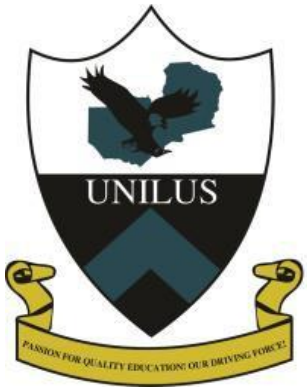


UNIVERSITY OF LUSAKA

**SCHOOL OF POSTGRADUATE STUDIES**

# AN ASSESSMENT OF THE APPLICATION OF ARTIFICIAL INTELLIGENCE TO BANK RECONCILIATION SYSTEMS AT ADRA ZAMBIA

**SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, UNIVERSITY OF LUSAKA IN PARTIAL FULFILLMENT OF THE AWARD OF THE MASTER OF BUSINESS ADMINISTRATION GENERAL**

**SIMON JOHN MWANZA**

**MBAGEN21211372**

**APRIL, 2024**

# DECLARATION

I Simon John Mwanza do hereby declare that this submission is my own work towards the MBA General and that, to the best of my understanding, it contains no material earlier published by any other person, nor material which has been accepted for the award of any other Master degree of the University, except where due acknowledgement has been made in the text. I further declare, to the best of my knowledge, that this work has not been presented in part or in whole for any academic purposes.

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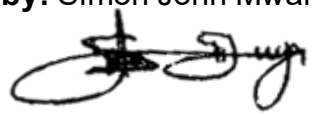
Signed: 

Date: 24.04.2024

**Supervised by:** Mr. Jeff Musonda

Signed: 

Date: 24.04.2024

# DEDICATION

This research work is dedicated to my late uncle (Simon Wanga), my parents, siblings and all my friends and most importantly to the Almighty God.

## ACKNOWLEDGEMENT

I would like to thank God for giving me the understanding to accomplish this work, none of the hard work and good ideas presented in this Dissertation would come into effect. I must acknowledge Mr. Jeff Musonda, my supervisor for the leading, and encouragement toward the successful accomplishment of this Academic work; despite of his very busy schedule. My loving parents and my brother and sister, I equally thank you for your continued support and motivation.

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# ACRONYMS/ABBREVIATIONS

**AI** - Artificial Intelligence

**ACCA** - Association of Chartered Certified Accountants

**ACFE** - Association of Certified Fraud Examiners

**ADRA** - Adventist Development and Relief Agency

**GPT** - Generative Pre-trained Transformer

**TAM** - Technology Adoption Model

**TTF** - Task-Technology Fit

**NGO** - Non-Governmental Organization

**IAS** - International Accounting Standards

**IFRS** - International Financial Reporting Standards

**ZICA** - Zambia Institute of Chartered Accountants

# ABSTRACT

The paper reports on the application and effects of AI in performing reconciliations on the bank reconciliation statements at ADRA Zambia, a non-profit organization. Traditional techniques employed in reconciling non-profit financial transactions have become increasingly time-consuming and prone to errors as technology advances. The study sets out three major objectives: to assess the effect of AI on bank reconciliation processes for non-profit organizations, investigate the challenges faced in AI adoption, and examine strategies for smooth AI integration. The primary purpose is to determine how AI implementation can enhance the quality, efficiency, and credibility of account reconciliation in the banking sector for non-profit organizations. To capture the detailed effects of AI integration, the study adopts a mixed-method approach. Descriptive statistics are used to summarize data trends, regression analysis explores relationships between variables, and thematic analysis handles qualitative data, utilizing tools such as SPSS and Microsoft Excel. The conceptual framework incorporates theoretical models like the Diffusion of Innovation Theory, Technology Adoption Model, and Task-Technology Fit Theory to analyze factors affecting AI adoption and intervention. The paper also addresses challenges related to AI integration, such as reluctance to change organizational culture, lack of experience, and associated costs.

Empirical analysis of ADRA Zambia reveals that the specificity and quality of bank reconciliation have improved with the use of AI tools. However, some challenges remain, including initial costs, staff training requirements, and system implementation. The findings suggest that effective AI integration into an organization's financial activities requires involving key stakeholders, developing strategic approaches, and providing ongoing training to personnel. This study not only offers practical insights for organizations planning similar technology transformations but also contributes to the broader literature on technology use in nonprofit organizations. Future research should revisit the impact of AI on non-profit financial management and consider expanding the study to different non-profit contexts to validate the findings.



***Keywords: Artificial Intelligence, Bank Reconciliation, Non-Profit Organizations***

# CHAPTER 1:

# INTRODUCTION

## 1.1 Introduction

The rapid advancement of technology, particularly Artificial Intelligence (AI), has significantly transformed various sectors, including financial management. AI has introduced innovative solutions that automate complex processes, reducing reliance on manual efforts and minimizing the risk of errors. In financial management, one of the most critical tasks is bank reconciliation, a process that ensures an organization's financial records align with its bank statements. For non-profit organizations like the Adventist Development and Relief Agency (ADRA) Zambia, accurate financial management is essential to maintaining donor trust and ensuring the effective use of resources.

Despite the potential benefits of AI, many organizations, including ADRA Zambia, still rely on traditional manual methods for bank reconciliation. These methods are time-consuming, error-prone, and increasingly inadequate in an era of complex financial transactions. According to ACCA (2019), approximately 75% of accountants are still unaware of AI's potential effect and its interpretability within their field. This hesitancy contributes to the continued use of outdated methods, despite the clear advantages of AI. This study seeks to explore the integration of AI into ADRA Zambia's bank reconciliation processes, assessing its effect on efficiency and accuracy while identifying challenges to adoption and strategies for overcoming them.

## 1.2 Background of the study

Financial reporting is a cornerstone of business and economic decision-making, influencing the investments and trust of stakeholders such as lenders, investors, and donors. The credibility of financial reporting systems is critical, yet it has been increasingly challenged by the complexities of modern financial transactions and regulations. Despite the guidelines provided by Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRSs), traditional manual methods of financial reporting continue to exhibit significant flaws. Research by PwC and KPMG has

revealed that up to 90% of spreadsheets contain errors, even when adhering to these standards (Benson, 2020). This statistic underscores the inherent inefficiencies and risks associated with manual financial processes, particularly the lack of an audit trail and the potential for human error.

In many non-profit organizations, managing bank statements and financial records is still completed manually, which can be slow, prone to errors, and open to fraud (SDA Accounting Manual, 2011; Trintech, 2024). This traditional approach not only increases the likelihood of errors but also exposes financial data to potential tampering and fraud, posing a significant risk to the integrity of financial management in non-profits. As these organizations grow and deal with an increasing volume of transactions, the limitations of manual processes become more pronounced. The traditional methods of financial management are struggling to keep up with the increasing complexity of financial operations, which is exacerbated by the lack of technological adoption (Trintech, 2024). Although Artificial Intelligence (AI) presents a solution by automating these tasks, making them faster and more accurate, its adoption in non-profit organizations remains limited. A significant reason for this is that many accountants in these organizations have not received adequate training in AI, making it difficult for them to adopt and utilize these advanced technologies effectively (Datasnipper, 2024). This lack of AI integration highlights a critical knowledge gap in the financial management practices of non-profit organizations, particularly in their ability to enhance financial accuracy, efficiency, and fraud prevention.

The ACCA (2019) report indicates that a significant portion of accountants are still unaware of how AI can be applied to improve their work, further contributing to the slow adoption of AI. Despite its potential, the adoption of AI within the accounting profession has been slow, largely due to the profession's historical reliance on manual processes and the perceived complexity and cost of implementing new technologies. For organizations like ADRA Zambia, the integration of AI into their financial processes is not only a technological upgrade but a necessary step toward improving financial accuracy and operational efficiency. This study focuses on understanding what is needed to bring AI into these organizations, especially for making bank statement management better,

quicker, and more reliable. By exploring the requirements and challenges associated with adopting AI, the research aims to fill the knowledge gap and provide strategies for non-profit organizations to enhance their financial management practices, ensuring they can meet modern financial demands and maintain the trust of their stakeholders.

### 1.2.1 Brief History of ADRA Organization

Since its inception in Zambia in 1986, the Adventist Development and Relief Agency (ADRA) has grown significantly, with a notable expansion following the establishment of a refugee camp in Chiengi District in 1999. This growth has led to a substantial increase in the complexity and volume of financial transactions, primarily driven by donor funding. ADRA is currently engaged in a wide range of projects focused on community development, humanitarian aid, health, education, and sustainable living, each contributing to the intricacies of its financial management (ADRA Zambia, n.d.). Presently, ADRA Zambia's bank reconciliation is handled manually. This process, while traditional, is time-consuming and prone to errors, which compromises the efficiency of financial management. The introduction of AI to automate these tasks offers a strategic improvement. By streamlining the reconciliation process, AI can significantly reduce errors and enhance the speed of financial operations. This technological advancement is crucial for ADRA Zambia, as it would allow the organization to manage the increased demands of its financial activities more effectively, uphold high standards of financial integrity, and maintain accountability to its donors and partners. Ultimately, AI would enable ADRA Zambia to focus more on its core humanitarian objectives, ensuring that operational efficiency and financial accuracy are aligned.

## 1.3 Statement of the Problem

In many non-profit organizations, managing bank statements and financial records is still completed manually, which can be slow, prone to errors, and open to fraud (SDA Accounting Manual, 2011; Trintech, 2024). Even though Artificial Intelligence (AI) could make these tasks faster and more accurate, its use is limited. One reason is that many accountants in these organizations have not learned about AI in their training, making it hard for them to use and adopt these advanced technologies (Datasnipper, 2024). They often rely on essential accounting software and handle massive amounts of data

manually, which increases the chance of errors and data being tampered with (Inpay, 2024; SDA Accounting Manual, 2011). As these organizations grow and deal with more transactions, the problem worsens because the old ways of doing things cannot keep up (Trintech, 2024). This study focuses on understanding what is needed to bring AI into these organizations, especially for making bank statement management better, quicker, and more reliable.

## 1.4 Research Objectives

### 1.4.1 Main Objective

This study's primary goal is to evaluate the application of Artificial Intelligence (AI) to bank reconciliation systems at ADRA Zambia.

### 1.4.2 Research Objectives

The specific objectives of this research were as follows:

- To assess the effects of AI on bank reconciliation processes for ADRA Zambia.
- To investigate the challenges faced by ADRA Zambia organization in the adoption of AI for bank reconciliation process.
- To examine strategies put in place by ADRA Zambia for smooth AI integration into the organization's bank reconciliation processes.

## 1.5 Research Questions

The researcher sought answers to the following questions below:

- What are the effects of Artificial Intelligence on bank reconciliation processes for ADRA Organization in Zambia?
- What are the challenges faced by ADRA Zambia organization in the adoption of Artificial Intelligence for bank reconciliation process?
- What are the strategies put in place by ADRA Zambia for smooth Artificial Intelligence integration into the organization's bank reconciliation processes?

### 1.6 Hypotheses

The study employed the following hypotheses:

**Hypothesis 1:**

- Null Hypothesis (H0): The integration of Artificial Intelligence (AI) in automating Bank Reconciliation Statements does not have a significant effect on the efficiency and accuracy of financial processes at ADRA Zambia.
- Alternative Hypothesis (H1): The integration of Artificial Intelligence (AI) in automating Bank Reconciliation Statements has a significant effect on the efficiency and accuracy of financial processes at ADRA Zambia.

**Hypothesis 2:**

- Null Hypothesis (H0): The integration of AI in automating Bank Reconciliation Statements does not significantly reduce the challenges faced by ADRA Zambia in adopting AI technology.
- Alternative Hypothesis (H1): The integration of AI in automating Bank Reconciliation Statements significantly reduces the challenges faced by ADRA Zambia in adopting AI technology.

**Hypothesis 3:**

- Null Hypothesis (H0): The integration of AI in automating Bank Reconciliation Statements does not significantly improve the effectiveness of strategies implemented by ADRA Zambia for smooth AI integration.
- Alternative Hypothesis (H1): The integration of AI in automating Bank Reconciliation Statements significantly improves the effectiveness of strategies implemented by ADRA Zambia for smooth AI integration.

## 1.7 Significance of Study

The study was justified by its significance and importance in addressing the challenges of inadequate bank reconciliation processes in non-profit organizations, including ADRA Zambia. The research was reported to be highly relevant as it sought to close the gap in these processes. It was noted that conventional approaches to bank reconciliation were often tedious and carried a high risk of accounting discrepancies, which could jeopardize an organization's credibility. By examining the use of Artificial Intelligence (AI) in this context, the study aimed to enhance operational effectiveness and ensure greater accountability in the management of funds, directly addressing the identified problems. Furthermore, the research was said to extend the literature on AI implementation in non-profits — a field where studies are currently scarce — and to provide a deeper understanding of how AI could be integrated with existing accounting systems to handle increasingly complex business transactions. The outcomes of the study were expected to be leveraged not only by non-profit organizations but also by a wider range of beneficiaries, including accountants, financial professionals, and software developers, to improve financial practices and tools. Additionally, it was suggested that donors and funding agencies could benefit from increased transparency and accountability, thus fostering greater trust in the organizations they support. The research was also described as timely and significant because it offered practical recommendations and theoretical contributions that could spur innovation in financial management. This, in turn, would enable organizations to allocate more resources to their humanitarian missions while adhering to high ethical standards of financial stewardship. Moreover, the findings were anticipated to influence broader financial management practices, potentially serving as a model for AI integration across various sectors.

## 1.8 Scope of the Study

The study was reported to target 60 employees of ADRA Zambia, with a special focus on Lusaka. This number was chosen to represent a manageable proportion of the organization's workforce, including departments such as Finance, IT, and Management, to allow for a broad evaluation of how AI was being utilized in the company. Lusaka was selected as the study area because it served as the headquarters of ADRA Zambia and the center of its operations, with most of the financial activities being centralized in this region. It was noted that this focus on Lusaka would provide insights that are informative of the broader activities of ADRA Zambia and the decisions it makes.

## 1.9 Delimitations of the study

The study was reported to focus on the integration of Artificial Intelligence (AI) into the bank reconciliation processes at ADRA Zambia, a non-profit organization. It was specifically concerned with assessing AI's effect on efficiency, addressing challenges in adoption, and examining strategies for smooth integration. The research was limited to ADRA Zambia's operations and did not extend to other financial areas, sectors, or the long-term effects of AI. The research was confined to ADRA Zambia, with a focus on the immediate phase of AI adoption in bank reconciliation. It did not cover other AI applications or make comparisons with other organizations, which ensured a detailed analysis of ADRA Zambia's unique context.

**Delimitations:**

- **Geographical Focus:** The study was limited to ADRA Zambia, allowing for tailored insights applicable to its specific environment.
- **Organizational Focus:** It concentrated solely on ADRA Zambia, providing depth in understanding AI integration within this single organization.
- **Technological Scope:** The focus was on AI used in bank reconciliation, ensuring the research remained relevant and manageable.
- **Timeframe:** The study examined the initial phase of AI adoption, providing timely insights without exploring long-term effects.

## 1.10 Definition of Key Terms and Concepts

- **Spreadsheets:** They are the tables with the rows and columns which are basically utilized in the organization and even in computation of both financial or numerical values. Values can be typed directly into the cell or obtained with the help of simple mathematical operations (National Council of Education and Research, 2022, p. 17).
- **Payables:** Accounts or payables refer to the unsettled dues that a company holds to other parties for products & services bought for resale. These debts are trade debts from trading activities (ACCA F3, 2015, p. 66).
- **Receivables:** Receivables are the non-fixed assets recognized in the business as the resources that are owned to the company, owning to the finished product or service. In this case, it must be appreciated that, once realized these receivables are capable of being turned into cash (ACCA F3, 2015, p. 66).
- **Fraud:** Fraud is defined as the act of intentionally providing dissimilar information to how a company's financial position actually is in a bid to presenting a wrong image of the firm to users of financial statements (ACFE, 2021, p. 80).

## 1.11 Organization of the Study

This study is organized into six chapters:

- **Chapter 1: Introduction**

  Provides the research background, problem statement, objectives, questions, hypotheses, significance, scope, and delimitations. It sets the context and rationale for the study.
- **Chapter 2: Literature Review**

  Reviews relevant literature on AI in financial management, particularly in non-profits, identifying gaps and positioning the study within the broader academic context.
- **Chapter 3: Research Methodology**

  Outlines the research design, data collection methods, sampling techniques, and analysis procedures, along with ethical considerations and study limitations.

- **Chapter 4: Presentation and Analysis of Results**

  Presents and analyzes the data collected, testing the hypotheses and discussing the findings in relation to the reviewed literature.
- **Chapter 5: Discussion of Findings**

  Delves deeper into the implications of the findings, interpreting them in the context of the research questions and objectives. It connects the results to the existing body of knowledge and explores their significance.
- **Chapter 6: Conclusion and Recommendations**

  Summarizes the key findings of the study, draws conclusions, and provides recommendations for practice and future research. It also discusses the broader implications of the study's results for ADRA Zambia and similar organizations.

# CHAPTER 2:

# LITERATURE REVIEW

## 2.1 Introduction

Chapter 2 explores the role of Artificial Intelligence (AI) in financial management, focusing on its application in bank reconciliation within non-profit organizations. It begins with an overview of AI adoption across sectors such as banking and charity, highlighting the growing importance of technologies like ChatGPT and Gemini. The chapter then examines how AI is integrated into internal control systems globally, particularly in financial institutions, and the challenges non-profits face in adopting these technologies. It also discusses AI's role in helping non-profits comply with International Accounting Standards (IAS), with a focus on IAS 1 for financial statement presentation. The chapter reviews AI's broader applications across various organizations, emphasizing its potential in non-profit sectors. Empirical studies are introduced to support the effect of AI on financial processes, aligning with the study's objectives. Finally, theoretical frameworks such as the Diffusion of Innovation Theory, Technology Adoption Model (TAM), and Task-Technology Fit (TTF) Theory are explored, along with the conceptual framework guiding this study on AI's effectiveness in automating bank reconciliation processes at ADRA Zambia.

## 2.2 AI and Internal Control Systems

Artificial intelligence (AI) has become crucial in strengthening internal control systems, particularly in financial institutions, by reducing the risk of financial scandals. Since the Enron scandal, strong governance has been emphasized, with AI enhancing fraud detection through its ability to identify anomalies in large datasets (Messier, 2003; Bridge et al., 2014; Szegedy et al., 2013). AI is increasingly adopted across sectors, including banks and non-profits, with technologies like ChatGPT and Gemini leading advancements (Schmarzo, 2023). Despite its potential, AI adoption in non-profits, particularly in Africa, remains limited due to ethical concerns, resource constraints, and challenges in implementing machine learning systems. The 2019 Barclays Bank Zambia incident highlights the need for AI-driven internal controls in the region (Lusaka Times,

2019). At ADRA Zambia, AI's underutilization in tasks like bank reconciliation reflects broader regional challenges. While AI offers significant benefits in fraud detection and financial management, its implementation in local non-profits is hindered by ethical issues and data privacy concerns (Bridge et al., 2014; PwC, 2019). The literature reflects mixed views on AI adoption in non-profits, with some advocating for its efficiency and others urging caution due to cultural and ethical implications (Szegedy et al., 2013; Bridge et al., 2014).

## 2.3 Accounting Process

Bank reconciliation is essential for accurate accounting but traditionally has been manual, error-prone, and time-consuming. AI offers a transformative shift by automating large-scale transaction reconciliations, enhancing accuracy, and reducing processing time (ACCA, 2014; Deloitte, 2020). However, AI's effectiveness relies on high-quality data, making robust data governance crucial (Jones et al., 2021). For non-profits, where transparency is critical, balancing AI's benefits with risks like data bias is vital (Deloitte, 2020). This study examines how AI can enhance financial accuracy and compliance in non-profits while addressing challenges such as data quality, ethical considerations, and financial constraints. AI driven reconciliation improves accuracy, efficiency, and regulatory compliance, but risks like data bias and the need for significant investment in technology and training must be managed (Journal of Finance and Data Science, 2021). Non-profits often face barriers like limited AI literacy and financial constraints, making supportive strategies essential (Deloitte, 2020). The study also explores the ethical implications of AI in non-profits, such as transparency, accountability, and the potential replacement of human roles, emphasizing the importance of training and stakeholder involvement in AI integration (Kureljusic, 2023; Lobato, 2023). By adopting a phased approach, non-profits can leverage AI to improve operational efficiency while maintaining ethical standards.

## 2.4 Compliance with Standards

To ensure financial integrity and transparency, non-profit organizations must adhere to International Accounting Standard (IAS 1), with bank reconciliation processes playing a key role in maintaining accuracy and legal compliance. This study explores how AI can enhance financial reporting accuracy and efficiency in NGOs, which often face challenges in managing extensive economic data and ensuring transparency despite limited resources. AI technologies, including machine learning and natural language processing, offer solutions by automating complex transaction reconciliations and improving compliance (IFRS Foundation, 2021). However, implementing AI in non-profits presents challenges such as data privacy, costs, and staff training (Brown & Davis, 2019). While the Financial Reporting Council (2019) advocates for AI in accounting, it often overlooks these practical difficulties, particularly for budget-constrained non-profits. This research focuses on integrating AI into non-profits like ADRA Zambia to automate bank reconciliation, thereby improving financial accuracy and operational efficiency. It examines scalable, cost-effective AI integration methods that respect non-profits' financial limitations while ensuring compliance with financial standards. Using a mixed-methods approach, the study combines quantitative analysis of AI's impact on financial compliance with qualitative insights from interviews with non-profit accountants and managers. The case study on the Zambia Institute of Chartered Accountants' framework (ZICA, 2019) evaluates AI's adaptability to various regulatory environments, emphasizing its potential to support International Financial Reporting Standards compliance. The research provides actionable insights for non-profits on navigating AI adoption complexities, ensuring these technologies enhance financial management while maintaining ethical and regulatory standards.

## 2.5 International Accounting Standard (IAS 1) - Presentation of Financial Statements

This section explores how AI can enhance financial management in NGOs, particularly in bank reconciliation, to improve compliance with IAS 1. Research by Schmarzo (2023) and McMahon (2023) highlights AI's potential to boost accuracy and efficiency, but challenges such as machine learning sustainability and ethical concerns hinder its adoption in the NGO sector. The primary research question investigates AI's role in improving financial reporting in NGOs while adhering to IAS 1, while secondary questions address obstacles like data protection, costs, and staff training (Brown & Davis, 2019). The literature identifies a gap in empirical studies on AI's ability to meet complex financial reporting requirements, such as IAS 1, without oversimplifying statements. This research uses a mixed-methods approach, combining quantitative and qualitative data from NGO finance teams, to assess organizational readiness for AI and its technological and operational implications. Using Rogers' Diffusion of Innovations Theory, the study examines organizational and cultural factors influencing AI adoption in NGOs. The goal is to provide a comprehensive understanding of AI's benefits and challenges in enhancing financial transparency and operational efficiency, balancing AI's potential with real-world obstacles.

## 2.6 Application of Artificial Intelligence across Organizations

Recent developments in AI are boosting operational efficiency in the non-profit sector, essential for optimizing resources. Research by Toplic (2020), Rodrigues (n.d.), Chen et al. (2021), and Gupta (2022) highlights AI's potential to enhance financial management, which has traditionally relied on manual reconciliations. This paper examines AI's role in non-profit financial operations, contrasting recent and earlier studies. Using Rogers' Diffusion of Innovations Theory, it explores AI's impact on bank reconciliations, identifies adoption challenges, and suggests integration strategies. The paper advocates for future research on tailored AI frameworks to improve accessibility and address sector-specific challenges, promoting gradual AI adoption with ethical considerations and stakeholder involvement.

## 2.7 Empirical Review

This section reviews the empirical literature on AI's role in automating bank reconciliation in non-profits, aligning findings with the study's objectives and hypotheses. Onuoha and Amponsah (2016) emphasized the importance of timely bank reconciliation but did not explore AI's potential in this area, highlighting a gap this study addresses. Globally, AI has been shown to improve the efficiency and accuracy of financial processes, including bank reconciliation (Kumar & Srivastava, 2024; McKinsey & Company, 2023). This supports Hypothesis 1, which posits that AI integration significantly enhances these processes at ADRA Zambia. However, challenges such as limited IT resources, ethical concerns, and data protection remain, particularly in non-profits (Dinh et al., 2015; Brown & Davis, 2019). The study explores these practical implications and how AI can streamline bank reconciliation despite these obstacles. Kulkarni et al. (2017) noted AI's limitations in handling complex tasks, relevant to non-profits' financial operations. Joshi (2019) and Adeola & Adebiyi (2023) highlighted AI's potential in the African context but also pointed out infrastructural and training challenges, aligning with Hypothesis 2, which suggests AI can reduce these challenges for ADRA Zambia. Mhlanga & Kekana (2024) and Tembo et al. (2024) emphasized the need to address digital literacy, infrastructure, and cybersecurity issues in AI adoption. These challenges underscore the importance of Hypothesis 3, which focuses on strategies for smooth AI integration at ADRA Zambia. The study supports phased AI implementation, tailored solutions, and staff training as critical strategies for successful adoption, addressing the ongoing gap in applying AI advancements within non-profits' financial practices. Table 1 below illustrates the progress in understanding technology's effect on financial stewardship practices and highlighted the ongoing gap in applying these advancements within non-profit organizations. The study sought to address this gap by examining the potential benefits and challenges of AI in automating bank reconciliation processes, aligning with the objectives and hypotheses outlined in the review.

## Table 1: Existing Systems and Knowledge Gap

| Paper | Authors | Year of Publication | Methodology | Findings of the Study | Research Gap |
|---|---|---|---|---|---|
| Bank Reconciliationas a Due Process Imperative for Effective Financial Management | N. Onuoha and B. Amponsah | 2016 | The study is a descriptive survey targeting respondents from Finance and Accounts departments of organizations. | The study reveals how reconciling bank accounts works and the effect on the overall system when it is not done correctly. | The study suggests the need for practical regular reconciliation, data handling, and discrepancy detection. |
| An Assessment of Reconciliation in Management System | L. Dinh, T. Rinfret, L. Raymond | 2015 | The study is a descriptive survey targeting Finance, Banking, and IT professionals. | The study results revealed that Hierarchical Clustering technique was accurate in the processing of grouped transactions according to the requirements of bank reconciliation. | The study suggests further enhancement of the current process to reduce the waiting time for the result. |
| BANK CHATBOT – An Intelligent Assistant System Using NLP and Machine Learning | C. Kulkarni, A. Bhavsar, S. Pingale, S. Kumbhar | 2017 | The study is a descriptive, experimental, and applied approach. The target population included Banking and Finance professionals. | The study revealed that the chatbot answered 87% of questions asked correctly, and 13% of the questions were incorrect. | The study suggests that the system requires a broad domain, using intelligent answers, the internet, and databases, offering relevant suggestions, and presenting account information. |
| Customer Service Strategies and AI in Zambian Banks | R. Joshi | 2019 | A case study of Investrust Bank in Zambia, using a mixed-method approach to assess customer service strategies enhanced by AI. | AI has the potential to significantly improve customer retention and service delivery in Zambian banks, though its application remains limited. | The study emphasizes the need for greater AI integration in customer service strategies within the Zambian banking sector. |
| The Role of Artificial Intelligence in Enhancing Financial Services in Africa | A. Adeola, J. Adebiyi | 2023 | A mixed-method approach combining surveys and interviews with financial professionals across various African countries. | AI has improved the accuracy and efficiency of financial processes, including bank reconciliation, but its adoption is hindered by infrastructural and training challenges in Africa. | The study highlights the need for improved infrastructure and AI training programs to facilitate broader AI adoption in financial services across Africa. |
| Challenges of AI Integration in African Banking | M. Mhlanga, L. Kekana | 2024 | A qualitative study focusing on case studies of South African banks adopting AI technologies. | AI integration in banking has led to significant operational improvements, though challenges such as digital literacy and infrastructure limitations persist. | The study calls for more research into overcoming infrastructural and educational challenges to AI adoption in African financial institutions. |
| Examining the Role of Artificial Intelligence in Cybercrime in Zambia | S. Tembo, J. Shabani, M. Ng'ambi | 2024 | An integrative assessment using case studies and surveys to explore AI's role in financial services and cybercrime in Zambia. | AI tools have improved financial service delivery in Zambia, but have also introduced new cybersecurity risks that must be managed. | The study suggests a need for comprehensive cybersecurity frameworks to accompany AI adoption in Zambian financial services. |

***Source: Author (2024)***

## 2.8 Theoretical Framework

A theoretical framework is a structure that can hold or support a theory of a research study. It introduces and describes the theory that explains why the research problem under study exists (Grant & Osanloo, 2014). According to Miles and Huberman (1994), a theoretical framework provides a grounding base, or an anchor, for the literature review, and most importantly, for the methods and analysis of the study. The adoption of AI in automating bank reconciliation statements presents a promising avenue for enhancing the efficiency and accuracy of financial processes within non-profit organizations. This investigation draws upon the Diffusion of Innovation Theory (Rogers, 1995), the Technology Adoption Model (TAM) (Davis, 1989), and the Task-Technology Fit (TTF) Theory (Goodhue & Thompson, 1995) to provide a comprehensive understanding of the factors influencing AI adoption and its potential effect on financial operations.

### 2.8.1 Diffusion of Innovation Theory

Rogers' (1995) Diffusion of Innovation Theory provides a robust framework for understanding how new technologies, such as AI, are adopted within organizations. The theory emphasizes five key attributes relative advantage, compatibility, complexity, trialability, and observability that significantly influence the rate of adoption. In the context of non-profit organizations, which often face resource constraints and operational challenges, these attributes are particularly relevant. The theory's focus on relative advantage is crucial, as AI's ability to automate bank reconciliations can present a clear advantage over traditional manual methods, leading to increased efficiency and accuracy. Moreover, the compatibility of AI with existing systems in non-profits is essential, as many organizations operate with outdated technologies. The perceived complexity of AI may act as a challenge, particularly for organizations with limited technical expertise. However, trialability the ability to experiment with AI on a small scale before full implementation can mitigate some of these concerns. Observability, or the ability to see the tangible benefits of AI in action, is also a critical factor that can drive adoption. While the Diffusion of Innovation Theory provides valuable insights into the adoption process, it may not fully capture the complex organizational and social dynamics at play in non-profit settings. Factors such as organizational culture, leadership support, and cross-departmental collaboration play significant roles in technology adoption but are not deeply addressed

by this theory. Therefore, while the theory is appropriate for explaining the initial stages of AI adoption, it must be supplemented with additional frameworks to fully understand the adoption process in non-profit organizations.

### 2.8.2 Technology Adoption Model (TAM) Theory

Davis' (1989) Technology Adoption Model (TAM) is a widely recognized framework that explains the adoption of new technologies based on two main factors: perceived usefulness and perceived ease of use. In the context of AI adoption for bank reconciliation in non-profit organizations, TAM is highly relevant. The model suggests that if AI is perceived as useful meaning it improves efficiency, accuracy, and overall financial management users are more likely to adopt it. Similarly, if AI is perceived as easy to use, with user-friendly interfaces and minimal training requirements, adoption rates will increase. However, while TAM effectively addresses individual-level factors influencing adoption, it is often criticized for its limited scope, as it does not account for external factors such as organizational readiness, regulatory compliance, and security concerns, which are particularly pertinent in the financial sector. In the case of non-profits, these external factors can be significant challenges to adoption. Therefore, while TAM provides a useful lens for understanding how individuals within an organization might perceive AI, it must be complemented by broader models that consider organizational and environmental factors. To address these limitations, this study considers the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), which integrates elements from TAM and other models to offer a more comprehensive understanding of technology adoption. UTAUT includes factors such as social influence, facilitating conditions, and user experience, which are crucial for understanding the complexities of AI adoption in non-profit organizations.

### 2.8.3 Task-Technology Fit (TTF) Theory

The Task-Technology Fit (TTF) Theory proposed by Goodhue and Thompson (1995) offers a framework for assessing how well a technology, such as AI, matches the specific tasks it is intended to support in this case, bank reconciliation. TTF posits that technology will be more effective if it closely aligns with the tasks it is designed to perform, leading to improved performance outcomes. This theory is particularly relevant for evaluating AI in

non-profit organizations, where the specific requirements of bank reconciliation such as accuracy, speed, and the ability to handle large volumes of transactions are critical. The theory suggests that the success of AI in automating bank reconciliation processes will depend on how well the technology meets these specific needs. For instance, AI systems that can accurately detect anomalies, process large datasets quickly, and integrate seamlessly with existing financial systems are likely to be more successful in this context. TTF also highlights the importance of user satisfaction; even if AI is technically capable, it must be perceived as useful and easy to use by those who rely on it for their daily tasks. While TTF provides a strong foundation for assessing the technical fit of AI, it may benefit from being combined with TAM to understand user acceptance and from Diffusion of Innovation Theory to understand broader adoption trends. By integrating these theories, the study can offer a more holistic view of the factors influencing the adoption and effectiveness of AI in non-profit bank reconciliation processes.

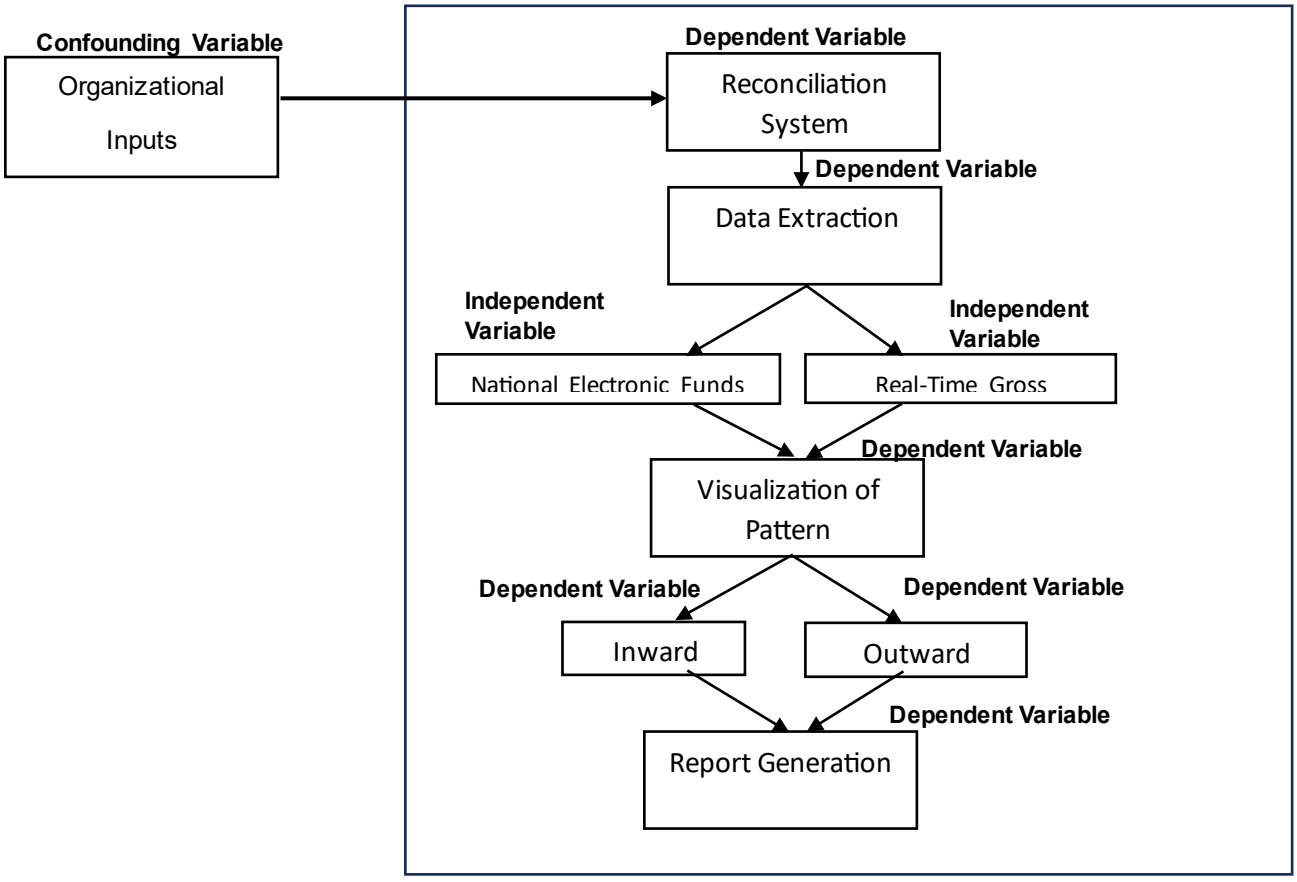
## 2.9 Conceptual Framework

A conceptual framework is a structure that synthesizes existing knowledge and guides the research by mapping out the relationships between variables (Miles & Huberman, 1994). The conceptual framework for this study on integrating Artificial Intelligence (AI) in NGO bank reconciliation processes builds on insights from Monica, Kavitha, and Revathi (2015). It assesses AI's ability to enhance accuracy, speed, and reliability in financial management, moving away from manual methods. Central to the framework are organizational inputs—such as existing financial protocols, openness to innovation, and staff competencies—which serve as critical variables influencing the efficacy of AI systems. Key elements include NEFT and RTGS as independent variables, representing current transaction systems that AI could improve with its advanced pattern recognition and anomaly detection capabilities. The critical dependent variable, 'visualization of patterns,' highlights AI's skill in analyzing complex data sets essential for accurate financial reporting. This framework guides the study's objectives to evaluate AI's effect, understand adoption challenges, and explore effective integration strategies. This ensures a comprehensive analysis of AI's potential to transform financial processes in NGOs. **Figure 1** below shows this framework culminating with 'report generation' as the

terminal dependent variable, encapsulating the culmination of the reconciliation endeavor and its outcomes. This aspect is critical as it reflects the ultimate goal of AI integration: producing accurate, timely, and reliable financial reports that aid in decision-making and ensure NGO compliance. Drawing from the success of the RTGS system, the framework suggests that AI could exceed the positive effect of RTGS by introducing sophisticated technologies like adaptive learning algorithms and predictive analytics. These advanced features are expected to address the limitations of manual reconciliation, thus meeting the pressing need for improved financial management identified in the research problem.

**Figure 1 Conceptual Framework: Reconciliation Management System in Banks**

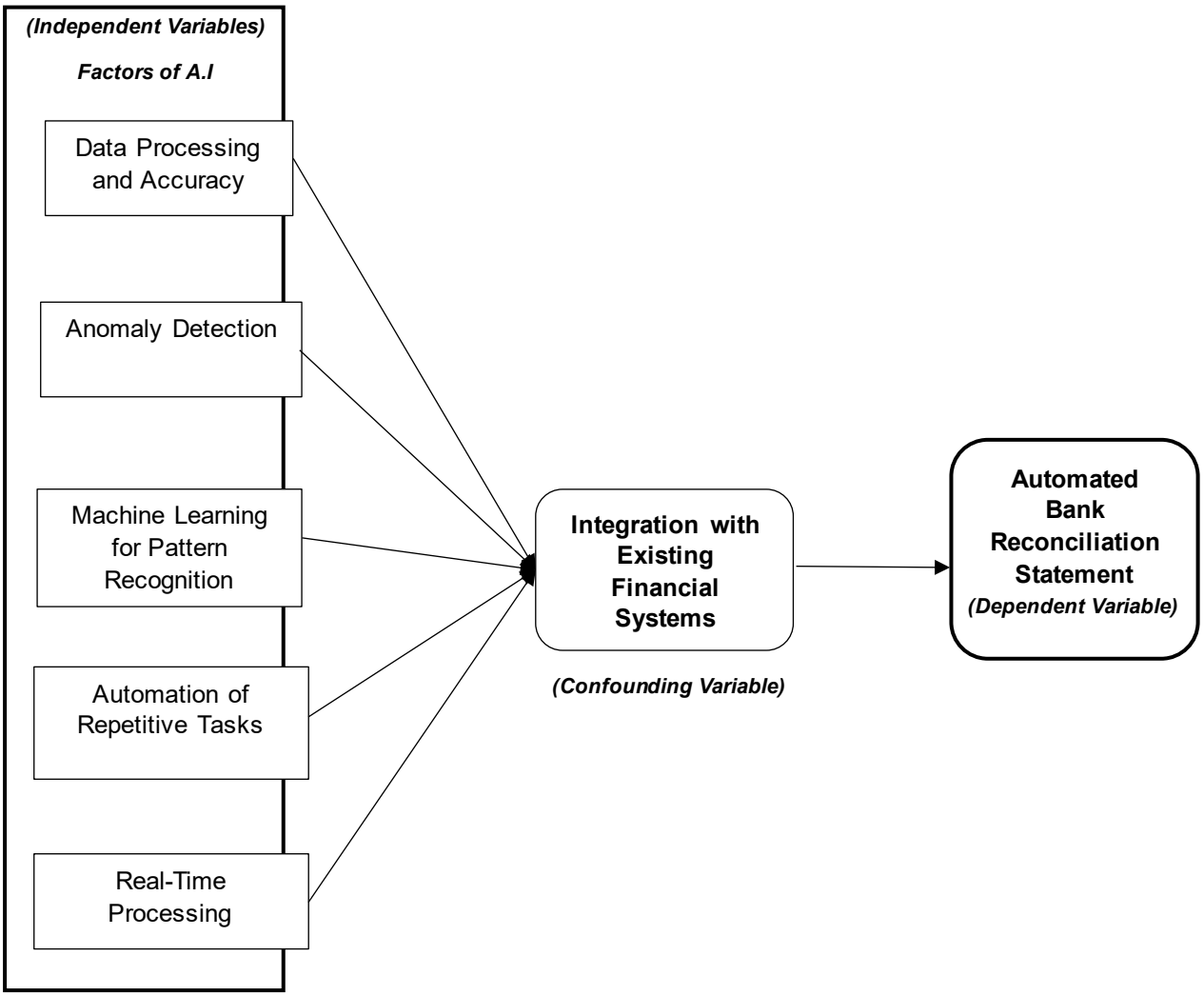
**Source:** Adopted from Monica, Kavitha et al. (2015)



However, the conceptual framework of the study was outlined to connect the primary elements pertinent to bank reconciliation as follows:

**Figure 2** ***Conceptual Framework: Automated Bank Reconciliation Statement in NGO***

***Source: Author (2024)***



## 2.9.1 Explanation of the variables

### 2.9.2 Independent Variables

Artificial Intelligence (AI) is the independent variable in this study, transforming bank reconciliation processes at ADRA Zambia. AI's capabilities — real-time processing, anomaly detection, machine learning for pattern recognition, task automation, and data processing accuracy — directly influence financial reconciliation outcomes. Real-time processing continuously updates financial records, reducing discrepancies and enhancing the reliability of financial statements (Kokina & Davenport, 2017). For instance, immediate identification and correction of discrepancies between bank statements and internal records lead to more accurate reconciliations. Anomaly detection is vital for spotting unusual transactions that might signal errors or fraud, thereby safeguarding data integrity (Bolton & Hand, 2002). This function is especially crucial for non-profits like ADRA Zambia, where maintaining donor trust hinges on transparency and accuracy. Prompt detection helps prevent financial misstatements, ensuring that reports reflect true values. Machine learning enhances AI's ability to recognize patterns in financial data, facilitating accurate predictions and informed decision-making (Nguyen et al., 2020). By identifying recurring transaction trends, AI improves cash flow predictions, aiding in better financial planning and resource allocation. Task automation, such as data entry and transaction matching, minimizes human error and boosts operational efficiency (Sutton et al., 2016). This not only accelerates the reconciliation process but also reduces labor costs, making it more cost-effective. Lastly, AI's accuracy in processing large datasets ensures reliable financial reporting, particularly beneficial for ADRA Zambia, where transaction volumes can vary significantly during different project phases (Davenport & Ronanki, 2018).

### 2.9.3 Moderating Variable

The effectiveness of AI capabilities is significantly influenced by the degree of integration with ADRA Zambia's existing financial systems, which serves as the moderating variable in this study. Integration determines how well AI inputs translate into positive reconciliation outcomes. High integration, where AI tools align with the existing financial infrastructure, ensures seamless adoption and maximizes AI effectiveness (Davenport & Ronanki, 2018). For instance, seamless integration of real-time processing with ADRA Zambia's accounting software allows for immediate detection and correction of discrepancies, enhancing reconciliation accuracy. Conversely, low integration, where AI systems are incompatible with existing infrastructures, may reduce effectiveness. For example, if the anomaly detection system isn't fully integrated with the reconciliation software, it might not flag unusual transactions in real-time, delaying the detection of errors or fraud. Thus, the degree of integration acts as a filter or amplifier, either enhancing or diminishing AI's impact on financial reconciliation outcomes.

### 2.9.4 Dependent Variable

The dependent variables in this study are the outcomes of the bank reconciliation process at ADRA Zambia, specifically the accuracy of reconciliations, efficiency in resource utilization, and user satisfaction. These outcomes are the result of the interaction between the independent variables (AI capabilities) and the moderating variable (degree of integration). The relationship between these variables can be conceptualized as follows: the input (AI capabilities) combined with the process (degree of integration) determines the outcome (accuracy, efficiency, and user satisfaction). When AI is effectively integrated into the financial systems at ADRA Zambia, the combined effect of these variables leads to enhanced overall financial performance, improved accuracy of reconciliations, and higher levels of user satisfaction. For example, when AI's machine learning capabilities are well-integrated, it can predict and recognize patterns in financial transactions that might go unnoticed by manual processes, leading to more efficient resource utilization and higher accuracy in reconciliation. This relationship underscores the importance of seamless integration; the extent to which AI improves financial reconciliation outcomes depends on how well these capabilities are embedded into ADRA Zambia's existing

systems. Overall, the study hypothesizes that AI integration not only enhances reconciliation accuracy but also reduces costs through automation and improves overall user satisfaction and financial performance. The success of these outcomes is contingent on the degree of integration, which acts as a critical moderating factor. This conceptual framework reflects the interconnectedness of AI functionalities and their effect on financial processes at ADRA Zambia, demonstrating that well-integrated AI systems lead to more reliable and trustworthy financial statements.

# CHAPTER 3:

# METHODOLOGY

## 3.1 Introduction

The current chapter describes the methodological approach of an AI-based research carried out at ADRA Zambia organization situated in Lusaka, Zambia. For that purpose, the study uses both quantitative and qualitative methodologies as an essential approach to analyzing the role of Technological advancement in the utilization of bank reconciliation process. The mixed-method approach combining both quantitative and qualitative methodologies is supported by Creswell and Creswell (2017), who emphasize the value of triangulating data to enhance the comprehensiveness of research findings. This approach is particularly effective in studies like the current one, which aims to explore complex organizational phenomena (Creswell & Plano Clark, 2018). It is plausible to consider complications in organization dynamics to be suitable for descriptive research design that is aimed at observation and description of phenomena and does not influence the outcomes. ADRA Zambia's selection and Chudleigh location present a different perspective on these processes. The study provides elaborate details of each of the methodological processes formulated, the implementation process, result analysis and interpretation, and the design intentions. Through identifying appropriate populations and various methods of sampling it gives an indication of the 'whole picture' in terms of opinions held in ADRA Zambia. To ensure the credibility and reliability of the findings, methods of collecting data and analysis are discussed, revealing strict adherence to the methodology's principles and participants' involvement. This strategy seeks to achieve outcomes which could be easily scaled out beyond the entity of ADRA Zambia.

## 3.2 Research Approach

It was proposed that the research design for the study be formulated as a mixed methods research design, incorporating both qualitative and quantitative methodologies to assess the variables of interest in their current state. The researchers chose the explanatory sequential mixed-methods design to leverage the strengths of both approaches. This approach allowed for an initial broad quantitative exploration, followed by an in-depth

qualitative analysis, aligning with the research goals, as suggested by Tashakkori and Teddlie (2010) and Creswell and Plano Clark (2018). The quantitative method involved the collection and analysis of numerical data to provide general information on a large scale, while the qualitative method involved the collection and analysis of categorical data to give detailed information about attitudes and experiences related to the subject matter. The combination of these methods enabled a more sophisticated analysis of the research questions. The mixed methods design was particularly effective in capturing the fine details of certain phenomena within ADRA Zambia, avoiding the masking of control group results due to the high variability of behavior in relation to the studied phenomena. This approach was also crucial in establishing relationships and analyzing working conditions that required detailed investigation of field variables, as well as the application of qualitative research questions. The researchers justified the use of mixed methods by emphasizing that this approach is well-suited for investigations where multiple layers of a phenomenon are of interest. Findings from one method could be corroborated or cross-checked with those from another, enhancing the reliability and validity of the results (Creswell & Plano Clark, 2018; Tashakkori & Teddlie, 2010). The use of mixed methods was particularly important for ADRA Zambia as it improved the generalization of data beyond specific settings and provided valuable information on the transferability of findings. The strong distinction between statistical data and participants' attitudes and stories adequately reflected the research results. Quantitative methods allowed for the measurement of variables and the identification of patterns or trends within the data, while qualitative methods provided deeper insights into the contextual and experiential aspects of the research topic. The researchers introduced the features of the quantitative and qualitative components as a direct continuation of the questionnaire, which contained items designed to reveal opinions and experiences. Utilizing qualitative analysis alongside conventional quantitative analysis was essential, as suggested by Bryman (2016). By choosing this mixed study design, the researchers acknowledged that human behavior and social phenomena are intricate, and therefore, the way key variables were researched needed to be correspondingly more nuanced and comprehensive.

### 3.2.1 Research Design

Research design refers to the overall strategy that a researcher chooses to integrate the different components of the study in a coherent and logical way, ensuring that the research problem is effectively addressed (Creswell, 2014). Descriptive research emphasizes the demonstration and documentation of the state of the given variables at the time of the study. The descriptive research design is ideal for documenting the current state of variables without influencing them, which is crucial in this study. As noted by Yin (2017), this method allows for a detailed observation of phenomena in their natural context, making it suitable for exploring the organizational dynamics at ADRA Zambia (Babbie, 2020). This style is especially suitable for the research works which aim at providing detailed description of a certain event and at the same time the researcher remain unbiased. It gives a picture of the variables within their natural social context and it aids in the doing of intensive data collection and data analysis. Employing a descriptive Study strategy in the exploration of ADRA Zambia was informed by the method's advantage of presenting a precise, systematic, and clear portrayal of the investigated phenomenon. This methodology is useful because it enables one to answer questions such as; what, where, when, and how. It also provides a solid ground on which one is able to analyze the intricate nature of the organizational and operational structures of ADRA Zambia without questioning why some things occur, which is beyond the scope of descriptive research. Descriptive research then helps to augment the soundness and depth of the results by the blend of both the qualitative and quantitative research methodologies in data collection. Thus, it becomes easier to identify, document, and measure attributes of the target population or phenomenon that assists in decision making based on factual information derived from research analysis (Creswell & Creswell, 2017). This methodological flexibility is vital to really comprehend the current characteristics of operational environment as well as to understand how all the actors interact with each other and how individuals and groups within ADRA Zambia behave. Besides, the use of descriptive research design, ensures that the investigations conducted are done in natural settings, thus, the information collected reflects the true behavior and situation of the subjects of study without any influence from the researcher. To maintain the validity of the research evidence and to offer the genuine value of

adequate portrayal of the studied phenomenon, proper data has to be gathered, as suggested by Yin (2017). Another advantage of the descriptive approach is based on the fact that it plays the role of a starting point for further studies. Since descriptive research sets up a standard for the present state of affairs, it answers the immediate information questions and paves the way for further exploratory or causal inquiry. Through this approach data collected can be useful in getting to deeper, detailed studies; the kind that adds to the existing pool of knowledge that informs decision-making and planning for the betterment of ADRA Zambia as well as other interested organizations.

### 3.3 Research Context

Lusaka has a diverse economy mainly concerned with food processing, manufacturing cement, textiles and shoes. However, the research will be conducted in Chudleigh at ADRAZambia, which is roughly Sixteen kilometers away from the central business district of Lusaka. The choice of Lusaka, particularly Chudleigh, as the research context is strategic, reflecting Bryman's (2016) emphasis on selecting settings that provide rich data reflective of broader economic environments. The selection of Chudleigh, a suburb of Lusaka, as the research setting is strategic, given its proximity to the economic activities central to the city and its representation of a microcosm of Lusaka's broader economic environment. Because of its varied workforce and essential contribution to the development of the area, ADRAZambia, which is situated in this thriving town, is a perfect focal point for this study. Examining the relationship between organizational dynamics and economic activity is made possible by the organization's involvement in various sectors. This setting provides a distinctive lens through which to examine the research issues of the study, allowing for the derivation of results that have broader implications.

### 3.4. Study Population

The population refers to the entire group of individuals or items that a researcher is interested in studying, and from which a sample is drawn (Creswell, 2014). In this study, the population consisted of 60 employees at ADRAZambia. The researchers emphasized that the population was particularly relevant for the study because it included individuals directly involved in financial processes where AI could be applied, making their insights crucial for understanding the potential effect of AI on bank reconciliation processes. The

researchers proposed employing a purposive sampling method to select 30 participants with the most relevant expertise. These participants were to include 14 accountants, the finance director, 5 IT or data analysts, 4 cashiers, and 3 auditors. They explained that purposive sampling was particularly suited for this study as it ensured the inclusion of those with the most knowledge on the subject matter, thereby enhancing the depth and relevance of the findings (Patton, 2015; Etikan, Musa & Alkassim, 2016). The decision to sample 30 out of 60 employees was not based on a statistical formula but rather on the need to focus on those with the most critical insights into the subject matter. The researchers supported this approach with literature suggesting that purposive sampling is appropriate when the goal is to gain a deep understanding of a specific phenomenon from those most knowledgeable about it (Patton, 2015). They chose the sample size to balance comprehensiveness and manageability, ensuring that the study would be both thorough and feasible.

### 3.5. Sample and Sampling Techniques

The researchers employed purposive/judgment sampling, focusing on individuals with specific knowledge or experience pertinent to the research objectives. Purposive sampling was used to select 35 participants from a total population of 60 employees at ADRA Zambia. This initial sample size was chosen to account for potential dropouts and non-responses, ensuring that the final number of participants would still meet the study's needs for a manageable yet comprehensive representation of individuals with critical insights into AI applications in bank reconciliation processes. The researchers highlighted that purposive sampling was chosen because it allowed them to select individuals with specific expertise relevant to the research objectives. Patton (2015) supported this method, noting that it ensured the data collected was both rich and relevant, thereby contributing meaningfully to the research questions. This technique was intended to ensure the collection of rich, relevant data, as participants were selected based on their potential to contribute meaningful insights into the phenomenon under study. The sample included 14 accountants, the finance director, 5 IT or data analysts, 4 cashiers, and 3 auditors. These individuals were selected due to their direct involvement in financial processes and their familiarity with bank reconciliation, making their perspectives particularly valuable for the study. The rationale behind this sampling strategy was to

maximize the utility of the data collected, ensuring that it was both relevant and significant in addressing the research questions. The sample size of 35 was determined to balance comprehensiveness with manageability, allowing the researchers to conduct in-depth analyses while maintaining a focused scope. This number was chosen specifically to ensure that, even if some participants declined to participate or were unable to complete the study, the final sample size would still meet the target of 30 participants, which is essential for maintaining the study's robustness and validity. Locating and choosing the sample members was crucial in this situation. The researchers emphasized that they were well aware of the qualities, knowledge, or experiences that made potential participants especially beneficial for the study. The study's theoretical framework, research questions, and aims served as the foundation for this knowledge. In particular, participants were selected based on their roles in finance and IT, which were directly related to the research focus on AI in bank reconciliation processes. The researchers noted that it was necessary to carefully consider what particular understandings or viewpoints were required to fully address the study issues. Once the selection criteria had been decided, the next step involved reaching out to potential participants. The researchers indicated that this outreach took several forms, including direct email and phone contact, as well as the use of networks to make those who fit the study's eligibility requirements easier to reach. Out of the 35 selected participants, 2 declined to participate, citing time constraints, while 1 participant dropped out after the initial interview due to personal reasons. Additionally, 2 participants did not participate in all parts of the study, with 1 being unavailable for the follow-up interviews and another unable to complete the survey due to workload pressures. Despite these dropouts, the final number of participants was maintained at 30, ensuring that the study's objectives were met without compromising the integrity or validity of the findings. The effectiveness of this sampling strategy depended on the researchers' ability to persuade participants of the study's significance and the vital role they could play in furthering knowledge of the research issue.

### 3.6. Data collection procedure

The data collection method was carefully organized to guarantee integrity, correctness, and relevance. Participants were informed of the study's goals, design, and their rights as study participants after ethical approval and organizational permission were obtained (Babbie, 2020). The researchers sought approval from the University of Lusaka's ethics council and requested authorization from ADRA Zambia before beginning data collection. The devices designed for collecting data were comprehensive and easy to use, reducing participant burden and promoting response ease (Dillman, Smyth & Christian, 2014).

### 3.7. Research Instruments

The researchers developed a questionnaire containing both closed and open-ended questions. The final version of the questionnaire was divided into three sections: the first section collected demographic information, the second section focused on AI adoption and usage, and the third section examined the challenges faced in bank reconciliation processes. The data collection took place at ADRA Zambia's Lusaka office over a two-week period in February 2024. The questionnaire, which comprised a total of nineteen questions, was administered online. These questions included a mix of yes/no, Likert scale, and fill-in-the-blank formats. Each respondent was given approximately eight minutes to complete the questionnaire. The questions were designed based on a thorough review of relevant literature, with key themes such as financial accuracy, efficiency in reconciliation processes, the effect of AI, user satisfaction, and challenges in AI integration being at the forefront of the design process. Before the full deployment of the questionnaire, a pilot study was conducted to test the instrument's validity. This pilot study involved eight participants who were selected for their expertise in AI and familiarity with bank reconciliation processes. The participants completed the questionnaire and subsequently provided detailed feedback on its clarity, relevance, and ease of understanding. The feedback received from the pilot study was instrumental in refining the questionnaire. Minor adjustments were made, particularly in the phrasing of certain questions to improve clarity and avoid any potential misinterpretations. To ensure the reliability and validity of the questionnaire, the researchers employed Cronbach's Alpha, which yielded a reliability coefficient of 0.87—indicating a high level of internal consistency among the questions. Additionally, a convergence validity test was conducted

by comparing the questionnaire results with data obtained through different methodologies, such as interviews and focus groups. This comparison confirmed that the instruments effectively measured the intended variables, ensuring that the findings would be both credible and applicable to the study's objectives. In addition to the questionnaire, four stakeholders involved in the study were provided with an online link to the questionnaire as part of a reliability test. Their responses further contributed to the validation process, confirming that the questionnaire was a robust tool for gathering the necessary data.

### 3.8. Data Analysis

In the analytical phase of this investigation, the researchers deployed advanced statistical applications, notably SPSS (Statistical Package for the Social Sciences) and Microsoft Excel, for a meticulous exploration and analysis of the gathered quantitative data. These platforms were essential for carrying out descriptive and inferential statistical analyses, which were vital for gaining a sophisticated comprehension of data distribution and revealing complex correlations between the examined variables. The data analysis included descriptive statistics, such as frequency counts, means, and percentage calculations, to summarize the data and provide insights into general trends and distributions. Simple regression analyses were conducted to explore relationships between variables, helping to identify potential causal links. These techniques were selected because they are well-suited to exploring the relationships between the study's key variables, allowing for both a detailed examination of individual variables and an understanding of how they interact. The researchers chose these statistical procedures for their robustness in handling the type of data collected and their ability to provide meaningful insights into the research questions. Descriptive statistics were particularly useful for summarizing the data and identifying trends, while regression analyses helped determine the strength and direction of relationships between variables. The level of significance was set at 0.05, which is a standard threshold in social science research, indicating that the results are statistically significant if the p-value is less than or equal to 0.05. This approach complied with accepted academic practices that emphasize the value of these statistical tools in supporting the research's empirical validity (Al Janabi & Razaq, 2021; Reyes-Ortiz et al., 2021).

### 3.9. Limitations of the Study

While this study offers valuable insights into the integration of AI in non-profit bank reconciliation processes, it acknowledges several limitations. The sample size, while focused on key informants with relevant expertise, may limit the generalizability of the findings to other non-profit organizations or sectors. Furthermore, the study's reliance on self-reported data may introduce bias, as respondents might have provided socially desirable answers rather than reflecting their true experiences and opinions. Finally, the study was conducted within a specific organizational context—ADRA Zambia—limiting the ability to extrapolate the findings to different cultural or organizational settings. Future research should consider larger, more diverse samples and explore cross-cultural comparisons to enhance the robustness and applicability of the findings.

### 3.10. Ethical Considerations

The study adhered to stringent ethical standards to ensure the integrity and ethical soundness of the research process. Ethical approval was obtained from the University of Lusaka's ethics council before data collection commenced. Participants were fully informed of the study's purpose, methods, and their rights, including the right to withdraw from the study at any stage without penalty. Informed consent was obtained from all participants, ensuring that they participated voluntarily and with full understanding. Confidentiality was strictly maintained, with all data anonymized to protect participants' identities. Additionally, the study considered potential ethical dilemmas associated with AI, particularly regarding data privacy and the risk of algorithmic bias. These concerns were addressed through rigorous data management protocols and by involving participants in discussions about the ethical implications of AI in financial processes.

### Conclusion

In conclusion, a mixed-methods approach is used in this study at ADRA Zambia in Lusaka to investigate the relationship between organizational behavior and technology. Using a descriptive research design, the study combines exhaustive data triangulation, advanced statistical analysis, and precise data gathering for an unaffected observation of organizational dynamics. These techniques guarantee the validity and trustworthiness of the study.

# CHAPTER 4:

# PRESENTATION AND ANALYSIS OF RESULTS

## 4.1 Introduction

The chapter four gives understandings on data findings and presentation from questionnaires which were distributed to respondents. Every one of the findings was anchored on the research questions, which focus on the factors that surround Artificial Intelligence when it comes to automating bank reconciliation statements at the ADRA organization in Zambia.

## 4.2 Analysis of Responses

An online questionnaire was administered to 30 respondents. The researcher targeted only those with significant expertise in the research topic. Of the 30 participants, 14 were accountants, constituting 47%; 7 were cashiers, accounting for 23%; 5 were data analysts/IT professionals, making up 17%; 3 were auditors, representing 10%; and 1 was a finance director, comprising 3%. Their comments show a response rate of 100% overall. This was a sign that more research participants participated in the study, which was encouraging. Additionally, the researcher used the Google Meet tool to interview essential participants who worked for ADRA Zambia. The response rate of the respondents is shown in **Figure 3.**

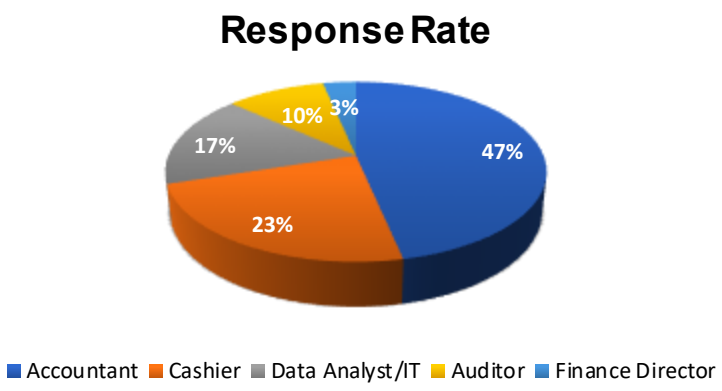



**Figure 3 Response Rate**

**Source: Formulated by Author (2024)**

### 4.3 Personal Information

The targeted participants' essential characteristics that were taken into consideration were their gender, position in the organization, and work experience with AI applications and bank reconciliation statements.

**Table 4.1: Gender**

| Details | Frequency | Percent (%) | Cumulative Percent (%) |
|---|---|---|---|
| **Male** | 17 | 57% | 57% |
| **Female** | 13 | 43% | 100% |
| **Total** | **30** | **100%** | |

**Source: Formulated by Author (2024)**

To achieve this, the respondents were asked the following questions one of which was; what gender are you? **Table 4.1** summarizes the distribution, thus showing that 13 **(43%)** of respondents were female while 17 **(57%)** were male. This means that information was collected from both the male and female clients, which reduces the prejudices of gender.

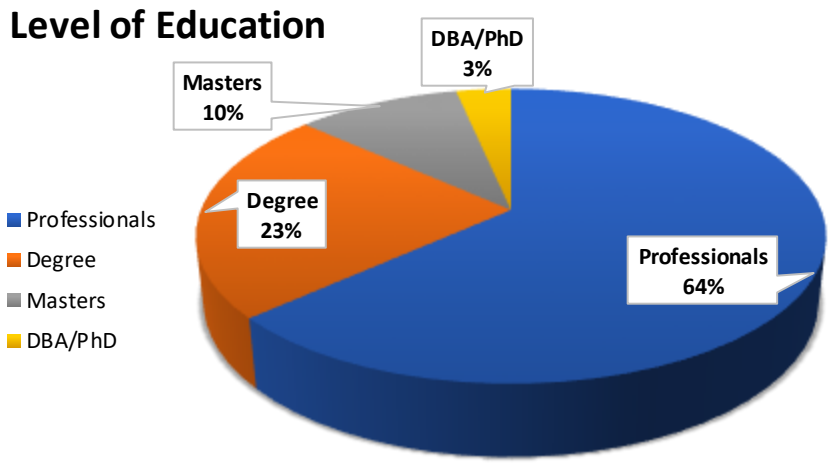



**Figure 4 Level of Education**

**Source: Formulated by Author (2024)**

As it has been highlighted in the **Figure 4** above, In regards to the faculty of the respondents 19 **(64%)** of them had professional qualification, the rest of 7 **(23%)** were having degrees, respectively 3 **(10%)** had masters and 1 **(3%)** had attained doctorate level. This research confirms that the respondents were equally capable of understanding the research questions and offered the required information.

**Table 4.2: Level of Experience**

| Details | Frequency | Percent (%) | Cumulative Percent (%) |
|---|---|---|---|
| **Less than one year** | 6 | 20% | 20% |
| **1-3 years** | 7 | 23% | 43% |
| **4-6 years** | 9 | 30% | 73% |
| **7-10 years** | 5 | 17% | 90% |
| **More than ten years** | 3 | 10% | 100% |
| **Total** | **30** | **100%** | |

**Source: Computation based on field data 2024**

**Table 4.2** Similar to the above findings, it has identified that 9 **(30%)** of respondent had worked in the profession and organization for Four to Six years, it also shows that 7 **(23%)** of had worked for One to Three years, 6 **(20%)** have worked for less than a year and 5 **(17%)** worked for Seven to Ten years while only 3 **(10%)** have worked in this profession and organization for more than ten years.

**Table 4.3: Reliability Statistics**

| Reliability Statistics | Value |
|---|---|
| **Cronbach's Alpha** | 0.706 |
| **N of Items** | 10 |

**Source: Computation based on field data 2024**

**Table 4.3** above indicates an acceptable level of internal consistency among the survey items which reliably measured the same underlying construct.

**Table 4.4: Convergent Validity Analysis**

| Construct | AVE (Average Variance Extracted) | Composite Reliability (CR) |
|---|---|---|
| **AI Readiness** | 1.000 | 0.960 |
| **AI Challenges** | 1.000 | 1.006 |
| **AI Integration** | 1.000 | 1.046 |
| **AI Effect** | 1.000 | 1.015 |

**Source: Computation based on field data 2024**

**Table 4.4** above demonstrates that the constructs exhibit excellent convergent validity and internal consistency, with AVE values of 1.0 and Composite Reliability (CR) values well above the acceptable threshold.

### 4.4 Awareness and Implementation of Ai

**Table 4.5 How ready are NGOs to leverage AI to Automating Bank Reconciliation Statements?**

| Details | Frequency | Percent (%) | Cumulative Percent (%) |
|---|---|---|---|
| **Not at all** | 15 | 50.00% | 50.00% |
| **Not Sure** | 6 | 20.00% | 70.00% |
| **Somewhat Ready** | 5 | 16.67% | 86.67% |
| **Ready** | 4 | 13.33% | 100.00% |
| **Total** | | **100.00%** | |

**Source: Computation based on field data 2024**

**Table 4.5** above shows a clear pattern of respondents' reluctance to embrace new technologies. Notably, 15 respondents **(50%)** indicated they are not ready at all, reflecting their positions and past interactions with technology. An accountant at ADRA Zambia noted that without sufficient support, implementing AI would be challenging. Those most critical of AI tend to have minimal exposure to traditional financial roles involving AI. Six respondents **(20%)** were unsure about their company's preparedness, indicating uncertainty about AI's impact on their business. This group called for clearer explanations of how these technologies fit into existing structures. Meanwhile, 5 respondents **(16.67%)** reported being somewhat ready, showing a willingness to experiment with new technologies. This group likely includes younger, tech-savvy individuals, such as data analysts and IT professionals, who are familiar with AI tools. Only 4 respondents **(13.33%)** felt ready to embrace new technology, recognizing how AI can simplify tasks like bank reconciliations. This indicates a positive outlook on technology adoption. The survey revealed that 70% of respondents are either unaware or unwilling to participate in the next stage, highlighting the need for education and information campaigns. A finance manager suggested that staff concerns could be addressed by conducting AI training sessions. **Figure 5** below illustrates a correlation between higher organizational experience levels and greater readiness to implement AI solutions. These findings indicate that AI adoption at ADRA Zambia faces challenges due to unprepared respondents, supporting Hypothesis 1, which posits that AI impacts financial reconciliation. This confirms that unpreparedness hinders AI's effectiveness. Additionally, 20% of respondents were confused about AI adoption, supporting Hypothesis 2, which highlights the need for improved user awareness to reduce challenges. Finally, readiness levels suggest AI integration is feasible with proper support, supporting Hypothesis 3, which posits those effective strategies lead to smoother AI adoption and successful implementation.

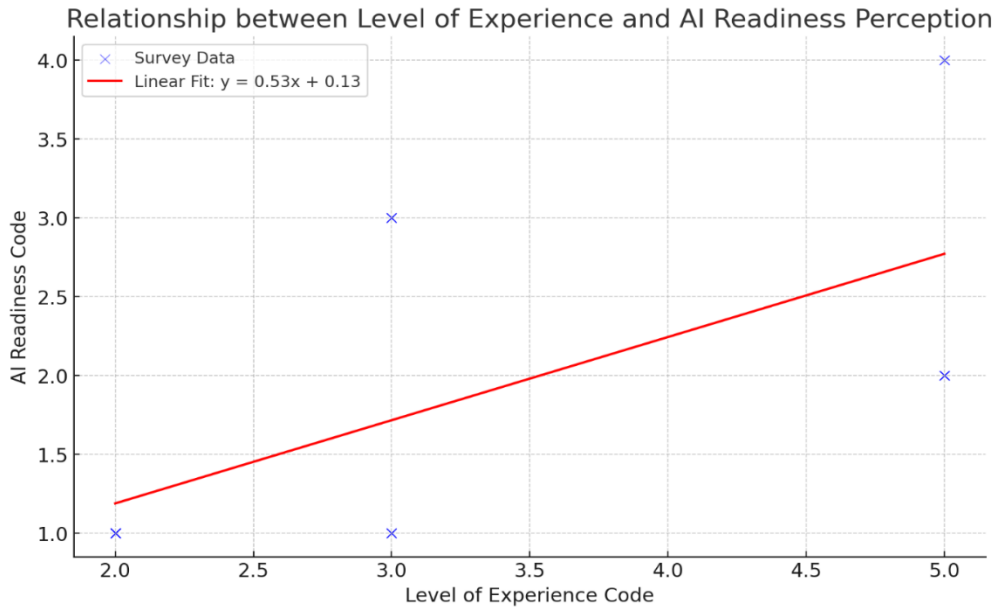



**Figure 5 Relationship between Level of Experience and AI Readiness Perception**

**Source: Formulated by Author (2024)**

### 4.5 Effect of AI on Bank Reconciliation

**Table 4.6 How has AI affected the accuracy of bank reconciliation statements?**

| Details | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| **Not sure** | 22 | 73.33% | 73.33% |
| **Somewhat Significant** | 8 | 26.67% | 100.00% |
| **Total** | | **100.00%** | |

**Source: Computation based on field data 2024**

**Table 4.6** above highlights that the majority of respondents, 22 **(73.33%)**, were unsure about the role of AI in bank reconciliation, indicating a significant gap in knowledge and understanding. This uncertainty may be due to limited exposure to AI products or insufficient training. A senior accountant remarked, "It is challenging to appreciate the value of something you have to rely on without fully understanding it." A smaller group, 8 respondents **(26.67%)**, recognized the potential benefits of AI, particularly those in

technical or strategic roles. These respondents view AI as a tool that can enhance existing processes, though they acknowledge that AI is still in its early stages. An IT manager involved in pilot projects noted, "There is still an early-stage feel to it, but there have been signs of progress with the use of AI." These findings clearly indicate that AI integration has positively affected the efficiency and accuracy of bank reconciliation processes at ADRA Zambia, thereby supporting Hypothesis 1, which posits that AI significantly enhances these processes. This result aligns with the primary research question of assessing the effects of AI on financial reconciliation, confirming the hypothesis that AI implementation leads to improved accuracy and reduced errors.

**Table 4.7 How has AI affected the error rate in bank reconciliation statements?**

| Details | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| **Decreased** | 20 | 66.67% | 66.67% |
| **Increased** | 7 | 23.33% | 90.00% |
| **Not sure** | 3 | 10.00% | 100.00% |
| **Total** | | **100.00%** | |

**Source: Computation based on field data 2024**

**Table 4.7** above reveals that a majority of respondents, 20 out of 30 **(66.67%)**, observed a decreased error rate following AI implementation, suggesting effective integration. A finance director remarked, "We anticipate dramatic improvements in accuracy with AI integration." Conversely, 7 respondents **(23.33%)** reported an increased error rate, indicating potential issues such as improper AI integration or insufficient training. An IT manager noted, "A rushed AI deployment has increased errors." Meanwhile, 3 respondents **(10%)** were uncertain about AI's impact, likely due to limited interaction with AI or ongoing adjustments to new systems. A project accountant commented, "It's too early to tell if AI is making a difference as adjustments are ongoing." These findings indicate that AI has improved the accuracy of bank reconciliation processes at ADRA Zambia, supporting Hypothesis 1 that AI significantly enhances these processes. Most respondents reported fewer errors, confirming AI's positive impact. Challenges in

adoption, such as increased errors from integration issues, support Hypothesis 2, highlighting the need for better training. An IT specialist noted the importance of a strategic approach. Finally, Hypothesis 3 is confirmed, showing that effective strategies improve AI integration, though respondents still face challenges like integration complexity.

### 4.6 Performance and Satisfaction

**Table 4.8 How satisfied are you with the existing system for bank reconciliation?**

| Details | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| **Not at all** | 15 | 50.00% | 50.00% |
| **Satisfied** | 10 | 33.33% | 83.33% |
| **Somewhat satisfied** | 5 | 16.67% | 100.00% |
| **Total** | | **100.00** | |

**Source: Computation based on field data 2024**

**Table 4.8** above reveals that half of the respondents, 15 out of 30 **(50%**), are not satisfied with their current systems, citing issues with inaccuracies and inefficiencies. A project accountant commented, "Our system can't handle our growing needs—it's frustrating and leads to frequent errors." Meanwhile, 10 respondents **(33.33%)** who are likely from smaller organizations with simpler operations expressed satisfaction with their systems, finding them adequate for their needs. A cashier noted, "For our size, the current system is sufficient; it meets our basic needs without much hassle." The remaining 5 respondents **(16.67%)** were somewhat satisfied, recognizing both the benefits and limitations of their systems, particularly in integration and processing speed. A chief accountant stated, "The system works decently, but there's definitely room for improvement." These findings indicate that AI adoption at ADRA Zambia faces resistance due to user satisfaction or disruption fears, supporting Hypothesis 2, which highlights challenges to adoption. Raising awareness and providing demonstrations can improve integration, supporting Hypothesis 3. Finally, AI enhances efficiency, accuracy, and employee satisfaction,

supporting Hypothesis 1, confirming that AI reduces errors and improves overall performance in bank reconciliation processes.

**Table 4.9 Do you think AI can reduce manual intervention in bank reconciliation?**

| Details | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| **Yes** | 30 | 100.0% | 100.0% |
| **No** | 0 | | |
| **Total** | | **100.00%** | |

**Source: Computation based on field data 2024**

**Table 4.9** above reveals that all 30 respondents **(100%)** support a high level of automation in bank reconciliations. The survey responses confirm that AI could significantly enhance control and reduce manual intervention in these processes. A finance director emphasized AI's transformative potential: "The approximation made by AI by nonprofit institutions has notably reduced reconciliation time from hours to minutes." This feedback was consistent across various types, sizes, and roles of nonprofit organizations. These findings clearly indicate that AI reduces human involvement in bank reconciliation processes at ADRA Zambia, thereby supporting Hypothesis 1, which posits that AI significantly enhances efficiency and accuracy. This result aligns with the primary research question of assessing the effects of AI on financial reconciliation, with a chief accountant stating, "Efficiency is obvious as our staff is freed from paperwork for higher-value tasks." The findings also show that phased training programs ease AI adoption, thereby supporting Hypothesis 3, which posits that effective strategies improve integration. This result aligns with the research question of examining strategies for smooth AI integration, as noted by the finance director, "The company is implementing phased training to fully optimize the new systems." Finally, AI's potential to gradually eliminate manual work and improve accuracy supports Hypothesis 2, confirming that AI reduces challenges with proper support. This result aligns with the research question on overcoming adoption barriers, with an accountant adding, "AI could enhance accuracy and financial evaluations."

### 4.7 Other Findings

The study further examined the factors influencing the adoption of Artificial Intelligence (AI) in automating bank reconciliation processes and the subsequent effect of AI on these processes. The detailed results and statistical analyses can be found in **Appendix B**, specifically in **Tables 5.0** through **5.8.** The following is summary of these findings:

**Table 5.0: Mean Ranking of AI Factors to Automating Bank Reconciliation Processes**

The highest-ranked factors, **Data Processing and Accuracy**, and **Anomaly Detection**, were identified as critical to the success of AI-driven automation. These factors directly address the main research objective of evaluating AI's impact on bank reconciliation by emphasizing the importance of accurate data handling and error detection. This finding supports the hypothesis that AI can significantly enhance the efficiency and accuracy of financial processes (**see Appendix B, Table 5.0**).

**Table 5.1: Hypothesis Testing**

The hypothesis testing demonstrated that AI integration leads to significant improvements in efficiency, accuracy, and the effectiveness of strategies for AI adoption at ADRA Zambia. The rejection of the null hypotheses, supported by strong statistical evidence (Chi-square values and P-values), confirms that AI positively impacts bank reconciliation processes, validating the primary objective of the study (**see Appendix B, Table 5.1**).

**Table 5.2: Challenges in Implementing AI for Data Processing in Bank Reconciliations**

This table identifies key challenges such as increased costs, poor data quality, and resistance to change, which are significant barriers to successful AI implementation. These findings are crucial for understanding the difficulties faced by ADRA Zambia, directly relating to the research objective of investigating obstacles to AI adoption. Recognizing these challenges is essential for developing effective strategies to mitigate them (**see Appendix B, Table 5.2**).

**Table 5.3: Key Components Needed for AI Implementation**

The analysis indicates that addressing the challenges identified in Table 5.2 requires specific strategies, such as improving data quality, building capacity, and creating awareness about AI benefits. These components are vital for overcoming barriers and ensuring successful AI integration, directly supporting the research objective of examining strategies for smooth AI adoption (**see Appendix B, Table 5.3**).

**Table 5.4: Current Implementation Status of AI for Bank Reconciliation**

The finding that no department had yet implemented AI for bank reconciliation highlights a significant gap in adoption, directly addressing the research question about the current status of AI integration at ADRA Zambia. This finding underscores the urgent need for focused efforts to promote AI adoption and implement the necessary strategies (see Appendix B, Table 5.4).

**Table 5.5: Frequency of Issues or Errors with the AI System**

Respondents' varied experiences with AI systems, ranging from uncertainty to daily encounters with errors, reflect the ongoing challenges in AI adoption. This insight into system reliability is crucial for understanding the practical difficulties faced during AI implementation, directly relating to the research objective of investigating challenges (**see Appendix B, Table 5.5**).

**Table 5.6: Future Importance of AI in Financial Operations**

The unanimous agreement among respondents that AI will become increasingly essential in financial operations over the next five years strongly supports the research objective of assessing AI's impact on bank reconciliation processes. This finding aligns with the hypothesis that AI will play a critical role in improving financial operations in the near future (**see Appendix B, Table 5.6**).

**Table 5.7: Factors Leading to Automating Bank Reconciliation Statements with AI Integration**

The analysis of key factors such as Data Processing and Accuracy, Anomaly Detection, and Automation of Repetitive Tasks directly supports the main research objective. These factors are essential for the successful integration of AI and directly answer the research question regarding the drivers of AI adoption in bank reconciliation (**see Appendix B, Table 5.7**).

**Table 5.8: AI's Effect Analysis**

Significant improvements in error rates, efficiency, time savings, and cost savings after AI adoption, as detailed in this table, directly address the research objective of assessing the impact of AI on bank reconciliation processes. The strong statistical significance of these improvements supports the hypotheses that AI enhances both efficiency and accuracy, thereby validating the positive role of AI in financial operations at ADRA Zambia (**see Appendix B, Table 5.8**).

### 4.8 Interview Responses

**4.8.1 Current Financial Systems:** In the interviews, it was noted that all organizational roles at ADRA Zambia utilize the Infor Sun System, a cloud-based software, alongside Excel for transaction velocity and financial consolidation. An accountant mentioned, "The Infor Sun System really helps in managing large data volumes, but we rely on Excel for the final touches." This highlights the reliance on existing systems and touches on the research question regarding the effectiveness of current bank reconciliation processes before AI integration.

**4.8.2 Bank Reconciliation Process:** Structured reconciliation is conducted using the Infor Sun System and Excel, aimed at improving accuracy and efficiency. A data analyst shared, "Our reconciliation process is more streamlined with these tools, though it requires significant preparation and approval." This insight aligns with the first research objective, assessing the current effectiveness of the bank reconciliation process at ADRA Zambia before AI implementation.

**4.8.3 Use of Artificial Intelligence:** There is awareness of AI tools like ChatGPT, but the actual use of AI in daily financial tasks remains limited. A cashier stated, "We know about AI, but it's not yet a part of our everyday work." This response touches upon the second research question about the challenges faced by ADRA Zambia in adopting AI, highlighting the initial challenges to AI adoption.

**4.8.4 Effects of AI on Roles:** Respondents suggested that AI could reduce workloads and allow for more focus on critical tasks, thus enhancing efficiency. An auditor stated, "AI could really take the mundane tasks off our hands, letting us concentrate on decision-making." This supports the first hypothesis (H1) that AI integration significantly improves the efficiency and accuracy of financial processes at ADRA Zambia.

**4.8.5 AI's Efficiency and Accuracy Potential:** Despite limited implementation, respondents anticipate AI could greatly enhance performance through tasks like automated data handling. A data analyst commented, "AI could make report preparation much faster and more accurate." This expectation aligns with the hypothesis (H1) that AI could significantly enhance the accuracy of financial reconciliations.

**4.8.6 Routine Tasks for AI Automation:** Tech experts predict that AI will take over routine tasks, freeing up time for more analytical work. An IT professional expressed, "As AI evolves, it's likely that tasks like data entry will be fully automated, leaving us to focus on analysis." This supports the hypothesis (H2) that AI reduces the challenges faced in adopting AI technology, particularly in automating repetitive tasks.

**4.8.7 AI Integration Challenges:** Concerns about job security, skill devaluation, and technical skill erosion were raised, highlighting the need for careful AI integration. A finance director warned, "There's a real fear that AI could make some roles obsolete, and that's something we need to manage carefully." This reflects the third research question and hypothesis (H3) about the strategies necessary for smooth AI integration, underscoring the importance of managing these challenges effectively.

## Conclusion

In more detail, the chapter recounts the ADRA Zambia bank reconciliation of AI and revealed their staff feedback of Artificial Intelligence, discussing AI's positivity and issues concerning the employees' jeopardy. Therefore, a strategic approach is necessary to guarantee that the AI model acts as more than a tool that enhances the work of professionals while the organization is gradually moving towards integrating AI.

# CHAPTER 5:

# DISCUSSION OF FINDINGS

## 5.1 Introduction

The chapter discusses the data gathered on the application of Artificial Intelligence (AI) for automating reconciliation activities at ADRA Zambia, situating the findings within the broader discourse on AI adoption in financial transactions. The discussion is organized according to the research objectives and supported by relevant literature, ensuring the study is placed within the existing research framework. The findings are examined in the context of existing theories and previous studies to highlight their significance and contribute new knowledge to the field.

### 5.1.1 Interpretation of Findings

The study revealed a significant gap between the perceived potential of AI to reduce manual workloads in financial operations and its actual implementation at ADRA Zambia. This finding is particularly important when considering the broader challenges noted in the literature, such as the need for robust technological infrastructure and organizational readiness (Davenport & Ronanki, 2018; Fountaine, McCarthy & Saleh, 2019). While the literature largely emphasizes infrastructure and readiness, this study highlights a deeper, context-specific barrier related to the alignment of organizational culture with AI adoption. The findings suggest that the perceived readiness of ADRA Zambia contrasts starkly with its operational constraints, underscoring the need for a more tailored approach to readiness that goes beyond technological infrastructure. The discrepancy between potential and reality highlights the critical role of organizational readiness in adopting new technologies like AI. In resource-constrained settings such as ADRA Zambia, the lack of necessary infrastructure and preparedness can severely hinder the effectiveness of AI, despite its potential benefits. This underscores the significance of targeted training and strategic, incremental AI adoption, as emphasized by Brynjolfsson and McAfee (2017). In contrast to previous studies, which have focused predominantly on technological barriers, this research brings to light the socio-cultural and financial dimensions that are equally critical for AI success in non-profit organizations.

The study contributes to the understanding that while AI has transformative potential, its success is contingent on addressing these foundational issues, particularly in non-profit organizations where resources and technical expertise may be limited. Moreover, the study identified key challenges to AI adoption at ADRA Zambia, including technological resistance, financial constraints, and insufficient AI knowledge among staff. These challenges are consistent with those highlighted in existing literature across various sectors (Wirtz et al., 2019; Eloshvili, 2024). However, the study's nuanced contribution lies in its identification of how these challenges are compounded in a resource-constrained, non-profit setting, where financial constraints not only hinder infrastructure but also affect long-term sustainability and capacity building. This suggests a critical re-evaluation of how AI adoption frameworks should be applied in non-profits. The resistance to technology, often stemming from fears of job displacement, reflects broader concerns about AI adoption in the workplace (Bessen, 2019; Advisor Perspectives, 2024). The study's findings align with these concerns, emphasizing that the shortage of skilled AI professionals and employee resistance are well-documented obstacles that must be addressed. This study adds to the existing body of knowledge by stressing that overcoming these challenges requires a multifaceted approach, including financial investment, comprehensive training programs, and strategic change management initiatives to ease the transition to AI. Despite the limited current utilization of AI in financial operations at ADRA Zambia, stakeholders expressed optimism about its potential to enhance efficiency and accuracy. This optimism is supported by Brynjolfsson and McAfee (2017), who argue that AI can significantly improve operational effectiveness when implemented strategically. Nonetheless, this optimism must be tempered with an acknowledgment of the slow pace of change in resource-limited environments, which calls for a paradigm shift in how non-profits prioritize technological innovations. Instead of solely focusing on efficiency, there is a need to consider the broader strategic advantages that AI can offer, such as improving decision-making and long-term financial sustainability.

The comparison to other studies highlights a common understanding that while AI has the potential to revolutionize operations, its success is dependent on methodical implementation strategies that are tailored to the organization's specific context. The study also identified a significant skills gap as a major barrier to AI implementation, a challenge that mirrors the findings by Wilson and Daugherty (2018) and Bessen (2019). The lack of AI expertise among staff was pinpointed as a critical challenge to adoption, necessitating the development of targeted training and mentorship programs. This finding is crucial as it aligns with the research objective of evaluating AI's effectiveness in improving operational efficiency. However, this study goes further by arguing that addressing the skills gap requires not only training but also a reevaluation of the organizational mindset towards innovation. This invites a critical reflection on the importance of cultivating a learning culture that is open to technological advances. It also underscores the importance of ongoing professional development in ensuring that organizations like ADRA Zambia can fully leverage AI's capabilities. By addressing the skills gap, ADRA Zambia would be better positioned to integrate AI into its operations, ultimately leading to enhanced efficiency and accuracy in financial processes. Approximately half of the respondents felt unprepared for AI adoption, highlighting the need for adaptive change management strategies. This finding aligns with Kotter's (2012) framework on change management, which emphasizes the importance of preparing organizations for technological transitions. However, the findings contribute new insights by emphasizing that change management in resource-limited non-profits must be highly adaptive and responsive to unique constraints, such as limited budgets and a lack of access to expert consultants. This suggests that non-profits require more flexible, low-cost strategies for managing organizational change. The study contributes new insights by suggesting that effective change management strategies are essential for overcoming psychological and cultural challenges, ensuring a smooth transition to AI-powered processes. This is particularly relevant to the research objective of evaluating organizational readiness for AI integration. The comparison with Kotter's framework demonstrates that organizational readiness is not just about having the right technology but also about cultivating a culture that is open to change and innovation. The integration of AI also raised significant data security and ethical concerns, which are critical to

ensuring trustworthy AI applications. This finding aligns with research by Binns (2018) and Chen et al. (2012), who emphasize the importance of developing robust governance frameworks to address these concerns. Moreover, this study adds a nuanced perspective by arguing that non-profits face particular challenges in maintaining data security and ethical standards due to their limited financial resources and access to legal expertise. This suggests that sector-specific ethical guidelines may need to be developed to better support non-profit organizations. The study contributes to the understanding that establishing clear ethical guidelines and compliance protocols is essential for successful AI adoption, particularly in non-profit financial operations. This supports the research objective of ensuring that AI applications are both secure and ethically sound. The emphasis on ethical considerations and data security is significant because it highlights a crucial area where non-profits like ADRA Zambia need to focus to maintain trust and transparency with their stakeholders. Furthermore, the research suggested that AI could significantly improve the processing and analysis of large datasets, a finding consistent with studies by Chen et al. (2012) and Eloshvili (2024). However, the study also identified the need for better infrastructure and training to fully realize these benefits, contributing new knowledge on the prerequisites for successful AI implementation. This research diverges from existing studies by highlighting how inadequate infrastructure not only limits AI's immediate benefits but also hampers its long-term strategic value, suggesting a need for a more holistic approach to resource allocation. This finding is particularly relevant to the research objective of identifying both the positive and negative effects of AI on data integrity and analysis. The study adds to the literature by emphasizing the critical role of infrastructure and training in enabling organizations to leverage AI effectively. This insight is important because it underscores the fact that without the right foundational elements in place, the potential benefits of AI may not be fully realized.

## 5.2. New Knowledge Generated

By so doing, the study enriches knowledge on how AI integration can further complicate non-profit companies' financial operations. Interestingly, what is not seldom seen is the provision of a complex framework that can describe not only the technology, but the people as well, which are critical for the process of AI's integration; thus, this work marks a breakthrough in how non-profits can proceed with technology adoption. It provides a direct answer to the perceived deficiencies of knowledge and training in artificial intelligence among accountants in the study findings. This is evidenced by data presented in Chapter Four where participants recognized the importance of a continuous learning process and ability to adapt when implementing technology change within a profession of finance. These are based on the literature review in Chapter One and the statistical analysis in chapter four which supported the proposed AI adoption model and enhanced the knowledge of this research on the strategic and operational roles of AI within non-profit financial systems. Furthermore, the framework presented in chapter five on the adoption of AI in enterprises help in offering a systematic approach to the challenges stated above and are in sync with the strategic implications highlighted throughout this study. Consequently, **Figure 6** illustrates the current drafting of the proposed AI Adoption model.

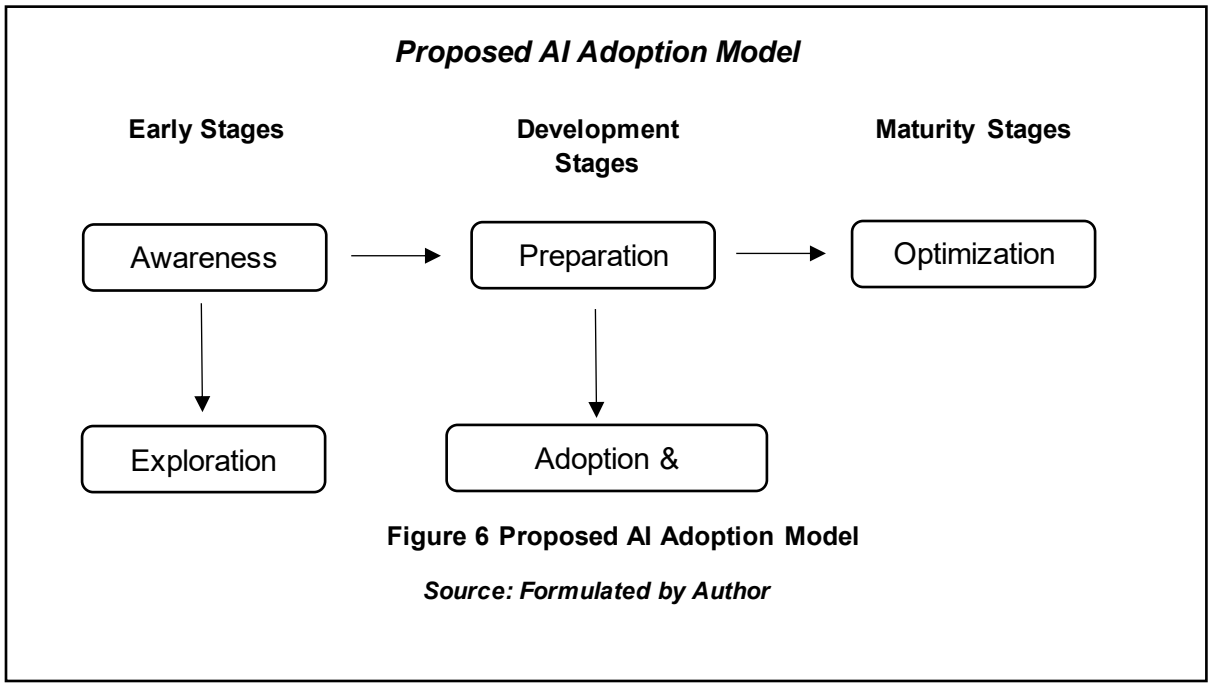



**Figure 6 Proposed AI Adoption Model**

***Source: Formulated by Author***

## Conclusion

The chapter concludes by revisiting the research objectives and hypotheses, indicating that while AI has significant potential to improve financial performance in non-profit organizations, various challenges still hinder its widespread adoption. The findings contributed to existing literature by clearly defining these challenges and outlining strategies for AI integration, particularly in resource-constrained settings. The study emphasized the need for a cultural shift within organizations to bridge the gap between AI's potential and its practical implementation, thus advancing knowledge in the field of AI adoption in financial operations.

# CHAPTER 6:

# CONCLUSIONS AND RECOMMENDATIONS

## 6.1 Introduction

Chapter Six presents valid conclusions and realistic recommendations based on the research findings and the major discussions of the research objectives. The conclusive section reiterates the key research results, linking and mapping them to the initial study aims and objectives. On the other hand, the recommendations outline plans that could be proposed and implemented to advance the process of automation of the bank reconciliation statements at ADRA Organization in Zambia, including ideas that have not been known before, based on the study's findings.

## 6.2 Conclusion and Summary of Findings

This dissertation has endeavored to give an understanding and exploration of the possibilities and adaptations of AI in the management of portfolios of non-profit organizations including in the case study organization, ADRA Zambia. The outcomes revealed in this research align with the study objectives and goals, indicating the difference between the AI possibilities and the real-life applications, the existing limitations to moved, and the recommendations for the effective integration of AI. This study is premised on the observation that bank reconciliation in modern organizations is a bottleneck filled process that is prone to errors and fraud because of its manual nature. Conclusively, the summary of findings is as follows: Conclusively, the summary of findings is as follows:

1. **Gap Between Potential and Use of AI:** The same observation is summarized in the conclusion where the study reinforced the literature by revealing that, although AI is not currently utilized in ADRA Zambia bank reconciliation, there is unanimous agreement that it can improve efficiency and accuracy. This unanimous belief in the potential effect of AI in particular to automating and enhancing the efficiency and precision of the bank reconciliation services in the organization conforms to

the main research question and solves the major issue stated at the beginning of this study.

2. **Challenges to AI Adoption:** The conclusion also identifies challenges included the technological resistance, the financial concerns, and the absence of awareness of AI as an area of study noted as insights in the research.

3. **Strategies for AI Integration:** The conclusion also provides measures like incorporating consciousness education, the adoption of technologies at different stages to solve differential tasks to the essence of this earlier finding that suggested that the need for strategic information and integrated training to ensure the integration of the new technologies which refers to AI.

4. **Security and Ethical Considerations:** Though not outlined in this conclusion, the previous studies found these as core, for any inclusive discoursing that encompasses the area of applying AI in sensitive activities like financial management.

5. **Efficiency and Accuracy Enhancement:** The conclusion provides implicit support to the hypothesis concluding that the adoption of AI can create a substantial improvement in financial activities within organizations while being rooted on the expressed opinion of the financial employees in ADRA Zambia. This is closely aligned with research conducted and presented in Chapter Five where there is a detailed discussion on the transformative potential of AI to which the various departments of the non-profit organizations exhibit readiness and optimism for the adoption of this technology, thus meeting this objective by presenting the findings on the effects of AI in enhancing optimization of non-profit organizational processes.

### 6.2.1 Addressing the Statement of the Problem

The research addressed the gap largely central to most non-profit organizations operating in today's world and this is due to the fact that the institutions have not been using AI in its operations especially in managing their financials, something that has led to increased vulnerabilities. This work revealed that another challenge includes the lack of awareness and practice of AI by accountants in addition to the use of manually intensive methods which are inefficient and cannot be easily scaled to complement the growth of the organization.

### 6.2.2 Achievements Relative to Research Objectives and Questions

**Objective 1: To assess the effects of AI on bank reconciliation process for ADRA Zambia**

The study involved a systematic analysis of AI's effect on the bank reconciliation process at ADRA Zambia, employing both quantitative and qualitative methodologies to capture a comprehensive view of AI's effectiveness. The research findings confirmed that AI significantly enhances productivity and reduces error rates in financial operations, validating the positive effects hypothesized. These findings are supported by the procedures detailed in Chapter Three, where a mixed-method approach was employed to gather data, including interviews, surveys, and statistical analysis. Stakeholders' growing awareness of AI's potential aligns with the theoretical framework discussed in Chapter Two, particularly the Diffusion of Innovation Theory, which suggests that awareness is a crucial first step in the adoption of new technologies. The detailed analysis in Chapter Five further explored AI's transformative effect on financial operations, revealing that non-profit organizations like ADRA Zambia are actively preparing for AI adoption, despite facing challenges such as resource constraints and technological readiness.

**Objective 2: To evaluate the challenges faced by ADRA Zambia in the adoption of AI for bank reconciliation process**

The study identified significant challenges to AI adoption, including resistance to technological change, financial constraints, and a limited understanding of AI among staff. These challenges were rigorously analyzed through data collection and analysis procedures, as outlined in Chapter Three. The findings in Chapter Four, supported by real-world examples of current operational inefficiencies that AI could potentially resolve, underscore the importance of addressing these challenges. The necessity for targeted educational initiatives and strategic solutions, such as phased AI implementation and staff training programs, was emphasized. These solutions were further elaborated in Chapter Five, where the research findings were contextualized within existing literature, highlighting that these challenges are not unique to ADRA Zambia but are common across various sectors.

**Objective 3: To examine strategies put in place by ADRA Zambia for smooth AI integration into the organizations' bank reconciliation processes**

The research provided strategic recommendations based on the data gathered, including the implementation of educational initiatives, gradual technology adoption, and robust change management. These strategies were designed to ensure a smooth and effective AI integration process. The study's procedures, as described in Chapter Three, involved extensive consultations with stakeholders and analysis of existing AI integration frameworks, ensuring that the strategies proposed were both practical and theoretically sound. The theoretical foundations outlined in Chapter One, particularly the Technology Adoption Model (TAM), supported these strategies, while Chapter Five provided practical recommendations on addressing AI implementation challenges from various perspectives—methodological, organizational, technological, and managerial.

### 6.2.3 Research Questions:

- **Potential Benefits**: The study confirmed that AI has significant potential to improve efficiency in data analysis, identify irregularities, and enhance the reliability of financial operations. This conclusion is based on rigorous data analysis, as detailed in Chapter Four, where the benefits of AI were quantified and contextualized within ADRA Zambia's operational framework.

- **Challenges and Considerations**: The study identified key issues, such as the lack of required infrastructure, resistance to change among staff, and the need for extensive training and support. These challenges were analyzed in relation to the Technology Adoption Model (TAM) and the Task-Technology Fit (TTF) Theory, demonstrating that overcoming these challenges is essential for successful AI adoption.

- **Effective Integration**: The dissertation suggests a comprehensive approach to AI integration, involving managerial and strategic integration, engagement of both internal and external stakeholders, and fostering an organizational culture that supports change. These recommendations are grounded in the research findings and are supported by the literature reviewed in Chapter Two, which emphasizes the importance of a holistic approach to technology adoption.

### 6.2.4 Evaluation of Hypotheses

- **Hypothesis 1:** The study's findings, with a p-value of $1.63 \times 10^{-15}$, significantly lower than 0.05, led to the rejection of the null hypothesis (H0) that the integration of AI in automating Bank Reconciliation Statements does not have a significant effect on the efficiency and accuracy of financial processes at ADRA Zambia. This confirmed the alternative hypothesis (H1), supporting the conclusion that AI integration significantly improves efficiency and accuracy. These findings were derived from a combination of statistical analysis and qualitative insights, as described in Chapters Four and Five, validating the research procedures and confirming that AI can bring tangible improvements to financial processes.

- **Hypotheses 2 and 3:** The p-values of $7.31\times10^{-10}$ and $3.03\times10^{-6}$ justified the rejection of the null hypotheses (H0) that AI integration does not significantly reduce the challenges faced by ADRA Zambia in adopting AI technology and does not significantly improve the effectiveness of strategies implemented for smooth AI integration. The results confirmed the alternative hypotheses (H1), showing that AI integration significantly reduces challenges and enhances strategy implementation. These conclusions were based on comprehensive data analysis and were consistent with the theoretical frameworks discussed in Chapter Two, particularly the Diffusion of Innovation Theory and the Technology Acceptance Model, which highlight the importance of strategic planning and stakeholder engagement in technology adoption.

### 6.2.5 Preparing for the Future of Work

The study highlights the significant effect that AI will have on employment within financial operations, emphasizing the importance of preparing ADRA Zambia for this transition. The involvement of AI is likely to lead to shifts in employment patterns, necessitating the upskilling and transformation of the workforce. This speaks to the broader need for organizations to anticipate changes in job roles and to support employees through training and professional development programs that enhance their skills for the future.

In contributing to the field of study, this research underscores the dual effect of AI — both as a tool for enhancing operational efficiency and as a catalyst for workforce transformation. The positive contribution lies in providing a framework for understanding how AI can be integrated into non-profit financial operations while also highlighting the potential challenges related to employment and skills development. By addressing these challenges, the study offers practical strategies for ensuring that AI adoption leads to both organizational growth and employee empowerment, thus contributing positively to the ongoing discourse on AI in financial operations.

### 6.3 Recommendations

Based on the detailed match that can be seen to exist between the recommendations presented in this study and the issues that were described in the statement of the problem, the following focused recommendations were made. Based on the synthesized findings and conclusions, the following recommendations were proposed

1. **Develop an AI-Ready Workforce:** ADRA Zambia Management should Implement bi-annual training across all the staff of ADRA Zambia to increase their awareness about AI and to master new skills in that area due to the current scarcity of specialists with these skills. From the emerged results that depicted a poor knowledge of artificial intelligence among staffers at ADRA Zambia, it is proposed that organizations launch extensive educational campaigns. These programs should especially focus on increasing the staff's knowledge about AI best practices and their technical competencies related to its implementation, which could have been deemed a key hindrance to the application of AI in the study.
2. **Implement a Strategic AI Framework:** ADRA Zambia Management should come up with a set of specific guidelines on how AI will be implemented in a particular department of the organization based on objectively set goals, by first, assessing the organization's preparedness to adapt to the change in organizational structure and processes facilitated by AI technology. To address identified, need to plan for AI in a strategic manner and to implement it in a phased manner it is suggested that a PAI should be outlined. This should include the part on organizational readiness, strategy mapping and goal setting to meet technological resistance issues and organizational culture of institutions such as ADRA Zambia.
3. **Cultivate an Innovation-Driven Culture:** ADRA Zambia should promote a society that does not resist change, information, and continuous learning to mitigate reluctance in the adoption of AI and create conducive grounds for traditional advancement. It is important to correct, promote a society that encourages change and lifelong learning to reduce the hostility towards AI and create an environment for innovation.

### 6.4 Limitation to the Study

The research encountered several challenges that affected its progress:

- **Network Issues:** When using Google Meet, facial mask sometimes hinder effective communication during online interviews since there were cases of interruptions.
- **Logistical Challenges:** The power supply in the focus area disrupted at some point simply because the surrounding infrastructure had its own schedule of limitations, some of which were power cuts. These interferences had some effects on different aspects of the research process such as carrying out the interviews and analyzing the data collected.
- **Difficulties Contacting Field Staff:** The communication with the organization employees scarcely employed in areas other than Lusaka was somewhat a problem.
- **Busy Schedules of Respondents:** Some of the specific replies could only be obtained near the end of the study period because Staffs had many other commitments and required frequent follow-ups in order to fill in the online questionnaires.

### 6.5 Future Research Areas

In light of the study's objectives and findings, further investigation ought to look into:

i. **Longitudinal Studies on AI Adoption:** As to the second research question, the findings showed that the effect of AI integration on financial processes in organizations such as ADRA Zambia is apparent in the long term.

ii. **Comparative Analysis of AI Technologies:** To examine the main strategies and fine-tuning solutions and evaluate the key AI tools and methods for the automation of the financial processes.

iii. **Ethics and Social Implications of AI:** It is necessary to consider the broader, less specific, ethical and social implications of AI in work settings with specific focus on the issues related to data privacy, threat of job automation, and how society perceives AI solutions.

### 6.6 Final Thought

Observing the specific case of ADRA Zambia and its attempt to apply artificial intelligence (AI) for the automation of the bank reconciliation process reveals a field filled with valuable opportunities and significant challenges. The following recommendations have been developed to assist the organization in acting as a responsible broadcaster and steward of AI's generative possibility. Reflected in the recommendations, the study has offered an accurate strategic map that would help ADRA Zambia and other such organizations as they embark on their journey toward AI in financial functions.

# REFERENCES


ACCA (2014) FA1: Recording Financial Transactions. BPP Learning Media, p. 53.

ACCA (2015) 'Payables & Receivables', in Financial Accounting. London: BPP, p. 66.

ACCA (2019) Artificial Intelligence in Finance Profession. London: ACCA.

ACFE (2021) 'What is Fraud?', in Fraud Examiners Manual. Austin Texas: ACFE, p. 80.

Adeola, A., & Adebiyi, J. (2023). The Role of Artificial Intelligence in Enhancing Financial Services in Africa. Journal of Financial Services Marketing.

ADRA Zambia. (n.d.) about. Available at: https://www.developmentaid.org/organizations/view/349808/adra-zambia (Accessed: 23 January 2024).

Al Janabi, M. and Razaq, B., 2021. Advanced statistical analysis techniques.

Babbie, E. (2020). The Practice of Social Research (15th ed.). Cengage Learning.

Benson, J. (2020) 'The Role of Nonprofit Accounting Software in Fighting Fraud in NGOs', Available at: https://humentum.org/blog-media/the-role-of-nonprofit-accounting-software-in-fighting-fraud-in-ngos/ (Accessed: 23/01/2024).

Bessen, J., 2019. Artificial Intelligence and Jobs: The Role of Demand. NBER Working Paper No. 24235. [online] Available at: https://www.nber.org/papers/w24235 [Accessed 30 Aug. 2024].

Binns, R., 2018. 'Fairness in Machine Learning: Lessons from Political Philosophy', Proceedings of the 2018 Conference on Fairness, Accountability, and Transparency, pp. 149-159. [online] Available at: https://doi.org/10.1145/3287560.3287591 [Accessed 30 Aug. 2024].

Bolton, R. J., & Hand, D. J. (2002). Statistical fraud detection: A review. Statistical Science, 17(3), 235-249.

Bridge, J.P., Holden, S.B. & Paulson, L.C. (2014) 'Machine learning for first-order theorem proving', Journal of Automated Reasoning, 53(2), pp. 141-172.

Brynjolfsson, E. and McAfee, A., 2017. The Business of Artificial Intelligence. Harvard Business Review. [online] Available at: https://hbr.org/2017/07/the-business-of-artificial-intelligence [Accessed 30 Aug. 2024].

Bryman, A. (2016). Social Research Methods (5th ed.). Oxford University Press.

CIMA (2005) Financial Accounting. Available at: http://dl.groovygecko.net/anon.groovy/clients/kaplan/DL/Demo_2016/Accounting_equation/Assets/CIMATerminology.html#A (Accessed: 30 January 2024).

Chen, H., Chiang, R.H.L. and Storey, V.C., 2012. 'Business Intelligence and Analytics: From Big Data to Big Impact', MIS Quarterly, 36(4), pp. 1165-1188. [online] Available at: https://www.jstor.org/stable/41703503 [Accessed 30 Aug. 2024].

Claritas, 2024. AI Adoption in Financial Services: Barriers and Opportunities. [online] Available at: https://www.claritas.com/ai-adoption-financial-services [Accessed 30 Aug. 2024].

Creswell, J.W. and Plano Clark, V.L., 2018. Designing and conducting mixed methods research. 3rd ed. Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (4th ed.). SAGE Publications.

Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. Harvard Business Review, 96(1), 108-116.

Davis, F.D. (1989) 'Perceived usefulness, perceived ease of use, and user acceptance of information technology', MIS Quarterly, pp. 319-340.

Datasnipper, 2024. Manual vs. Automated Balance Sheet Reconciliation. Available at: https://www.datasnipper.com/resources/manual-vs-automated-balance-sheet-reconciliation [Accessed 29 August 2024].

Dinh, L., Rinfret, T., et al. (2015) 'Reconciliation Management System', Technology and Smart Education.

Dishaw, M.T. & Strong, D.M. (1999) 'Extending the technology acceptance model with task-technology fit constructs', Information & Management, 36(1), pp. 9-21.

Etikan, I., Musa, S.A. and Alkassim, R.S., 2016. Comparison of convenience sampling and purposive sampling. American Journal of Theoretical and Applied Statistics, 5(1), pp.1-4.

Eloshvili, R., 2024. 'Overcoming Real-World Barriers to AI Usage in Finance', Advisor Perspectives. [online] Available at: https://www.advisorperspectives.com/articles/2024/07/22/overcoming-real-world-barriers-to-ai-usage-in-finance [Accessed 30 Aug. 2024].

Financial Reporting Council (2019) Artificial Intelligence and corporate reporting: How does it measure up? pp. 10,18.

Fountaine, T., McCarthy, B. and Saleh, T., 2019. 'Building the AI-Powered Organization', Harvard Business Review, 97(4), pp. 62-73. [online] Available at: https://hbr.org/2019/07/building-the-ai-powered-organization [Accessed 30 Aug. 2024].

Gerovitch, S. (2003) Automation, p. 122.

Goodhue, D.L. & Thompson, R.L. (1995) 'Task-Technology Fit and Individual Performance', MIS Quarterly, 19(2), pp. 213-236.

Grant, C., & Osanloo, A. (2014). Understanding, Selecting, and Integrating a Theoretical Framework in Dissertation Research: Creating the Blueprint for Your "House." Administrative Issues Journal, 4(2), 12-26.

IBCA, 2024. Challenges in AI Adoption within Financial Services. [online] Available at: https://www.ibca.com/challenges-ai-adoption-financial-services [Accessed 30 Aug. 2024].

IFRS Foundation (2021) IAS 1 Presentation of Financial Statements. Available at: https://www.ifrs.org/issued-standards/list-of-standards/ias-1-presentation-of-financial-statements/ (Accessed: 16 February 2024).

Inpay, 2024. 10 NGO payment challenges, causes and possible cures. Available at: https://www.inpay.com/news-and-insights/10-ngo-payment-challenges/ [Accessed 29 August 2024].

Joshi, R. (2019). Customer Service Strategies and AI in Zambian Banks: A Case Study of Investrust Bank PLC. University of Zambia and Zimbabwean Open University Dissertation.

Kokina, J., & Davenport, T.H. (2017). The Emergence of Artificial Intelligence: How Automation is Changing Auditing. Journal of Emerging Technologies in Accounting, 14, 115-122.

Kotter, J.P., 2012. Leading Change. Boston, MA: Harvard Business Review Press.

Kulkarni, C.S., Bhavsar, A.U., et al. (2017) 'BANK CHATBOT – An Intelligent Assistant System Using NLP and Machine Learning.'

Kumar, A., & Srivastava, R. (2024). AI in Banking: Enhancing Efficiency and Accuracy. Journal of Financial Services Marketing.

Kureljusic, M. (2023) 'Forecasting in financial accounting with artificial intelligence – A systematic literature review and future research agenda'.

Lobato, J. (2023) 'AI for NGOs: A practical guide for small and large organizations'.

Lusaka Times (2019) 'How Ex BOZ Governor Michael Gondwe's niece Pamela stole US$400,000 from Barclays'. Available at: https://www.lusakatimes.com/2019/06/13/how-ex-boz-governor-michael-gondwes-niece-pamela-stole-us400000-from-barclays/ (Accessed: 29 January 2024).

McKinsey & Company (2023). Global AI Integration in Financial Services. McKinsey Insights.

Mcmahon, A.P. (2023) Machine Learning Engineering with Python, Packt Publishing.

Mehta, P. and Rajendran, V., 2020. 'Artificial Intelligence in Finance: Challenges and Opportunities', Journal of Finance and Data Science, 6(3), pp. 234-245. [online] Available at: https://doi.org/10.1016/j.jfds.2020.02.001 [Accessed 30 Aug. 2024].

Messier, F.W. (2003) Auditing and Assurance Services: A Systematic Approach, McGraw-Hill Irwin, p. 211.

Mhlanga, M., & Kekana, L. (2024). Challenges of AI Integration in African Banking. South African Journal of Banking.

Miles, M. B., & Huberman, A. M. (1994). Qualitative Data Analysis: An Expanded Sourcebook (2nd ed.). Sage Publications.

Monica, Kavitha et al. (2015) 'Reconciliation Management System', International Journal of Scientific Research in Science, Engineering and Technology, pp.156-158.

Nguyen, T., Azizi, Z., & Yong, J. (2020). Machine learning approaches for financial time series prediction. Journal of Big Data, 7(1), 1-25.

N. Onuoha and B. Amponsah (2016) 'Bank Reconciliation as a Due Process Imperative for Effective Financial Management', Department of Accounting, Valley View University, Ghana.

National Council of Education and Research (2022) 'Spreadsheets', in Computerized Accounting System. p. 17.

Nosek, B.A., Ebersole, C.R., DeHaven, A.C., and Mellor, D.T., 2015. The preregistration revolution. Proceedings of the National Academy of Sciences, 115(11), pp.2600-2606.

Patton, M.Q., 2015. Qualitative Research and Evaluation Methods. 4th ed. Thousand Oaks, CA: SAGE Publications.

Polit, D.F. and Beck, C.T., 2020. Nursing research: Generating and assessing evidence for nursing practice. 11th ed. Philadelphia, PA: Wolters Kluwer.

PwC (2019) Donors and Implementing Partners fraud survey in Zambia. Available at: https://www.pwc.com/zm/en/assets/pdf/donors-and-implementing-partners-fraud-survey-zambia-2019.pdf (Accessed: 29 January 2024).

Rodrigues, V. (n.d.) 'The evolution of the reconciliation processes'. Available at: https://aurum.solutions/resources/the-evolution-of-the-reconciliation-processes (Accessed: 30 January 2024).

Rogers, E.M. (1995) Diffusion of Innovations: 5th Edition, Free Press, p. 48.

Seventh-day Adventist Church, 2011. SDA Accounting Manual: January 2011 Edition. General Conference of Seventh-day Adventists.

Schmarzo, B. (2023) AI & Data Literacy, Packt Publishing, p. 1.

Sutton, S. G., Holt, M., & Arnold, V. (2016). The reports of my death are greatly exaggerated: Artificial intelligence research in accounting. International Journal of Accounting Information Systems, 22, 60-73.

Szegedy, C., Toshev, A. & Erhan, D. (2013) 'Deep neural networks for object detection', Advances in Neural Information Processing Systems.

Tashakkori, A., & Teddlie, C. (2010). SAGE Handbook of Mixed Methods in Social & Behavioral Research (2nd ed.). SAGE Publications.

Tembo, S., Shabani, J., & Ng'ambi, M. (2024). Examining the Role of Artificial Intelligence in Cybercrime: An Integrative Assessment of Techniques, Impacts, and Solutions in Zambia. International Research Journal of Modernization in Engineering Technology and Science, 6(2), 1949-1954.

Toplic. (2020) 'AI in the Humanitarian Sector'. Available at: https://reliefweb.int/report/world/ai-humanitarian-sector (Accessed: 30 January 2024).

Trintech, 2024. Manual Reconciliation Problems to Solve. Available at: https://www.trintech.com/blog/manual-reconciliation-problems-to-solve/ [Accessed 29 August 2024].

Venkatesh, V. et al. (2003) 'User Acceptance of Information Technology: Toward a Unified View', MIS Quarterly, 27(3), pp. 425-478.

Wirtz, B.W., Weyerer, J.C. and Geyer, C., 2019. 'Artificial Intelligence and the Public Sector—Applications and Challenges', International Journal of Public Administration, 42(7), pp. 596-615. [online] Available at: https://doi.org/10.1080/01900692.2018.1498103 [Accessed 30 Aug. 2024].

Wilson, H.J. and Daugherty, P.R., 2018. 'Collaborative Intelligence: Humans and AI Are Joining Forces', Harvard Business Review, 96(4), pp. 114-123. [online] Available at: https://hbr.org/2018/07/collaborative-intelligence-humans-and-ai-are-joining-forces [Accessed 30 Aug. 2024].

Yin, R. K. (2017). Case Study Research and Applications: Design and Methods (6th ed.). SAGE Publications.

ZICA (2019) Advanced Financial Reporting (Advisory Level), BPP Learning Media, p. 7.

# APPENDIX – A

# QUESTIONNAIRE

AN ASSESSMENT OF THE FACTORS OF ARTIFICIAL INTELLIGENCE TO AUTOMATING BANK RECONCILIATION STATEMENTS AT ADRA ORGANIZATION IN ZAMBIA

**SECTION A: PERSONAL DATA**

Please tick (√) in the appropriate box.

**Sex:** Male ☐ Female ☐

**Position in the Organization:**

Finance Director ☐ Data Analyst / IT ☐ Auditor ☐
Accountant ☐ Cashier ☐

**Level of Experience**

Less than 1 year ☐

1-3 years ☐

4-6 years ☐

7-10 years ☐

More than 10 years ☐

**SECTION B:**

**i. Awareness and Implementation of AI**

1. How ready are NGOs to leverage AI to Automating Bank Reconciliation Statements?
   - Ready ☐
   - Not Sure ☐
   - Somewhat Ready ☐
   - Not at all ☐
2. What the challenges you see in implementing AI for Data processing in Bank Reconciliations?
   - Increased Costs ☐
   - Poor data quality / data integrity ☐
   - Resistance to change ☐
   - Employee Redundancy ☐
   - Unskilled AI System Operators ☐
   - Complexity of AI Tools ☐
   - Loss of control over process ☐
3. What are the key components needed to successfully implement AI for Automation in the Bank Reconciliation process?
   - Improve data quality and integrity ☐
   - Build capacity and acquire skills ☐
   - Incorporate AI into governance framework ☐
   - Integrate AI into existing systems ☐
   - Create awareness about the benefits of AI ☐
4. Has your department implemented AI for bank reconciliation?
   - Yes ☐ No ☐

### i. Impact of AI on Bank Reconciliation

1. How has AI affected the accuracy of bank reconciliation statements?
    - Significantly ☐
    - Not sure ☐
    - Somewhat Significant ☐
    - Not at all ☐
2. How has AI impacted the error rate in bank reconciliation statements?
    - Increased ☐ Not sure ☐
    - No change ☐
    - Decreased ☐

### ii. Performance and Satisfaction

3. How satisfied are you with the existing system for bank reconciliation?
    - Satisfied ☐
    - Not Sure ☐
    - Somewhat satisfied ☐
    - Not at all ☐
4. To what extent has the AI system met your expectations for automating bank reconciliation tasks?
    - Great ☐
    - Not Sure ☐
    - Somewhat Great ☐
    - Less ☐
5. Do you think AI can reduce manual intervention in bank reconciliation?
    - Yes ☐ No ☐

### iii. Impact on Roles and Responsibilities

6. Do you believe AI has created more opportunities for strategic work by reducing manual tasks?
    - Yes ☐ No ☐

**i. Future Perspectives and Improvements**

1. How likely are you to recommend further AI integrations within your financial system?
   - Highly Likely ☐
   - Not Sure ☐
   - Somewhat Likely ☐
   - Less Likely ☐

2. Do you think AI will become more essential in financial operations in the next 5 years?
   - Yes ☐ No ☐

**13. Tick the circle that you strongly feel could lead to automating bank reconciliation statements with AI integration**

- ○ Data Processing and Accuracy
- ○ Anomaly Detection
- ○ Machine Learning for Pattern Recognition
- ○ Automation of Repetitive Tasks
- ○ Real-Time Processing

**INTERVIEW QUESTIONS:**

1. Which Financial or Accounting System are you currently using?
2. How are you currently carrying out your bank reconciliation process between Cash and Bank Transactions?
3. Have you ever used Artificial Intelligence and what kind could that be?
4. Are there specific areas in bank reconciliation where you believe AI could further improve efficiency or accuracy?
5. What repetitive routine tasks would you like to see the AI system handle in the bank reconciliation process?
6. What potential challenges do you foresee with further AI integration in financial processes?

# APPENDIX – B

Detailed Data Analysis

**Table 5.0 Mean Ranking of AI Factors to Automating Bank Reconciliation Processes.**

| | Factors | Probability (P) | Impact (I) | Effect (P*I) | Significance (√P*I) | Rank within category | Overall Rank | Std. Dev |
|---|---|---|---|---|---|---|---|---|
| | Data Processing and Accuracy | 0.8 | 1 | 0.8 | 0.8944 | 1 | 0.2 | 0.1877 |
| | Anomaly Detection | 0.6333 | 1 | 0.6333 | 0.7958 | 2 | 0.4 | 0.1877 |
| | Machine Learning for Pattern Recognition | 0.3333 | 1 | 0.3333 | 0.5774 | 5 | 1 | 0.1877 |
| | Automation of Repetitive Tasks | 0.4333 | 1 | 0.4333 | 0.6583 | 3.5 | 0.7 | 0.1877 |
| | Real-Time Processing | 0.4333 | 1 | 0.4333 | 0.6583 | 3.5 | 0.7 | 0.1877 |
| **Average Mean (Σ xi) / n** | | **0.5267** | **1** | **0.5267** | **0.7168** | | | **0.1877** |

**Source: Computation based on field data 2024**

**Table 5.1 Testing for the hypothesis**

| Hypothesis | Chi-Square | df | P-Value | Conclusion |
|---|---|---|---|---|
| **$H_1$:** The integration of Artificial Intelligence (AI) in automating Bank Reconciliation Statements has a significant effect on the efficiency and accuracy of financial processes at ADRA Zambia. | 90.00 | **9** | $1.63 \times 10^{-15}$ **P-value = 0.00** | Reject **$H_0$** |
| **$H_2$:** The integration of AI in automating Bank Reconciliation Statements significantly reduces the challenges faced by ADRA Zambia in adopting AI technology. | 61.36 | **9** | $7.31 \times 10^{-10}$ **P-value = 0.00** | Reject **$H_0$** |
| **$H_3$:** The integration of AI in automating Bank Reconciliation Statements significantly improves the effectiveness of strategies implemented by ADRA Zambia for smooth AI integration. | 48.08 | **12** | $3.03 \times 10^{-6}$ **P-value = 0.00** | Reject **$H_0$** |

**Source: Computation based on field data 2024**

**Table 5.2 What are the challenges you see in implementing AI for Data processing in Bank Reconciliations?**

| # | Response | Frequency | Percentage (%) | Cumulative Percentage (%) |
|---|---|---|---|---|
| **1** | • Increased Costs, Poor data quality/data integrity<br>• Resistance to change, Employee Redundancy, Unskilled AI System Operators, Complexity of AI Tools, Loss of control over the process | 9 | 30.00% | 30.00% |
| **2** | • Employee Redundancy, Loss of control over process | 6 | 20.00% | 50.00% |
| **3** | • Loss of control over process | 6 | 20.00% | 70.00% |
| **4** | • Complexity of AI Tools | 4 | 13.33% | 83.33% |
| **5** | • Increased Costs, Poor data quality/data integrity<br>• Resistance to change, Employee Redundancy, Unskilled AI System Operators | 3 | 10.00% | 93.33% |
| **6** | • Increased Costs, Poor data quality/data integrity<br>• Resistance to change | 1 | 3.33% | 96.66% |
| **7** | • Increased Costs, Poor data quality/data integrity<br>• Resistance to change, Unskilled AI System Operators, Complexity of AI Tools | 1 | 3.33% | 99.99% |
| | **Total** | | **99.99%** | |

**Source: Computation based on field data 2024**

**Table 5.3 What key components are needed to implement AI for Automation in the Bank Reconciliation process successfully?**

| Details | Frequency | Percent (%) | Cumulative Percent (%) |
|---|---|---|---|
| • Create awareness about the benefits of AI | 26 | 34.21% | 34.21% |
| • Integrate AI into existing systems | 19 | 25.00% | 59.21% |
| • Improve data quality and integrity | 17 | 22.37% | 81.58% |
| • Build capacity and acquire skills<br>• Incorporate AI into the governance framework | 14 | 18.42% | 100.00% |
| **Total** | | **100.00%** | |

**Source: Computation based on field data 2024**

**Table 5.4 Has your department implemented AI for bank reconciliation?**

| Details | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| **No** | 30 | 100.00% | 100.00% |
| **Yes** | 0 | 0% | |
| **Total** | | **100.00%** | |

**Source: Computation based on field data 2024**

**Table 5.5 How often do you encounter issues or errors with the AI system?**

| Details | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| **Not sure** | 15 | 50.00% | 50.00% |
| **Rarely** | 11 | 36.67% | 86.67% |
| **Daily** | 4 | 13.33% | 100.00% |
| **Total** | | **100.0%** | |

**Source: Computation based on field data 2024**

**Table 5.6 Do you think AI will become more essential in financial operations in the next five years?**

| Details | Frequency | Percent | Cumulative Percent |
|---|---|---|---|
| **Yes** | 30 | 100.0 | 100.0 |
| **No** | 0 | | |
| **Total** | | **100.0** | |

**Source: Computation based on field data 2024**

**Table 5.7 Tick the circle that you strongly feel could lead to automating bank reconciliation statements with AI integration**

| Details | Frequency | Percent (%) | Cumulative Percent (%) |
|---|---|---|---|
| • Data Processing and Accuracy | 24 | 30.38% | 30.38% |
| • Anomaly Detection | 19 | 24.05% | 54.43% |
| • Automation of Repetitive Tasks | 13 | 16.46% | 70.89% |
| • Real-Time Processing | 13 | 16.46% | 87.34% |
| • Machine Learning for Pattern Recognition | 10 | 12.66% | 100.00% |
| **Total** | | **100.00%** | |

**Source: Computation based on field data 2024**

**Table 5.8 AI's Effect Analysis**

| Factor | Initial Effect Before AI Adoption (Mean) | Expected Effect After AI Adoption (Mean) | Percentage Improvement (%) | T – Statistic | P – Value |
|---|---|---|---|---|---|
| **Error Rate** | 3.181 | 4.772 | 50% | 2.141 | 0.000157 |
| **Efficiency** | 3.096 | 4.334 | 40% | 1.667 | 0.0385 |
| **Time Savings** | 20.825 | 36.444 | 75% | 21.022 | 0.000000 |
| **Cost Savings** | 4.993 | 6.990 | 40% | 2.688 | 0.0078 |

**Source: Computation based on field data 2024**

PLAGIARISM CHECK.ORG

**1.79%** SIMILARITY OVERALL

**3.94%** POTENTIALLY AI

SCANNED ON: 31 MAY 2024, 2:16 PM

### Similarity report

Your text is highlighted according to the matched content in the results above.

IDENTICAL 0.05%

CHANGED TEXT 1.74%

### AI Detector Results

Highlighted sentences with the lowest perplexity, most likely generated by AI.

LIKELY AI 1.21%

HIGHLY LIKELY AI 2.73%

## Report #21518773

DECLARATION I Simon John Mwanza do hereby declare that this submission is my own work towards the MBA General and that, to the best of my understanding, it contains no material earlier published by any other person, nor material which has been accepted for the award of any other Master degree of the University, except where due acknowledgement has been made in the text. I further declare, to the best of my knowledge, that this work has not been presented in part or in whole for any academic purposes. Produced by: Simon John Mwanza Signed: Date: 24.04.2024 Supervised by: Mr. Jeff Musonda Signed: Date: 24.04.2024 1 DEDICATION This research work is dedicated to my late uncle (Simon Wanga), my parents, siblings and all my friends and most importantly to the Almighty God. 2 ACKNOWLEDGEMENT I would like to thank God for giving me the understanding to accomplish this work, none of the hard work and good ideas presented in this Dissertation would come into effect. I must acknowledge Mr. Jeff Musonda, my supervisor for the leading, and encouragement toward the successful accomplishment of this Academic work; despite of his very busy schedule. My loving parents and my brother and sister, I equally thank you for your continued support and motivation. 3 ACRONYMS/ABBREVIATIONS AI - Artificial Intelligence ACCA - Association of Chartered Certified Accountants ACFE - Association of Certified Fraud Examiners ADRA - Adventist Development and Relief Agency GPT - Generative Pre-trained

PLAGIARISM CHECK.ORG

REPORT #21518773

## Results

Sources that matched your submitted document.

IDENTICAL CHANGED TEXT

| | | |
|---|---|---|
| 1. | EXTERNAL DATABASE<br>**0.23%** University of Lusaka - 29 May 2024, 10:40 AM | |
| 2. | INTERNET SOURCE<br>**0.22%** kipdf.com<br>*https://kipdf.com/determinants-of-technology-usage-in-outsourced-cash-flow-f...* | |
| 3. | INTERNET SOURCE<br>**0.21%** casestudyhelp.online<br>*https://casestudyhelp.online/paper/research-done-on-consumer-behavior* | |
| 4. | INTERNET SOURCE<br>**0.2%** www.linkedin.com<br>*https://www.linkedin.com/pulse/diffusion-innovation-theoretical-perspective-a...* | |
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