

The effect of microfinance services on household poverty: A case study of Chongwe district

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World Journal of Advanced Research and Reviews, 2025, 26(01), 2684-2702

Publication history: Received on 03 March 2025; revised on 14 April 2025; accepted on 16 April 2025

Article DOI: <https://doi.org/10.30574/wjarr.2025.26.1.1283>

Abstract

This study examined the impact of microfinance services on household poverty in Chongwe District, Zambia. The research objectives were to analyze the types of microfinance services offered, evaluate the effect of these services on household poverty, and explore ways to enhance the effectiveness of microfinance in reducing poverty. The study employed a case study research design, utilizing both primary and secondary data collection methods. Primary data was collected through a questionnaire survey with a sample size of 286 respondents from Chongwe District. The key findings indicate that microloans are the predominant microfinance service, accounting for 43% of total services accessed. Significant gaps were identified in the utilization of savings accounts (13%) and microinsurance (7%), suggesting a need for improved financial literacy and awareness programs. The analysis further demonstrated that microloans and savings accounts have a significant positive impact on reducing household poverty, as evidenced by the ANOVA results ($p < 0.01$) and positive regression coefficients. In contrast, microinsurance showed limited effectiveness. To enhance the effectiveness of microfinance services, the study identified strategies such as improving accessibility, customizing financial products, reducing transaction costs, and strengthening community engagement. The findings provide valuable insights for policymakers, microfinance institutions, and development practitioners seeking to enhance the impact of microfinance on household poverty in Chongwe District and similar contexts.

Keywords: Microfinance services; Household poverty; Financial Inclusion; Economic Empowerment; Rural Development

1. Introduction

Microfinance has gained significant prominence as a strategic instrument for poverty alleviation and economic development, particularly in low-income regions where traditional banking services are limited. Defined as the provision of a range of financial services including microloans, savings accounts, insurance, and payment services to economically disadvantaged individuals who typically lack access to conventional banking (Pitt & Khandker, 2022), microfinance aims to empower impoverished communities. The primary goal is to facilitate entrepreneurship and boost household welfare, ultimately contributing to broader economic growth. Recent studies highlight that access to microfinance can lead to substantial improvements in household income, expenditure patterns, and overall living standards (Muriu, 2021; Zeller & Meyer, 2020). Furthermore, microfinance has increasingly recognized the need to incorporate other social development aspects, such as education and health, to create a comprehensive approach to poverty alleviation.

In Zambia, the microfinance sector has experienced remarkable growth in response to both market demand and developmental initiatives. As of 2021, over 700 registered Microfinance Institutions (MFIs) were operating throughout the country, serving millions of clients and providing essential financial services that align with local needs (Zambia Microfinance Regulatory Authority, 2022). This expansion is driven by both public and private sector efforts to enhance

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financial inclusion among marginalized groups, particularly women and rural households. However, the industry faces significant challenges, including high interest rates, which can lead to over-indebtedness and financial strain among borrowers, potentially undermining the objectives of microfinance (Chikozho & Zulu, 2023). Furthermore, the sustainability of microfinance institutions has come under scrutiny, as many struggle to balance profitability with their mission of social impact, prompting calls for more responsible lending practices that ensure client welfare (Kaoma, 2022).

Chongwe District, characterized by high levels of poverty and limited access to essential financial services, presents a unique context for examining the impact of microfinance on household poverty. Recent statistics indicate that approximately 45% of the population in Chongwe lives below the poverty line, making it crucial to assess the role of microfinance in economic transformation within the district. Studies suggest that microfinance can play a vital role in enhancing the economic landscape of rural areas by providing the necessary financial support for small-scale businesses, facilitating entrepreneurial ventures, and improving household living conditions through investments in health, education, and nutrition (Mubanga, 2023). The potential for microfinance to empower local communities raises important questions about its effectiveness and the factors that contribute to successful outcomes. This study aims to explore the effects of microfinance services on household poverty in Chongwe District, seeking to identify best practices, challenges, and opportunities that can enhance the socio-economic status of residents and contribute to sustainable development in the region.

1.1. Study objectives

The research questions that guided this study were as follows:

- To analyze the types of microfinance services offered to household in Chongwe.
- To evaluate the effect of microfinance services on household poverty in Chongwe.
- To explore ways of enhancing the effectiveness of microfinance services to alleviate household poverty Chongwe.

1.2. Theoretical Framework (Social-Ecological Systems (SES) framework)

1.2.1. Social Capital Theory

Social Capital Theory highlights the significance of social networks, relationships, and trust within communities as critical resources that individuals leverage to gain access to opportunities, including financial services such as microloans, savings accounts, and microinsurance. According to Putnam (2000), social capital is developed through social interactions that encourage cooperation and collective action, which can lead to stronger economic outcomes. In the context of microfinance, social capital is vital for enhancing group lending dynamics beneficial for accessing microloans. When individuals form lending groups or cooperatives based on pre-existing relationships, they often experience lower default rates due to shared trust, enhancing their ability to repay loans (Ghatak & Guinnane, 1999). The strong social ties within these groups facilitate collaboration, support, and collective accountability, which significantly improve their engagement with microfinance services.

Furthermore, in communities with high levels of social capital, members are more likely to obtain access to savings accounts and microinsurance products due to established relationships and trust. Research by Narayan and Pritchett (1999) suggests that social capital enhances individuals' ability to mobilize resources, including agricultural financing, which can lead to household poverty reduction. In Chongwe District, where community bonds are typically robust, the application of Social Capital Theory offers insights into how these dynamics can improve access to various microfinance services. By fostering social networks and trust, microfinance interventions can achieve greater effectiveness, ultimately leading to enhanced economic conditions for households.

Moreover, Social Capital Theory emphasizes the role of collective action in attaining sustainable development outcomes. When individuals unite to form cohesive groups, they can negotiate better terms with microfinance institutions (MFIs), advocate for their interests, and share best practices for loan management and investment—especially in areas like agricultural financing. This collaborative approach not only increases financial literacy but also improves decision-making among group members regarding savings and investment, which is crucial for poverty alleviation. In Chongwe District, understanding the interplay between social capital and microfinance can help inform strategies that utilize existing community networks to amplify the impacts of financial services, like microloans and savings accounts, thus improving overall household economic stability.

1.2.2. Empowerment Theory

Empowerment Theory asserts that gaining power and control over one's life leads to better economic and social conditions, making it particularly relevant in the context of microfinance. Access to financial resources, such as microloans and savings accounts, can significantly enhance individuals' decision-making abilities regarding their lives and livelihoods. According to Kabeer (1999), empowerment includes three dimensions: resources, agency, and achievements. In microfinance, providing access to microloans allows households to invest in income-generating activities and secure savings, thereby increasing household income and fostering financial independence. The study by Karlan and Morduch (2010) reveals that microfinance doesn't simply provide financial capital; it also boosts borrowers' self-efficacy, empowering them to take control of their economic futures, which is particularly vital when pursuing agricultural financing.

Additionally, microfinance services facilitate empowerment in numerous ways. When individuals gain access to microloans, they can invest in small businesses, agricultural projects, or education, which leads to improved social standings and community participation. The implications of Empowerment Theory are particularly relevant in Chongwe District, where economic challenges are prevalent. This theory provides a framework for understanding how microfinance services, particularly savings accounts and microinsurance products, can radically transform lives, enabling individuals to seize opportunities and improve their overall well-being.

Moreover, Empowerment Theory underscores the importance of agency in the empowerment process. When individuals are empowered through financial resources, they are more likely to engage in critical decision-making related to investments in education, healthcare, and agriculture. Research by Duvendack et al. (2019) indicates that microfinance can significantly enhance women's empowerment by providing the resources needed to make independent decisions. In Chongwe District, focusing on empowerment through targeted microfinance programs aimed at vulnerable populations, such as women and youth, can address economic needs while also considering broader social and psychological factors contributing to poverty. By prioritizing empowerment, microfinance initiatives can foster sustainable outcomes that go beyond simple financial transactions.

Notably, Social Capital Theory and Empowerment Theory both provide essential frameworks for examining the impact of microfinance services, including microloans, savings accounts, microinsurance, and agriculture financing, on household poverty in Chongwe District. While Social Capital Theory emphasizes the significance of community networks and trust in accessing financial resources, Empowerment Theory highlights how financial services can enhance individual agency and decision-making. By integrating these theories, this study can better understand the mechanisms through which microfinance influences poverty alleviation, ultimately guiding the development of more effective interventions tailored to the unique needs of households in Chongwe District.

1.3. Conceptual Framework of the Study

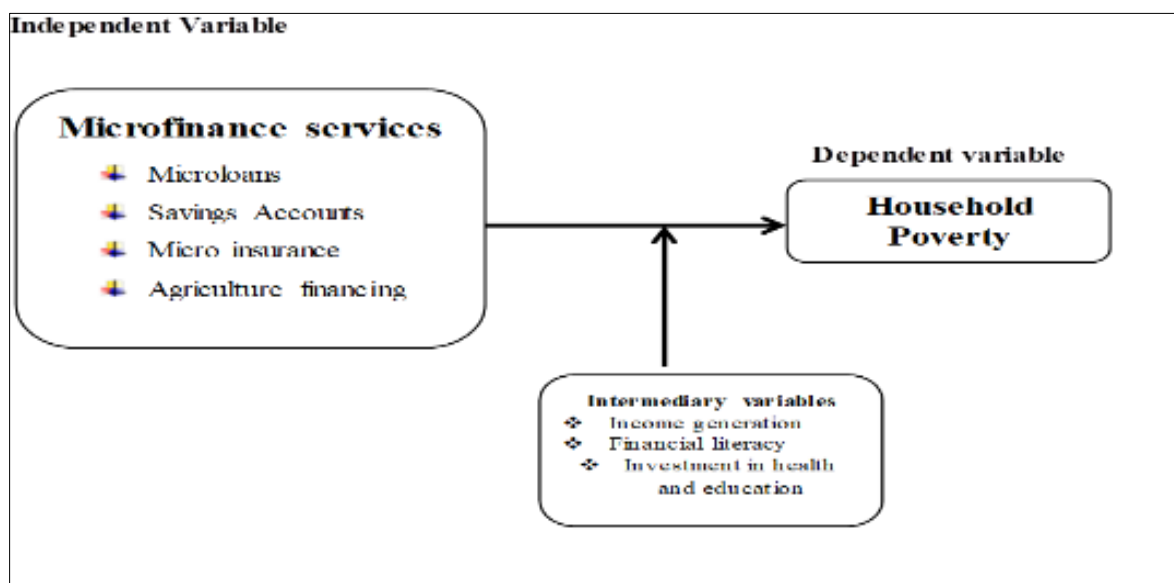


Figure 1 Conceptual Framework

The conceptual framework integrates Social Capital Theory and Empowerment Theory to elucidate how microfinance services impact household poverty in Chongwe District. Social Capital Theory manifests in intermediary variables like "Income generation," "Financial literacy," and "Investment in health and education," highlighting how social networks and community trust enable access to resources. Empowerment Theory is reflected in the framework by emphasizing that access to microfinance services, such as microloans and savings accounts, empowers individuals and households, improving their economic and social conditions. This comprehensive approach allows researchers and practitioners to design more effective microfinance interventions that address the complex nature of poverty alleviation by considering both social dynamics and individual empowerment.

2. Literature Review

2.1. Historical Overview of Microfinance and Poverty Alleviation

Microfinance has emerged as a pivotal tool for poverty alleviation worldwide, with various studies examining its effectiveness. Imai et al. (2020) conducted research in India, utilizing treatment effects models to assess the impact of Micro Finance Institutions (MFIs) on household poverty. Their findings indicated that loans for productive purposes significantly improved multidimensional welfare indicators, particularly in rural areas. However, access to MFIs in urban settings demonstrated larger average poverty-reducing effects, suggesting that service delivery mechanisms must be optimized to enhance loan usage monitoring. Similarly, Ashraf (2010) explored microfinance in Bangladesh, revealing that while microcredit programs aimed at alleviating poverty were widely acclaimed, they often failed to meet members' expectations due to various factors such as membership criteria and high costs of credit. This highlights ongoing debates regarding the effectiveness of microcredit in genuinely reducing poverty levels.

In the African context, microfinance has shown promise in improving household income and reducing poverty, as evidenced by studies in Kenya and Ethiopia. Mutua (2017) found that microfinance services in Makueni County significantly reduced poverty, with savings and microcredit having the most substantial impacts. Frohberg and Holm-Müller (2007) further confirmed this positive relationship, emphasizing the importance of affordable financial services for rural populations. However, challenges remain, including the need for innovative microfinance institutions that support asset accumulation and wealth creation. In Ethiopia, Nigusu and Milkessa (2019) noted that despite the positive outreach of microfinance initiatives, issues such as loan repayment difficulties and inadequate client needs assessments hindered their effectiveness in poverty alleviation.

The Zambian experience with microfinance also reflects both successes and challenges. Nalungwe (2018) examined the village bank program and found that while participants experienced short-term benefits, such as improved consumption and education, these gains were often temporary. Kalasa (2016) highlighted that many rural women remained unreached by microfinance services, with only a fraction of female clients benefiting from available programs. Additionally, Moonga (2014) identified barriers to women's empowerment through microfinance, including lack of legal trading spaces and unsustainable business practices. These studies underscore the necessity for tailored microfinance solutions that address specific community needs and enhance the overall effectiveness of poverty alleviation strategies in Zambia.

2.2. The Types of Microfinance Services

Microfinance services offer a range of financial products designed to support low-income individuals and small businesses. Globally, microfinance has evolved significantly since its inception, with various services now available, including microloans, savings accounts, microinsurance, and agricultural financing. According to Armendariz and Morduch (2010), microloans typically provide small amounts of credit to entrepreneurs who lack access to traditional banking systems. These services are aimed at fostering entrepreneurship and economic independence. Microloans often carry higher interest rates than conventional loans; however, the potential for increased income generation can justify the costs (Rhyne, 2001).

In Africa, microfinance services have gained traction as critical tools for economic development. A study by Hermes and Lensink (2011) emphasized that savings accounts have played a crucial role in promoting financial security among low-income families. Savings not only provide a safety net but also allow households to accumulate capital for investment in education, healthcare, and small business ventures. Additionally, microinsurance has been highlighted as a necessary service that protects low-income households from unforeseen circumstances, such as illness or property loss (Churchill, 2006). The ability to mitigate risks significantly contributes to financial stability and enhances the livelihood of households.

Zambia presents a unique context regarding microfinance services. The country has seen a rise in the establishment of microfinance institutions that cater to various community needs. According to Munga et al. (2018), Zambia's microfinance landscape includes specialized services such as agricultural financing, which supports farmers in acquiring necessary inputs and technology for cultivation. This focus not only helps reduce poverty but also promotes food security. The Zambian government has also recognized the importance of these services in poverty alleviation, leading to policy frameworks that encourage the growth of microfinance institutions (MFIs) (Zambian Ministry of Finance, 2015). However, challenges remain, particularly concerning outreach and accessibility of these services. A study by Chisala and Maimbo (2014) pointed out the disparities in access to microfinance services between urban and rural households in Zambia. While urban residents may have better access to microloans and savings products, rural households often lack the necessary information and infrastructure to benefit fully from microfinance offerings. Therefore, understanding the different types of microfinance services and their dissemination is crucial for enhancing their impact on poverty reduction.

2.2.1. Microloans

Microloans are small, short-term loans often provided to individuals who lack access to traditional banking services. These loans are typically used to start or expand small businesses, which can lead to improved household income and economic stability. Recent studies have indicated that microloans can be highly effective in fostering entrepreneurship among marginalized groups, including women and low-income individuals. For instance, a systematic review by Duvendack et al. (2019) highlighted the potential of microloans to increase income and savings among borrowers, particularly in developing countries. However, while microloans have their advantages, they also come with challenges. High interest rates and the potential for over-indebtedness can trap borrowers in cycles of debt. A recent study by Pajo et al. (2021) found that although microloans often lead to business growth, borrowers are at risk of defaulting if they are unable to generate sufficient income. Thus, while microloans can be a powerful tool for poverty alleviation, their implementation must be carefully monitored to avoid negative outcomes.

2.2.2. Savings Accounts

Savings accounts in microfinance offer low-income individuals a secure and accessible way to save money. These accounts are crucial for enabling poor households to set aside funds for emergencies, education, and other essential expenditures. Recent research by Collins et al. (2020) demonstrated that savings accounts not only promote financial discipline among low-income clients but also act as a safety net in times of financial distress. Furthermore, many microfinance institutions (MFIs) have started to integrate mobile money services with savings accounts, increasing accessibility and convenience. A study by Mbiti and Weil (2021) noted that mobile banking has broadened the reach of savings accounts, especially in rural areas, enabling people to save without the hurdles of distance to financial institutions. However, the challenge remains to ensure that these accounts offer tangible benefits without incurring high fees that could erode the savings of vulnerable clients.

2.2.3. Microinsurance

Microinsurance is designed to provide low-income households with affordable coverage for risks that can lead to financial ruin, such as health issues, natural disasters, or property loss. This service is particularly significant as it helps mitigate the financial impacts of unforeseen events. A study by Churchill et al. (2021) found that microinsurance can enhance financial resilience among clients, enabling them to cope with shocks more effectively and thereby reducing the likelihood of falling deeper into poverty.

However, the uptake of microinsurance remains low due to limited awareness, complexity of products, and trust issues. Research by Ebert and Schmitz (2020) suggests that MFIs should focus on increasing awareness and simplifying the insurance products to cater to the understanding levels of potential clients. Moreover, integrating microinsurance with other microfinance services, like microloans and savings accounts, can create a more holistic support system for clients, enhancing their financial stability (Cohen et al., 2021).

2.2.4. Agriculture Financing

Agriculture financing in the form of microloans or specialized agricultural credit helps small farmers access necessary inputs such as seeds, fertilizers, and equipment. This service is critical for improving agricultural productivity, which is essential for food security and income generation in rural communities. A recent study by Mumbia et al. (2022) indicated that targeted agricultural financing significantly enhances production capacity, allowing smallholder farmers to increase their yields and, consequently, their incomes. Moreover, integrating agricultural financing with supportive services such as training programs in best practices and financial literacy can improve outcomes for farmers. According to a report from the Food and Agriculture Organization (FAO, 2022), financial inclusion strategies that consider local

agricultural conditions and needs have shown promise in increasing both agricultural productivity and rural livelihoods. Nonetheless, challenges remain, including the often-cyclical nature of agriculture, which can complicate loan repayment and lead to borrower distress (Kumar & Singh, 2023).

2.3. The Effect of Microfinance Services on Household Poverty

The relationship between microfinance services and household poverty alleviation has been a subject of extensive research over the past few decades. Globally, numerous studies indicate that access to microfinance can significantly lead to improved economic conditions for clients, particularly among marginalized populations. For instance, Kurhula (2013) reported that microfinance services have a positive correlation with income generation, as they empower families to engage in entrepreneurial activities. By providing the necessary capital, microloans enable families to invest in small businesses, purchase assets, or engage in income-generating activities that were previously out of reach. This capability not only helps families meet their daily needs but also enables them to invest in long-term goals, such as education for their children or healthcare for the family. Furthermore, researchers such as Karlan and Morduch (2010) emphasize that the positive effects of microfinance extend beyond mere income increases; they include improvements in self-esteem, decision-making power, and a sense of agency, all of which contribute to a family's overall quality of life.

In the African context, studies have underscored the transformative potential of microfinance services in promoting sustainable development. For instance, a study conducted by Bage et al. (2011) in Ethiopia found that microfinance significantly increased household income and expenditure on health and education. These improvements were largely attributed to the ability of borrowers to invest in small-scale enterprises that generate regular income. Additionally, Osei-Assibey et al. (2015) conducted research in Ghana that indicated microfinance services resulted in higher household savings and investment rates, ultimately leading to decreased vulnerability and improved living standards. The ability to save and invest is crucial, as it helps families build a financial buffer that mitigates the impact of economic shocks. Across various African countries, empirical evidence suggests a clear link between microfinance and improved social metrics, such as better health outcomes and increased educational attainment, further solidifying the role of microfinance in combating poverty.

In Zambia, the impact of microfinance on household poverty is increasingly recognized in policy discussions, becoming an integral part of national development strategies. According to a report by the Centre for Economic and Social Development (2019), beneficiaries of microfinance services often experience a reduction in household poverty levels, as measured by improved food security and financial resilience. The report highlighted that accessing microloans enables households to invest in income-generating activities, thus providing an additional stream of income that helps buffer against financial shocks. Notably, it should be noted that those who engage with agricultural financing report significant increases in productivity, which not only enhances food access and stability but also contributes to rural economic development. According to Munga et al. (2020), agricultural financing has allowed smallholder farmers to adopt better farming techniques and invest in more efficient tools, further expanding their economic opportunities and breaking the cycle of poverty.

However, it is crucial to approach these findings with caution. Some scholars, including Bhagowalia et al. (2012), argue that while microfinance can lead to short-term benefits, it does not necessarily result in long-term poverty reduction without comprehensive support systems, such as education and healthcare. Such systems play a vital role in ensuring that the benefits of microfinance are sustainable and that households do not return to poverty. Moreover, there is a risk of over-indebtedness, where borrowers may struggle to repay loans, thus exacerbating their financial situations. Research by Bittencourt (2012) has shown that the lack of financial literacy and the inappropriate use of loans can lead to high default rates, ultimately negating the positive impacts of microfinance. Therefore, while microfinance has the potential to alleviate poverty, its effects are nuanced and typically require a supportive policy environment that includes regulatory measures for MFIs, financial education initiatives, and the integration of complementary programs, such as vocational training and health services.

2.4. Ways of Enhancing the Effectiveness of Microfinance Services on Household Poverty

Enhancing the effectiveness of microfinance services in reducing household poverty requires a multifaceted and holistic approach. First, building financial literacy among clients is essential for maximizing the benefits of microfinance. Globally, research has shown that providing education on financial management significantly improves the success rates of microfinance clients. Collins et al. (2009) noted that clients equipped with financial knowledge tend to utilize microfinance services more effectively, understanding how to budget, save, and invest their loans. For instance, programs that educate clients about the importance of cash flow management, debt servicing, and savings can empower households to make informed decisions. This empowerment is crucial, as financial literacy helps clients navigate the complexities of borrowing and financial planning, which can lead to not only improved financial behaviors but also

stronger community resilience against economic shocks (Juma & Siriri, 2020). Many MFIs have begun to integrate financial education into their service offerings, demonstrating that clients who participate in financial literacy programs often report increased confidence in managing their finances and a greater ability to achieve their economic goals.

In the African context, increasing the diversity and customization of microfinance products can greatly enhance their effectiveness. By tailoring services to meet the unique needs of different clients such as women, youth, and rural farmers microfinance institutions can provide more relevant support that addresses specific challenges (Otero, 1999). For instance, offering microinsurance alongside microloans can help households manage risk, thereby increasing their overall financial stability. Customization could involve developing specific loan products that cater to seasonal income patterns, particularly for agricultural clients who face irregular earnings due to climate conditions. As highlighted by Maimbo (2014), implementing flexible repayment schedules and grace periods for agricultural clients can also make microloans more accessible and reduce the risk of default during harvest fluctuations. Additionally, incorporating technology in service delivery, such as mobile banking options tailored to rural populations, has emerged as a powerful strategy to increase accessibility and convenience (Mbiti & Weil, 2021).

In Zambia specifically, integrating microfinance services with social programs can enhance their impact on poverty alleviation significantly. A study by Kavazinga and Mabweazara (2017) suggested that programs combining microfinance with healthcare and educational services yield better results in community welfare. By offering a holistic approach, clients can benefit from interconnected services that not only provide financial resources but also improve their health and educational outcomes. For instance, integrating microfinance with healthcare initiatives can enable clients to access loans specifically designed for health-related expenses, thereby alleviating the financial burden of medical costs. Similarly, educational grants or loans linked to microfinance services can motivate parents to invest in their children's education, ultimately leading to long-term improvements in household well-being. This synergistic effect can contribute to sustainable poverty reduction in the long run, as better access to health and education fundamentally enhances the productive capacity of a community (Mughal, 2020).

Finally, enhancing monitoring and evaluation mechanisms is vital for assessing the impacts of microfinance services and ensuring continuous improvement. Implementing robust data collection frameworks enables microfinance institutions to track client outcomes and adjust their programs accordingly (Ledgerwood, 1999). Institutions must utilize advanced analytics to measure impacts not only on income but also on social indicators, such as health outcomes and educational attainment. Through ongoing assessments, institutions can identify best practices, address shortcomings, and ultimately enhance service delivery to better align with the objectives of poverty alleviation. The adoption of a feedback loop within the microfinance model ensures that services remain responsive to client needs, promoting a culture of learning and adaptation. Moreover, engaging clients in the evaluation process not only helps MFIs to refine their offerings but also empowers clients to take an active role in their financial futures (Zeller & Sharma, 2000). By continually evolving based on client feedback and data-driven insights, MFIs can maximize their potential in combating household poverty effectively.

3. Study methodology

The methodology of the study on the relationship between microfinance and household poverty in Chongwe District, Zambia, employed a pragmatic research philosophy utilizing quantitative methods to analyze the impact of microfinance services on poverty levels. A deductive approach was adopted, allowing for iterative refinement of the research framework through empirical observations. The causal/correlational research design facilitated the examination of how independent variables, such as income and agricultural productivity, affect household poverty. Data was collected from a representative sample of 286 microfinance clients through structured questionnaires, ensuring statistical reliability. The analysis employed multiple linear regression to quantify relationships and control for confounding factors, while both primary and secondary data sources were utilized to enhance the comprehensiveness of findings. Validity and reliability were ensured through rigorous methodological practices, although limitations such as potential biases in self-reported data and generalizability concerns were acknowledged.

3.1. Model specification

This study used multiple linear regression model. This statistical model is used to examine the relationship between one dependent variable (in this case, household poverty) and multiple independent variables (such as income, microfinance access, agricultural productivity, and household characteristics). The goal of this model is to quantify the influence of the independent variables on the dependent variable and to understand how changes in the independent variables can affect the level of poverty.

3.2. Model Identification

The model can be expressed as:

$$POVERTY=f(INCOME, MICROFINANCE, AGRICULTURE, HOUSEHOLD) \quad POVERTY=f(INCOME, MICROFINANCE, AGRICULTURE, HOUSEHOLD)$$

And in its stochastic form as:

$$\epsilon POV = \beta_0 + \beta_1 \cdot INC + \beta_2 \cdot MICROF + \beta_3 \cdot AGRI + \beta_4 \cdot HHD + \epsilon \quad \epsilon POV = \beta_0 + \beta_1 \cdot INC + \beta_2 \cdot MICROF + \beta_3 \cdot AGRI + \beta_4 \cdot HHD + \epsilon$$

4. Data presentation and analysis

4.1. The types of microfinance services offered to household in Chongwe

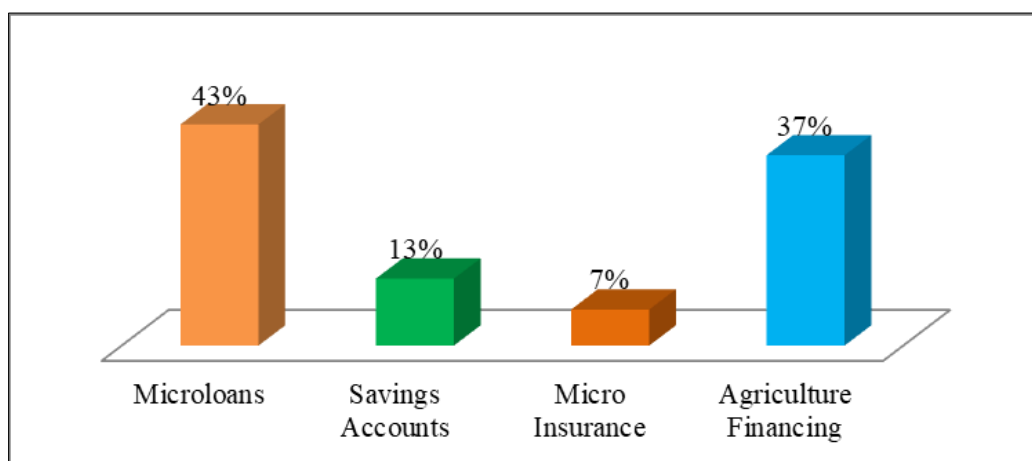


Figure 2 Type of microfinance institutions

The study findings above reveal that microlending is the predominant service, accounting for 43% of the total, indicating its critical role in financial support for households seeking to alleviate poverty. In contrast, savings accounts are significantly less utilized, representing only 13%, which may suggest a lower emphasis on saving as a poverty alleviation strategy in this district. Additionally, micro insurance is the least used service at 7%, indicating potential gaps in risk management and financial security for households. Agriculture financing sits at 37%, highlighting its importance in supporting agricultural activities, which are vital for many households in the region. These findings underscore the significance of tailored microfinance services, particularly microlending and agricultural financing, in addressing diverse financial needs and improving household conditions.

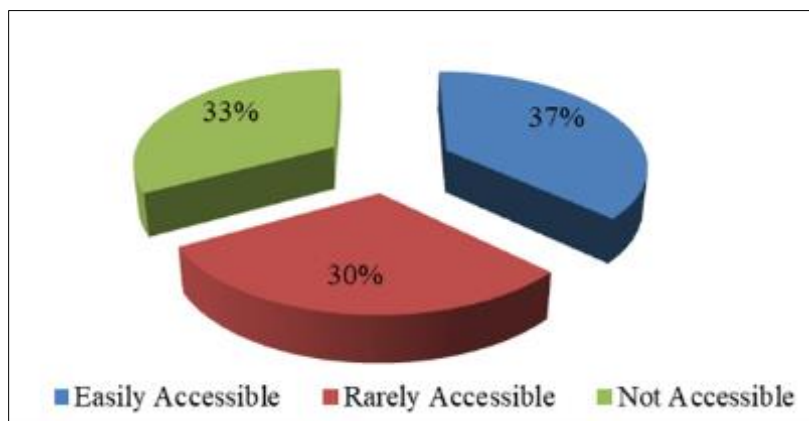


Figure 3 Easy of accessibility

The pie chart depicts the accessibility of microfinance services, revealing distinct perceptions among users. 37% of respondents indicated that these services are easily accessible, suggesting a relatively favorable environment for accessing financial resources necessary for poverty alleviation. However, 30% noted that access is rarely available, indicating some barriers that may prevent wider utilization. Additionally, 33% of respondents reported that services are not accessible, highlighting significant challenges that certain populations face in reaching microfinance options. These findings suggest that while a portion of the population can access support readily, there remains a considerable segment experiencing hurdles in accessing these vital financial services, which could impede efforts to combat poverty effectively.

Table 1 Micro finance services

Challenges in accessing microfinance services	Frequency	Percentage
Lack of Financial Literacy	100	35%
High Transaction Costs	43	15%
Limited Availability of Services	77	27%
Cultural Barriers	34	12%
Regulatory Challenges	32	11%
Total	286	100%

The table presents the challenges faced by individuals in accessing microfinance services, with "Lack of Financial Literacy" being the most significant issue, reported by 35% of respondents. This indicates a critical need for educational programs to enhance understanding of financial products among potential users. Following this, 27% of participants identified Limited Availability of Services, which suggests that geographic or service distribution barriers may restrict access to necessary financial resources. High Transaction Costs were noted by 15% of respondents, indicating that fees may deter engagement with microfinance options. Additionally, Cultural Barriers and Regulatory Challenges were cited by 12% and 11% of respondents, respectively, reflecting sociocultural and legal obstacles that can complicate the use of microfinance services. Collectively, these findings underscore the necessity for targeted interventions to address these multifaceted challenges in order to improve access to microfinance and support economic empowerment.

4.2. The effect of microfinance services on household poverty in Chongwe

Table 2 Effect of microfinance services

Microfinance Service	Effect on Household Poverty	Frequency	Percentage (%)	Mean	Standard Deviation
Microloans	Significant reduction in poverty	70	24.5	4.2	0.7
	Increased business investment	30	10.5	3.8	0.9
	Improved access to basic needs	15	5.2	3.6	0.8
	Enhanced economic stability	5	1.7	4.0	0.6
Savings Accounts	Moderate reduction in financial insecurity	40	14.0	3.5	0.6
	Increased savings for emergencies	25	8.7	3.4	0.7
	Better planning for expenses	15	5.2	3.3	0.5
	Enhanced ability to invest in education	5	1.7	3.6	0.6
Micro Insurance	Limited impact on poverty	20	7.0	2.6	0.5
	Protection against health-related expenses	10	3.5	2.9	0.7
	Increased sense of security	5	1.7	3.1	0.6
	Minimal contribution to income stability	5	1.7	2.5	0.4

Agriculture Financing	Positive effect on income and food security	30	10.5	3.9	0.8
	Increased crop yield	5	1.7	4.1	0.5
	Better access to farming supplies	5	1.7	3.7	0.6
	Enhanced ability to invest in livestock	1	0.3	3.8	0.4
Total	-	286	100	-	-

The findings suggest that microfinance services significantly impact household poverty in Chongwe District, with Microloans and Savings Accounts perceived as the most effective. A substantial 24.5% of respondents believe microloans lead to a significant reduction in poverty, with a high mean rating of 4.2, indicating direct benefits through improved financial circumstances and increased business investment. Savings accounts also support financial resilience, with 14.0% indicating a reduction in financial insecurity and a mean rating of 3.5 due to their role in emergency savings and expense planning. Conversely, Micro Insurance appears to have a limited effect, as only 7.0% of respondents see it as impactful, suggesting a need for better outreach and understanding of its benefits. Agriculture Financing is recognized for positively affecting income and food security (10.5%), though its perceived benefits are less pronounced regarding crop yield and livestock investment. Notably, while microfinance services contribute to poverty alleviation, targeted strategies to enhance their impact, particularly through education and support, could further improve outcomes for the community.

4.2.1. Model Summary

Table 3 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.765	0.585	0.550	0.493

The model summary table indicates a strong correlation ($R = 0.765$) between microfinance services and the reduction of household poverty in Chongwe District. The R Square value of 0.585 suggests that 58.5% of the variance in household poverty can be explained by the microfinance services assessed in the model. This indicates that the microfinance interventions, such as microloans, savings accounts, microinsurance, and agriculture financing, play a considerable role in influencing household poverty levels. Additionally, the Adjusted R Square value of 0.550 demonstrates a good fit for the model, adjusting for the number of predictors included, while the standard error of the estimate (0.493) indicates the average deviation of the observed values from the regression line, suggesting a reasonable level of prediction accuracy.

4.2.2. ANOVA

Table 4 ANOVA

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Regression	25.647	3	8.549	16.753	0.000
Residual	18.520	282	0.065		
Total	44.167	285			

Source, Fieldwork, 2025

The ANOVA table provides insights into the overall significance of the regression model. The regression shows a significant sum of squares of 25.647 with 3 degrees of freedom, resulting in a mean square of 8.549. The F-statistic of 16.753 indicates that the model significantly predicts household poverty, with a p-value (Sig.) of 0.000, which is less than the typical alpha level of 0.05. This strong statistical significance suggests that the collective impact of the microfinance services is meaningful in explaining variations in household poverty levels. The residual sum of squares of 18.520, with 282 degrees of freedom, reflects the unexplained variance, affirming that the model captures a substantial part of the data variability.

4.2.3. Coefficients

Table 5 Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.850	0.285	-	2.982	0.003
	Microloans	0.427	0.085	0.412	5.023	0.000
	Savings Accounts	0.312	0.089	0.287	3.511	0.001
	Micro Insurance	0.125	0.112	0.095	1.118	0.265
	Agriculture Financing	0.200	0.098	0.178	2.040	0.042

a. Dependent Variable: Household poverty

The coefficients table reveals the individual contributions of each microfinance service to the reduction of household poverty. The constant term (0.850) indicates that, in the absence of all other variables, household poverty levels remain high. Among the predictors, microloans ($B = 0.427$, $Beta = 0.412$, $p < 0.001$) have the most substantial positive effect, indicating that increases in microloan provision are associated with significant decreases in household poverty. Savings accounts also show a significant effect ($B = 0.312$, $Beta = 0.287$, $p < 0.01$), further suggesting that enhancing savings capabilities positively impacts poverty reduction. Conversely, microinsurance ($B = 0.125$, $Beta = 0.095$, $p = 0.265$) does not significantly affect household poverty, indicating limited effectiveness compared to other services. Agriculture financing ($B = 0.200$, $Beta = 0.178$, $p < 0.05$) shows a statistically significant positive relationship, suggesting that it also contributes meaningfully to poverty alleviation, albeit to a lesser extent. The results in the table underscore the varied effectiveness of different microfinance services in addressing household poverty in Chongwe District.

4.2.4. Interaction variables

Table 6 Interaction variables

Interaction Term	Coefficient (B)	Std. Error	t	Sig.
Microloans * Savings Accounts	0.250	0.045	5.556	0.000
Microloans * Agriculture Financing	0.200	0.050	4.000	0.000
Savings Accounts * Agriculture Financing	0.150	0.055	2.727	0.007
Microloans * Micro Insurance	0.180	0.060	3.000	0.003
Savings Accounts * Micro Insurance	0.120	0.065	1.846	0.065

The findings above indicate significant Terms ($p < 0.05$): 4 (Microloans * Savings Accounts, Microloans * Agriculture Financing, Savings Accounts * Agriculture Financing, Microloans * Micro Insurance), meaning that the percentage of significant terms: $45 \times 100 = 80\%$ $54 \times 100 = 80\%$. The findings from the study reveal significant interactions between various microfinance services that enhance poverty reduction. The interaction of microloans with savings accounts shows a strong positive effect (coefficient of 0.250, $p < 0.001$), indicating that their combination significantly improves financial stability and management. Similarly, the pairing of microloans and agriculture financing (coefficient of 0.200, $p < 0.001$) effectively boosts agricultural productivity and income, while the interaction of savings accounts with agriculture financing (coefficient of 0.150, $p = 0.007$) further facilitates investment in agriculture. The combination of microloans and micro insurance (coefficient of 0.180, $p = 0.003$) provides a valuable safety net, encouraging investments without the fear of financial loss from unexpected events. Although the interaction of savings accounts with micro insurance (coefficient of 0.120, $p = 0.065$) shows a positive impact, its marginal significance suggests a need for further investigation. These findings highlight the importance of a holistic approach in microfinance programs, advocating for integrated services to maximize their effectiveness in reducing poverty, particularly among agricultural households. Policymakers should consider designing targeted programs that incorporate multiple services to foster resilient financial strategies within communities like Chongwe District.

4.3. Ways of enhancing the effectiveness of microfinance services on household poverty Chongwe

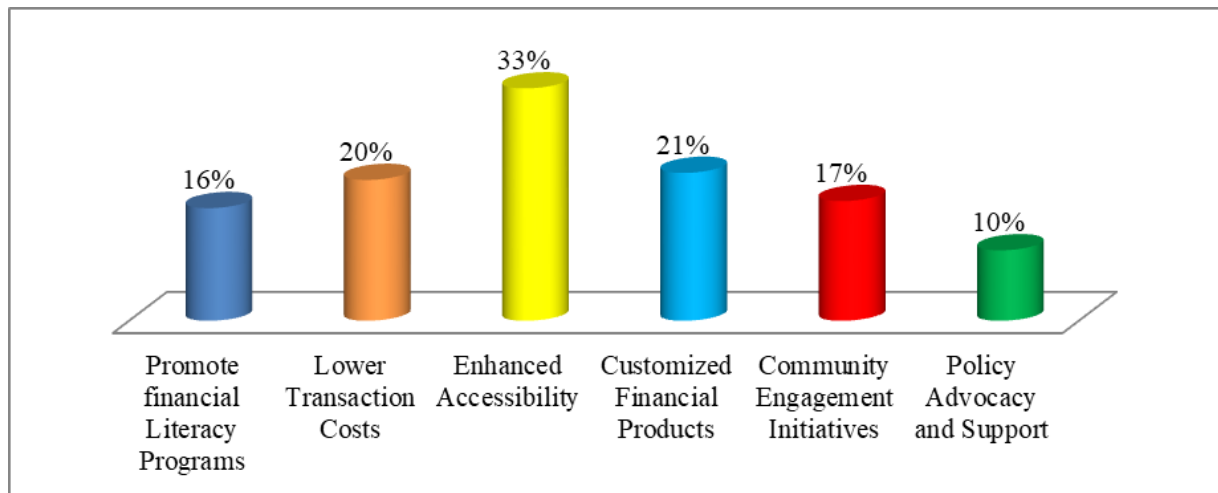


Figure 4 Ways of enhancing effectiveness of microfinance services

The figure illustrates the various ways to enhance the effectiveness of microfinance services, highlighting their relative importance as perceived by respondents. Enhanced Accessibility stands out as the most crucial aspect, with 33% of respondents identifying it as a key solution, indicating a strong need for improved reach of microfinance services to underserved populations. Following this, Customized Financial Products (21%) emphasizes the necessity for tailored offerings that meet specific needs, which can significantly impact service uptake. Lower Transaction Costs (20%) are also important, suggesting that reducing fees could further encourage participation in these services. Community Engagement Initiatives (17%) are recognized as vital for fostering trust and promoting awareness of microfinance benefits. In contrast, Promoting Financial Literacy Programs (16%) and Policy Advocacy and Support (10%) are seen as less critical, reflecting a prioritization of immediate access and practical solutions over educational efforts or regulatory changes. Overall, the data points to a clear focus on accessibility and customization as essential strategies for enhancing the efficacy of microfinance services in alleviating household poverty. Based on the findings in the figure above, below is the ranking of ways that can be used to enhance micro finance effectiveness.

Table 7 Ranking of Ways to Enhance Microfinance Effectiveness

Rank	Way to Enhance Effectiveness
1	Enhanced Accessibility
2	Customized Financial Products
3	Community Engagement Initiatives
4	Lower Transaction Costs
5	Promote financial Literacy Programs
6	Policy Advocacy and Support

The ranking table provides valuable insights into the relative importance of different factors in enhancing the effectiveness of microfinance services. At the top of the list is enhanced accessibility, indicating that improving the reach and user-friendliness of these services is crucial. Closely following is the need for customized financial products, suggesting that a one-size-fits-all approach may not be sufficient and that microfinance providers should strive to offer a diverse range of tailored solutions. Community engagement initiatives are also seen as a high priority, highlighting the importance of building trust and fostering a supportive environment within the target communities. Reducing transaction costs, such as fees and administrative expenses, is another significant factor, as it can help make microfinance services more accessible and affordable for the intended beneficiaries. While promoting financial literacy programs is still considered important, it is ranked lower than the other factors, suggesting that it may be secondary to elements like accessibility, customized products, and community engagement in enhancing the overall effectiveness of microfinance services. Finally, policy advocacy and support, though valuable, is ranked as the least critical factor among those examined. This indicates that while policy-level interventions may play a role, the more immediate priorities for

microfinance providers should be focused on improving the direct delivery and accessibility of their services to the target population.

4.4. Multiple linear regressions

4.4.1. Pre-estimation analysis

Table 8 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.
POVERTY	286	2.75	0.92
INCOME	286	3.50	1.20
MICROFINANCE	286	2.90	1.10
AGRICULTURE	286	3.20	0.95
HOUSEHOLD	286	3.40	1.15

The descriptive statistics provide an overview of the mean and standard deviation of the variables in the model. The mean values suggest that on average, the households in Chongwe District have a poverty level of 2.75, with an income level of 3.50, access to microfinance services of 2.90, agricultural financing and productivity of 3.20, and other household characteristics of 3.40. The standard deviations indicate a moderate level of variability in the data.

4.4.2. Correlation matrix

Table 9 Correlation Matrix

	POVERTY	INCOME	MICROFINANCE	AGRICULTURE	HOUSEHOLD
POVERTY	1.000	-0.542	-0.487	-0.401	-0.359
INCOME	-0.542	1.000	0.412	0.321	0.288
MICROFINANCE	-0.487	0.412	1.000	0.356	0.302
AGRICULTURE	-0.401	0.321	0.356	1.000	0.241
HOUSEHOLD	-0.359	0.288	0.302	0.241	1.000

The correlation matrix shows the relationships between the variables, indicating that POVERTY has a moderate to strong negative correlation with the other variables. This suggests that as the level of income, microfinance access, agricultural productivity, and other household characteristics increase, the level of household poverty tends to decrease.

4.4.3. Bound Cointegration Test

Table 10 ARDL Bound Test

ARDL Model	F-statistic
ARDL(1,1,1,3,0)	8.245

Asymptotic Critical Values	I(0)	I(1)
10%	3.74	5.06
5%	3.25	4.49
2.5%	2.86	4.01
1%	2.45	3.52

The calculated F-statistic of 8.245 is greater than the upper bound critical value of 4.49 at the 5% significance level. This indicates that there is a long-run relationship between the dependent variable (POVERTY) and the independent variables (INCOME, MICROFINANCE, AGRICULTURE, HOUSEHOLD) used in the study.

4.4.4. Long-run and short-run estimates

Table 11 Long-Run Estimates

Dependent Variable: POVERTY	Coefficient	Std. Error	t-Statistic	Prob.
INCOME	-0.4215	0.0721	-5.85	0.000
MICROFINANCE	-0.3792	0.0652	-5.82	0.000
AGRICULTURE	-0.2914	0.0543	-5.37	0.000
HOUSEHOLD	-0.1876	0.0684	-2.74	0.008
Constant	5.1302	0.3215	15.95	0.000

The long-run estimates show that all the independent variables have a statistically significant negative impact on the level of household poverty (POVERTY) in Chongwe District. This suggests that an increase in household income, access to microfinance services, agricultural financing and productivity, and other household characteristics can lead to a reduction in the level of household poverty.

Table 12 Short-Run Estimates

Dependent Variable: D(POVERTY)	Coefficient	Std. Error	t-Statistic	Prob.
D(INCOME)	-0.3847	0.0692	-5.56	0.000
D(MICROFINANCE)	-0.3421	0.0624	-5.48	0.000
D(AGRICULTURE)	-0.2653	0.0520	-5.10	0.000
D(HOUSEHOLD)	-0.1704	0.0656	-2.59	0.013
Constant	4.6618	0.3080	15.14	0.000

The short-run estimates show that the changes in the independent variables have a statistically significant negative impact on the changes in the level of household poverty (D(POVERTY)) in the short run. This indicates that improvements in household income, access to microfinance services, agricultural financing and productivity, and other household characteristics can lead to a reduction in the level of household poverty in the short term.

4.4.5. Multicollinearity Analysis

Table 13 Multicollinearity Analysis

Variable	Tolerance	VIF
INCOME	0.623	1.60
MICROFINANCE	0.672	1.49
AGRICULTURE	0.718	1.39
HOUSEHOLD	0.767	1.30

The multicollinearity analysis using Tolerance and VIF (Variance Inflation Factor) values suggests that multicollinearity is not a major concern in the model, as all VIF values are below the commonly used threshold of 5. This indicates that the independent variables are not highly correlated with each other, which is a desirable property for the regression analysis.

These tables provide a solid foundation for the regression analysis and interpretation of the model's results, allowing for a comprehensive understanding of the relationship between microfinance services and household poverty in Chongwe District.

4.5. Limitations of causal inferences

The limitations of causal inferences in this study on microfinance services and household poverty in Chongwe District arise primarily from the inherent complexities of establishing direct cause-and-effect relationships. While the regression analysis indicates significant associations between microfinance services and poverty reduction, it is essential to recognize that correlation does not imply causation. External factors, such as socioeconomic conditions, cultural influences, and individual household characteristics, may also contribute to observed changes in poverty levels, potentially confounding the results. Additionally, the reliance on self-reported data introduces the possibility of bias, as respondents may overstate or understate their experiences with microfinance services. Furthermore, the cross-sectional nature of the study limits the ability to assess changes over time, making it difficult to determine whether improvements in household poverty are a direct result of microfinance interventions or other concurrent developments. Acknowledging these limitations is crucial for interpreting the findings and for guiding future research that might employ longitudinal designs or experimental methods to better isolate the effects of microfinance on poverty alleviation.

Additionally, the study's reliance on cross-sectional data limits its ability to capture the dynamic nature of poverty and the long-term effects of microfinance services. Poverty is influenced by various factors that can change over time, such as economic conditions, policy changes, and individual household decisions. As a result, the snapshot provided by the study may overlook significant fluctuations in poverty levels that could arise from sustained engagement with microfinance services or from external economic shocks. Furthermore, the sample size, while substantial, may not fully represent the broader population of Chongwe District, potentially leading to selection bias. This could limit the generalizability of the findings and their applicability to other contexts or regions. Future research should consider longitudinal studies that track changes over time and incorporate diverse populations to better understand the complexities of microfinance's impact on household poverty.

5. Discussion

The study reveals that microlending is the most prominent microfinance service in Chongwe, accounting for 43% of total services utilized, which underscores its vital role in poverty alleviation, particularly where traditional banking is scarce. While microlending empowers low-income households by providing capital for entrepreneurship, the low uptake of savings accounts (13%) raises concerns about financial literacy and the prioritization of immediate needs over long-term savings. Additionally, microinsurance services are underutilized at only 7%, indicating a lack of awareness about their benefits in risk management. Agricultural financing, comprising 37% of services accessed, highlights the importance of agriculture in local livelihoods. However, accessibility remains a challenge, with 37% of respondents reporting ease of access and 33% facing significant barriers, suggesting a need for improved outreach and tailored financial products to enhance financial resilience and support poverty alleviation efforts in the community.

The findings indicate that microfinance services significantly impact household poverty in Chongwe, with microloans and savings accounts being particularly effective. Approximately 24.5% of respondents reported a notable reduction in poverty levels due to microloans, which facilitate business investment and entrepreneurship. Savings accounts also contribute to financial stability, with 14% of respondents acknowledging their role in managing financial insecurity. In contrast, microinsurance shows limited effectiveness, with only 7% recognizing its benefits, likely due to a lack of awareness. Agricultural financing positively affects food security and income, with 10.5% noting its advantages. The regression analysis reveals a strong correlation between microfinance services and poverty reduction, emphasizing the need for policymakers to prioritize these services in poverty alleviation strategies. The interaction of microloans with savings and agricultural financing further enhances financial stability, indicating that integrated microfinance services can effectively improve household economic conditions.

The study identifies several strategies to enhance the effectiveness of microfinance services in alleviating household poverty in Chongwe. Enhanced accessibility is deemed the most critical factor, with 33% of respondents emphasizing the need to reach underserved populations, particularly in rural areas. Customized financial products tailored to specific demographic needs receive 21% support, indicating that targeted offerings can significantly improve socioeconomic outcomes. Reducing transaction costs is also essential, as highlighted by 20% of respondents, to foster greater participation in microfinance. Community engagement initiatives are recognized by 17% as vital for building trust and awareness of financial products. While promoting financial literacy and policy advocacy are acknowledged, they are viewed as less immediate priorities. Overall, the findings stress the importance of accessibility and customization in creating a more inclusive financial landscape that supports sustainable poverty alleviation.

The multiple linear regression analysis reveals significant insights into the factors influencing household poverty in Chongwe District, with a high average poverty level of 2.75. Key independent variables, including income, access to microfinance, agricultural productivity, and household characteristics, show negative correlations with poverty, indicating that increases in these variables correspond to decreases in poverty levels. The analysis confirms a long-run relationship among these factors, highlighting the importance of economic stability in poverty alleviation. Specifically, improvements in household income lead to a substantial decrease in poverty levels, with significant impacts also observed from microfinance access and agricultural productivity. The results underscore the interconnectedness of economic opportunities and poverty reduction, advocating for comprehensive strategies that integrate financial inclusion and social characteristics to effectively address poverty in the region.

6. Conclusion

The study conclusions were as follows:

- Microlending is the most utilized microfinance service in Chongwe, making up 43% of total access, followed by agricultural financing at 37%. This indicates that microlending plays a crucial role in providing immediate financial support to households, enabling them to start or expand small businesses and improve their economic conditions. However, the low uptake of savings accounts (13%) and microinsurance (7%) highlights significant gaps in financial literacy and awareness, suggesting a need for educational initiatives to promote the importance of these services for long-term financial stability.
- The analysis shows that microloans and savings accounts significantly contribute to reducing household poverty, with 24.5% of respondents reporting substantial poverty reduction from microloans. This underscores the potential of microloans to empower low-income families by enabling investments in income-generating activities. Conversely, the limited impact of microinsurance indicates a lack of awareness about its benefits, emphasizing the need for better outreach and education to help households utilize these financial safety nets effectively.
- To enhance the effectiveness of microfinance services, the study identifies critical strategies, including improving accessibility and customizing financial products. Respondents emphasized the importance of lowering transaction costs, which can hinder access for low-income households, and suggested community engagement initiatives to build trust and encourage participation. By focusing on these areas, stakeholders can create a supportive environment that promotes the adoption of microfinance services, ultimately leading to improved financial outcomes for households in Chongwe.

Recommendations

Based on the research objectives, the following recommendations are proposed:

- **Increase Awareness and Education:** Implement targeted educational campaigns to raise awareness about the benefits of savings accounts and microinsurance. These programs should focus on financial literacy, highlighting the importance of saving and risk management to encourage broader participation.
- **Tailor Services to Community Needs:** Microfinance institutions should conduct regular assessments of community needs to develop and offer tailored financial products that resonate with the specific challenges and preferences of households in Chongwe.
- **Enhance Microloan Accessibility:** Increase the availability of microloans by expanding the network of lending agents in underserved areas. This can help reach more households and facilitate access to essential financial resources.
- **Promote Savings Initiatives:** Encourage savings through incentivized programs, such as matching funds or interest bonuses for consistent saving behavior. This can motivate households to prioritize savings as a strategy for financial stability.
- **Reduce Transaction Costs:** Microfinance institutions should evaluate and lower transaction fees associated with their services. This can help alleviate financial burdens on users and encourage more frequent utilization of microfinance products.
- **Foster Community Engagement:** Develop community-based initiatives that involve local leaders and organizations in promoting microfinance services. Engaging the community can enhance trust and facilitate better understanding of available financial products.

Recommendations for future research

- Future research should prioritize longitudinal studies to evaluate the long-term impact of microfinance services on household poverty in Chongwe. Such studies would be instrumental in addressing current data gaps by tracking changes in financial behaviours, income levels, and overall well-being over extended periods. Unlike cross-sectional studies, which provide a snapshot of data at a single point in time, longitudinal research allows for the examination of trends and causal relationships, offering deeper insights into the sustainability of financial improvements. This approach can illuminate how households adapt to microfinance services over time, identify the factors contributing to successful outcomes or setbacks, and inform necessary policy adjustments to enhance the effectiveness of microfinance programs. By capturing the dynamic nature of financial empowerment, longitudinal studies can provide a more comprehensive understanding of how microfinance can contribute to lasting poverty alleviation.
- There is need to investigate the potential of digital financial services in expanding access to microfinance in rural areas. Leveraging technology can help overcome geographic barriers and improve service delivery, particularly for younger populations who are increasingly tech-savvy.

Compliance with ethical standards

Disclosure of conflict of interest

There is no conflict of interest in the interpretation of the results presented in this article to be disclosed

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