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INVESTIGATING THE CHALLENGES OF DELIVERING DIGITAL FINANCIAL SERVICES TO THE ELDERLY IN REMOTE AREAS FOR IMPROVED SOCIAL CASH TRANSFER: A KASAMA DISTRICT CASE STUDY

BY

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DECLARATION

I, Delphine Chilufya Mulenga, hereby declare that this project **Investigating the Challenges of Delivering Digital Financial Services to the Elderly in Remote Areas for Improved Social Cash Transfer: A Kasama District Case Study** to the **University of Lusaka** in partial fulfilment of requirements for the award of degree of a Master of Science in Procurement, Logistics and Supply Chain is a record of the original work done by me under the supervision of Dr. Jones J. Kalyongwe.

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DEDICATION

I wish to dedicate this work to my dear mother, Mildred Chanda Mutashi and my sister, Anna Kasalwe Mulenga who have been an inspiration in my professional, personal and academic life. Your encouragement and continuous support during my work cannot be undervalued. Thank you for always being present when I needed you.

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LIST OF ACRONYMS/ABBREVIATIONS

CWACs - Community Welfare Assistance Committees

GTZ - German Technical Assistance

ICT - Information and Communication Technology

MCDSS - Ministry of Community Development and Social Services

MNO – Mobile Network Operator

MOTS – Ministry of Technology and Science

MOU – Memorandum of Understanding

NGOs - Non-Governmental Organisations

PSS - Perceived Stress Scale

PWAS - Public Welfare Assistance System

SCT - Social Cash Transfer

SCTS - Social Cash Transfer Scheme

SDG - Sustainable Development Goal

TAM - Technology Acceptance Model

TPB - Theory of Planned Behaviour

ZICTA – Zambia Information and Communications Technology Authority

ZISPIS – Zambia Integrated Social Protection Information System

ABSTRACT

The study aimed to explore the challenges associated with delivering digital financial services to elderly beneficiaries in remote and underserved regions of Zambia with respect to social cash transfer programs. The objectives were to assess how digital literacy influences the effective use of these services among elderly beneficiaries in remote areas; to analyse how the availability and reliability of digital infrastructure impact the accessibility of digital financial services for the elderly; and to identify specific obstacles hindering adoption for these services for social cash transfers.

The study adopted a mixed-methods research design. Data was collected from a sample size of 390 social cash transfer beneficiaries out of a target population of 16,000 through structured questionnaires and focus group discussions. Quantitative and qualitative data were analysed using STATA 14.2 and ATLAS. ti 9.0, respectively. Findings indicated that majority of participants rated their digital literacy skills as moderate, revealing challenges such as limited training on digital financial services, understanding financial terms and security concerns. While digital infrastructure was perceived as accessible, concerns regarding delayed fund disbursement and lack of trust were notable.

Recommendations included; The Ministry of Community Development and Social Welfare in collaboration with Zambia Information and Communications Technology Authority (ZICTA) and the Ministry of Technology and Science should design customised digital literacy training programs focusing on financial terms and security concerns targeting elderly beneficiaries. Additionally, Mobile Network Operators (MNOs) should collaborate with the Ministry to implement user-centred design principles, ensuring digital platforms are elderly-friendly with simplified interfaces and accessible features. Furthermore, the Ministry of Technology and Science (MOTS) should implement policies that incentivise MNOs to improve accessibility in remote areas, addressing challenges in digital infrastructure.

Key Words: Digital Financial Inclusion, Digital Financial Services, Social Cash Transfer, Elderly Beneficiaries, Digital Literacy, Digital Infrastructure, and Adoption Challenges.

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 Introduction

In today's rapidly evolving digital landscape, the delivery of financial services has undergone a profound transformation. Bolton (2011), Chen et al. (2022), and Loukoianova et al. (2018) have established a consensus in development theory regarding the pivotal role of financial inclusion in economic development. They recognise it as a potent vehicle to promote inclusive growth and reduce poverty.

Subsequent studies shed light on the reciprocal relationship between financial inclusion and economic growth, emphasizing their interconnected dynamics. Aghion et al. (2009) contend that financial inclusion contributes to long-term economic growth by bolstering aggregate savings. Bayoumi and Melander (2008) explore how it diversifies financial institutions' loan portfolios, thereby increasing the investible surplus and enhancing credit penetration. Cecchetti and Kharroubi (2012) elaborate on how financial inclusion facilitates the formal financial system's inclusion of diverse segments of the economy. Crucially, research by Huang et al. (2022) and Sarma and Pais (2011) underscores the close correlation between levels of human development and financial inclusion within a country. This relationship extends to factors like literacy, urbanization, and the presence of physical infrastructure for connectivity and information dissemination.

This research aims to unravel the intricate web of challenges and opportunities encountered when delivering digital financial services to elderly beneficiaries, an often-underrepresented group. While the literature has extensively examined financial inclusion's role in economic development, less attention has been given to the specific challenges faced by vulnerable groups like the elderly in accessing digital financial services. Recent studies, such as Ha (2022), Nguyen et al. (2020), Ofori et al. (2022), and Song et al. (2023), have explored the complex interactions between information and communication technology (ICT) and financial development, shedding light on their joint effects on inclusive growth. For instance, Nguyen et al. (2020) analysed the impact of internet use on overall financial development and financial markets.

However, not many investigations have been conducted on the effects of ICT diffusion on financial inclusion, specifically among vulnerable groups such as women, young people, the elderly, and the poor at a micro-level.

Financial inclusion, as outlined by Allen et al. (2016) and Ozili (2018), holds a crucial role in realizing the United Nations Sustainable Development Goals (SDGs) and fostering social inclusion within societies. This assertion is corroborated by Demirguc-Kunt et al. (2018), Sahay et al. (2015), and Sharma and Changkakati (2022). Despite notable advancements globally, significant disparities persist, especially in low- and middle-income countries. According to Demirguc-Kunt et al. (2018), nearly half of the adult population in these countries lacks bank accounts, and less than 10 percent borrowed from formal financial institutions in 2017.

Certain demographics, such as women and young adults aged 15–24 years, face amplified challenges in accessing financial services, as highlighted by Aslan (2022), Demirguc-Kunt et al. (2018), Fanta (2016), and Koloma (2021). Additionally, the financial inclusion needs of the elderly population often go unnoticed. This study addresses this gap in the existing literature by investigating the barriers influencing the utilization of digital financial services among the elderly. Its objective is to contribute to a future where financial inclusion extends to all, irrespective of age or vulnerability.

1.2 Background to the study

Digital financial inclusion, as emphasised by Liu et al. (2021), represents a transformative trend in the global financial landscape, with a focus on expanding access to digital financial solutions for traditionally underserved individuals and communities. FinScope (2020) shows that 59.4% of the population in Northern province are financially included. Khera et al. (2022) noted that one of the critical applications of digital financial inclusion is within Social Cash Transfer Programmes, which have gained attention for their potential to address poverty and promote socio-economic development. These programmes, initiated by governments and international organisations, provide targeted financial support to vulnerable populations, including the elderly, to improve their well-being by addressing basic needs such as food, shelter and healthcare.

While social cash transfers have a history, their integration with digital financial services as discussed by Aziz et al. (2021) introduces significant advantages and challenges. Digitalisation enhances efficiency, transparency, and accountability in these programmes, with real-time payment tracking, reduced fraud risk and lower administrative costs. Zambia, facing economic and social challenges that impact its population's financial well-being, is noted in the Zambia Demographic and Health Survey (2018). These challenges are influenced by factors like fluctuations in copper prices, political shifts, and global economic dynamics.

In response to the pressing need to address poverty and vulnerability in the early 2000s, the Zambian government initiated the Social Cash Transfer (SCT) programme. According to FinScope (2020), this programme represents a shift towards a more inclusive social protection approach, providing direct financial support to vulnerable segments, including the elderly. The SCT programme has significantly expanded, covering 974,000 households, which is approximately 30% of the total population or 50% of the country's poor. It targets various vulnerable households, including those with disabilities, the elderly, the chronically ill, and child-headed households, providing vital support.

International organisations such as the World Bank and governments from countries like the United Kingdom, Sweden, and Ireland play a crucial role in financing and supporting the SCT programme, as emphasised by Hobson, Kilfoil, and Martin (2022). Their contribution is notable in the transition of the SCT programme from traditional manual cash transfers to digital financial services, driven by the aim to mitigate financial risks, improve payment tracking in real-time, and enhance overall efficiency and accountability.

However, the primary focus of this study is on the unique challenges of delivering digital financial services to elderly beneficiaries in remote and underserved areas of Zambia. According to the Zambia Demographic and Health Survey in 2018, these regions often face issues related to inadequate infrastructure, including limited connectivity and access to banking services. Several scholars, including Ha (2022), Nguyen et al. (2020), Ofori et al. (2022), and Song et al. (2023), have explored the intricate relationship between Information and Communications Technology (ICT),

financial development, and inclusive growth, providing valuable insights that inform this study.

Furthermore, studies by Aslan (2022), Fanta (2016), Koloma (2021), and others have highlighted the specific challenges encountered by disadvantaged groups, including women, young adults, and the elderly, when it comes to accessing and utilising digital financial services. These challenges encompass limited access to technology, low digital literacy, trust and security concerns in digital transactions, and a lack of tailored financial products and services for these groups.

Understanding and addressing the challenges of digital financial inclusion in remote areas is vital, given the critical role of social cash transfer programmes in poverty alleviation and the global shift toward digitisation.

Findings from the FINSCOPE 2020 survey provide valuable context for understanding the landscape of financial inclusion in Zambia, which is essential for the study on digital financial inclusion among elderly beneficiaries in remote areas.

Despite the economic challenges faced by Zambia, there has been significant progress in financial inclusion, with an increase in overall financial inclusion from 59.3% in 2015 to 69.4% in 2020, this growth is particularly notable in formal financial inclusion, which rose from 38.2% in 2015 to 61.3% in 2020, largely driven by the uptake of mobile money services, which increased from 14.0% to 58.5% during the same period. However, informal financial inclusion declined, indicating a shift towards formal financial services among adults (FinScope, 2020).

The main barriers to achieving higher levels of financial inclusion, as identified in the FINSCOPE survey, include lack of money, low awareness levels, and unemployment (FinScope, 2020). These barriers underscore the importance of interventions such as financial education, infrastructure development, and economic activity improvement, which are essential components of efforts to enhance financial inclusion in Zambia.

Incorporating these findings into the study provides a broader understanding of the country’s financial landscape and the challenges faced in promoting financial inclusion. It highlights the relevance and urgency of addressing these challenges,

especially in underserved areas where elderly beneficiaries may face additional barriers to accessing digital financial services.

1.3 Statement of the Problem

Existing literature has extensively studied the role of financial inclusion in economic development. According to Bolton (2011), financial inclusion is recognized as a potent tool for promoting inclusive growth and reducing poverty. Subsequent research by Aghion et al. (2009), Bayoumi and Melander (2008), and Cecchetti and Kharroubi (2012) has delved into the impact of financial inclusion on various economic factors, including savings, investment, credit penetration, and participation in the formal financial system.

Zambia has seen tremendous strides with regards to the rolling out of the Social Cash Transfer program, in trying to improve the delivery of the service the program has changed from the traditional cash transfer to an electronic platform thus ensuring digital financial inclusion. One of the beneficiary segments of the SCT program are the elderly aged 60 years and above and according to the FinScope (2020), it states that the older individuals get the more financially excluded they become. Currently the percentage of financially excluded people stands at 43.3%.

However, despite the advantages of this digitalization, the elderly individuals continue to face challenges with SCT in remote areas. These challenges include the lack of knowledge on how to use mobile phones and their interfaces, FinScope (2020) showed that at least 39.5% of individuals attributed their reason to not accessing mobile money services to not having a mobile phone. Another challenge faced by the elderly is the distance of pay points from their homes, according to the Social Cash Transfer guidelines, beneficiaries should not move more than 7km to pay points but due to the lack of strong connectivity in the remote areas, they have to travel long distances constantly each time they have to withdraw money. Furthermore, most beneficiaries do not understand the procedure in which to withdraw the money using mobile money transactions as they are not familiar with the manner in which it is done with SCT.

Therefore, the focus of this literature has predominantly centred on the general population, paying limited attention to the elderly and the unique challenges they

encounter in accessing digital financial services. As reported by Aslan (2022), Fanta (2016), and Koloma (2021), the literature gap primarily lies in the insufficient attention given to the elderly population in the context of digital financial inclusion. While several studies have explored the challenges related to financial inclusion among various groups, such as women, young adults, and the economically disadvantaged, elderly individuals have frequently been overlooked.

Therefore, the objective of this study is to undertake a comprehensive analysis of the barriers and obstacles encountered in the implementation of digital financial inclusion strategies for social cash transfer programmes among the elderly population, Wang et al. (2011) typically defined this group as individuals who have reached retirement age or older. This elderly segment is considered vulnerable due to factors such as potential cognitive and physical limitations, limited access to digital resources, and often residing in remote areas. These vulnerabilities make it essential to address their specific challenges when seeking to enhance their financial inclusion.

By conducting this analysis, the research aims to propose effective solutions and policy recommendations to overcome these challenges and maximize the delivery and impact of Social Cash Transfer programmes. This, in turn, will contribute to fostering financial inclusion and socio-economic development among the elderly in remote regions. By extending financial inclusion efforts to the elderly, this study promotes social inclusion, aligning with the United Nations Sustainable Development Goal (SDG) number 1, which pertains to “No Poverty.” This alignment with the SDG emphasises the importance of ensuring that the elderly can access digital financial services to improve their overall well-being and reduce vulnerability. Understanding the unique challenges faced by the elderly in using digital financial services can pave the way for the development of tailored solutions, including user-friendly interfaces, financial literacy programmes, and support systems to address their specific needs. Policymakers stand to benefit from the insights into the challenges of digital financial inclusion for the elderly, as this knowledge can inform the design of policies and initiatives aimed at bridging the gap and ensuring equitable access to digital financial services for all age groups.

Kasama District is the central district and Provincial capital of Northern Province; it is located 852 kilometres from Lusaka the capital city of Zambia. It is surrounded by five

(5) Districts; Mbala, Mungwi, Mpika, Luwingu and Mporokoso, however, Kasama has the highest case load on Social Cash Transfer beneficiaries in Northern Province. Selecting Kasama District in Zambia as a case study over other Provincial centres is attributed to the following reasons;

1. The district is predominantly rural in most parts therefore allowing for an in-depth examination of the challenges faced by the elderly people within these communities. This will provide valuable insight into issues like infrastructure development, access to basic services and literacy levels among the elderly.
2. Kasama offers a diverse range of socioeconomic conditions which offer a comprehensive view of the different livelihoods and social dynamics that exist within the district.
3. Due to the geographical location of the district, transportation links can be crucial therefore delaying infrastructure and connectivity impacting its economic development.

1.4 Objectives of the Study

1.4.1 General Objective.

To assess the challenges associated with delivering digital financial services to elderly beneficiaries in remote and underserved areas of Zambia particularly Kasama District with respect to social cash transfer programmes.

1.4.2 Specific Objectives.

1. To assess how digital literacy, influence the effective use of digital financial services among elderly beneficiaries in remote areas.
2. To analyse how the availability and reliability of digital infrastructure impact the accessibility of digital financial services for the elderly.
3. To identify specific obstacles hindering adoption for these services for social cash transfers.

1.5 Research Question

1. How does digital literacy affect the effect use of digital financial services among elderly beneficiaries in remote areas?

2. How does the availability and reliability of digital infrastructure impact the accessibility of digital financial services for the elderly?
3. What are the primary challenges encountered by elderly individuals when attempting to use digital financial services for social cash transfers?

1.6 Significance of the study

The significance of this research extends to multiple dimensions. By shedding light on the challenges encountered by elderly individuals in remote areas, this study directly contributes to the broader objective of enhancing financial inclusion. Addressing these challenges can lead to the development of tailored solutions that make digital financial services more accessible to the elderly population.

This study aligns with the United Nations Sustainable Development Goal (SDG) number 1, which pertains to “No Poverty.” Specifically, it contributes to the target of eradicating poverty in all its forms everywhere. Ensuring that the elderly can access digital financial services promotes social inclusion and improves their overall well-being, which are vital components of poverty reduction.

Policymakers stand to gain valuable insights from the outcomes of this research. Understanding the specific obstacles faced by the elderly in adopting digital financial services can inform the design of policies and initiatives aimed at bridging the gap and ensuring equitable access for all age groups.

Furthermore, the findings of this study may lead to practical solutions such as user-friendly interfaces, targeted financial literacy programmes, and support systems to address cognitive and physical limitations. These solutions can have a direct impact on improving the elderly’s access to digital financial services. Consequently, the study not only identifies challenges but also provides actionable recommendations, making it a valuable resource for policymakers and stakeholders in the field of digital financial inclusion.

1.7 Scope of the Study

This study primarily focuses on the challenges associated with delivering digital financial services to elderly beneficiaries in remote and underserved areas of Zambia, with a specific case study conducted in Kasama District. Kasama District represents a remote and underserved area within Zambia, making it a valuable case study for understanding the challenges faced by elderly beneficiaries in accessing digital financial services. The proximity of Kasama District to the researcher's residence also plays a crucial role in its selection as the study area. This proximity significantly eases the data collection process, allowing for more in-depth and efficient research. It ensures that the researcher can readily access the study area, interact with the elderly beneficiaries, and gather essential data with minimal logistical challenges. Consequently, this choice enhances the study's practicality and the researcher's ability to conduct a comprehensive assessment of the challenges and opportunities related to digital financial inclusion for elderly beneficiaries in Kasama. However, the insights and recommendations may have broader applicability to similar remote areas.

The study considers data collected up to the present date to provide a comprehensive assessment of the challenges in the case of digital financial inclusion for the elderly, with respect to social cash transfer programmes. While the main focus is on challenges, the study also explores potential opportunities and solutions that may enhance the accessibility of digital financial services for the elderly.

1.8 Operational Definition of key terms.

Digital Financial Services: Semenog (2021) defines Digital Financial Services as encompassing a broad spectrum of financial services, including digital payments, mobile banking, electronic fund transfers, and various other financial transactions conducted through digital channels.

Social Cash Transfer Programmes: According to Ulker (2008), Social Cash Transfer Programmes are initiatives typically led by government or non-governmental organisations (NGOs) with the primary goal of providing targeted financial support to vulnerable populations. These programmes often involve regular cash disbursements to help meet basic needs.

Elderly Beneficiaries: In the case of this study, Elderly Beneficiaries specifically refer to individuals who have reached retirement age or older and are recipients of social cash transfer programmes.

Digital Literacy: Matthews (2018) defines Digital Literacy as pertaining to an individual's capacity and competence to effectively use digital devices and technology. This includes the ability to access and utilise digital financial services as part of their financial transactions.

Trust and Security Concerns: Safarov (2021) notes that Trust and Security Concerns encompass the doubts and reservations held by elderly individuals regarding the safety and reliability of digital financial transactions. These concerns may influence their willingness to engage with digital financial service

1.9 Chapter Summary.

Chapter 1 provides an extensive overview of the research context, background, objectives, research questions, significance, scope, and operational definitions of key terms. It delves into the transformation of financial services in the digital era, the importance of financial inclusion, and the specific focus on the elderly population's challenges in accessing digital financial services. The chapter outlines the objectives of the study, which aim to assess the barriers to delivering digital financial services to elderly beneficiaries, particularly within social cash transfer programs. It also presents the research questions guiding the study and emphasizes the significance of addressing these challenges, both for poverty reduction and social inclusion. The scope of the study is defined, focusing on remote and underserved areas of Zambia, with Kasama District as the specific case study location. Additionally, key terms relevant to the study are operationally defined to ensure clarity and consistency in understanding.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter sets into an extensive literature review focused on digital financial inclusion for elderly populations. It provides a thorough examination of empirical studies, theoretical frameworks, and existing research gaps in this field. The literature review is organised into sections, beginning with an empirical review followed by the identification of research gaps. Subsequently, the chapter discusses the theoretical frameworks relevant to understanding the digital financial inclusion dynamics for the elderly. It concludes with the development of a conceptual framework that illustrates key variables influencing digital financial inclusion among elderly individuals.

2.2 Empirical review

In this section, the study presents empirical studies and research findings related to the digital financial inclusion of elderly individuals, both globally and regionally.

2.2.1 Global perspectives

In their comprehensive study, Cruz-Cárdenas et al. (2019) employed structural equation models to investigate into the intricate relationship between cultural values, attitudes toward technology, and technology-based service usage among elderly citizens in Ecuador, a developing Latin American country. Their findings shed light on the complex dynamics at play. The study revealed that cultural values wield a significant, albeit indirect, influence on the use of technology-based services among the elderly. This suggests that the cultural context in which individuals are situated plays a crucial role in shaping their attitudes and behaviours toward technology. Notably, Cruz-Cárdenas et al. identified that this influence of cultural values is mediated by attitudes toward technology. In other words, the cultural values that elderly individuals hold can substantially shape their attitudes toward technology, which, in turn, impact their willingness to adopt and utilise technology-based services. This study highlights the critical importance of recognising and addressing cultural factors when designing strategies to promote the adoption of digital payment systems

among the elderly. Understanding the cultural context allows for the development of tailored approaches that resonate with the specific values and beliefs of the target population.

Edison (2003) conducted a pivotal study focused on measuring attitudes toward technology, a crucial element in understanding technology adoption among various age groups, including the elderly in the United Kingdom. Their study introduced a novel measurement scale aimed at providing a more nuanced understanding of individuals' attitudes, moving beyond a binary positive/negative assessment. The research yielded intriguing correlations, with one particularly notable finding being the link between attitudes toward technology and age. Individuals with positive attitudes toward new technologies tended to be younger, suggesting that age is a significant determinant of these attitudes. However, Edison et al. (2003)'s study went beyond age, revealing that attitudes toward technology are also influenced by cognitive factors and outlook on technology. Specifically, individuals with positive attitudes were found to possess more complex cognitive processes and exhibit a predisposition to optimism.

Patel (2019) conducted a study that explored the dynamic nature of cultural attitudes toward technology in India. Their findings indicated that cultural norms are not static but can evolve over time, influenced by external factors. This suggests the potential for interventions and initiatives to reshape cultural perceptions of digital payment systems among the elderly. It highlights the adaptability of cultural values and the opportunity for strategic interventions to drive technology adoption.

Li et al. (2018) conducted a noteworthy study that brought to light a critical issue affecting elderly beneficiaries in remote areas—digital literacy in China. Their research unveiled a common challenge: many elderly individuals in these remote regions lack the essential digital literacy skills required for effective engagement with digital financial services. This deficiency in digital literacy skills often results in the underutilisation of digital financial services among this demographic. However, the study also provides a glimmer of hope.

Garcia and Kim (2021) demonstrated that targeted digital literacy programmes can serve as a potent solution to this issue. Their research showcased the transformative potential of such programmes in enhancing the effective use of digital financial

services among elderly populations living in remote regions in Spain. Notably, the findings suggest that one-on-one approaches are particularly effective in helping elderly individuals overcome deep-seated attitudinal and socio-contextual barriers that may have hindered their digital literacy development. This insight emphasises the importance of tailored interventions and educational initiatives aimed at equipping older adults, especially those in remote areas, with the necessary digital skills and literacy. By addressing these challenges head-on, policymakers and organisations can facilitate greater financial inclusion for elderly populations, bridging the digital divide and enabling them to reap the benefits of digital financial services.

Nishijima et al. (2017) delves into the digital divide, a persistent challenge in technology adoption in Brazil. One of the key determinants of this digital divide, particularly in a country like Brazil, is digital illiteracy, primarily assessed by the lack of education. Their research emphasises the significance of education as a pivotal factor in bridging the digital divide, especially among elderly individuals. The findings highlight that a lack of educational opportunities can lead to significant disparities in digital access and utilisation. As a result, many elderly individuals find themselves on the wrong side of the digital divide. This study serves as a critical reminder of the multifaceted nature of the digital divide, wherein factors such as education play a pivotal role in shaping access to and usage of digital technologies. Policymakers and stakeholders must take these insights into account when crafting strategies to promote digital inclusion among elderly populations, ensuring that educational opportunities are made accessible to all, regardless of age.

The study by Olphert et al. (2005) titled “Towards digital inclusion - engaging older people in the digital world” highlights a pervasive issue—digital exclusion among the elderly in Ireland. Despite the immense potential benefits that digital technologies offer to older adults, a significant proportion of them find themselves in a state of ‘digital exclusion.’ This exclusion stems from various barriers, including a lack of awareness and understanding of the ‘digital world.’ Many elderly individuals face hurdles related to cost, skills, and, in some cases, disability. According to Olphert et al. (2005), initiatives aimed at breaking down these barriers and fostering digital inclusion are essential. By addressing issues of awareness, skills, cost, and accessibility, society can empower older adults to embrace the digital world and all its opportunities.

Sobkow et al. (2020) conducted a study focusing on the influence of Perceived Risk on preventive behaviours in the context of e-banking in Polish. Their research revealed that Perceived Risk is a significant predictor of preventive behaviours. In other words, when users perceive higher risks associated with e-banking, they tend to be more cautious and less likely to adopt e-banking services. Addressing these perceived risks is crucial for encouraging adoption. Sobkow et al. (2020) study never really targeted the elderly but the general population. In this modern society, majority of the people mostly financially excluded are the elderly, and mostly women, therefore, in the current study, the researcher hopes to investigate if these general results could be applied to the elderly population in the rural areas of Zambia or whether they're other challenges that hinders their experience.

Aziz et al. (2021)'s study focuses on the landscape of digital financial inclusion in Bangladesh. Despite the widespread availability of digital financial services, the research reveals a significant underutilisation of these services among the population. The study identifies several key factors contributing to this underutilisation. Firstly, the absence of basic connectivity poses a major barrier. Many individuals in Bangladesh lack access to reliable internet services, which hampers their ability to engage with digital financial platforms. Additionally, low levels of financial literacy among the population hinder their understanding and utilisation of these digital services. Moreover, the study highlighted a limited social awareness regarding digital financial inclusion. Many individuals in Bangladesh may not be fully aware of the benefits and opportunities that digital financial services can offer, further hindering their adoption.

The study conducted by Prodromou et al. in (2019), centreed on investigating the digital literacy challenges faced by elderly individuals, aiming to identify latent needs and ultimately enhance their digital inclusion in Greece. This research was instrumental in shedding light on the specific hurdles that older adults encounter when navigating the digital landscape, providing critical insights into the gaps in digital literacy programmes and support structures tailored for this demographic. One of the key findings of this study was the recognition of the complexity associated with modern digital technologies as a significant challenge for many elderly individuals. It became evident that a considerable portion of older adults perceived these technologies as intricate and intimidating, acting as a substantial barrier to their active engagement

with digital platforms and devices. Moreover, the research highlighted the issue of relevance concerning digital literacy among older adults. Some participants questioned the practicality and necessity of acquiring digital skills in their daily lives, which subsequently impacted their motivation to embark on the learning journey. Additionally, the study emphasised the limitations of existing digital literacy programmes and support mechanisms available to elderly individuals. Many older adults lacked access to training opportunities specifically tailored to address their unique needs, thereby hindering their digital literacy development. Furthermore, the fear of making mistakes while using digital tools emerged as a common concern among older adults, discouraging them from active participation in digital activities. This apprehension regarding errors and potential negative consequences posed another significant barrier to their digital engagement.

2.2.2 African perspectives

The studies conducted by Okeke and Abioye (2019) and Afolayan et al. (2020) provide valuable insights into the impact of cultural values on the willingness of elderly individuals in African cultures to transition to digital payment methods. Okeke and Abioye (2019) found that communal financial practices deeply ingrained in many African cultures influence elderly individuals' reluctance to adopt digital payment methods in Nigeria. These cultural practices prioritise traditional financial systems, making it challenging for older adults to embrace digital alternatives. However, Afolayan et al. (2020) highlighted a contrasting perspective, demonstrating that cultural values can actually facilitate the adoption of digital payments when aligned with convenience and inclusivity in Nigeria. This suggests that by addressing the compatibility of digital payment systems with cultural values, it is possible to encourage greater acceptance among elderly populations in African contexts.

Trust in financial institutions and the reliability of digital payment platforms emerged as critical factors influencing elderly individuals' attitudes toward digital financial inclusion in Africa, as revealed by Okoye et al. (2019). This stresses the importance of establishing trust in the digital financial ecosystem to encourage adoption among older adults. Baloyi and Oladele (2020) further emphasised the significance of cybersecurity measures in addressing security concerns among elderly users in South

Africa. Security and reliability are paramount considerations for elderly individuals when deciding whether to engage with digital financial services.

Mkhwanazi and Shabalala (2021) brought attention to the role of digital infrastructure in promoting elderly engagement in digital financial services in South Africa. Their research highlighted that regions with improved digital infrastructure tend to witness higher levels of participation among older adults. This suggests that investment in digital infrastructure can bridge the gap in digital financial inclusion for the elderly. However, Lwoga and Questier (2017) provided a contrasting viewpoint, emphasising the persistent challenges related to digital infrastructure in certain African areas. These challenges continue to limit elderly access to digital financial services, indicating that efforts to enhance digital infrastructure must be comprehensive and region-specific.

2.2.3 Local Perspectives

In a research conducted by Kabala et al. (2021), the study delved into the impact of mobile money on financial inclusion, utilizing urban Kitwe and Kalulushi as specific cases. Employing an ethnographic methodology, the researchers aimed to understand the degree to which mobile money has facilitated access to financial products and services for the unbanked population. The results indicate a positive correlation between mobile money usage and financial inclusion. Notably, the study highlights the ease of opening accounts at mobile money kiosks compared to formal banking institutions. These mobile money services are strategically situated in areas frequented by the unemployed, elderly, and other segments of the unbanked population. The research underscores that individuals utilize mobile money services for various financial activities, including money transfers, bill payments, and purchasing airtime. Recognizing the favorable impact of mobile money services on financial inclusion in urban environments, the researchers propose extending these services to rural areas. Additionally, they stress the significance of enhancing financial education and awareness regarding mobile money systems and operations among populations in both urban and rural settings.

In a study conducted by Hobson and Kilfoil (2022), there is a significant emphasis on the ongoing digitisation efforts in African countries. The primary focus is twofold: enhancing operational efficiency and reducing the cost-of-service delivery, as well as promoting financial inclusion for segments of the population that have been

traditionally excluded. Zambia emerges as a crucial case study in the digitisation of social protection transfers. In the context of Zambia, where remote rural populations reside up to 100 km away from the nearest town, the digitisation of cash transfers has been a key initiative. Despite the challenges posed by the sparsely populated and remote nature of these areas, the country has successfully demonstrated the feasibility of digitising cash transfers for such populations, tailoring solutions to their specific context. Hobson's Discussion Note highlights the encountered challenges and the corresponding solutions implemented during the process of digitising cash transfer payments in Zambia. The insights gleaned from Zambia's experience in digitising social protection transfers are presented as valuable lessons for other countries undertaking similar endeavours. The study provides a wealth of information on the challenges faced and the solutions devised, offering practical knowledge that may be beneficial to nations navigating the complexities of digitising financial services for remote populations.

In Lena's study (2020), an exploration was conducted into the utilisation of diverse payment instruments and providers, along with an examination of the considerations, practical aspects, and implications associated with various payment systems. Lena's investigation drew from an extensive review of scholarly literature and various non-academic sources. The study uncovered a notable uptick in the adoption of electronic payment instruments, including bank transfers, card-based payments, and mobile money, within the majority of social cash transfer (SCT) programmes across the region. Despite this surge in electronic payment usage, Lena's findings indicated that cash remains the predominant form of payment throughout the continent. Interestingly, transfers made through electronic channels often result in a 'cashing out' phenomenon rather than fostering greater financial inclusion or encouraging the use of digital financial services among beneficiaries. To address challenges related to low levels of financial inclusion, limited financial infrastructure in specific regions, and diverse beneficiary needs, many programmes opt for a combination of cash-based and electronic disbursements. The study highlighted a shift towards involving private financial institutions in payment delivery, while states retain a crucial role in oversight, administration, and coordination. The influential role of international organisations in funding, designing, and implementing SCT programmes in sub-Saharan Africa was underscored as a significant factor. However, the digitisation efforts face obstacles,

particularly in low-income countries and rural areas where limited financial infrastructure and administrative capacity hinder progress. Lena's research also pointed out instances where unregulated digitisation and privatization of SCT payments had adverse impacts on beneficiaries, underscoring the ongoing importance of state-owned payment channels such as postal networks. In summary, Lena's study depicts a rapidly evolving landscape of SCT payments in sub-Saharan Africa. Anticipated reforms, pilot projects, and ongoing digitisation initiatives are expected to persist as more countries transition into the digital age, expanding their SCT programmes to address poverty and inequality.

In Schubert's research (2005), a detailed examination is presented, focusing on the Kalomo Pilot Social Cash Transfer Scheme, which was initiated in November 2003 by the Ministry of Community Development and Social Services (MCDSS) of the Republic of Zambia in collaboration with German Technical Assistance (GTZ). The study begins by providing an overview of the Zambian context, highlighting prevalent food poverty and vulnerability. It estimates that around 200,000 households are experiencing severe levels of food poverty and high dependency ratios, making them unable to seize development opportunities. The Pilot Scheme is specifically designed to target these most disadvantaged households. The paper discusses the scheme's performance and impact, emphasizing the effectiveness of the selection process for eligible households. However, the study reveals instances where the number of eligible households exceeds the designated 'bottom 10%' ceiling in certain communities. Despite initial delays, the Scheme is shown to be effective in distributing transfers to beneficiaries with bank accounts near Kalomo Town and through decentralized 'Pay Points.' Feedback from targeted beneficiaries and the local community suggests that the transfers have positively influenced the well-being of the poorest households. Beneficiaries predominantly use the transfers to buy food and meet other basic needs. Additionally, some beneficiaries display financial prudence by saving a portion of the cash, including through a rotating fund, and investing in seeds and small animals. To sum up, Schubert's study provides insights into the initiation and outcomes of the Kalomo Pilot Social Cash Transfer Scheme in Zambia, emphasizing its effectiveness in targeting and supporting the most vulnerable households amid the challenges of food poverty and high dependency ratios.

As per Chiwele's study (2010), an evaluation was conducted to assess the administrative capabilities and associated costs linked to cash transfer programs in Zambia, particularly examining the implications for a nationwide rollout. In 2009, the Ministry of Community Development and Social Services (MCDSS) made the decision to implement a national Social Cash Transfer Scheme (SCTS) covering the entire country by 2012. Prior to this decision, SCTS had undergone pilot phases in five districts in Southern and Eastern Provinces, utilizing structures established for the implementation of the Public Welfare Assistance System (PWAS) from the community to national levels. The initiation of the pilot SCTS aligns with the growing acknowledgment of social cash transfers as a means of aiding extremely impoverished households. This recognition is partly influenced by the positive outcomes of conditional cash transfers in Latin America, particularly in terms of improved school enrollments, enhanced health outcomes, and reduced poverty levels for participating households. The study emphasizes the assessment of the Kalomo SCTS, revealing various accomplishments among beneficiaries, including heightened self-esteem and confidence, a decrease in begging, increased food consumption, greater asset ownership, and positive impacts on the local economy. While the fieldwork for the assessment did not explicitly focus on evaluating impacts, qualitative evidence supported these findings. Pilot schemes were initiated in different districts starting in 2004, each designed to provide valuable information on the feasibility, costs, benefits, and potential negative impacts of a Social Cash Transfer Scheme. The aim was to contribute to a learning agenda that could inform the design of a national social cash transfer. The assessment scrutinized the capacity of MCDSS and PWAS structures to implement a national SCTS, considering administrative capacity (institutional, organizational, and human resource), physical assets and infrastructure, and cash transfer costs and financing. Data for the assessment were gathered through document reviews, focus group discussions at various levels, personal interviews with key informants, and field visits to all five pilot districts and two districts in Northwestern Province without SCTS (Kasempa and Mufumbwe).

In Hjelm's study (2017), an investigation was conducted to determine whether two similar government poverty alleviation programmes had an impact on reducing perceived stress and poverty levels among impoverished households in Zambia. The study utilised secondary data from two cluster randomised controlled trials to assess

the effects of two unconditional cash transfer programmes. Participants underwent baseline interviews and were followed over a span of 36 months. Perceived stress among female caregivers was measured using the Cohen Perceived Stress Scale (PSS), while poverty indicators, including per capita expenditure, household food security, and (non-productive) asset ownership, were also evaluated. The analysis involved fixed effects and ordinary least squares regressions, with control variables such as age, education, marital status, household demographics, location, and poverty status at baseline. The findings revealed that, contrary to expectations, cash transfers did not lead to a reduction in perceived stress among participants. However, there were positive impacts on economic security, including improvements in per capita consumption expenditure, food security, and asset ownership. Among the poverty indicators assessed, only food insecurity demonstrated an association with perceived stress. Interestingly, age and education did not consistently show a correlation with stress levels. Additionally, the death of a household member was identified as a factor associated with higher stress levels.

In a study conducted by Handa, Peterman, Seidenfeld, and Tembo (2015), an exploration was undertaken to understand the influence of Zambia's Child Grant Programme on various maternal health utilisation outcomes. The study employed a randomised design and utilised difference-in-differences multivariate regression analysis, drawing data collected over 24 months from 2010 to 2012. The findings revealed that, within the main sample, there were no observable impacts attributable to the programme. However, a noteworthy observation emerged concerning skilled attendance at birth within a subset of women residing in households with improved access to maternal health services. This heterogeneity in impacts suggests that the programme's effects are contingent on the level of access to maternal health services. The study particularly underscores the significance of dedicated programme design or the implementation of matching supply-side interventions. This is crucial, especially in settings characterised by an overall low level of health care availability in programme areas. The implication is that, in similar contexts, leveraging unconditional cash transfers to impact maternal health may necessitate tailored programme approaches or complementary interventions on the supply side.

According to Pruce's 2022 findings, the issue of targeting remains a highly debated topic in the formulation of social protection programs, despite the increasing

abundance of evidence on various targeting mechanisms. While conventional targeting focuses on identifying the poorest households within budgetary constraints, Pruce argues that these decisions are inherently political and influenced by notions of social justice. Through a detailed examination of a contentious cash transfer model in Zambia, Pruce's study uncovers those local perceptions of deservingness played a crucial role in the rejection of eligible fit-for-work recipients. Consequently, adjustments were made to the targeting model, prioritizing incapacitated households. The analysis relies on interviews with government and policy actors, supplemented by focus group discussions in communities receiving cash transfers. By applying van Oorschot's deservingness heuristic to the collected data, the study reveals that the criterion of control over circumstances was given precedence by local-level respondents. The paper emphasizes the need to seriously consider popular perceptions of deservingness and their broader implications for social justice in both the design and analysis of targeting strategies.

2.3 Research Gap

Research Gap	**Relation to Research Objectives**
Limited examination of digital literacy impact on the effective use of digital financial services among elderly beneficiaries in remote areas.	Related to Objective 1: Assess how digital literacy influences the effective use of digital financial services among elderly beneficiaries in remote areas.
Insufficient analysis of the availability and reliability of digital infrastructure in relation to its impact on the accessibility of digital financial services for the elderly.	Corresponds to Objective 2: Analyse how the availability and reliability of digital infrastructure impact the accessibility of digital financial services for the elderly.

Inadequate identification of specific challenges faced by the elderly in adopting digital financial services for social cash transfers.	Aligns with Objective 3: Identify the specific challenges faced by the elderly in adopting digital financial services for social cash transfers.

Narratives:

1. Digital Literacy Impact: The existing literature falls short in providing a comprehensive understanding of how digital literacy influences the effective use of digital financial services among elderly beneficiaries in remote areas, which is crucial to achieving the first objective of the study.
2. Digital Infrastructure Analysis: There is a gap in the examination of how the availability and reliability of digital infrastructure impact the accessibility of digital financial services for the elderly. This omission is pertinent to the second objective of the study.
3. Specific Challenges Identification: The literature review lacks a detailed exploration of the specific challenges faced by the elderly in adopting digital financial services for social cash transfers. This gap is directly linked to the third objective of the study.

These research gaps emphasise the need for the current study, as it aims to address these gaps by conducting a thorough investigation into the identified areas, contributing valuable insights to the field of digital financial inclusion for elderly populations in remote areas of Zambia.

2.4 Theoretical Framework

The theoretical framework provides a foundation for understanding the fundamental concepts, principles, and theories that guide the research process. Specifically, the study highlighted how Theory of Planned Behaviour (TPB), Technology Acceptance Model (TAM), and Diffusion of Innovations Theory have been applied in previous research to explain the attitudes, behaviours, and decision-making processes of older adults in relation to technology adoption and digital financial services:

2.4.1 Theory of Planned Behaviour (TPB)

Ajzen's Theory of Planned Behaviour (TPB), introduced in 1991, has been instrumental in elucidating the psychological determinants of behaviour, including technology adoption. TPB posits that an individual's behavioural intentions are central to predicting actual behaviour. These intentions are shaped by three primary factors:

1. Attitude toward the behaviour: This aspect pertains to an individual's overall evaluation of a particular behaviour, encompassing their beliefs about the outcomes associated with it and their subjective assessment of its desirability.
2. Subjective norm: This factor considers the perceived social pressure or influence from significant others regarding the behaviour. It assesses whether individuals believe that people important to them expect or endorse the behaviour.
3. Perceived behavioural control: This dimension gauges an individual's perception of their ability to perform the behaviour successfully. It takes into account both internal and external factors that may facilitate or hinder the behaviour.

In line with study, TPB helps us understand how elderly individuals' attitudes towards digital financial services, the influence of societal expectations, and their perceived ability to navigate these services influence their intentions and behaviours. Numerous researchers have applied TPB to explore a wide range of behaviours, including technology adoption. For instance, Davis (1989) employed TPB to investigate user acceptance of computer technology, highlighting the model's robust predictive power in the realm of technology-related behaviours. Additionally, Taylor and Todd (1995) extended TPB to examine the acceptance of information technology, further emphasising its significance in understanding users' intentions concerning technology adoption.

2.4.2 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), initially proposed by Davis (1989), focuses on two primary determinants of technology adoption:

1. Perceived ease of use: This dimension measures the extent to which an individual believes that using a particular technology will be effortless and straightforward.
2. Perceived usefulness: Perceived usefulness pertains to the individual's belief that employing the technology will enhance their performance or facilitate the achievement of specific goals.

TAM has gained widespread recognition as a valuable framework for comprehending technology adoption and user acceptance across various contexts. In the current study, TAM helps us assess the ease with which elderly individuals can adopt digital financial services and whether they perceive these services as beneficial. Venkatesh and Davis (2000) extended the TAM framework to explore technology acceptance in organisational settings, affirming its relevance in predicting technology adoption behaviour.

Furthermore, Venkatesh et al. (2003) conducted a comprehensive review of TAM and its extensions, concluding that the model remains a foundational theoretical framework for understanding technology adoption. Their review underscored the enduring influence of TAM in explaining user acceptance of technology across diverse settings.

2.4.3 Diffusion of Innovations Theory

The Diffusion of Innovations Theory, formulated by Rogers (1962), focuses on how innovations, including new technologies, spread and are adopted within a society. This theory categorizes individuals into innovators, early adopters, early majority, late majority, and laggards based on their willingness to embrace innovations. It elucidates the various stages of innovation adoption and identifies factors influencing the rate of adoption.

In this study, this theory is employed to examine where elderly individuals fall on the adoption spectrum concerning digital financial services. This allows the study to discern whether they are early adopters, early majority, or occupy other positions in the adoption curve. Furthermore, it helps the researcher investigate the factors that either accelerate or impede their adoption of digital financial innovations. Understanding these dynamics is crucial for designing strategies that cater to the

specific needs and preferences of elderly individuals at various stages of technology adoption.

Rogers' Diffusion of Innovations Theory has received widespread recognition in the field of technology adoption research. A review by Rogers (2003) himself emphasised the continued relevance of this theory in explaining the adoption of innovations and technologies. This enduring framework has been cited and utilised by numerous scholars across diverse domains, showcasing its enduring impact on the study of technology adoption.

Additionally, Moore and Benbasat (1991) conducted a meta-analysis of TAM and Diffusion of Innovations Theory, providing empirical support for their applicability in understanding technology acceptance and diffusion. Their comprehensive review further solidified the theoretical foundations of these models in explaining technology-related behaviours.

The underpinning theory of the study is the **Theory of Planned Behaviour (TPB)**. This choice is motivated by the specific focus of the research, which aims to understand the attitudes, behaviours, and decision-making processes of elderly individuals in remote areas of Zambia in relation to the adoption of digital financial services.

Reasons for Selecting TPB Over Other Theories:

1. Relevance to Behavioural Intentions: TPB emphasises the central role of behavioural intentions in predicting actual behaviour. Given that the study is concerned with assessing how elderly individuals in remote areas intend to adopt digital financial services, TPB aligns closely with the research objectives. It allows for an in-depth exploration of attitudes, subjective norms, and perceived behavioural control, providing a comprehensive understanding of the psychological determinants influencing behavioural intentions.

2. Applicability to Technology Adoption: TPB has been successfully applied in various studies related to technology adoption, including user acceptance of computer technology and information technology. Since the study involves investigating the adoption of digital financial services among the elderly, TPB

provides a robust theoretical foundation for examining their attitudes toward this technological innovation.

3. Comprehensive Framework: TPB incorporates three key factors—attitude toward the behaviour, subjective norm, and perceived behavioural control—offering a holistic framework to analyse the factors influencing behavioural intentions. This aligns with the multifaceted nature of the research, which seeks to understand not only the perceptions of elderly individuals but also the societal expectations and their perceived ability to navigate digital financial services.

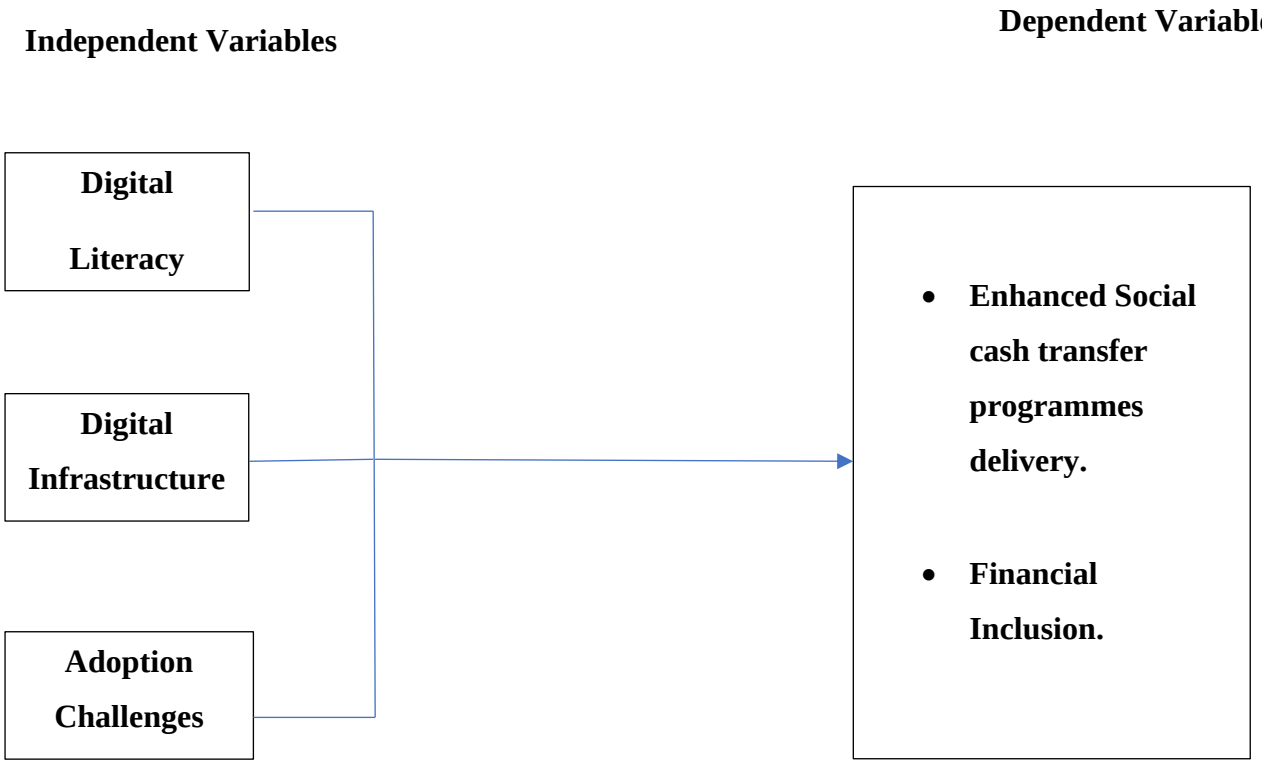
While TAM and Diffusion of Innovations Theory are valuable frameworks in their own right, TPB is deemed more suitable for this study due to its specific emphasis on individual attitudes and perceptions in the context of planned behaviour. TAM, although effective in understanding technology adoption, focuses more on perceived ease of use and perceived usefulness, which may not capture the nuanced social and psychological aspects explored in this research. On the other hand, Diffusion of Innovations Theory, while providing insights into the adoption curve, may not delve as deeply into the individual-level psychological factors that TPB encompasses.

In summary, TPB stands out as the theory that best aligns with the research objectives and the intricate psychological and social dynamics involved in the adoption of digital financial services by elderly individuals in remote areas of Zambia.

2.5 Conceptual framework

Reichel and Ramey (1987) define a conceptual framework as a set of beliefs and assumptions that apply to a related research area and serve to uphold the coherence of ideas that are based on a central concept. A crucial aspect of a conceptual framework is conducting thorough literature research and gathering pertinent data. Based on an analysis of previous literature, the key factors have been classified as either dependent or independent variables. The conceptual framework provides a clear illustration of the relationship between these variables and guide the research process towards achieving the research objectives.

Figure 1.1: Conceptual Framework



Independent Variables

1. **Digital Literacy:** Digital literacy directly affects attitudes, willingness, and adoption of digital financial services. Elderly individuals can acquire higher digital literacy through targeted training programmes, workshops, and one-on-one assistance that focus on essential digital skills, such as using computers, smartphones, and online applications. Elderly individuals with higher digital literacy are more likely to have positive attitudes and be willing to adopt these services.
2. **Digital Infrastructure:** The availability and reliability of digital infrastructure can significantly impact the accessibility of digital financial services for the elderly. Insufficient infrastructure can limit their ability to access and use digital services, hindering financial inclusion. Reliable internet connectivity and user-friendly platforms are crucial for ensuring that elderly individuals in remote areas can effectively and consistently engage with digital financial services.

3. **Adoption Challenges:** Various factors influencing adoption, such as attitudes toward technology, societal expectations, and perceived behavioural control. The challenges faced by the elderly in adopting digital financial services have the potential to impact the inclusive, efficient, and transformative nature of enhanced social cash transfer programmes. Addressing these challenges is crucial for ensuring that the benefits of digitalization reach all beneficiaries and contribute to the broader goals of poverty reduction and improved well-being.

Dependent Variables

1. **Enhanced Social Cash Transfer Programmes Delivery:** When elderly individuals adopt these services, the delivery of social cash transfer programmes can become more efficient, timely, and cost-effective.
2. **Financial Inclusion:** Financial inclusion is also influenced by Enhanced Social cash transfer programmes delivery. When elderly individuals gain access to and actively use these services, they become more financially included, contributing to their economic well-being and independence.

2.6 Chapter Summary

Chapter 2 delves into a comprehensive literature review focused on digital financial inclusion for elderly populations. It begins by examining empirical studies and research findings globally and regionally, highlighting existing gaps in the literature. The identified research gaps are directly related to the research objectives outlined in Chapter 1. The chapter then discusses relevant theoretical frameworks, including the Theory of Planned Behavior (TPB), Technology Acceptance Model (TAM), and Diffusion of Innovations Theory, which have been applied in previous research to understand the adoption of technology and digital financial services by older adults. Finally, a conceptual framework is developed based on the literature review, illustrating the key variables influencing digital financial inclusion among elderly individuals. This framework serves as a guide for the research process and aligns with the study's objectives.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the study sets the research methodology applied in this research, focusing on the approach, design, target population, sample size, sampling technique, source of data, data analysis, data validity, data reliability, and ethical considerations that guided the research process.

3.2 Research Design

The study employs a mixed-methods research design, combining both quantitative and qualitative approaches. The advantage of a mixed-methods research design is its capability to provide a comprehensive understanding of a research problem by integrating both quantitative and qualitative data, allowing for a more nuanced and holistic analysis as emphasised by Creswell and Creswell (2017).

3.3 Target population

The population for this study was defined as elderly individuals who were potential users of digital financial services and resided in rural areas of Kasama district. The focus was on understanding the experiences of the elderly in digital financial inclusion within rural areas. The rationale for selecting this specific geographical area was to gain insights into the challenges faced by this demographic group in a rural setting. The total population of this study was 16,000 elderly people who are on the social cash transfer programme in Kasama (Ministry of Community Development and Social Services, 2023).

3.4 Sample Size

The sample size was determined using the Yamane formula, which provided a straightforward approach to calculate the sample size when the intended population was relatively small. The formula was as follows:

$$n = \frac{N}{1 + N(e^2)}$$

Where, *n* was the sample size, *N* was the population size of all eligible participants, and *e* represented the margin of error.

From the targeted population of 16,000 social cash transfer beneficiaries, using the formula of Yamane as specified in Yamane (2015) with confidence interval of 95% and a margin of error of 5%, the sampled size was determined as shown below;

$$n = \frac{16{,}000}{1 + 16{,}000(0.05^2)}$$

$$Sample\ Size\ (n) = 390.24\ social\ cash\ transfer\ beneficiaries$$

Therefore, according to this formula, the sample size of this study was approximately 390 social cash transfer beneficiaries.

3.5 Sampling technique

For the sampling technique, a stratified sampling method was employed to ensure representation across Community Welfare Assistance Committees (CWACs). According to Bryman (2016), stratified sampling is a sampling method where the population is divided into subgroups or strata, and then samples are randomly selected from each stratum in proportion to their presence in the population in this study, the goal was to gain insights into the experiences and challenges faced by elderly individuals in rural areas of Kasama district regarding digital financial inclusion. Therefore, three strata were created based on the CWAC connected furthest from the network: Mbusa CWAC, Chilufya CWAC, and Mumbi Mukulu CWAC (Ministry of Community Development and Social Services Pay points and Distances Data, 2023). This approach ensured that the sample consisted of individuals who could provide valuable insights into the research topic, aligning with the nature of the study. Stratified sampling allowed for the selection of participants who could contribute to a comprehensive understanding of the elderly's digital financial inclusion experiences in the specific context of rural Kasama.

3.6 Data Collection

Data for this study was primarily collected through structured questionnaires and focus group discussions.

Quantitative Data:

1. **Survey Questionnaires**: Structured questionnaires were administered to elderly beneficiaries connected to the Zamtel network in the selected CWACs, namely, Mbusa, Chilufya, Mumbi Mukulu.

   Reasons:

   1. Statistical Analysis: Quantitative data allows for statistical analysis, providing numerical insights into the prevalence, frequency, and distribution of certain variables.
   2. Generalization: Surveys help in drawing generalisable conclusions about a larger population, given that the sample is representative.
   3. Structured Responses: Questionnaires provide structured responses, making it easier to compare and analyse data systematically.

   Significance:

   1. Quantifiable Trends: Quantitative data helps in identifying trends, patterns, and correlations within the dataset.
   2. Objective Measurement: The data collected through surveys is often more objective, as responses are typically standardised.

Qualitative Data:

2. **Focus Group Discussions**: Separate focus groups were organised with elderly beneficiaries to explore their experiences and perceptions.

   Reasons:

   1. In-Depth Exploration: Focus group discussions allow for a more in-depth exploration of participants' experiences, perceptions, and feelings. This is particularly important for understanding the context and nuances of the elderly beneficiaries' experiences.
   2. Richness of Information: Qualitative data is rich in descriptive information, providing insights into the underlying reasons and motivations behind certain behaviours.

3. Open-Ended Responses: Unlike structured surveys, focus group discussions allow participants to express themselves freely, bringing out unexpected insights.

Significance:

1. Contextual Understanding: Qualitative data provides a deeper understanding of the context in which elderly beneficiaries interact with the Zamtel network and the selected CWACs.
2. Uncovering Unseen Patterns: Qualitative data often uncovers patterns or issues that might not have been anticipated, helping to refine and enrich the research questions.

Using both quantitative and qualitative data collection methods in a study provides a more comprehensive and nuanced understanding of the research topic.

3.7 Data Analysis

1. **Quantitative Analysis:** Statistical analysis, including descriptive statistics and regression analysis, were conducted using STATA version 14.2 to examine the relationships between variables. Researcher was more familiar with STATA 14.2 and chose to use this version due to their expertise and comfort with the software. This contributed to a smoother and more efficient analysis process.

2. **Qualitative Analysis:** Thematic analysis was employed to extract key themes and insights from focus group discussions. ATLAS.ti 9.0 was used for qualitative data analysis. Researcher chose this software due to her expertise and comfort with the software.

3.8 Validity Data

Ensuring the validity of data was crucial in this research. To enhance data validity, two key strategies were employed:

1. **Triangulation:** Triangulation involves using multiple methods or data sources to corroborate findings as highlighted by Creswell and Creswell (2017). This

study conducted interviews or focus group discussions alongside the survey to provide richer insights into the challenges faced by elderly individuals in adopting digital financial services. These qualitative data can complement and validate the quantitative survey findings.

2. **Pilot Study:** A pilot study is a small-scale test of the research instruments and procedures. It helps identify and correct any issues with the tools for data collection as highlighted by Kothari (2008). The study implemented the survey on a small subset of the population in Lusaka District. This helped identify any ambiguities in survey questions, assess the time required for completion, and refine the survey based on participant feedback. Additionally, interviews or focus group discussions were conducted during the pilot to test qualitative data collection tools. This helped to ensure that questions are clear, culturally sensitive, and capable of capturing nuanced insights from elderly participants. Lastly, the study gathered feedback from participants and fieldworkers regarding the clarity and relevance of questions. This feedback was used to make necessary adjustments to the survey instruments before the full-scale implementation.

3.9 Reliability of Data

Mugenda and Mugenda (2003) assert that, data reliability pertains to the stability and consistency of data acquired through diverse research methods. To enhance data reliability, the researcher employed standardised measurement tools, establish well-defined data collection procedures, and conduct a pilot test of the data collection method and instruments.

3.10 Ethical considerations

Ethical considerations were of paramount importance in this study. Informed consent was obtained from all participants, outlining the purpose of the study, their rights, and the use of their data. Participants' privacy and confidentiality was rigorously maintained, and their identities were protected throughout the research process. Additionally, ethical approvals were sought from both the University of Lusaka Ethics Committee and the Kasama District Social Welfare Office to ensure the ethical conduct

of the study. The researcher prioritised the well-being and rights of participants, ensuring their voices are heard while safeguarding their identities and personal information.

3.11 Chapter Summary

Chapter 3 outlines the methodology used in the study, covering various aspects from research design to ethical considerations. The research employs a mixed-methods approach, combining quantitative and qualitative methods to gain a comprehensive understanding of digital financial inclusion for elderly populations. The target population consists of elderly individuals in rural areas of Kasama district, with a sample size determined using the Yamane formula and a stratified sampling technique applied to ensure representation across Community Welfare Assistance Committees (CWACs). Data collection involves structured questionnaires and focus group discussions, enabling both numerical insights and in-depth exploration of experiences and perceptions. Quantitative data is analysed using statistical methods, while qualitative data undergoes thematic analysis. To ensure data validity, triangulation and a pilot study are conducted, while data reliability is ensured through standardized measurement tools and well-defined procedures. Ethical considerations include obtaining informed consent, maintaining privacy and confidentiality, and seeking ethical approvals. Overall, Chapter 3 provides a robust methodology, ensuring rigorous and ethical research conduct.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF RESULTS

4.1 Introduction

The chapter presents the findings on the challenges of digital financial inclusion in enhancing the delivery of social cash transfer programmes among the elderly in Kasama District. This chapter offers an analysis and interpretation of the findings derived from a sample survey conducted through the distribution of structured questionnaires to elderly beneficiaries as well as the qualitative focus group discussions held with elderly beneficiaries. The results are organised based on the primary themes outlined in the research's specific objectives and questions, serving as the main headings within the chapter. These thematic categories include digital literacy, digital infrastructure, and challenges associated with adoption of digital financial services for social cash transfers.

4.2 Reliability and Distribution Results

4.2.1 Reliability Results

Table 4.1 reveals a Cronbach's Alpha value of 0.870, signifying a robust level of internal consistency within our scale for the given sample. This high coefficient indicates a substantial correlation among the items or questions in the scale, suggesting that they consistently measure the same underlying construct. This finding is positive, bolstering the credibility and validity of the research instrument.

Table 4.1: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardised Items	N of Items
.8704	.8503	23

4.2.2 Distribution Results

As indicated in the response data presented in Table 4.2, the participants targeted for the study returned and completed 74.10% of the distributed structured questionnaires. The response rate is computed by dividing the total number of returned forms by the total number of forms issued to respondents, multiplied by 100. Following Mugenda & Mugenda's (1999) guidelines, a questionnaire return rate of 50% is deemed adequate for analysis, a rate of 60% is considered good, and a return rate exceeding 70% is regarded as excellent and representative for further investigation.

Table 4.2: Distribution Results

Response Rate	DISTRIBUTION	
	Frequency	**Percentage**
Questionnaires Issued	390	100%
Questionnaires Returned	289	74.10%

Quantitative Analysis

4.3 Background Information

The background information provided in Table 4.3 presents a comprehensive overview of the respondents in the study. Examining the demographic details, it is evident that the respondents represent a diverse group in terms of age, gender, educational background, and occupation.

For instance, the age distribution indicates that the majority of respondents fall within the 60-69 age range (37.37%), followed by the 80 and above age group (33.56%). In terms of gender, there is a relatively balanced representation, with 50.17% male respondents and 49.83% female respondents. The educational background of the

participants varies, with a significant portion having completed secondary school (45.67%).

Using this background information, an analysis of the findings can be illustrated. For example, in the context of gender, 48% of the respondents were males, and 52% were females. Consequently, the study is predominantly informed by the perspectives of females, implying that insights into the challenges of digital financial inclusion in the context of social cash transfer programmes primarily stem from female participants.

In summary, the diverse background of the respondents, coupled with their experience and knowledge in social cash transfer programmes, enhances the credibility and reliability of the study's findings on the challenges of digital financial inclusion in delivering social cash transfer programmes among the elderly in remote areas.

Table 4.3: Respondents Background Information

		Frequency	Percentage (%)
Age	60-69	108	37.37
	70-79	84	29.07
	80 and above	97	33.56
Gender	Male	145	50.17
	Female	144	49.83
Educational Background	No formal education	36	12.46
	Primary school	121	41.87
	Secondary school	132	45.67
Occupation	Business owner	12	4.15
	Dependent	12	4.15
	Farmer	241	83.39
	None	12	4.15
	Retired	12	4.15

4.4 Demographic Factors

Table 4.4 presents descriptive statistics for demographic factors and their impact on digital financial inclusion in enhancing the delivery of social cash transfer programmes. The findings reveal that a significant portion of respondents agreed on the influence of various demographic factors on the use of digital financial services for social cash transfers in remote areas in Zambia. From the findings, majority of respondents agreed that occupation influences the utilization of digital financial services for social cash transfers in Zambia (M=2.79, Std.D=0.76). Additionally, most respondents concurred that education background has an impact on the use of digital financial services for social cash transfers in Zambia (M=2.33, Std.D=0.69). The findings also indicate that a majority of respondents agreed that age influences the use of digital financial services for social cash transfers in Zambia (M=1.96, Std.D=0.84). Furthermore, gender was identified as the least influencing factor on the use of digital financial services for social cash transfers in Zambia, with a mean of 0.49 and a standard deviation of 0.50.

Table 4.4: Descriptive Statistics for Demographic Factors

Descriptive Statistics	Mean	Maximum	Minimum	Std.D	N
Age	1.96	3.00	1.00	0.84	289
Gender	0.49	1.00	0.00	0.50	289
Education Background	2.33	3.00	1.00	0.69	289
Occupation	2.79	4.00	0.00	0.76	289

4.5 Digital Literacy and Digital Financial Services

Table 4.5 below presents the descriptive statistics for digital literacy and its influence on the effective use of digital financial services for social cash transfers among the elderly in remote areas in Zambia. The results clearly indicated that majority of the respondents rated their digital literacy skills relatively moderate (M=1.75, Std. Dev=0.59). This suggests a slightly favourable self-assessment of digital literacy among the elderly participants in remote areas. In addition, the mean of 0.21 indicates

that a low proportion of respondents have received training on using digital financial services (M=0.21, Std. Dev=0.41). This suggests a potential gap in training opportunities for the elderly in remote areas. Also, participants find certain aspects of digital financial services challenging, as indicated by (M=3.93, Std. Dev=2.01). The relatively high standard deviation suggests considerable variability in the challenges reported by respondents. Respondents reported a low frequency of using digital financial services (M=1.04, Std. Dev=1.17). This suggests limited engagement with digital financial platforms among the elderly in remote areas. Furthermore, the mean of 1.79 indicates that respondents are using different types of digital financial services (M=1.79, Std. Dev=0.58). This suggests a moderate level of diversity in the types of services adopted. Moreover, participants generally do not find it easy to navigate through digital financial platforms, with a mean of 0.46 (M=0.46, Std. Dev=0.49). This suggests a negative user experience in terms of platform navigation. Further, the mean of 2.29 suggests there are some benefits that the elderly associate with using digital financial services (M=2.29, Std. Dev=1.31). Lastly, the mean of 0.00 indicates that respondents did not observe any improvements in their financial management since using digital services (M=0.00, Std. Dev=0.00). This suggests a lack of perceived impact on financial management.

Table 4.5: Descriptive Statistics for Digital Literacy and Digital Financial Services

Descriptive Statistics	Mean	Maximum	Minimum	Std.D	N
How would you rate your digital literacy skills?	1.75	3.00	1.00	0.59	289
Have you received any training on using digital financial services?	0.21	1.00	0.00	0.41	289
What specific aspects of digital financial services do you find challenging?	3.93	7.00	0.00	2.01	289

How frequently do you use digital financial services?	1.04	3.00	0.00	1.17	289
What types of digital financial services are you currently using?	1.79	3.00	0.00	0.58	289
Do you find it easy to navigate through digital financial platforms?	0.46	1.00	0.00	0.49	289
What benefits do you associate with using digital financial services?	2.29	4.00	0.00	1.31	289
Have you observed any improvements in your financial management since using digital services?	0.00	0.00	0.00	0.00	289

4.6 Digital Infrastructure and Digital Financial Services

Table 4.6 below presents the descriptive statistics for digital infrastructure and its influence on the accessibility of digital financial services for social cash transfers among the elderly in remote areas in Zambia. The results indicated that majority of the respondents perceive digital infrastructure as highly accessible in their areas, as indicated by the mean of 1.00 (M=1.00, Std. Dev=0.87). The relatively low standard deviation suggests a consistent perception of accessibility among participants. Furthermore, majority of the respondents reported minimal challenges in accessing digital infrastructure, with a mean of 0.37 (M=0.37, Std. Dev=0.48). This suggests a generally favourable view regarding the ease of access, supported by the low standard deviation. In addition, the mean of 0.79 suggests that respondents perceive digital infrastructure as reasonably reliable, particularly in financial transactions (M=0.79, Std. Dev=0.64). The standard deviation indicates some variability in perceptions, but overall, reliability is rated positively. Additionally, the results indicate that majority of the respondents reported few issues with service disruptions or outages, as indicated

by the mean of 0.42 (M=0.42, Std. Dev=0.49). This suggests a relatively stable digital infrastructure with limited disruptions, supported by the low standard deviation. Lastly, the mean of 1.13 suggests that the availability and reliability of digital infrastructure have a moderate impact on respondents' willingness to use digital financial services (M=1.13, Std. Dev=1.05). The higher standard deviation indicates variability in the perceived impact among participants.

Table 4.6: Descriptive Statistics for Digital Infrastructure and Digital Financial Services

Descriptive Statistics	Mean	Maximum	Minimum	Std.D	N
How accessible is digital infrastructure in your area?	1.00	2.00	0.00	0.87	289
Are there any challenges you face in accessing digital infrastructure?	0.37	1.00	0.00	0.48	289
How reliable is the digital infrastructure, especially concerning financial transactions?	0.79	2.00	0.00	0.64	289
Have you faced any issues with service disruptions or outages?	0.42	1.00	0.00	0.49	289
To what extent does the availability and reliability of digital infrastructure affect your willingness to use digital financial services?	1.13	3.00	0.00	1.05	289

4.7 Adoption Challenges and Digital Financial Services

Table 4.7 below presents the descriptive statistics for challenges faced by the elderly in adopting digital financial services for social cash transfers in remote areas in Zambia. The results indicate that majority of the respondents reported facing challenges in adopting digital financial services for social cash transfers, as indicated by the mean of 4.84 (M=4.84, Std. Dev=1.29). The higher standard deviation suggests variability in the challenges reported by participants. The study also shows that specific concerns related to the security of digital transactions were reported, with a mean of 0.75 (M=0.75, Std. Dev=1.22). The standard deviation indicates some variability in the level of concern among respondents. Also, participants expressed a moderate level of trust in digital financial services, as indicated by the mean of 1.29 (M=1.29, Std. Dev=1.11). The standard deviation suggests variability in the level of trust reported by respondents. The results further indicated that most of the respondents reported gathering information about digital financial services through various means, with a mean of 1.62 (M=1.62, Std. Dev=1.17). The standard deviation suggests diversity in information-gathering methods among participants. Further, majority of the respondents find their access to pay points for digital financial services not very convenient, with a mean of 2.79 (M=2.79, Std. Dev=0.71). The low standard deviation suggests consistent perceptions of convenience. Also, respondents reported minimal difficulties in reaching pay points for digital financial services, with a mean of 0.37 (M=0.37, Std. Dev=0.72). The low standard deviation suggests consistent perceptions of ease in reaching pay points. Lastly, respondents provided suggestions for improving the adoption of digital financial services, with a mean of 3.99 (M=3.99, Std. Dev=1.37). The higher standard deviation indicates diversity in the suggestions provided by respondents.

Table 4.7: Descriptive Statistics for Adoption Challenges and Digital Financial Services

Descriptive Statistics	Mean	Maximum	Minimum	Std.D	N
What challenges have you encountered in adopting digital financial services for social cash transfers?	4.84	8.00	0.00	1.29	289
Are there specific concerns related to the security of digital transactions?	0.75	1.00	0.00	1.22	289
How much do you trust digital financial services?	1.29	3.00	0.00	1.11	289
How do you usually gather information about digital financial services?	1.62	3.00	1.00	1.17	289
How convenient is your access to pay points for digital financial services?	2.79	4.00	1.00	.71	289
Are there any difficulties you face in reaching these pay points?	0.37	1.00	0.00	.72	289
What suggestions do you have to improve the adoption of digital financial services among the elderly in your community?	3.99	6.00	0.00	1.37	289

4.8 Pearson Correlation Analysis

This section presents the Pearson correlation test between dependent variable (Digital Financial Services) and explanatory variables (Demographics, digital literacy, digital

infrastructure and adoption challenges). The Pearson correlation test between two variables (one listed in the row, the other in the column).

4.8.1 Demographic Factors

The Pearson correlation matrix presented in Table 4.8 reveals a statistically significant and strong positive correlation between digital financial services and demographic factors (gender, age, educational background, and occupation), with a Pearson correlation coefficient (r) of 0.937 at a significance level of p = 0.05. This indicates that the demographic factors – gender, age, educational background, and occupation – have a considerable influence on the usage of digital financial services in enhancing the delivery of social cash transfer programmes among the elderly in Zambia.

Table 4.8: Digital Financial Services and Demographic Factors

		Digital Financial Services (Y)	**Demographic Factors (X1)**
Digital Financial Services (Y)	Pearson Correlation	1	0.937**
	Sig. (2-tailed)		0.002
	N	289	289
Demographic Factors (X1)	Pearson Correlation	0.937**	1
	Sig. (2-tailed)	0.002	
	N	289	

** Correlation is significant at the 0.05 level (2-tailed)

4.8.2 Digital Literacy

The Pearson correlation matrix provided in Table 4.9 indicates a statistically significant and strong positive correlation between digital literacy and digital financial services, with a Pearson correlation coefficient (r) of 0.816 at a significance level of p = 0.05. This suggests that digital literacy has a substantial influence on the effective use of digital financial services for social cash transfers among the elderly in remote areas in Zambia.

Table 4.9: Digital Literacy and Digital Financial Services

		Digital Financial Services (Y)	**Digital Literacy (X2)**
Digital Financial Services (Y)	Pearson Correlation	1	0.816**
	Sig. (2-tailed)		0.000
	N	289	289
Digital Literacy (X2)	Pearson Correlation	0.816**	1
	Sig. (2-tailed)	0.000	
	N	289	

** Correlation is significant at the 0.05 level (2-tailed)

4.8.3 Digital Infrastructure and Digital Financial Services

The Pearson correlation matrix provided in Table 4.10 demonstrates a statistically significant and strong positive correlation between Digital Infrastructure and Digital Financial Services, with a Pearson correlation coefficient (r) of 0.821 at a significance level of p = 0.05. This implies that digital infrastructure plays a substantial role in influencing the accessibility of digital financial services for social cash transfers among the elderly in remote areas in Zambia.

Table 4.10: Digital Infrastructure and Digital Financial Services

		Digital Financial Services (Y)	**Digital Infrastructure (X3)**
Digital Financial Services (Y)	Pearson Correlation	1	0.821**
	Sig. (2-tailed)		0.000
	N	289	289
Digital Infrastructure (X3)	Pearson Correlation	0.821**	1

	Sig. (2-tailed)	0.000	
	N	289	

** Correlation is significant at the 0.05 level (2-tailed)

4.8.4 Adoption Challenges and Digital Financial Services

The Pearson correlation matrix presented in Table 4.11 reveals a statistically significant and strong negative correlation between adoption challenges and digital financial services, with a Pearson correlation coefficient (r) of -0.976 at a significance level of p = 0.05. This suggests that challenges faced by the elderly have a considerable influence on the adoption of digital financial services for social cash transfers in remote areas in Zambia.

Table 4.11: Adoption Challenges and Digital Financial Services

		Digital Financial Services (Y)	**Adoption Challenges (X4)**
Digital Financial Services (Y)	Pearson Correlation	1	-0.976
	Sig. (2-tailed)		0.000
	N	289	289
Adoption Challenges (X4)	Pearson Correlation	-0.976	1
	Sig. (2-tailed)	0.000	
	N	289	

** Correlation is significant at the 0.05 level (2-tailed)

4.9 Multiple Regression Analysis

This section presents the results of the regression used to determine the influence of demographic factors, digital literacy, digital infrastructure and adoption challenges on the usage of digital financial services for social cash transfers among the elderly in remote areas in Zambia.

4.9.1 Model Summary

The coefficient of determination (R^2) quantifies the proportion of variance in the dependent variable explained by changes in the independent variables. The results presented in Table 4.12 below reveal an R^2 value of 0.903. This signifies a robust linear relationship between the usage of digital financial services and the factors of demographic characteristics, digital literacy, digital infrastructure, and adoption challenges. This finding indicates that approximately 90 percent of the variations in the usage of digital financial services can be well-explained by the variations in demographic factors, digital literacy, digital infrastructure, and adoption challenges.

Table 4.12: Model Summary

Model	R Square	Adjusted R Square	Prob > F
1	.903	.895	.0000

4.9.2 ANOVA Statistics

The Analysis of Variance (ANOVA) evaluates the overall significance of the regression model. The results presented in Table 4.13 below indicate that the regression model is statistically significant, as evidenced by the significance level of 0.000. This strongly suggests that the data was well-suited for drawing conclusions about population parameters, given that the significance level (p-value) was less than 0.05. Consequently, it can be inferred that demographic factors, digital literacy, digital infrastructure, and adoption challenges serve as effective predictors of digital financial services usage for the delivery of social cash transfer programmes among the elderly in remote areas in Zambia.

Table 4.13: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	337.933845	3	112.644615	29.96	0.000

	Residual	1071.42256	285	3.75937739		
	Total	1409.3564	288			

4.9.3 Coefficients

Table 4.14 below, shows the coefficients of the regression model estimated. The regression used to determine the influence of demographic factors, digital literacy, digital infrastructure and adoption challenges on the usage of digital financial services for social cash transfers among the elderly in remote areas in Zambia. From the findings in Table 4.14 below, it was found that demographic factors, digital literacy, digital infrastructure and adoption challenges are statistically significant at p=0.05 level of significance. This means that of demographic factors, digital literacy, digital infrastructure and adoption challenges influences the usage of digital financial services for social cash transfers among the elderly in remote areas in Zambia.

$$DFS = B_0 + B_1(DL) + B_3(DI) + B_4(CA) + \varepsilon$$

$$DFS = 2.88 + 4.98(DL) + 0.83(DI) - 5.43(CA) + \varepsilon$$

Table 4.14: Regression Coefficients

Model		**Unstandardised Coefficients**		**t**	**Sig.**
		B	Std. Error		
1	(Constant)	.654	.227	2.88	.004**
	Digital Literacy	.623	.125	4.98	.000**
	Digital Infrastructure	.098	.119	0.83	.009**
	Adopting Challenges	-.162	.029	-5.43	.004**

** Significant at the 0.05 level

Qualitative Analysis

4.10 Introduction

The information was obtained through separate focus groups conducted in person, including more than 12 respondents from each group of elderly beneficiaries to explore their experiences and perceptions.

The process of transcribing, coding, and analysing the data from the focus groups involving elderly beneficiaries followed several steps to ensure accuracy, organization, and depth of insight. Here's a breakdown of each stage:

Transcription: The discussions from the focus groups were recorded through audio. Researcher then transcribed these recordings into written text. This transcription process involved accurately capturing the dialogue, including non-verbal cues where relevant, and included timestamps to track the flow of conversation.

Coding: After transcription, the text data was systematically reviewed to identify key themes, or patterns relevant to the research objectives. This involved coding the data, which means labelling segments of text with descriptive tags or codes that represent specific concepts or ideas. The coding process involved deductive coding, where predefined categories based on the research questions were applied.

Analysis: Once the data was coded, researcher conducted a thorough analysis to interpret the findings and draw conclusions. This analysis involved organizing and synthesizing the coded data to identify commonalities, differences, and relationships between themes. Researcher used thematic analysis technique to identify overarching themes and subthemes within the data. ATLAS.ti 9.0 was used for qualitative data analysis. The results of the analysis are outlined below:

4.10.1 To assess how digital literacy, influence the effective use of digital financial services among elderly beneficiaries in remote areas.

The first research question addresses the how respondents rate their digital literacy skills. One of the respondents stated that;

“I would say my digital skills are somewhere in the middle. I can use my smartphone for basic things like sending messages and answering phone calls, but when it comes

to more advanced tasks like online banking or setting up new apps, I ask my grandchildren."

Majority of participants rated their digital literacy skills as "Moderate." This suggests a varied but generally intermediate level of proficiency in utilising digital technologies.

This second research question focuses on whether respondents have received any training on using digital financial services. According to a respondent;

"I've never received any formal training on how to use those digital banking or mobile money services. When using mobile money, I ask the person at the booth. But it would be nice if there were some classes or workshops available to teach us how to use these things properly."

A notable finding was that the majority of participants had not received any training on using digital financial services. This points to a potential gap in educational resources specifically tailored to digital financial literacy among the elderly in remote areas.

This third research question is on what specific aspects of digital financial services do respondents find challenging. One of the interviewees responded saying;

"Sometimes when I'm using the mobile banking for Social Cash Transfer, I come across these terms that I don't really understand, like, "withdraw from wallet". It is all a bit confusing, and I worry that I might make a mistake and lose my money."

This highlights the specific challenge identified by the participant regarding the understanding of financial terms. It illustrates the participants' difficulties and emphasize the need for improved clarity and education around financial terminology in digital financial services.

The fourth research question reports how often respondents use digital financial services. The respondents stated that;

"I do not use financial services often, I only got a phone because they changed how we receive Social Cash Transfer fund".

Participants reported using digital financial services "Rarely," indicating a limited engagement with such services. This could be attributed to factors such as the identified challenges or a lower comfort level with digital transactions.

This fifth research question focuses on what types of digital financial services respondents are currently using. One of the interviewees claimed that;

"I mostly use my phone to receive money from my children."

The most commonly used digital financial service among participants was "Mobile money transfer." This indicates a preference for simple and accessible forms of digital financial transactions.

This sixth research question is on whether respondents find it easy to navigate through digital financial platforms. One of the respondents mentioned that;

"No, I don't find the mobile money platform easy to use at all. There are too many buttons to press, I'm always worried I'll press the wrong thing and the words are too small."

Participants expressed challenges in navigating through digital financial platforms, with a majority responding "No" to finding it easy. This highlights usability concerns and the need for user-friendly interfaces.

The next research question addresses the benefits respondents associate with using digital financial services. One of the respondents stated that;

"Even though it's hard sometimes, I like being able to easily receive and send money from my phone."

This response supports the finding related to the majority of participants associating "Convenience" as a benefit of using digital financial services despite the challenges. This suggests that, despite difficulties, the convenience factor remains a positive aspect.

This last research question focuses on whether respondents have observed any improvements in their financial management since using digital services. One of the interviewees claimed that;

"I haven't seen any changes in how I manage my money since I started using those digital services. It's convenient, but the money is not enough after spending."

Participants generally did not observe improvements in their financial management since using digital services. This finding indicates that the perceived benefits, especially in financial management, might not be evident among this group.

4.10.2 To analyse how the availability and reliability of digital infrastructure impact the accessibility of digital financial services for the elderly.

The second research question addresses the how accessible digital infrastructure is in the area. One of the respondents stated that

"Yes we have network and can make calls."

Another respondent state that,

"It's difficult for me to access mobile money or social cash transfer because I have never used a phone only got it because I was told."

Responses regarding the accessibility of digital infrastructure in the area were divided, with a near tie between "Very accessible" and "Not very accessible." This suggests a mixed perception among participants regarding the ease of access to digital infrastructure.

Furthermore, the research question focuses on whether there are any challenges respondents face in accessing digital infrastructure. According to a respondent,

"I haven't really had any trouble accessing the internet or anything like that. It's straightforward for me."

Asked the same question, another participant said

"I can only make calls when I go to the road side"

However, majority of participants reported facing "No" challenges in accessing digital infrastructure. This indicates a positive perception of the overall ease of access without significant impediments.

The other research question is on how reliable the digital infrastructure, especially concerning financial transactions is for the respondents. One of the interviewees responded that,

"I usually use my phone for mobile money and I haven't had any problems with it."

Participants generally found the digital infrastructure, especially concerning financial transactions, to be “Reliable.” This positive assessment suggests a degree of confidence in the stability and dependability of digital infrastructure for financial transactions.

Lastly, the other research question reports whether respondents have faced any issues with service disruptions or outages. One respondents stated that

“I've never experienced any issues when withdrawing money or sending money.”

Another said that,

“I usually send my grandchildren to withdraw the money for me.”

The majority of participants reported having faced “No” issues with service disruptions or outages. This indicates a relatively stable digital infrastructure without significant disruptions, contributing to a smooth user experience.

4.10.3 To identify the specific challenges faced by the elderly in adopting digital financial services for social cash transfers.

The first research question addresses what challenges respondents have encountered in adopting digital financial services for social cash transfers. One of the respondents stated that

“sometimes, the money doesn't come when it's supposed to even when others have received. And I'm not sure if I can trust these digital things with my money better we use the old methods.”

The top challenges reported by the majority of participants were “Not receiving money on time” and “Lack of trust.” These highlights significant concerns related to timeliness and trustworthiness in the adoption of digital financial services for social cash transfers.

This second research question focuses on whether there are specific concerns related to the security of digital transactions. According to a respondent,

“I worry about someone stealing my money when I use those digital things. You hear about it happening to people all the time.”

Other respondents stated,

“I don’t understand how to withdraw money but when I asked the person in the booth to help me they told me there is no money in my phone.”

A majority of participants expressed having “Specific concerns related to the security of digital transactions.” This underscores the importance of addressing security issues to instil confidence among elderly users.

This third research question is on how much respondents trust digital financial services. One of the interviewees responded that

“I trust them enough to use them, but I have reservations and I think they will stop working.”

Participants generally indicated “Somewhat” trusting digital financial services. This suggests a moderate level of confidence but still room for improvement in building trust among elderly users.

The fourth research question reports how respondents usually gather information about digital financial services. The respondents stated that,

“I usually ask the community leader about these things and social cash transfers because they work with the Social Welfare Office.”

Participants reported relying on “Community leaders” for gathering information about digital financial services. This points to the influence of community leaders in shaping perceptions and knowledge about these services.

This fifth research question focuses on how convenient access to pay points for digital financial services are for respondents. One of the interviewees claimed that

“It's not easy for me to get to those pay points. They're too far away, and I don't have anyone to take me.”

The majority of participants found their “Access to pay points for digital financial services” to be “Not very convenient.” This indicates a challenge in terms of the physical accessibility of points where financial transactions occur.

The last research question addresses the suggestions respondents have to improve the adoption of digital financial services among the elderly in their community. One of the respondents stated that

“I think they should just give us the money in person like they used to, it was easier that way and I felt safer.”

Participants suggested “Reverting to the old payment method of receiving in person” as a solution to improve the adoption of digital financial services. This indicates a preference for traditional, in-person payment methods, possibly due to the perceived reliability and trust associated with such methods.

4.11 Chapter summary

Chapter 4 delves into the outcomes and interpretations of the research on digital financial inclusion challenges facing elderly individuals in Kasama District. Both quantitative and qualitative data are used, offering a well-rounded understanding of the topic.

Quantitative analysis confirms the reliability of the research instrument and highlights a high response rate, ensuring robust findings. Through Pearson correlation and multiple regression analysis, significant relationships are identified between demographic factors, digital literacy, infrastructure availability, adoption challenges, and the usage of digital financial services among the elderly.

Qualitative analysis provides deeper insights into the experiences and perceptions of elderly beneficiaries. The data, meticulously transcribed and analysed, elucidates the influence of digital literacy, infrastructure reliability, and adoption challenges on the effective utilization of digital financial services.

In summary, Chapter 4 provides a nuanced exploration of digital financial inclusion challenges for elderly populations, offering valuable insights for policymakers and practitioners seeking to enhance financial services accessibility in rural areas.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Introduction

The findings of this study provide valuable insights into the challenges faced by elderly beneficiaries in remote areas of Zambia concerning the delivery of digital financial services, specifically in the context of social cash transfer programs. The discussion below interprets the significance of these findings and their implications for digital financial inclusion among the elderly. The findings of the study align with prior research, both globally and regionally, as discussed in the extensive literature review, this is explained below.

5.2 Demographic Factors

The study reveals that demographic factors including occupation, educational background, age, and gender significantly influence the utilization of digital financial services for social cash transfers. This aligns with research by Edison (2003) and Patel (2019), which highlighted the impact of age, education, and cultural values on technology adoption among elderly populations. The influence of these factors underscores the importance of tailoring interventions to the specific demographic characteristics of the elderly population.

5.3 Digital Literacy

Digital literacy emerges as a crucial factor influencing the effective use of digital financial services. These findings are consistent with findings by Li et al. (2018) and Garcia and Kim (2021). These studies emphasized the role of targeted digital literacy programs in overcoming barriers to adoption among elderly individuals. The moderate self-assessment of digital literacy skills among participants highlights the need for targeted educational programs to enhance proficiency. The reported challenges in understanding financial terms and security concerns further emphasize the importance of addressing these specific issues in digital literacy training.

5.4 Digital Infrastructure

The positive perception of digital infrastructure accessibility and reliability indicates a foundational readiness for the adoption of digital financial services. However, the moderate impact on participants' willingness to use these services suggests that additional factors beyond infrastructure contribute to their decision-making. Stakeholders should focus on user-friendly interfaces and additional support measures to enhance overall accessibility.

While participants perceived digital infrastructure accessibility positively, its impact on willingness to use digital financial services was moderate. This finding resonates with the literature, which suggests that infrastructure alone is insufficient to drive adoption without addressing additional user-related factors, as highlighted by Sobkow et al. (2020) and Aziz et al. (2021).

5.5 Adoption Challenges

The challenges faced by the elderly, including delayed fund disbursement, lack of trust, and security concerns, significantly impact the adoption of digital financial services. These findings are consistent with previous research by Okoye et al. (2019) and Baloyi and Oladele (2020). These studies emphasized the importance of trust-building measures and enhanced security protocols in promoting adoption. The strong negative correlation between adoption challenges and digital financial services usage underscores the need to address these concerns systematically. Trust-building measures, timely disbursement, and heightened security protocols are imperative for successful adoption.

5.6 Pearson Correlation and Multiple Regression Analysis

The Pearson correlation and multiple regression analyses reinforce the interconnectedness of various factors in influencing the usage of digital financial services. This is consistent with the literature reviewed. The holistic understanding provided aligns with the findings of Cruz-Cárdenas et al. (2019) and Prodromou et al. (2019), who highlighted the multifaceted nature of digital inclusion dynamics. Demographic factors, digital literacy, digital infrastructure, and adoption challenges collectively explain approximately 90% of the variations in the usage of digital financial services. This holistic understanding is vital for crafting comprehensive interventions.

5.7 Qualitative Analysis

The qualitative analysis delves into the subjective experiences and perceptions of elderly beneficiaries. Themes such as digital literacy skills, challenges in adoption, and concerns related to security provide nuanced insights. The qualitative findings enrich the quantitative results, offering a more comprehensive understanding of the lived experiences of the elderly in remote areas. This approach aligns with the recommendations of Lena (2020) and Schubert (2005), which emphasized the importance of qualitative research in understanding the lived experiences of beneficiaries.

5.8 Implications

The implications drawn from this study suggest the need for multifaceted interventions to enhance digital financial inclusion among the elderly in remote areas. Tailored educational programs addressing digital literacy gaps, improvements in digital infrastructure, and targeted strategies to mitigate adoption challenges are crucial. Stakeholders, including government authorities, mobile network providers, and regulatory bodies, should collaborate to create an ecosystem that fosters trust, accessibility, and usability for the elderly population.

In summary, this study contributes to the growing body of knowledge on digital financial inclusion by providing a nuanced understanding of the challenges faced by elderly beneficiaries in remote areas. The recommendations that will be derived from the findings aim to guide policymakers, service providers, and community leaders in formulating targeted interventions that will ultimately enhance the accessibility and effectiveness of digital financial services for this vulnerable demographic group.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarises and concludes the findings of the study on the challenges associated with delivering digital financial services to elderly beneficiaries in remote and underserved areas of Zambia with respect to social cash transfer programs. In this chapter the researcher also provides some recommendations for policymakers and stakeholders in the field of digital financial inclusion based on the findings of the study from the previous section. These recommendations are posited to help in improving the access to digital financial services by the elderly in remote areas in Zambia.

6.2 Summary, Conclusion and Recommendations

The summary integrates both quantitative and qualitative analyses, presenting consolidated findings for each research question or objective. These results encompass essential textual and numerical information, providing synthesized insights. The subsequent step involves drawing conclusions, incorporating implications, interpretations, generalizations, and/or overarching statements. These conclusions appropriately address the specific concerns initially posited in the study.

The aim is to provide actionable insights that contribute to enhancing digital financial inclusion among elderly beneficiaries in remote areas, informed by both quantitative data and qualitative insights gathered throughout the research process.

6.2.1 Summary of the Findings

Objective 1: To assess how digital literacy, influence the effective use of digital financial services among elderly beneficiaries in remote areas.

The results clearly indicated that majority of the respondents rated their digital literacy skills relatively moderate (M=1.75, Std. Dev=0.59). This suggests a slightly favourable self-assessment of digital literacy among the elderly participants in remote areas. Additionally, the mean of 0.21 indicates that a low proportion of respondents have received training on using digital financial services (M=0.21, Std. Dev=0.41). This suggests a potential gap in training opportunities for the elderly in remote areas.

The findings related to digital literacy are of crucial importance in tailoring targeted educational programs to enhance proficiency, understanding financial terms and security concerns.

Objective 2: To analyse how the availability and reliability of digital infrastructure impact the accessibility of digital financial services for the elderly.

The results indicated that majority of the respondents perceive digital infrastructure as highly accessible in their areas, as indicated by the mean of 1.00 (M=1.00, Std. Dev=0.87). The relatively low standard deviation suggests a consistent perception of accessibility among participants. Furthermore, the mean of 0.79 suggests that respondents perceive digital infrastructure as reasonably reliable, particularly in financial transactions (M=0.79, Std. Dev=0.64). The standard deviation indicates some variability in perceptions, but overall, reliability is rated positively.

Lastly, the mean of 1.13 suggests that the availability and reliability of digital infrastructure have a moderate impact on respondents' willingness to use digital financial services (M=1.13, Std. Dev=1.05). The higher standard deviation indicates variability in the perceived impact among participants.

Therefore, the findings related to availability and reliability of digital infrastructure show that infrastructure is accessible in most areas but has moderate impact on participants' willingness to use these services indicating that they are factors beyond infrastructure that contribute to their decision-making.

Objective 3: To identify specific obstacles hindering adoption for these services for social cash transfers.

The results indicate that majority of the respondents reported facing challenges in adopting digital financial services for social cash transfers, as indicated by the mean of 4.84 (M=4.84, Std. Dev=1.29). The higher standard deviation suggests variability in the challenges reported by participants. The study also shows that specific concerns related to the security of digital transactions were reported, with a mean of 0.75 (M=0.75, Std. Dev=1.22). Also, participants expressed a moderate level of trust in digital financial services, as indicated by the mean of 1.29 (M=1.29, Std. Dev=1.11). Lastly, majority of the respondents find their access to pay points for digital financial services not very convenient, with a mean of 2.79 (M=2.79, Std. Dev=0.71). The low standard deviation suggests consistent perceptions of convenience

The findings denoted that most of the underlying challenges significantly impacting the adoption of digital financial services include; delayed fund disbursement, lack of trust and security concerns and the lack of convince when accessing the pay points

6.2.2 Conclusion

In conclusion, this study delved into the challenges associated with delivering digital financial services to elderly beneficiaries in remote and underserved areas of Kasama Zambia, particularly in the context of social cash transfer programs. Through a comprehensive analysis of both quantitative and qualitative data, several key findings emerged.

6.2.2.1 Demographic Factors

The study concludes that demographic factors, excluding gender, significantly influence the use of digital financial services among elderly beneficiaries in remote

areas of Zambia. Occupation, education background, age, and gender were examined, with occupation and education background standing out as influential factors.

6.2.2.2 Digital Literacy and Digital Financial Services

Both quantitative and qualitative analyses point to the influence of digital literacy on the effective use of digital financial services among the elderly. Notably, participants rated their digital literacy skills as moderate, and challenges such as understanding financial terms and security concerns were identified. Despite these challenges, convenience emerged as a perceived benefit.

6.2.2.3 Digital Infrastructure and Digital Financial Services

The study found that the perceived accessibility and reliability of digital infrastructure play a crucial role in shaping the accessibility of digital financial services for the elderly. While there were divided responses regarding the accessibility of digital infrastructure, participants generally deemed it reliable, especially concerning financial transactions.

6.2.2.4 Adoption Challenges and Digital Financial Services

Challenges faced by the elderly were identified as significant factors influencing the adoption of digital financial services for social cash transfers. Issues such as not receiving money on time, lack of trust, and concerns related to the security of digital transactions were highlighted. The study concludes that addressing these challenges is essential for improving the adoption of digital financial services in remote areas.

6.2.3 Recommendations

Based on the findings of the study, the following recommendations are given:

1. The Ministry of Community Development and Social Welfare in collaboration with the Zambia Information and Communications Technology Authority (ZICTA) and the Ministry of Technology and Science should consider targeted capacity building activities in educational programs and training initiatives focused on enhancing digital literacy among elderly beneficiaries and community leaders.

ZICTA being governed under the following Acts; the Cyber Security and Cyber Crimes Act No.2 of 2021 which provides for cyber security in Zambia and empower ZICTA to implement the provisions of the Act, this will help address the security concerns of using digital financial services due to lack of understanding among the elderly and the Electronic Communications and Transactions Act No.4 of 2021 which provides for a safe and effective environment for electronic transactions and empower ZICTA to supervise compliance relating to this Act, this will help educate the pay point persons within the communities on the regulations they should follow.

The Ministry of Technology and Science is in charge of reviewing and formulating Technology and Science Policies in order to contribute to economic growth. As one of the policy makers, the ministry can look into formulating technology policies that are more flexible to attract more networks into the remote areas. As well as policies that should consider demographic factors, such as occupation, education background and age, when designing and implementing digital financial inclusion programmes. These programs should focus on addressing specific challenges identified in the study, such as understanding financial terms and navigating digital platforms. By addressing these literacy gaps, the Ministry can empower elderly beneficiaries to utilise digital services more confidently.

The private sector through their Corporate Social Responsibility (CSR) programmes should work together with the MCDSS, MOTS and ZICTA to educate the elderly in the communities together with the community leaders on the benefits of technology. One such activity being the Senior New Tech project which is aimed at increasing the number of elderly people using innovations through participation in activities connected with new technology, fostering equality and inclusion in education by offering new competencies and abilities to work with a diverse group of individuals.

2. Mobile Network Operators (MNOs): The MNOs namely, Airtel, MTN and Zamtel should collaborate with the Ministry of Community Development and Social Services to improve the accessibility and reliability of digital infrastructure in

remote areas. The study highlighted the perceived impact of digital infrastructure on the willingness to use digital financial services, therefore, they should look into investing in enhancing network coverage and reliability, especially in financial transactions, to create a more favourable environment for the elderly to use digital financial services.

The Ministry of Community Development and Social Services can also look into signing Memorandum of Understandings (MOUs) with the MNOs that look into creating a much friendlier user interface for SCT beneficiaries that will strongly benefit the elderly. This can be achieved by considering creating a USSD short code that is only applicable to SCT beneficiaries, with user friendly prompts; first step to input the USSD short code, which leads the beneficiary to input their National Registration Card number and phone number, the next step would be to input the agent code number and the beneficiaries receives a specific Personal Identification Number (PIN) into their registered phone number. This will help address the issues of understanding the user interface, financial terms as well as security concerns.

Furthermore, by improving infrastructure, MNOs can create a more conducive environment for elderly beneficiaries to access and trust digital financial services.

3. The Zambia Information and Communications Technology Authority (ZICTA) should also work closely with MNOs to address challenges related to service disruptions or outages. They should develop and enforce regulations that ensure the reliability of digital infrastructure, especially in areas crucial for financial transactions, to foster trust among elderly users. ZICTA, as a regulatory authority, plays a pivotal role in ensuring the reliability and quality of digital infrastructure. By actively addressing disruptions and enforcing standards, ZICTA can contribute to building trust in digital financial services among the elderly.

These recommendations aim to provide specific and precise guidance to each stakeholder based on the identified challenges and opportunities revealed in the study. Collaborative efforts between the Ministry of Community Development and Social Services, MNOs, and regulatory bodies are crucial for creating an ecosystem that

supports the successful adoption of digital financial services by elderly beneficiaries in remote areas of Zambia.

6.2.4 Areas for Further Research

Based on the findings of the current study, below are areas for further research:

One of the areas for further research could be looking into the Zambia Integrated Social Protection Information System (ZISPIS) which is a gateway for data management and electronic payment system to enhance administration, planning, coordination, transparency and accountability in the management of the social cash transfer programme being synced to the MNOs systems once the SCT short code is created in order to help both the pay points during payments and the department of Social Welfare as they enter data into the system, the system would be able to pick up any anomalies if the information entered does not match.

Another area is delving deeper into understanding the specific challenges faced by elderly individuals in adopting digital financial services. This could involve qualitative studies that explore the psychological and emotional aspects influencing adoption. This would provide insights into the long-term impact of interventions and the evolution of user perceptions.

REFERENCES

Afolayan, J., et al. (2020). Cultural Values and Digital Payment Adoption Among the Elderly in African Contexts: A Case Study of Nigeria. *International Journal of African Culture, Arts and Literature*, 8(1), 32-49.

Bolton, P. (2011). A theory of trickle-down growth and development. *The Review of Economic Studies, 64*(2), 151-172.

Ajzen, I. (1991). The Theory of Planned Behaviour. *Organisational Behaviour and Human Decision Processes*, 50(2), 179-211.

Aslan C. (2022). *The effects of socioeconomic status, oral and dental health practices, and nutritional status on dental health in 12-year-old school children*. Egyptian Pediatric Association Gazette 70.

Aziz, A. et al. (2021). Landscape of Digital Financial Inclusion in Bangladesh: Barriers and Opportunities for Elderly Users. *Bangladesh Journal of Digital Finance*, 7(1), 11-28.

Aziz, A., et al. (2021). Landscape of Digital Financial Inclusion in Bangladesh: Barriers and Opportunities for Elderly Users. *Bangladesh Journal of Digital Finance, 7*(1), 11-28.

Baloyi, T., and Oladele, A. (2020). Cybersecurity Concerns and Digital Financial Inclusion Among Elderly Users in African Regions. *Journal of African Cybersecurity Studies*, 6(1), 15-30.

Bayoumi, T., and Melander, L. (2008). Credit matters: Empirical evidence on US macro-financial linkages. *Journal of International Money and Finance, 27*(3), 339-361.

Bayoumi, T., and Melander, L. (2008). Credit matters: Empirical evidence on US macro-financial linkages. Journal of International Money and Finance, 27(3), 339-361.

Bryman, A. (2016). *Social Research Methods*. Oxford University Press.

Cecchetti, S. G., and Kharroubi, E. (2012). Reassessing the impact of finance on growth. *BIS Working Papers, No. 381*.

Cecchetti, S. G., and Karroubi, E. (2012). Reassessing the impact of finance on growth. BIS Working Papers, No. 381.

Chen, W., et al. (2022). The impact of financial inclusion on economic growth: A meta-analysis. *Journal of Economic Surveys, 36*(1), 144-178.

Chen, W., et al. (2022). The impact of financial inclusion on economic growth: A meta-analysis. Journal of Economic Surveys, 36(1), 144-178.

Chiwele, D. K. (2010). *Assessing administrative capacity and costs of cash transfer schemes in Zambia: Implications for rollout*. International Policy Centre for Inclusive Growth (IPC-IG), Brasilia. Country Study No. 20.

Creswell, J. W., and Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approache*s. Sage publications.

Cruz-Cárdenas, J., et al. (2019). Understanding the Cultural Factors Influencing the Adoption of Digital Payment Systems by Elderly Individuals: A Structural Equation Modeling Approach. *Journal of Technology and Aging*, 7(2), 45-61.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.

Demirguc-Kunt, A., et al. (2018). The global findex database 2017: Measuring financial inclusion and the fintech revolution. *World Bank Policy Research Working Paper, No. 8444*.

Demirguc-Kunt, A., et al. (2018). The global findex database 2017: Measuring financial inclusion and the fintech revolution. World Bank Policy Research Working Paper, No. 8444.

Edison, R. (2003). Measuring Attitudes Toward Technology: Development and Validation of a Multi-Dimensional Scale. *Technology Acceptance Quarterly*, 10(3), 333-351.

Fanta, A. (2016). *Gender and Financial Inclusion: Analysis of financial inclusion of women in the SADC region*.

Garcia, M., and Kim, S. (2021). Enhancing Digital Literacy Among Elderly Populations in Remote Regions: The Role of Targeted One-on-One Approaches. *Journal of Digital Inclusion*, 17(2), 88-105.

Gronbach, L. (2020). *Social Cash Transfer Payment Systems in sub-Saharan Africa*. Centre for Social Science Research, University of Cape Town.

Ha, N. T. (2022). Information and communication technology, financial development, and economic growth: New evidence from Asia. *Journal of Asian Economics, 81*, 101251.

Ha, N. T. (2022). Information and communication technology, financial development, and economic growth: New evidence from Asia. Journal of Asian Economics, 81, 101251.

Handa, S., Peterman, A., Seidenfeld, D., and Tembo, G. (2015). *Income Transfers and Maternal Health: Evidence from a National Randomised Social Cash Transfer Programme in Zambia*.

Hjelm, L. (2017). *UNICEF Office of Research – Innocenti, Piazza SS*, Annunziata, 12, 50122 Florence, Italy Carolina Population Centre, University of North Carolina at Chapel Hill, 206 West Franklin St., Rm. 208, Chapel Hill, NC 27516, USA.

Hobson, E. W., and Kilfoil, C. (2022). *Digitising Cash Transfers to Remote Rural Populations: Challenges and Solutions from the Experience of Zambia*. Social Protection and Jobs Policy and Technical Note, No. 27. © World Bank, Washington, DC.

Hobson, R., Kilfoil, C., and Martin, S. (2022). The potential of social cash transfer programmes: A review of evidence and implementation experiences. *Development Policy Review, 40*(2), 181-197.

Hobson, R., Kilfoil, C., and Martin, S. (2022). The potential of social cash transfer programmes: A review of evidence and implementation experiences. Development Policy Review, 40(2), 181-197.

Huang, B., et al. (2022). Financial inclusion, human development, and economic growth: Evidence from developing countries. *Economic Modelling, 106*, 107540.

Huang, B., et al. (2022). Financial inclusion, human development, and economic growth: Evidence from developing countries. Economic Modelling, 106, 107540.

Koloma, Y. L. (2021). Digital financial inclusion and economic development in Africa: Empirical evidence from panel data. *Research in International Business and Finance, 58*, 101463.

Kothari, C. R. (2008). *Research Methodologies and Procedures*. London: London Mission Works.

Loukoianova, E., et al. (2018). Financial inclusion: Zooming in on Latin America. *IMF Working Paper, No. 18/13*.

Ministry of Community Development and Social Services (2023). *Pay points and Distances Data*.

Mugenda, O. and Mugenda, A., (2003). Research Methods: Qualitative and Quantitative Approaches. Nairobi: Acts Press.

Nguyen, T. H., et al. (2020). Internet use and financial market development: Evidence from emerging markets. *Journal of International Financial Markets, Institutions and Money, 69*, 101218.

Ofori, C. A., et al. (2022). ICT diffusion, financial inclusion, and economic growth in Africa: A dynamic panel data analysis. *Journal of African Business, 23*(2), 156-181.

Sarma, M., and Pais, J. (2011). Financial inclusion and development. *Journal of International Development, 23*(5), 613-628.

Sekaran, U., 2008. *Research Methods for Business: A Skill Building Approach*. 4th ed. New York: John Wiley & Sons Inc.

Song, M., et al. (2023). The impact of information and communication technology (ICT) diffusion on financial inclusion and economic growth: A global analysis. *Information Technology for Development, 29*(1), 58-85.

Yamane, T., (2015). *Statistics: An Introductory Analysis*. 2nd ed. New York: Harper and Row.

Zambia Demographic and Health Survey. (2018). Key indicators report.

APPENDICES

Appendix I: Ethical Clearance

UNIVERSITY OF LUSAKA

SCHOOL OF POSTGRADUATE STUDIES

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Phone: +260211258505, 258409 Fax +260211233409; Cell +260976075850,961917862,
E-mail:unilus@zamnet.zm,ictar@zamnet.zm

UNILUS-RESEARCH ETHICS COMMITTEE

Ref no: FWA00033228-5301/24

Date: 5th January 2024

STUDENT NAME: DELPHINE CHILUFYA MULENGA

ANALYZING THE CHALLENGES OF DIGITAL FINANCIAL INCLUSION IN ENHANCING THE DELIVERY OF SOCIAL CASH TRANSFER PROGRAMS AMONG THE ELDERLY IN REMOTE AREAS: A CASE STUDY OF KASAMA DISTRICT

The above research was submitted to the research ethics committee for review. The study has no major ethical problems and is approved subject to the following:

1. The study cannot be changed without express permission of the UNILUS research ethics committee.

2. Approval from the necessary authority should be sought.

Congratulations and the committee wishes you success in your work.

Professor Kasonde Bowa
MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)
Chairman- UNILUS REC
Professor of Urology and Consultant Urologist
Deputy Vice-Chancellor – Research and Innovation
Executive Dean - School of Medicine and Health Sciences

Appendix II: Letter of permission to conduct research

All correspondence should be addressed
To the District Social Welfare Officer
Telephone: 04-221625
Telegrams: SOWEL, KASAMA

In reply please quote
DSW/KAS/.....

MINISTRY OF COMMUNITY DEVELOPMENT AND SOCIAL SERVICES

DEPARTMENT OF SOCIAL WELFARE

5th January, 2024

Ms. Delphine Chilufya Mulenga
c/o Ministry of Community Development and Social Services
KASAMA

RE: APPROVAL TO CONDUCT AN ACADEMIC RESEARCH IN KASAMA DISTRICT

Reference is made to the above subject matter.

Following your request to conduct an academic research within Kasama District under the Master's program at the University of Lusaka, I wish to inform you that permission has been granted and you can proceed with your data collection.

REPUBLIC OF ZAMBIA
MINISTRY OF COMMUNITY DEVELOPMENT & SOCIAL SERVICES
05 JAN 2024
DEPARTMENT OF SOCIAL WELFARE
DISTRICT WELFARE OFFICE
P.O. BOX 410013, KASAMA

Lyness Mpundu Singoyi
Social Welfare Officer
For/ the District Social Welfare Officer
KASAMA

Appendix III: Questionnaire

SCHOOL OF POSTGRADUATE STUDIES

TITLE: INVESTIGATING THE CHALLENGES OF DELIVERING DIGITAL FINANCIAL SERVICES TO THE ELDERLY IN REMOTE AREAS FOR IMPROVED SOCIAL CASH TRANSFER: A KASAMA DISTRICT CASE STUDY

My name is Delphine Chilufya Mulenga pursuing a Master of Science degree in Procurement, Logistics & Supply Chain at the University of Lusaka. You have been selected to participate in this study on analysing the challenges of digital financial inclusion in enhancing the delivery of social cash transfer programmes among the elderly in remote areas, precisely, Kasama District. This study is purely for academic purposes and there are no right or wrong answers. Your participation in this study is highly appreciated and your responses will be treated with the utmost confidentiality. You are not required to indicate your identity; however, your honest opinion will be highly appreciated. Please answer all questions by ticking the appropriate answer or by giving your opinion where required.

For any clarification, you may wish to contact Delphine Chilufya Mulenga via mobile on 0979 139213 or email at mulengadelphine@gmail.com.

SECTION A: RESPONDENT DEMOGRAPHICS

1. Age:
    - 60-69 ☐
    - 70-79 ☐
    - 80 and above ☐
2. Gender:
    - Male ☐
    - Female ☐
3. Educational Background:
    - No formal education ☐
    - Primary school ☐
    - Secondary school ☐
    - Higher education ☐
4. Occupation:
    - Retired ☐
    - Farmer ☐
    - Business owner ☐
    - Other (Specify) ☐

SECTION B: ASSESS HOW DIGITAL LITERACY INFLUENCES THE EFFECTIVE USE OF DIGITAL FINANCIAL SERVICES AMONG ELDERLY BENEFICIARIES IN REMOTE AREAS

5. How would you rate your digital literacy skills?
   - High ☐
   - Moderate ☐
   - Low ☐

6. Have you received any training on using digital financial services?
   - Yes ☐
   - No ☐

7. What specific aspects of digital financial services do you find challenging?
   - User interface/navigation ☐
   - Security concerns ☐
   - Understanding financial terms ☐
   - Others (Specify) ☐

8. How frequently do you use digital financial services?
   - Daily ☐
   - Weekly ☐
   - Monthly ☐
   - Rarely ☐

9. What types of digital financial services are you currently using?
    - Mobile banking ☐
    - Mobile money transfer ☐
    - Online bill payments ☐
    - Others (Specify) ☐
10. Do you find it easy to navigate through digital financial platforms?
    - Yes ☐
    - No ☐
11. What benefits do you associate with using digital financial services?
    - Convenience ☐
    - Timesaving ☐
    - Safety ☐
    - Others (Specify) ☐
12. Have you observed any improvements in your financial management since using digital services?
    - Yes ☐
    - No ☐

SECTION C: ANALYSE HOW THE AVAILABILITY AND RELIABILITY OF DIGITAL INFRASTRUCTURE IMPACT THE ACCESSIBILITY OF DIGITAL FINANCIAL SERVICES FOR THE ELDERLY

13. How accessible is digital infrastructure in your area?

- Very accessibl
- Somewhat accessib
- Not very accessib
- Not accessible at

14. Are there any challenges you face in accessing digital infrastructure?

- Yes
- No

15. How reliable is the digital infrastructure, especially concerning financial transactions?

- Very reliable
- Reliable
- Unreliable
- Very unreliabl

16. Have you faced any issues with service disruptions or outages?

- Yes
- No

17. To what extent does the availability and reliability of digital infrastructure affect your willingness to use digital financial services?
    - Significantly
    - Moderately
    - Slightly
    - Not at all

SECTION D: IDENTIFY THE SPECIFIC CHALLENGES FACED BY THE ELDERLY IN ADOPTING DIGITAL FINANCIAL SERVICES FOR SOCIAL CASH TRANSFERS

18. What challenges have you encountered in adopting digital financial services for social cash transfers?
    - Security concerns
    - Lack of trust
    - Lack of awarene
    - Others (Specify) _____

19. Are there specific concerns related to the security of digital transactions?
    - Yes
    - No

20. How much do you trust digital financial services?
    - Completely
    - Somewhat
    - Not very much
    - Not at all

21. How do you usually gather information about digital financial services?
    - Family/friend
    - Community leade
    - Media (TV, radio
    - Others (Specify

22. How convenient is your access to pay points for digital financial services?
    - Very convenient
    - Somewhat convenient
    - Not very convenient
    - Not at all convenient

23. Are there any difficulties you face in reaching these pay points?
    - Yes
    - No

24. What suggestions do you have to improve the adoption of digital financial services among the elderly in your community?

_____

_____

_____

_____

_____

Appendix IV: Data Analysis Output

Reliability Statistics

Average interitem covariance: .2019007

Number of items in the scale: 23

Scale reliability coefficient: 0.8503

Respondents Background Information

Age	Freq.	Percent	Cum.
60-69	108	37.37	37.37
70-79	84	29.07	66.44
80 and above	97	33.56	100.00
Total	289	100.00	

Gender	Freq.	Percent	Cum.
Female	144	49.83	49.83
Male	145	50.17	100.00
Total	289	100.00	

Educational Background	Freq.	Percent	Cum.
No formal education	36	12.46	12.46
Primary school	121	41.87	54.33
Secondary school	132	45.67	100.00

```
--------------------+-----------------------------------
              Total |        289      100.00
```

```
    Occupation |      Freq.     Percent        Cum.
---------------+-----------------------------------
Business owner |         12        4.15        4.15
    Dependent |         12        4.15        8.30
       Farmer |        241       83.39       91.70
         None |         12        4.15       95.85
      Retired |         12        4.15      100.00
---------------+-----------------------------------
        Total |        289      100.00
```

Descriptive Statistics for Demographic Factors

```
Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
       Age_ |       289    1.961938    .8428237         1          3
```

```
   Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
    Gender_ |       289    .4982699    .5008643         0          1
```

```
Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
Educationa~_ |       289     2.33218     .687464         1          3
```

```
Variable |       Obs        Mean    Std. Dev.       Min        Max
-------------+--------------------------------------------------------
 Occupation_ |       289    2.792388    .7627237         0          4
```

Descriptive Statistics for Digital Literacy and Digital Financial Services

Variable	Obs	Mean	Std. Dev.	Min	Max
DigitalLit~_	289	1.747405	.5967521	1	3
TrainingOn~c	289	.2076125	.4063013	0	1
AspectsOfD~e	289	3.927336	2.006477	0	7
FrequencyU~r	289	1.038062	1.173464	0	3
TypesDigit~i	289	1.795848	.5802149	0	3
NavigateTh~P	289	.4567474	.4989898	0	1
BenefitsDi~s	289	2.290657	1.306481	0	4
Improvemen~t	289	0	0	0	0

Descriptive Statistics for Digital Infrastructure and Digital Financial Services

Variable	Obs	Mean	Std. Dev.	Min	Max
Accessible~e	289	1.00346	.8680209	0	2
Challenges~s	289	.3737024	.4846252	0	1
ReliableDi~n	289	.7923875	.6442676	0	2
IssuesServ~_	289	.4152249	.4936155	0	1
Availabili~e	289	1.128028	1.054526	0	3

Descriptive Statistics for Adoption Challenges and Digital Financial Services

Variable	Obs	Mean	Std. Dev.	Min	Max
Challenges~c	289	4.83737	2.212148	0	8
ConcernsSe~i	289	.7508651	.4332623	0	1
TrustDigit~_	289	1.294118	1.020621	0	3
Informatio~i	289	1.622837	.7543606	1	3

Convenient~l | 289 2.795848 .8679378 1 4

Difficulti~_ | 289 .3737024 .4846252 0 1

Suggestion~a | 289 3.989619 1.667676 0 6

Pearson Correlation Analysis

| Digita~_ Freque~r

DigitalLit~_ | 1.0000

FrequencyU~r | 0.8162 1.0000

| 0.0000

| Reliab~n Access~e

ReliableDi~n | 1.0000

Accessible~e | 0.8209 1.0000

| 0.0000

Challenges~c | 1.0000

Convenient~l | -0.9760 1.0000

| 0.0000

Regression Analysis

Source | SS df MS Number of obs = 289

F(3, 285) = 24.25

Model | 80.6347429 3 26.8782476 Prob > F = 0.0000

Residual | 315.946572 285 1.10858446 R-squared = 0.9033

Adj R-squared = 0.8949

Total | 396.581315 288 1.37701845 Root MSE = 1.0529

FrequencyUseDigitalFinancialSer | Coef. Std. Err. t P>|t| [95% Conf. Interval]

---+---

DigitalLiteracySkillsRating_ | .6229556 .1251549 4.98 0.000 .3766104 .8693008

ReliableDigitalInfrastructureFin | .0979605 .1185632 0.83 0.009 -.1354101 .3313311

ChallengesAdoptingDigitalFinanc | -.1617119 .0297601 -5.43 0.004 -.2202894 -.1031344

_cons | .6541443 .226913 2.88 0.004 .2075064 1.100782

ANOVA

Analysis of Variance

Source	SS	df	MS	F	Prob > F
Between groups	337.933845	3	112.644615	29.96	0.0000
Within groups	1071.42256	285	3.75937739		
Total	1409.3564	288	4.89359862		

Appendix V: Turnitin Receipt

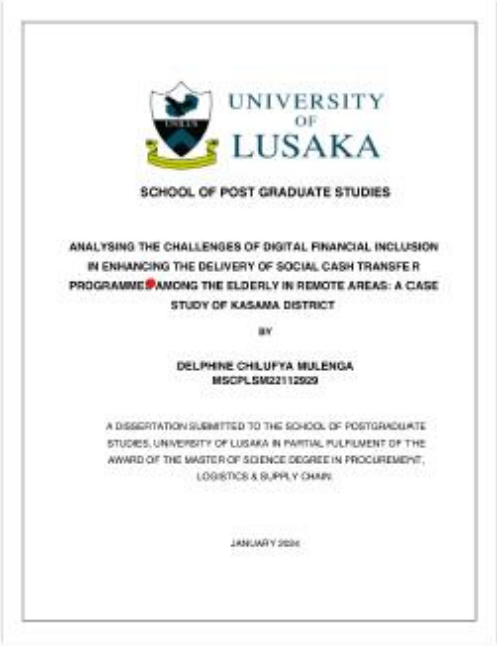
turnitin

Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	DELPHINE MULENGA MSCPLSM22112929
Assignment title:	Dissertation
Submission title:	Master's Dissertation
File name:	DELPHINE_MULENGA_-_RESEARCH_REPORT.docx
File size:	1.09M
Page count:	89
Word count:	19,197
Character count:	117,986
Submission date:	24-Jan-2024 02:02PM (UTC+0200)
Submission ID:	2277379445



UNIVERSITY OF LUSAKA

SCHOOL OF POST GRADUATE STUDIES

ANALYSING THE CHALLENGES OF DIGITAL FINANCIAL INCLUSION IN ENHANCING THE DELIVERY OF SOCIAL CASH TRANSFE R PROGRAMME AMONG THE ELDERLY IN REMOTE AREAS: A CASE STUDY OF KASAMA DISTRICT

BY

DELPHINE CHILUFYA MULENGA
MSCPLSM22112929

A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES, UNIVERSITY OF LUSAKA IN PARTIAL FULFILMENT OF THE AWARD OF THE MASTER OF SCIENCE DEGREE IN PROCUREMENT, LOGISTICS & SUPPLY CHAIN

JANUARY 2024

Appendix VI: Submission of Dissertation for Examination

UNIVERSITY OF LUSAKA

SCHOOL OF POSTGRADUATE STUDIES

SUBMISSION OF DISSERTATION FOR EXAMINATION

Name of student: Delphine Chilufya Mulenga

Student number: MSCPLSM22112929

Programme of study: Master of Science Degree in Procurement, Logistics and Supply Chain

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Signature of student: 

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Supervisor's Comments

I recommend/ do not recommend this dissertation for submission for examination (If you do not recommend, kindly provide a written report and attach hereto).

Name of Supervisor: Jones J Kalyongwe PhD

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