# Investigating the use of information and communication technology (ICT) in village community banks (VICOBA) in southern Tanzania: Evidence from Songea Urban in the Ruvuma Region

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https://doi.org/10.51867/ajernet.7.1.91

## ABSTRACT

The objective of this study is to investigate the use of Information and Communication Technology (ICT) in the operations of Village Community Banks (VICOBA) in Southern Tanzania, particularly in Songea urban in the Ruvuma region. For the past few years, VICOBA in the Ruvuma region has been using ICT in its operations; however, there is no documented research on this. This study sheds light on the matter, aiming to uncover the dynamics of its integration and utilization. The study was anchored with the Technology Acceptance Model (TAM) and the Technology Adoption and Diffusion of Innovations Theory (TADIT). Using a case study from Songea Urban in Southern Tanzania, the study employed an explanatory and analytical research design with a population of 40 respondents working in the VICOBA business. Both qualitative and quantitative data were collected using questionnaires, observations, and interviews. The collected data were examined and analyzed using the Statistical Package for the Social Sciences (SPSS) to identify patterns, trends, and correlations related to ICT usage in VICOBA. The study results revealed a diverse spectrum of ICT usage among VICOBA business operations; several ICT tools such as MKOBA, smartphones, laptops, projectors, etc. are widely used; 60% of the majority are satisfied with the use of ICT tools in various VICOBA activities; ICT within the VICOBA is primarily used for communication purposes (55%), and only 12.5% are using it for financial transactions and record keeping. The study also revealed several challenges in the use of ICT, including a lack of digital literacy, poor internet connectivity, security concerns, the high cost of technology, and others. However, the majority of VICOBA member groups perceive ICT's usefulness, suggesting that VICOBA recognizes ICT's potential to improve the efficiency and transparency of financial operations. These findings contribute to the existing knowledge by providing a detailed understanding of the intricate relationship between ICT and grassroots financial entities. The outcomes of this study are particularly relevant to policymakers and stakeholders involved in initiatives to foster financial inclusion and sustainable development in rural communities. In addition, these findings will help researchers and VICOBA groups.

**Keywords:** Community Banks, ICT, Management, Ruvuma Region, Southern Tanzania, Use of ICT, VICOBA, Village Community Banks

## I. INTRODUCTION

The use of Information and Communication Technology (ICT) is growing rapidly across sectors, especially in banking (Kumar et al., 2021; Rwela, 2024; Affum-Osei et al., 2015; Adebayo et al., 2017; Siano et al., 2020; Porter & Miller, 1985; Salum, 2017; Bakari et al., 2014; Wiredu et al., 2020; Yang et al., 2005). This growth is due to ICT's ability to connect various tools and systems (Rwela, 2024; Bradley & Stewart, 2003; Lucas & Akarro, 2016; Lushakuzi et al., 2017; Lwoga & Chigona, 2019; Madaha, 2018; Magali, 2018). Hardware, software, networks, data management systems, cloud storage, communication platforms, and automation tools are included (Bradley & Stewart, 2002). These examples show how ICTs have shaped our modern world, including personal connections, worldwide communication, and industrial automation. Technology creates business, educational, employment, civic participation, and recreational opportunities (Lwoga & Chigona, 2019; Kesanta & Andre, 2015). Supply chain automation, mobile banking, and associated apps can improve financial operations and help marginalized populations (Lucas & Akaro, 2016; Lushakuzi et al., 2017; Lwoga & Chigona, 2019; Madaha, 2018; Magali, 2018).

This global discourse concentrates on ICT's role in financial inclusion and banking accessibility. A global paradigm shift in the use of financial institution technology is underway. This change goes beyond digitizing transactions to help marginalized people access financial services securely and effectively (Bradley & Stewart, 2002). Village community banks aim to empower rural residents with affordable, tailored financial services. Village community banks (VICOBA) were founded by Nobel laureate Muhammad Yunus, who founded the Grameen Bank in Bangladesh. Yunus pioneered microfinance, lending small amounts to disadvantaged people to start or grow their businesses. This innovative financial inclusion strategy showed how financial services can benefit economically disadvantaged places

(Bradley & Stewart, 2002; Affum, 2022; Chatterjee & Das, 2021). Scholars like Esther Duflo have studied the effects of microfinance, continuing Yunus' legacy. Duflo's research has illuminated the efficacy of microfinance schemes and the need for therapy tailored to demographics. These groups require members to save before receiving low-interest loans (Bradley & Stewart, 2002).

ICT has become essential in connecting traditional banking systems with alternative banking institutions, reflecting Village Community Banks (VICOBA)'s goal of serving their local populations. In numerous countries, village community banks (VICOBA) have improved financial inclusion through ICT (Bradley & Stewart, 2002; Adebayo et al., 2017; Kimiti, 2024). Technology has transformed grassroots financial institutions in Asia, including India (Kimiti, 2024; Bradley & Stewart, 2002). Mobile banking and biometric identification have made rural populations more bankable, in line with the concept of village community banks (Aker & Mbiti, 2010; Magali, 2021; Magesa & Akidda, 2014; Malamsha & Zakaria, 2016). Grameen Bank in Bangladesh empowers rural populations through ICT innovations such as mobile microfinance (Bradley & Stewart, 2002). In the US, digital banking and fintech solutions have underscored the importance of accessible financial services, which community-oriented banks aim to provide. Both sites demonstrate how ICT reduces financial inequities, empowers marginalized populations, and promotes local economic development.

In Africa, VICOBA was first established in Niger in 1991, known as Mata Masu Dubara, meaning “women in the move” (Kimiti, 2024; Affum, 2022; Basweti et al., 2013; Lucas et al., 2016; Lushakuzi et al., 2017; Lwoga & Chigona, 2019; Madaha, 2018; Magali, 2018). This implies that, initially, VICOBA aimed to promote women's development. According to Kimiti (2024), VICOBA in Tanzania is estimated to comprise 50,000 groups with about 4.4 million clients and a capital of 1.5 trillion Tanzanian Shillings (TZS). Furthermore, Bradley & Stewart (2002) argued that VICOBA serves the majority of Tanzanians experiencing poverty that is not served by formal financial institutions. Similarly, Kesanta and Andre (2015) argued that VICOBA targets poor people living in remote areas, many of whom cannot access formal financial services. According to Oladejo and Akanbi (2012), a standard VICOBA group has 30 members, although others may have fewer or more. Usually, each VICOBA group is established after training in operating procedures, and it comprises the group leaders who oversee it. Furthermore, VICOBA is guided by laws agreed upon by all group members. VICOBA helps its members by providing savings opportunities, training, loans, insurance services, and connecting members to access other opportunities such as health insurance and legal services (Bakari et al., 2014; Adebayo et al., 2017; Mkaro et al., 2023; Moyo et al., 2023; Mponzi et al., 2023). VICOBA also strengthens the management of scarce financial resources and risks. Magali (2025) proposed VICOBA as a tool for poverty alleviation in Tanzania. VICOBA members, through training in various fields and loan disbursements, have improved food security, housing, education, and health services. Moreover, VICOBA has enabled access to loans and promoted members' participation in economic activities. This study applied the Sustainable Livelihood Approach (SLA) to examine VICOBA's role in industrialization, as the literature indicates that VICOBA has played an important role in livelihoods and may act as a catalyst for sustainable industrialization and clients’ livelihoods (Muganda, 2016; Nair & Fissha, 2010; Ngalemwa, 2013; Ollotu, 2017).

In general, Africa shows how ICT has revolutionized financial inclusion, especially in community banks. Information and Communication Technologies (ICTs) are introduced amid unique challenges and opportunities, such as VICOBA's lack of an effective operations monitoring system (Mponzi et al., 2023; Magali, 2021; Magesa & Akidda, 2014; Malamsha & Zakaria, 2016), which leads to inefficient financial management, inaccurate record-keeping, and insufficient real-time oversight (Shau, 2022). The integration of ICTs with African community-based finance models, such as VICOBA, has the potential to be revolutionary. Digital tools can boost grassroots financial inclusion and empowerment (Mponzi et al., 2023). In recent years, Nigeria has showcased the innovative use of ICT to transform financial services for underserved populations through village community banks. The Nigerian Communications Commission (NCC) reports 80% mobile penetration, enabling VICOBA to implement mobile banking services. Mobile banking transactions reached 2.3 trillion Naira in the previous fiscal year, indicating a growing reliance on digital financial services among rural populations, according to CBN statistics, with over 30% gains in financial literacy.

In East Africa, Tanzania is a key site where ICTs and community-based financial institutions, such as VICOBA, build a narrative of possibility and innovation, thereby altering financial frameworks (Muganda, 2016; Nair & Fissha, 2010; Ngalemwa, 2013; Ollotu, 2017). Digitizing and modernizing community-based finance systems, such as VICOBA, is growing in popularity. These actions encourage financial inclusion. VICOBA's 20% increase in financial inclusion in rural Tanzania (Mponzi et al., 2023) empowers communities to overcome poverty by integrating grassroots financial practices with ICTs. Digital technologies are being integrated into community-driven finance models to improve their efficacy and reach. Together with CARE International, the Economic Development Initiative of Tanzania, and the World Conference on Religion and Peace, VICOBA was founded in 2002. This community-based approach to banking services empowered low-income communities. It began in Tanzania's Karagwe, Mvomero, and Kilosa experimental districts. By 2009, VICOBA had 10,000 organizations and 500,000 members in Tanzania (Mponzi et al., 2023; Lucas & Akarro, 2016; Lushakuzi et al., 2017; Lwoga & Chigona, 2019; Madaha, 2018; Magali, 2018). This rapid expansion showed the model's ability to reduce financial exclusion and boost rural economic development (Mponzi et al., 2023; Shau, 2022).

According to Güven (2026) report, VICOBA has increased household income by 15% in its member areas. They now provide more services than savings and loans.

The Ruvuma Region in Southern Tanzania is a hub for the nationwide development of VICOBA. The introduction of ICTs into community-based financial institutions like VICOBA is a promising innovation in this diverse region with many landscapes and cultural identities. Ruvuma, like many regions of Tanzania, has struggled economically (, et al 2017; Kitomari & Abwe, 2016; Magali, 2021; Magesa & Akidda, 2014; Malamsha & Zakaria, 2016). Community banks began working with CARE International, the Economic Development Initiative of Tanzania, and the World Conference on Religion and Peace. Ruvuma oversees VICOBA's digital technology adoption amid ICTs' dominance of the global banking sector. The modernization and digitization of Ruvuma's community-based financial models are accelerating. These programs increase VICOBA's influence and accessibility, boosting regional financial empowerment.

This study explores how Village Community Banks (VICOBA) uses ICTs, revealing potential and innovation. In Southern Tanzania, grassroots financial institutions like Ruvuma demonstrate the revolutionary power of digital technologies. According to this study, ICTs may help VICOBA increase financial inclusion and community empowerment. This paper investigates ICTs and VICOBA to show how technological advances could make traditional financial institutions more inclusive and sustainable for underrepresented people.

### 1.1 Research Questions

i. What is the state of ICT use in Village community banks in the Ruvuma Region?
ii. What are the uses of information and communication technologies in village community banks in the region?
iii. What are the impacts of using information and communication technologies in village community banks in Ruvuma Region?

## II. LITERATURE REVIEW

### 2.1 Theoretical Framework

Evaluating whether investments in ICT influence organizational performance has long been an important topic in information systems research. Studies have been conducted to explain the relationship between ICT usage and VICOBA. ICT usage has the potential to improve VICOBA’s performance and enable it to face more competitive forces (Porter & Miller, 1985). Babbie (1999) defines a theory as a systematic explanation of observations related to a particular aspect of life. Theory helps to compare what is logically expected with what is actually observed. Over the past decade, there has been a significant effort to automate in Tanzania, driven by rapid advances in ICT (Wiredu et al., 2020). Unlike commercial banks, rural and community banks lag in adopting such technology, particularly computers and networking. Village community banking is a means of managing banking transactions in rural areas where bank offices are too far away to be useful.

Thus, Village community banking is every day in small towns and among farmers who live far from areas with more expensive populations and cannot make the effort to go there whenever they want to use banking facilities. Usually, a bank representative will visit these rural areas and bid to conduct transactions in an authorized manner (Ampah, 2010). In Tanzania, village community banking has been given the primary responsibility for providing banking services to rural and community residents. These services comprise banking, generating interest on funds deposited, and making loans available to qualified rural people, especially those in agribusiness, petty trading, and small-scale manufacturing (Ahlén, 2012). According to Basweti et al. (2013), the effects and challenges of ICT adoption in banks were investigated. Their report establishes the need for banks to teach the public how to use online banking services, for banks to invest more in ICT infrastructure, and for the government to reduce duties on ICT devices. In modern times, the dynamism of the Tanzanian banking industry has led to intense competition.

Nevertheless, despite improvements in ICT, many of the functions of Village community banking are still carried out manually. This problem has thereby reduced their competitive superiority in the industry. It has thus become common to see the giant commercial banks expand their operations to cover target markets previously reserved for Village community banking, thereby intensifying competition with Village community banking. Information and Communication Technology has widened the scope of banking practices, changed the nature of banking, and altered the competitive environment in which it operates. A comprehensive opening has occurred worldwide for banks, and they are now taking full advantage of these innovations to provide improved customer service amid competition and faster services that enhance productivity (Akinuli, 1999).

In this study, theories were employed because they enable connections, identify issues, and offer reasonable explanations regarding people and Information and Communication Technology usage in the development of village community banks in rural areas. According to Gargallo-Castel and Galve-Gorriz (2007) a study was conducted on organizational development relative to the intensity of integration and coordination of activities through ICT investment.

It was established that firms with improved organizational performance exhibit increased premium growth, lower operational costs, and better overall service delivery.

According to Gounaris et al. (2007), the purpose of ICT is to gather, analyze, evaluate, organize, and distribute timely, relevant, and accurate information to organizational decision-makers. The theoretical literature underpinning the research emphasizes the importance of ICT use for MFIs' performance within an organization. The theoretical literature review in this study was guided by two theories: the Technology Acceptance Model (TAM) and the Technology Adoption and Diffusion of Innovations Theory (TADIT), which are relevant to this study. These are among the relevant theories used to examine, analyze, and interpret ICT usage issues among people living in the Ruvuma region. An attempt has been made to discuss the history, origin, major strengths, and weaknesses of each of these theories in relation to the study.

### 2.1.1 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Fred Davis in 1989, is the foundational framework for predicting user adoption of information technology based on perceived usefulness and ease of use (Davis, 1989). TAM) in information systems is a system consisting of the network of all communication channels used within an organization. The theory explains how users come to accept and use a technology. The model suggests that when users are presented with a new software package, several factors influence their decisions about how and when to use it (Davis, 1986). TAM theory posits that perceived usefulness and perceived ease of use are the fundamental determinants of an individual's intention to use a system, which in turn leads to actual system use.

TAM found that users develop a positive attitude towards the technology when they perceive it as useful and easy to use. If a user perceives a specific technology as useful, they will develop a belief in a positive relationship between use and performance for that technology. Since effort is a finite resource, a user is likely to accept an application when they perceive it as easier to use than another. The extent to which one evaluates new technology as useful will likely determine whether one is ready to use it. At the same time, the system's perception is influenced by how people around them evaluate and use it (Muganda, 2016; Rogers, 1995). VICOBA's IT adoption depends on perceived ease of use and perceived usefulness, which will eventually motivate their behavioral intention to use IT. The model aims to explain users' intention to use an information system by understanding the factors that lead users to accept or reject it.

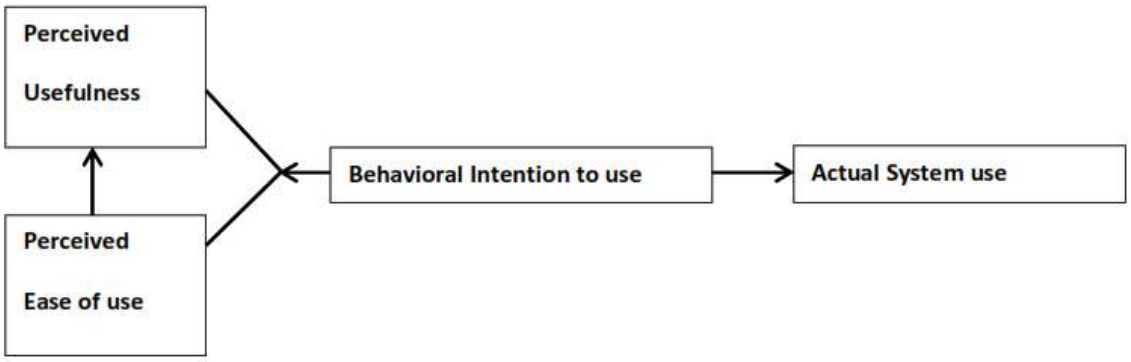


**Figure 1**
*Technology Acceptance Model (TAM)*
Source: Davis (1989).

### 2.1.2 Technology Adoption and Diffusion of Innovations Theory (TADIT)

Diffusion of Innovations is a theory that seeks to explain how, why, and at what rate new ideas and technology spread through cultures (Rogers, 1995). This theory was founded by Roger E.M in 1962 and revised in 2003. Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system (Rogers, 1995). The model recognizes innovation as any new idea, practice, or object considered new to an individual. The diffusion of innovations involves both mass media and interpersonal communication channels (Rogers, 1995). Technological Diffusion of Innovations Theory states that potential adopters of a technology progress through five stages over time to achieve full diffusion. First, they must learn about the innovation (knowledge); second, they must be persuaded of the value of the innovation (persuasion); they then must decide to adopt it (decision); the innovation must then be implemented (implementation); and finally, the decision must be reaffirmed or rejected (confirmation).

For VICOBA to introduce different technology-related services, they need to develop informative campaigns aimed at connecting innovators and users through sharing available technologies that are applicable to them and their customers, such as communication channels, including interpersonal communication or mass communication people

and share new innovations and adoptions available to them to enhance VICOBA's performance by increasing the number of customers and reducing service time. MFIs will connect innovators with the challenges arising from current technology to improve the next version so it meets users' expectations.

## 2.2 Empirical Review

### 2.2.1 Status of ICT in Financial Inclusion and VICOBA

Lapukeni (2015) acknowledges progress in financial service access through mobile wallets such as M-Pesa, particularly for women in Tanzania. However, they highlight persistent gender disparities stemming from limited mobile phone ownership and social norms that restrict financial autonomy (Maldeni & Jayasena, 2009; Jollystar & Lyimo, 2023; Milonge, 2014). The study advocates targeted interventions, such as digital literacy training and gender-sensitive product development, to bridge the gender gap and optimise mobile money's potential for inclusivity. This offers a nuanced understanding of ICT's complex relationship with financial inclusion in Tanzania.

Integrating ICT into VICOBA has immense potential to enhance financial inclusion and rural community empowerment in Tanzania (Lucas et al., 2016; Lushakuzi et al., 2017; Lwoga & Chigona, 2019; Madaha, 2018; Magali, 2018). However, it presents both exciting opportunities and complex challenges. Amini (2025) analyzes mobile banking adoption practices and challenges within VICOBA in Tanzania. The research provides a timely snapshot of the current landscape, detailing Types of mobile apps/platforms used by VICOBA, Key benefits observed (improved loan management, transparency, record-keeping), Challenges faced (digital literacy gaps, limited internet access, data security concerns), and emerging trends (integration with digital identity systems, agent banking networks)

### 2.2.2 Understanding Village Community Banks (VICOBA)

VICOBA is a group of up to 30 people who meet regularly, usually once per week, to save shares and lend to members. Among the 30 people, there is one chairperson, one secretary, and one treasurer. In Tanzania, VICOBAs were adopted initially from Niger, in West Africa, where they were popularly known as "Mata MasoDubara" (MMD) (Magesa & Akidda, 2014; Lucas & Akaro, 2016; Lushakuzi et al., 2017; Lwoga & Chigona, 2019; Madaha, 2018; Magali, 2018). The model was introduced in Tanzania as VICOBAs by SEDIT, CARE, and WCRP in 2002 (Magali, 2025). However, apart from Tanzania, the model is in use in various countries with different names. For instance, in Mozambique, VICOBAs are known as OPHIVELLA, in Uganda as JENGA, and in Zanzibar as JOSACA. CARE International provided different acronyms, with modifications tailored to local needs (Ngalemwa, 2013). According to Ahlen (2012), the VICOBAs concept was introduced in Zanzibar before spreading to other parts of the United Republic of Tanzania. Specifically, it aimed at fostering members' ability to innovate and manage income-generating activities. Vicobas do employ joint liability lending (JL), whereby the borrower and one or more group members assume liability for one another's debts (De Quidt et al., 2018; Adebayo et al., 2017; Maldeni & Jayasena, 2009; Jollystar & Lyimo, 2023; Milonge, 2014). This lending model makes it possible for everyone to qualify for a loan. Rutenge (2016) reveals that members of VICOBAs have created opportunities for entrepreneurship. However, Kitomari and Abwe (2016) argued that VICOBAs are not sustainable livelihood strategies because they fail to empower members to cope with and recover from hardship. Providing micro-credit alone, without business skills and supervision, will not improve members' living standards (Lushakuzi et al., 2017).

This study has focused on IR-VICOBA. An IR-VICOBA is a tailored microfinance program designed to provide credit to low-income people who need capital to start their own businesses, bringing together groups of 30 people. It provides mutual support and encouragement, empowering community members to work together to achieve sustainable development. Apart from the microfinance role, VICOBAs increase the ability to utilize resources, engage in off-farm employment, and develop accounting and business management skills. The introduction of VICOBAs in 2007 was a vehicle for the development of disadvantaged people. IR-VICOBA is a community-based economic empowerment model that addresses economic deficits faced by disadvantaged people, including women. In addition to other features of VICOBA shared earlier (Ngalemwa, 2013; Rutenge, 2016; De Quidt et al., 2018), VICOBA is a solidarity group in which poor and marginalized people from various religions and denominations empower themselves economically and socially by organizing, saving, and lending among themselves. IR-VICOBAs are interreligious and devoted to fostering social cohesion and mutual trust among coexisting communities, and, in so doing, they stand for peacebuilding and peaceful coexistence (Maldeni & Jayasena, 2009; Jollystar & Lyimo, 2023; Milonge, 2014).

Rutenge (2016), Diniz et al. (2009), and Diniz et al. (2008) emphasize VICOBA's potential, particularly with ICT-enabled solutions. He defines them as member-owned, village-level institutions that offer microcredit and savings services to marginalized populations. The group lending model, where members guarantee each other's loans, underscores trust and social capital within communities. Anyu highlights the potential of ICT integration to streamline operations, increase transparency, and improve access to financial services. De Quidt et al. (2018) further explore VICOBA in the Tanzanian context. They define them as informal village-level institutions with elected committees, peer monitoring systems, and flexible savings/loan arrangements. They distinguish VICOBA from other

microfinance institutions by emphasizing their reliance on social networks and trust. This deeper explanation underscores VICOBA's cultural and historical context, underscoring its importance in promoting financial inclusion, poverty reduction, and rural economic empowerment. The functions of VICOBA include the mandate to undertake banking business, subject to the limitations and manner provided for in the Banking Act of Tanzania 2023. It has the following as its core mandate or functions (1) Offering financial advice to its customers and others in rural areas, (2) To offer credit facilities to small-scale fishermen and other economically active people in the rural areas, (3) It renders fund management services, (4) It develops credit assessment procedures and monitors loans and advances, (5) It gives cash and receives excess cash, (6) It identifies viable industries in their respective catchment areas for investment and development, and (7) to mobilize resources locked up in the rural areas into banking systems to facilitate development

### 2.2.3 Impact of ICT on Village Community Banks' Financial Performance

Fundamentally, all the traditional banks in Ghana are spending vast sums of money on gaining ICT equipment, networking their various branches, and employing IT personnel to manage them. These, coupled with the high cost of training staff to use this IT equipment, negatively affect banks' balance sheets in the short run. Thus, these traditional banks acquire several ATMs, Computers, and costly software, issue electronic cards, and pay for all of it, incurring costs for themselves.

Rural banks in Ghana have recently embraced computerization, like these traditional banks. Henceforth, it has become necessary to determine whether ICT has a positive impact on the performance of these rural banks, thereby justifying the costs incurred. Most managers of several rural banks in Ghana are now considering adopting ICT for their daily operations. The question now is: what is the impact of ICT on the mobilization of deposits in the rural banks? Is there a meaningful relationship between ICT usage and the profitability of rural banks? Does ICT use affect the credit administration of rural banks? The main objective of this study is to assess the impact of ICT on rural bank management. The specific objectives are: to examine the impact of ICT on deposit mobilization; to evaluate the impact of computerization on loan recovery; and to examine the impact of computerization on the profitability of rural banks. The study focuses on the impact of ICT on rural bank management, as perceived by staff and management, following its adoption. In general, current studies have established two positive impacts regarding the relationship between ICT and rural banks' financial performance; Firstly, ICT can reduce banks' operational costs (the cost advantage). Secondly, ICT can facilitate transactions among customers within the same network (the network effect) (Farrell & Saloner, 1985; Katz & Shapiro, 1985; Economides & Salop, 1992).

Truly, Saloner and Shepard, using data on United States commercial banks for the period 1971-1979, showed that concerns about network effects are important in the adoption of ATMs by United States commercial banks, a finding also supported by Milne (2006). Likewise, some studies agree with the positive impact of ICT spending on business value. Lucas & Akaro (2016), Lushakuzi et al. (2017), Lwoga & Chigona (2019), Madaha (2018), and Magali (2018) assess the impact of ICT progress on the profit and cost efficiencies of the US banking sector during the period 1992-2003. The study shows a positive correlation between the level of ICT implementation and both profitability and cost savings. Moreover, research by Maldeni & Jayasena (2009) also supports a positive linear relationship between ICT usage and banks' performance (deposit mobilization, loan recovery, and profit). Shu & Strassmann (2005) studied 12 banks operating in the US from 1989 through 1997, and discovered that although ICT has been one of the most marginal productive factors among all inputs, it cannot increase banks' profits. A study done by Maldeni & Jayasena (2009) assessed the impact of ICT on bank branch performance. They explained that ICT use at the bank branch involves three elements: ICT applications, staff and customer ICT literacy, and staff and customer attitudes towards ICT. They used Pearson's correlation coefficient to measure the linear relationship between variables. The analysis showed that ICT usage has a positive linear relationship with financial performance and quality performance of bank branches. From several empirical studies, it is evident that ICT has a significant positive impact on the financial performance of rural banks.

Wired et al. (2020) investigated ICT's impact on rural banking in Bangladesh, highlighting improved access to financial services and streamlined operations. His research demonstrates the positive impact of ICT on rural banking efficiency and accessibility, thereby fostering financial inclusion. However, a deeper analysis of adoption challenges and the nuanced socio-economic impacts across different groups in rural areas could provide a more comprehensive understanding. Furthermore, Wired et al. (2020) examined how ICTs impact financial inclusion through community banking in rural Latin America. His research likely highlighted the positive influence of ICT on improving access to financial services in rural communities. Its significance lies in showcasing how ICT can bridge financial gaps in underserved regions through community-driven banking initiatives. However, potential limitations include a lack of detailed analysis of specific ICT tools used or a deeper examination of adoption challenges. Wired et al. (2020) emphasize the transformative potential of digital platforms in empowering VICOBA groups, highlighting streamlined operations and enhanced financial inclusion. They advocate user-friendly interfaces and secure data management as

critical to the successful implementation and utilization of monitoring systems. While identifying key adoption factors, potential limitations include a lack of in-depth exploration of contextual variations and challenges specific to different VICOBA groups. A critical synthesis reveals a common thread emphasizing ICT's positive influence on financial access and operational efficiency in rural banking across diverse regions. However, these studies collectively lack in-depth analyses of the challenges encountered during ICT adoption and the socio-economic impacts. The gaps lie in the comprehensive analysis of the hurdles faced during ICT implementation and the nuanced socio-economic impacts, providing the groundwork for the present study to address them.

## III. METHODOLOGY

### 3.1 Research Design

Being a case Study from the Ruvuma region, this study used both explanatory and analytical research designs. The choice of the two-research design is based on the fact that these two approaches vary in their strengths and weaknesses; therefore, the study uses both approaches in complementary ways (Gay & Airasian, 2004; Milne, 2006). The explanatory research design, for instance, uses open-ended questions and probing, which gives participants the opportunity to respond in their own words rather than forcing them to choose from fixed responses, and quantitative methods demand (Mugenda & Mugenda, 2003; Mugenda & Mugenda, 2012). This approach enabled the study to explore the respondents `feelings and attitudes with regard to Information and Communication Technology usage in the development of VICOBA services in rural areas in the Ruvuma region, Tanzania. The analytical research design offers an opportunity to clarify the process of analyzing a data collection. An analytical research design was useful for examining the effects on MFIs' performance in loan delivery services in rural areas. In addition, a case study strategy was employed because this study aimed to conduct an intensive investigation into the challenges people face throughout the ICT usage process and the coping strategies they adopt to sustain VICOBA operations in the Ruvuma region. Qualitative and quantitative research methods were used to collect primary data about the problem under investigation. In addition, quantitative research was used to complement the qualitative approach.

### 3.2 Participants and the Study Area

The study was conducted in southern Tanzania, in the Ruvuma region, in Songea urban, which is familiar to the researcher and comprises many village community bank groups with diverse intercultural aspects. 15-member groups were interviewed. An average of four members from each was interviewed to collect qualitative data. These groups were earmarked based on friendship, neighborhood, and the presence of many groups in one location. As a result, all 40 participants in the study came from various business sectors and genders. The selection criteria included the extent of ICT integration, geographical location, and community size. This approach ensures that the sample is representative of the diversity within VICOBA entities (Shau, 2022; Mugenda & Mugenda, 2003; Mugenda & Mugenda, 2012).

### 3.3 Targeted Population

The target population of the study involved forty (40) people who are working in VICOBA business support services. These include VICOBA officers who are involved in VICOBA services, financial service vendors, ward officers, ICT managers, telecommunication experts, and government top management who will be purposively selected and working in Songea urban in the Ruvuma region

### 3.4 Sampling Procedures and Sample Size

The study used purposive sampling to identify respondents. Purposive sampling was adopted for this study, given the researchers' existing knowledge of the sample, which provides control over key study variables and sample homogeneity. This sampling method was adopted to allow the researcher to focus on people with specific characteristics who can assist with the relevant research.

The sample size for this study involved approximately forty (40) from 15 VICOBA member groups from Songea urban in the Ruvuma region. The 40 respondents constituted approximately 80% of the targeted population. According to Gay and Airasian (2004), a sample size of between 10 and 20 percent of the total population is representative and therefore appropriate for a descriptive survey study. A total of 10 respondents were sampled from each school.

### 3.5 Data Collection Instrument

To investigate the use of ICT in Village Community Banks, questionnaires and interviews were used. The study was conducted in southern Tanzania, in the Ruvuma region, in Songea urban, which is familiar to the researcher and comprises many village community bank groups with diverse intercultural aspects. As a result, all 40 participants in the study came from various business sectors and genders. The selection criteria included the extent of ICT integration, geographical location, and community size. This approach ensures that the sample is representative of the diversity within VICOBA entities (Shau, 2022). In addition to interviews, a separate sample of participants was administered

questionnaires to gather quantitative data. The selection criteria for both qualitative and quantitative participants included factors such as the extent of ICT integration, geographical location, and community size, ensuring that the sample was representative of the diversity within VICOBA entities (Pelleberg, 2012; Flick, 2014; Miles & Huberman, 1994)

To capture nuanced perspectives, the qualitative aspect of the methodology involves in-depth interviews and observational techniques. This approach allows for a richer, context-specific exploration of the current state, impacts, and opportunities related to ICT implementation in VICOBA. By immersing in the lived experiences and narratives of stakeholders, the study aims to uncover valuable insights that may be overlooked in purely quantitative analyses. Data were collected from primary sources via questionnaires and secondary sources through document reviews. Validity was ensured through established scales, focus groups, and literature, while reliability was addressed through consistent methodologies and measures of trustworthiness.

### 3.6 Data Analysis

The collected quantitative data and participant responses were rigorously analyzed. The analysis utilized for the qualitative data gathered from interviews. Quantitative data from the questionnaires were examined using appropriate statistical methods to identify patterns, trends, and correlations related to ICT usage in VICOBA. The qualitative and quantitative data analysis yielded a thorough assessment of the function and influence of ICT in VICOBA. The analysis sought to elucidate underlying meanings and enhance comprehension of the qualitative dimensions of ICT use in VICOBA by systematically organizing these themes.

### 3.7 Informed Consent and Ethical Considerations

It is important to note that participation in this study was entirely voluntary, and participants had the right to withdraw their consent at any point, for any reason, without facing any obligations or consequences. At the outset of the research, both the researchers and participants engaged in the informed consent process (Mugenda & Mugenda, 2003; Mugenda & Mugenda, 2012). During this process, participants received detailed information about the study's purpose, goals, and objectives. They were explicitly instructed to provide their responses with clarity and honesty. In addition, ethical considerations included obtaining research clearance, protecting participant confidentiality, and fostering a respectful and open research environment.

## IV. FINDINGS & DISCUSSION

### 4.1 What is the Current State of ICT Usage in Village Community Banks?

The current state of Information and Communication Technology (ICT) usage within Village Community Banks (VICOBA) is a crucial aspect to explore, as it reflects the technological landscape and adoption trends in these community-based financial institutions. Through analysis of survey responses, this study aimed to gain insights into the extent of ICT utilization, the specific tools employed, and the levels of satisfaction with the accessibility and usability of ICT platforms for conducting financial transactions within VICOBA groups. As shown in Table 1 below, the findings reveal a diverse spectrum of ICT usage among VICOBA groups, ranging from limited access to extensive integration, with varying levels of satisfaction with ICT platforms for financial activities. This result is consistent with studies by Kimiti (2024) and Maldeni & Jayasena (2009), who found that VICOBA has limited access to ICT tools and varying levels of satisfaction with them. The following sections provide a detailed examination of the collected data, shedding light on the current state of ICT use and its implications for VICOBA operations and member experiences.

**Table 1**

*Current State of ICT usage in VICOBA*

| Current State of ICT Usage | **Frequency** | **Percent** |
|---|---|---|
| limited access to ICT infrastructure, such as a computer | 20 | 50.0 |
| Moderate utilization of ICT for basic tasks | 8 | 20.0 |
| Extensive integration of ICT for various purposes | 4 | 10.0 |
| No ICT usage in VICOBA | 8 | 20.0 |
| Total | 40 | 100.0 |

Table 1 above illustrates the distribution of responses regarding the current state of ICT usage in VICOBA. It shows that 50% of respondents reported limited access to ICT infrastructure, such as computers, indicating a significant portion of VICOBA groups faces challenges in accessing basic ICT resources. Additionally, 20% of respondents reported moderate use of ICT for basic tasks, suggesting that some VICOBA groups are using ICT, albeit to a limited extent. Only 10% reported extensive ICT integration for various purposes, indicating that a minority of VICOBA groups

have fully embraced ICT. Notably, 20% of respondents reported no ICT use in their VICOBA groups, highlighting a significant proportion of groups that do not utilize ICT at all. This outcome is in line with the study done by Adebayo et al. (2017) who revealed that many VICOBA are ready to used ICT tools regardless of limited access to internet.

**Table 2**
*ICT Tools Used within VICOBA Groups*

| ICT Tools | **Frequency** | **Percent** |
|---|---|---|
| Smartphones | 12 | 30.0 |
| Mobile banking application | 8 | 20.0 |
| Accounting software | 2 | 5.0 |
| Mkoba | 18 | 45.0 |
| **Total** | **40** | **100.0** |

Table 2 outlines the specific ICT tools used within VICOBA groups. It shows that smartphones are the most commonly used ICT tool, with 30% of respondents reporting their usage. Mobile banking applications are also prevalent, with 20% of respondents utilizing them. Accounting software is used by a smaller percentage (5%) of VICOBA groups, indicating a lesser adoption of specialized ICT tools for financial management. "Mkoba" is listed as an ICT tool used by 45% of respondents, but without further context or clarification, it is unclear what this refers to.

**Table 3**
*Satisfaction with the Accessibility and Usability of ICT Platforms for Conducting Financial Transactions within Your VICOBA Group*

| **Satisfaction with the Accessibility** | **Frequency** | **Percent** |
|---|---|---|
| Very satisfied | 6 | 15.0 |
| Satisfied | 18 | 45.0 |
| Neutral | 12 | 30.0 |
| Dissatisfied | 1 | 2.5 |
| Very dissatisfied | 3 | 7.5 |
| **Total** | **40** | **100.0** |

This table presents respondents' satisfaction levels with the accessibility and usability of ICT platforms for conducting financial transactions within their VICOBA groups. The majority of respondents (60%) reported being satisfied with the accessibility and usability of ICT platforms, with 15% indicating they were delighted. However, there is a notable portion (10%) who expressed some level of dissatisfaction, with 7.5% being very dissatisfied. This suggests that while a significant proportion of VICOBA groups find ICT platforms satisfactory for financial transactions, there are still areas for improvement to enhance user experience and satisfaction.

### 4.2 What is the Use of ICT in Village Community Banks?

The use of Information and Communication Technologies (ICT) in village community banks (VICOBA) encompasses a range of tools and technologies that facilitate financial transactions, communication, and information management within these grassroots financial institutions. Through surveys, interviews, and observations conducted as part of this research, it was found that VICOBA members utilize a range of ICT tools, including smartphones, mobile banking applications, and accounting software. Smartphones emerged as a predominant ICT tool among VICOBA members, serving multiple purposes, including communication, accessing financial information, and conducting transactions. Notably, platforms like "Mkoba," provided by Vodacom, were identified as popular choices among VICOBA members, offering comprehensive financial solutions and facilitating various transactions and savings management. Furthermore, the integration of mobile banking applications and accounting software was observed, albeit to a lesser extent than with smartphones. VICOBA members use these tools to manage financial records, track savings, and facilitate transparent financial operations within community banks.

**Table 4**
*ICT Utilization in VICOBA*

| ICT Utilization | **Frequency** | **Percent** |
|---|---|---|
| primarily for financial transactions and record keeping | 5 | 12.5 |
| mainly for communication with members and stakeholders | 22 | 55.0 |
| utilized for both financial management and communication purposes | 3 | 7.5 |
| not utilized for any specific purposes within VICOBA | 10 | 25.0 |
| **Total** | **40** | **100.0** |

Table 4 reveals that ICT within VICOBA is primarily used for communication, with 55% of respondents indicating its main use is communication with members and stakeholders. However, only 12.5% reported utilizing ICT primarily for financial transactions and record-keeping, suggesting a potential gap in leveraging ICT for core banking activities

**Table 5**

*Usage of Smartphones for Financial VICOBA Activities*

| Usage of Smartphones | **Frequency** | **Percent** |
|---|---|---|
| Daily | 10 | 25.0 |
| Weekly | 5 | 12.5 |
| Monthly | 7 | 17.5 |
| Rarely | 12 | 30.0 |
| Never | 6 | 15.0 |
| **Total** | **40** | **100.0** |

Table 5 above delves into the frequency of smartphone use for financial activities within VICOBA. It reveals that a significant portion of respondents use smartphones for financial VICOBA activities, with 25% reporting daily usage and 12.5% reporting weekly usage. This highlights the widespread reliance on smartphones for financial transactions within VICOBA groups. However, it's notable that a considerable proportion (30%) reported rarely using smartphones for these activities, and 15% reported never using smartphones for financial VICOBA activities. This suggests that while smartphones are commonly used, some members may not have access to or utilize them for financial transactions within VICOBA.

**Table 6**

*Comfort Level when using ICT Tools for VICOBA-Related Activities*

| Comfort Level | **Frequency** | **Percent** |
|---|---|---|
| Not comfortable at all | 17 | 42.5 |
| Slightly comfortable | 7 | 17.5 |
| Moderately comfortable | 13 | 32.5 |
| Very comfortable | 3 | 7.5 |
| **Total** | **40** | **100.0** |

Table 6 above explores respondents' comfort levels when using ICT tools for VICOBA-related activities. It indicates that a significant portion of respondents (42.5%) reported being completely uncomfortable when using ICT tools for these activities. This suggests potential challenges or barriers to adapting to and effectively using ICT tools within VICOBA groups. However, it's encouraging that 32.5% of respondents reported feeling moderately comfortable, indicating some confidence in using ICT tools for VICOBA-related activities.

Table 7 outlines the challenges VICOBA members face when using ICT tools for their activities. The most prominent challenge reported is the lack of digital literacy, cited by 30% of respondents. This highlights the importance of addressing digital literacy gaps to enhance the effective utilization of ICT within VICOBA groups. Other notable challenges include poor internet connectivity (17.5%), security concerns (25%), and the high cost of technology (15%). These challenges underscore the complex landscape of ICT adoption within VICOBA and the need for targeted interventions to overcome barriers and improve ICT utilization to enhance financial inclusion and members' experiences.

**Table 7**

*Challenges Faced in Using ICT Tools for VICOBA-Related Activities*

| **Challenges Faced in Using ICT Tools** | **Frequency** | **Percent** |
|---|---|---|
| Lack of digital literacy | 12 | 30.0 |
| Poor internet connectivity | 7 | 17.5 |
| Security concerns | 10 | 25.0 |
| High cost of technology | 6 | 15.0 |
| Other (please specify) | 5 | 12.5 |
| **Total** | **40** | **100.0** |

### 4.3 What are the Impacts of Using Information and Communication Technologies in Village Community Banks?

The impact of ICT on the efficiency and transparency of financial operations within VICOBA is a critical aspect to examine, as it sheds light on the effectiveness of ICT tools in enhancing financial processes and governance within these community-based financial institutions. Table 8 below illustrates the perceived impact of ICT tools on the efficiency and transparency of financial operations within VICOBA (Village Community Bank) groups. Among the respondents, 20% reported a very positive impact of ICT tools, while another 20% reported a positive impact. Additionally, 10% of respondents expressed a neutral stance regarding the impact of ICT tools on financial operations within VICOBA groups. On the contrary, 30% of respondents perceived the impact as negative, and another 10% reported a very negative impact. It's worth noting that there is an additional entry labeled "6.00," which likely represents a data entry error or anomaly. Overall, the data suggests a range of perceptions among respondents regarding the impact of ICT tools, with a notable proportion expressing negative views, while others highlight positive or neutral perceptions. The following analysis presents the perceived impact of ICT tools on financial operations within VICOBA groups, as indicated by respondents in Table 8.

**Table 8**

*Impact of ICT Tools on the Efficiency and Transparency of Financial Operations within VICOBA Groups*

| Impact of ICT Tools | Frequency | Percent |
|---|---|---|
| Very positive | 15 | 37.5 |
| Positive | 5 | 12.5 |
| Neutral | 8 | 20.0 |
| Negative | 6 | 15.0 |
| very negative | 6 | 15.0 |
| **Total** | **40** | **100.0** |

Table 8 above provides insights into respondents' perceptions regarding the impact of ICT tools on financial operations within VICOBA groups. Notably, the majority of respondents perceive the impact as positive or very positive, with 37.5% reporting a very positive impact and 12.5% reporting a positive impact. This suggests that a significant proportion of respondents recognize the potential of ICT tools in improving the efficiency and transparency of financial operations within VICOBA groups. One member stated,

"*The introduction of mobile banking applications has significantly improved the efficiency of our financial transactions. It's much faster and more convenient compared to traditional methods (From the response on 03 of Nov.2025).*

However, it's essential to note that a significant proportion of respondents also expressed neutral or negative perceptions of ICT tools' impact. Another member shared, "While ICT tools have brought some improvements, we still face challenges with internet connectivity and understanding how to use accounting software effectively. It's not as straightforward as we hoped."

### 4.4 Discussion

This research reveals the significant utilization of ICT inside VICOBA and the diverse methods of their operational integration. Smartphone use became a primary ICT tool among VICOBA members, enabling communication, accessing financial data, and executing transactions. This is in line with the study done by Akinuli (1999), Haule (2015), Affum (2022) and Ampah (2010), all noting that Smartphones are popular ICT tools among VICOBA members. Moreover, platforms such as Vodacom's "Mkoba" were recognized as favoured options among VICOBA members, providing extensive financial solutions and enabling diverse transactions and savings management, as supported by Basweti et al. (2013). These findings underscore the growing reliance on ICT tools to oversee financial transactions and operations within VICOBA, underscoring the importance of technology in improving financial inclusion and efficiency among grassroots financial organizations. As stated by a VICOBA member on 21 December 2025,

*"The utilization of cellphones has revolutionized our financial management.'*

Accessing our savings, executing transactions, and communicating with other members is exceedingly convenient, particularly during these trying times. This sentiment illustrates the tangible advantages VICOBA members have gained from utilizing ICT tools, including smartphones and specialized platforms like 'Mkoba.' Despite the widespread use of ICT tools within VICOBA, the research indicated varying levels of comfort among members in using these technologies for VICOBA-related tasks. All these are also supported by the studies done by Baswet al. (2013), Lushakuzi et al. (2017), Lwoga & Chigona (2019), Madaha (2018), and Magali (2018) , who noted that the VICOBA gain advantages in the use of ICT in their daily activities, including smooth VICOBA operations. A significant percentage of respondents reported uneasiness, attributing it to factors such as insufficient digital literacy, inadequate

internet connectivity, security concerns, and the high cost of technology. The findings underscore the need to overcome obstacles to digital inclusion in VICOBA communities, specifically by providing training and support to improve digital literacy and resolving infrastructure issues to ensure reliable internet connectivity (Magali, 2021; Magesa & Akidda, 2014; Malamsha & Zakaria, 2016).

The current state of ICT utilization among VICOBA groups reveals a heterogeneous picture, with some groups adopting ICT tools as essential components of their operations, while others show reluctance or limited adoption of digital tools. Although cellphones, mobile banking applications, and accounting software are common across VICOBA groups, the degree of ICT integration varies among them. This heterogeneity highlights the necessity for customized strategies to enhance ICT adoption and ensure optimal utilisation of these tools among VICOBA communities, as supported by Chatterjee & Das (2021), Chao et al. (2024), Mkaro et al. (2023), Moyo et al. (2023), Mponzi et al. (2023) and Lwoga & Chigona (2019).

The data reveal diverse perceptions among respondents concerning the influence of ICT tools on VICOBA. Some individuals view the impact on the efficiency and transparency of financial operations within VICOBA groups as favourable or very positive, while others regard it as negative or very negative (Aker & Mbiti, 2010; Annor et al., 2024). "ICT tools have undoubtedly simplified certain tasks; however, challenges such as internet connectivity issues and security concerns undermine our confidence in employing these technologies for financial operations." The contrasting opinions underscore the intricacy of ICT adoption and its influence on grassroots financial organizations such as VICOBA. Factors affecting these perceptions may include the efficacy of ICT training and support, the quality of ICT infrastructure, and the congruence of ICT tools with the specific requirements and environments of VICOBA communities. The findings highlight the need to foster digital inclusion and address obstacles to ICT adoption in VICOBA communities to leverage Information and Communication Technologies to improve financial inclusion, transparency, and efficiency in grassroots financial organizations. Effective initiatives must encompass targeted training and support, enhanced digital infrastructure, and the alignment of ICT tools with the specific requirements and circumstances of VICOBA communities.

## V CONCLUSION & RECOMMENDATIONS

### 5.1 Conclusion

As detailed in the findings and discussion, the study shows how ICT is used in Village community banks. The research discovered a diverse spectrum of ICT usage among VICOBA; various ICT tools such as MKOBA, accounting software, smartphones, laptops, desktop computers, digital projectors, and others are widely used; smartphones are the most used, transforming how we manage our finances 60% of the majority are satisfied with the use of ICT tools in various VICOBA activities. Some use ICT primarily for financial transactions and record keeping, mainly for communication with members and stakeholders. The study revealed that ICT within VICOBA is primarily used for communication, with 55% of respondents indicating its primary use is communication with members and stakeholders. However, only 12.5% reported utilizing ICT primarily for financial transactions and record-keeping, suggesting a potential gap in leveraging ICT for core banking activities. Furthermore, the study revealed several challenges facing VICOBA in the use of ICT, including a lack of digital literacy, Poor internet connectivity, Security concerns, High cost of technology, and others. Notably, the majority of respondents perceive the impact as upbeat, with 37.5% reporting a very positive effect and 12.5% reporting a positive impact. This suggests that a significant proportion of respondents recognize the potential of ICT tools in improving the efficiency and transparency of financial operations within VICOBA groups. The introduction of mobile banking applications has significantly improved the efficiency of our financial transactions. It's much faster and more convenient compared to traditional methods. These findings contribute to the existing knowledge by providing a detailed understanding of the intricate relationship between ICT and grassroots financial entities. The outcomes of this study are particularly relevant to policymakers and stakeholders involved in initiatives to foster financial inclusion and sustainable development in rural communities

### 5.2 Recommendations

Generally, this research highlighted the transformative potential of ICTs for VICOBA in the Ruvuma Region in Southern Tanzania. The study examined the present status of ICT adoption in VICOBA, uncovering a variety of challenges in the use of ICT in VICOBA. This research has significance for policymakers and stakeholders engaged in promoting financial inclusion in rural Tanzania. The stated obstacles require specific strategies to rectify infrastructural deficiencies and enhance digital literacy. Stakeholders, such as NGOs and development organizations, are essential in offering support mechanisms that enable the proper incorporation of ICT into VICOBA operations. The research promotes a cooperative approach to overcoming the digital gap and empowering communities.

**Declaration of Interest**

The author declares that he does not have any known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

**Funding Declaration**

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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