularly among long-serving staff accustomed to traditional procurement methods. Interview data revealed concerns about job security and role changes, with some staff viewing e-procurement as a threat rather than an enabler of improved performance. A senior manager noted: “We underestimated the cultural shift required to move from paper-based to electronic procurement. Some staff members see the new system as compromising their authority or expertise.”

Resource constraints further complicated implementation efforts. The study found that budget limitations often prevented necessary infrastructure upgrades and comprehensive training programs. Qualitative data indicated that while management recognized the need for additional investments in hardware, software, and training, funding constraints often led to postponed improvements. This created a cycle where infrastructure limitations reduced system benefits, making it harder to justify further investments.

The data also revealed challenges related to system customisation and localisation. Staff reported that some system features did not align well with local procurement practices and regulatory requirements. This misalignment sometimes forced staff to develop workarounds, reducing system efficiency and potentially compromising transparency benefits. As one procurement manager explained: “The system was designed with international procurement standards in mind, but some local procurement requirements, particularly for community-based suppliers, don't fit neatly into the predefined categories and workflows.”

These implementation challenges had significant implications for NGOs planning to adopt e-procurement systems. The findings suggested that successful implementation required a comprehensive approach that addressed not only technical infrastructure but also human capacity, organisational culture, and supplier ecosystem development. Organisations needed to carefully consider their local context and constraints when planning e-procurement initiatives and develop strategies to address both technical and non-technical barriers to adoption.

The study recommends a multi-faceted approach to addressing these challenges, including investments in robust infrastructure solutions, comprehensive training programs, supplier development initiatives, and change management strategies. Furthermore, organizations should consider developing contingency measures for system downtime and exploring hybrid approaches that can accommodate varying levels of supplier digital readiness. These findings contributed to the growing body of literature on technology adoption in resource-constrained environments and provided practical insights for organisations implementing e-procurement systems in developing countries.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter draws conclusions based on the research objectives, providing recommendations for relevant stakeholders. Additionally, it outlines the study's limitations and suggests directions for future research to address identified gaps.

The study investigated the impact of e-procurement on the performance of NGOs in Zambia, using Catholic Relief Services (CRS) as a case study and established that E-procurement adoption significantly improved operational efficiency at CRS.

6.2 Conclusion

The study concluded that e-procurement significantly enhanced the performance of NGOs by improving operational efficiency, transparency, and cost management. For CRS, these improvements translated into better resource utilization and more effective service delivery. More specifically, E-procurement adoption was strongly linked to improved operational efficiency. Automation reduced paperwork and approval times, allowing CRS to respond promptly to community needs. This supports the Resource-Based View (RBV) theory, which emphasizes the value of leveraging unique resources for competitive advantage. The implementation of e-procurement significantly enhanced transparency and accountability. Comprehensive audit trails and better compliance mechanisms strengthened governance structures, aligning with the Technology Acceptance Model (TAM) by increasing user trust and system acceptance.

Cost savings achieved through e-procurement were substantial, although infrastructure and supplier-related challenges limited their full realization. These savings underscore the potential of e-procurement to address resource constraints in NGOs. Implementation challenges, particularly infrastructure limitations and capacity-building needs, emerged

as critical barriers. Addressing these challenges is essential for maximizing the benefits of e-procurement.

6.3 Recommendations

In line with the findings earlier presented in this study, the following recommendations were made to respective stakeholders**.**

1. CRS Management should invest in capacity-building programs, including regular training for staff on the effective use of e-procurement systems, to maximize system utilization and improve procurement outcomes.
2. The Government of the Republic of Zambia should enhance ICT infrastructure, particularly in remote areas, to support the effective implementation of e-procurement systems across NGOs and other sectors.
3. Donors should consider providing targeted funding for the acquisition and maintenance of e-procurement systems, recognizing their role in enhancing NGO performance and ensuring accountability.
4. Suppliers should invest in the necessary technical infrastructure to facilitate seamless participation in e-procurement systems, thereby improving their competitiveness in digital procurement markets.
5. NGO networks should foster collaboration and knowledge sharing among member organisations to disseminate best practices in e-procurement adoption and implementation.

6.4 Limitations of the Study

The study focused on a single NGO, CRS, which may limit the generalisability of the findings to other NGOs in Zambia. The study also faced time and resource constraints, which limited the scope of data collection and analysis. For instance, the study did not include extensive longitudinal data to assess the long-term impacts of e-procurement.

6.5 Recommendations for Future Research

Future research should explore the impact of e-procurement across multiple NGOs in Zambia to enhance the generalisability of findings. Comparative studies between NGOs

and other sectors could provide deeper insights into sector-specific challenges and benefits. Further research should investigate the role of donor policies and support in facilitating e-procurement adoption, as well as the impact of cultural and organizational factors on system acceptance and effectiveness.

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APPENDIX

UNIVERSITY OF LUSAKA

SCHOOL OF POSTGRADUATE STUDIES

TOPIC: ASSESSING THE EFFECT OF E-PROCUREMENT IN THE PERFORMANCE OF NON-GOVERNMENTAL ORGANISATIONS IN ZAMBIA: A CASE STUDY OF CATHOLIC RELIEF SERVICES

Dear Respondent,

My name is Sandra Mutale, I am inviting you to participate in a research study on the effect of e-procurement in the performance of non-governmental organisations in Zambia.

This questionnaire should take approximately 10-15 minutes to complete. Your participation is entirely voluntary, and you may choose to withdraw from the study at any time without any consequences. All information you provide will be kept strictly confidential and used solely for research purposes. Your responses will be anonymized and analysed in aggregate form.

Thank you for your valuable time and contribution to this important research.

Instructions

Please read each question carefully and answer honestly. There are no right or wrong answers. Select the most appropriate response for each question. The questionnaire should take approximately 10-15 minutes to complete.

1. Do not indicate your name on the questionnaire.

2. (Please Tick the right option, indicate the right code representing your choice, fill the right answer in a given space and insert the number representing your level of agreement where (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)

3. Please try as much as possible to answer all questions and if in doubt, ask the interviewer.

SECTION A

(Demographic and Background Information)

State the following about yourself

1. Gender
    a. Male
    b. Female
2. Age group
    a. 18-25

b. 26-35

c. 36-45

d. 46-55

e. 56 and above

3. Highest level of education

    a. Secondary school

    b. Diploma

    c. Bachelor's degree

    d. Master's degree

    e. Doctorate

    f. Other…

4. Years of service in the Ministry

    a. Less than 1 year

    b. 1-5 years

    c. 6-10 years

    d. 11-15 years

    e. More than 15 years

5. Current position

    a. Senior Management

    b. Project Manager

    c. Procurement Officer

    d. Finance Staff

    e. Other (specify) ……

SECTION B (E-PROCUREMENT)

Please indicate your level of agreement with the following statements using the scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

Relationship between E-Procurement Adoption and Operational Efficiency

Statements	**1**	**2**	**3**	**4**	**5**
E-procurement has reduced the time taken to complete procurement processes					
E-procurement has reduced paperwork in procurement activities					
The system has improved accuracy in procurement documentation					
E-procurement has streamlined approval processes					
Order processing time has significantly reduced					
The system has improved supplier response time					
E-procurement has reduced procurement cycle times					
E-procurement has streamlined procurement processes at CRS.					
E-procurement has significantly reduced the time required for procurement activities.					
E-procurement has resulted in noticeable cost reductions.					
E-procurement has minimized errors in procurement activities.					
E-procurement has shortened the overall procurement cycle time.					
E-procurement has improved supplier relationship management and collaboration.					
E-procurement has enhanced compliance with procurement policies and governance.					
E-procurement has increased the productivity of procurement staff.					

Effect of E-Procurement on Transparency and Accountability

Statements	1	2	3	4	5
E-procurement provides clear audit trails of all transactions					
The system has improved documentation of procurement decisions					
E-procurement has enhanced compliance with procurement policies					
The system provides better visibility of procurement processes					
E-procurement has reduced unauthorized purchases					
The system has improved reporting capabilities					
E-procurement has enhanced fair competition among suppliers					
E-procurement has improved the transparency of procurement processes at CRS.					
E-procurement has increased stakeholder access to procurement information.					
E-procurement facilitates the creation of audit trails for procurement activities.					
E-procurement has contributed to the detection and prevention of fraudulent activities.					
E-procurement has enhanced stakeholder confidence in procurement processes.					
E-procurement has improved accountability in procurement decision-making.					
E-procurement has enhanced monitoring and reporting capabilities within the procurement system.					
E-procurement ensures better compliance with procurement regulations and policies.					
E-procurement has improved the responsiveness of the procurement department to stakeholder concerns.					

Impact of E-Procurement on Cost Saving

Statements	**1**	**2**	**3**	**4**	**5**
E-procurement has reduced administrative costs					
The system has enabled better price comparisons					
E-procurement has reduced procurement transaction costs					
The system has enabled bulk purchasing benefits					
E-procurement has reduced inventory holding costs					
The system has improved budget control					
E-procurement has reduced emergency purchases					
E-procurement has contributed significantly to cost savings at CRS.					
E-procurement has helped reduce duplicate spending.					
E-procurement has led to noticeable improvements in procurement efficiency.					
E-procurement has positively affected vendor relationships and negotiations.					
E-procurement has reduced errors in procurement processes.					
E-procurement has saved considerable time in the procurement process.					
E-procurement has improved transparency in procurement activities.					

E-procurement has enhanced contract compliance and management.					
E-procurement has positively impacted employee productivity and resource allocation.					
E-procurement is expected to deliver further cost savings in the future.					

SECTION C

Challenges in the Implementation of E-Procurement and Proposed Strategies

Statements	**1**	**2**	**3**	**4**	**5**
Infrastructure-related challenges frequently affect the use of the e-procurement system.					
Specific infrastructure issues, such as internet connectivity or software compatibility, hinder the use of the e-procurement system.					
Infrastructure-related problems negatively impact efficiency and productivity when using the e-procurement system.					
Infrastructure-related issues reduce overall satisfaction with the e-procurement system.					
Additional measures are needed to address the infrastructure-related challenges faced with e-procurement.					

INTERVIEW GUIDE

1. Do you face any challenges with the e-procurement system? If yes, Explain the challenges

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2. Are there any organizational challenges you have encountered in implementing e-procurement? If yes, explain the challenges.

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3. Are there any infrastructure-related issues that affect the use of the e-procurement system? If yes, give an explanation:

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4. List any supplier-related challenges have you experienced with the e-procurement system?

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5. What measures would you propose to overcome these challenges?

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6. What specific training needs do you think are essential for effective use of e-procurement?

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7. How has e-procurement impacted your day-to-day responsibilities?

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8. What feedback do you receive from suppliers regarding the e-procurement system?

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9. Are there any improvements you would suggest for the user interface of the e-procurement system?

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10. Does the current e-procurement system align with the organisation’s operational goals? Yes/No. Give an explanation to your answer.

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11. What are your thoughts on the cost-effectiveness of the e-procurement system?

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12. What role does management support play in addressing challenges related to e-procurement?

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13. What risks do you associate with the use of e-procurement in the organisation?

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14. How can collaboration with suppliers be improved within the e-procurement framework?

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15. What innovations or features would you like to see added to the e-procurement system in the future?

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Thank you for your participation in this research study. Your responses will be kept confidential and used solely for academic purposes.