



EXPLORING THE NEXUS BETWEEN MICROFINANCE AND POVERTY ALLEVIATION THROUGH MEDIATING ROLE OF MICRO SAVINGS TO ACHIEVE SUSTAINABLE DEVELOPMENT.

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Abstract

This paper attempts to evaluate the effects of different microfinance services, such as micro credit (MC), micro saving (MS), non-financial services (NFS), social intermediation services (SIS) and micro insurance (MIN) on poverty reduction (PA). It tries to assess the roles that these financial instruments play in minimizing poverty and enhancing socio-economic status of the underprivileged people. The positivist tool of research chosen, and quantitative data gathered in the form of structured surveys filled in by 248 people who took part in microfinance activities. To conduct the study, the researcher uses the Partial Least Squares Structural Equation Modelling (PLS-SEM) analysis to determine the direct and indirect symptoms of the microfinance services on reducing poverty. The paper evaluates some of the connection between the microfinance services and poverty alleviation whereby special consideration given to the inter-mediatory context of micro savings. The paper determines that micro credit, micro savings, and non-financial services to be instrumental in poverty reduction. Micro credit is the key instrument referred, which allows starting small businesses or improving the existing ones. Although there are less levels of uptake, micro savings demonstrate significant importance of serving the prospect of financial security and vulnerability against shocks. Financial services alone are not sufficient, where training and counselling are non-financial services that help them better the effectiveness of the financial services, particularly, in empowering individuals and community development processes. The study gives policymakers and microfinance institutions (MFIs) guidelines on what to do. Integration of non-financial services into microfinance services forms an addition to the long-lasting effect on the alleviation of poverty. The MFIs advised to make a more holistic approach that integrates the financial products with social support services. The work represents a contribution to microfinance literature by providing an environment in which various microfinance products related to alleviating poverty. Micro savings as a mediating factor is something that researchers have not focused on well enough and this paper fills the above gap providing fresh knowledge on the synergistic functioning of such services.

Keywords: *Microfinance, Micro Credit, Micro Savings, Poverty Alleviation, Non-Financial Services, Structural Equation Modelling*

1. Introduction

Microfinance identified as one of the most effective solutions to poverty and economic empowerment in the developing nations. It means the offering of micro credit or small amount of loans, saving and on the other hand of services to those people who normally do not have access



to organized financial markets such as the poor, women and everybody who lives in the rural areas (Vanroose & Espallier, 2009). Currently, Microfinance Institutions (MFIs) have become important players in the development discourse because of their ability to enhance access to financial services and enable economic activities for generating incomes. Therefore, microfinance is important in the realization of most of the United Nations Sustainable Development Goals especially those relating to poverty, women and economic empowerments (United Nations, 2020). When it comes to the fight against poverty and development of inclusiveness in the global economy, micro finance and poverty reduction are two rapidly developing links.

The link between micro finance and poverty reduction underpinned on the proposition that financial inclusion helps some persons to overcome certain disadvantages that keep them away from productive opportunities. In the poor counties, where people cannot easily access the bank and formal credit facilities, microfinance acts as the solution to financial instruments (Awaworyi Churchill et al., 2018). Microfinances are financial services for the provision of small procurement of funds to the poor who are mostly offered interest-free or insignificant interest loans to finance income-earning ventures such as business, farming, or school fees (Awaworyi Churchill et al., 2018). These small loans can in fact assist households to escape the poverty trap through promotion of business ventures and improvement on economic risk coverage besides increasing access to basic needs. Moreover, many programs also have financial management courses for borrower and savings products that allow them to be financially prepared during the economic downturns (Miled & Rejeb, 2015). Microfinance has therefore promoted better income levels, quality living standards, as well as eradication of poverty having a strong correlation to SDG 1 (No Poverty), which is to end poverty in all its forms (Irobi, 2008).

Microfinance still remains an active area of research since its effectiveness in reducing poverty or facilitating micro-credit and other developments that are essential for individuals as well as communities has not been fully realized or understood in the long run (Bel hadj Miled & Ben Rejeb, 2018). Current theorizing mainly targets on direct financial effects of microfinance; for instance, increased cash flows, business formation. However, there is still a disproportioned lack of information about integral causes of poverty, the problems of which microfinance does not solve, for example, education, medicine, and roads (Bateman, 2020). Moreover, although there exists literature on how microfinance affects women's economic status, its impact on gender and other SDGs has not been well investigated especially in terms of change at the broader social-economic transformation and to the entire community (Sultan & Masih, 2016). To an extent, this research seeks to undertake these gaps by examining the extensive and more holistic effects of micro-finance in poverty eradication and realization of the SDGs (Ezeanyeji et al., 2020). The purpose of the study is to measure the connections between different microfinance services (Micro Credit, Micro Savings, Non-Financial Services, Social Intermediation Services and Micro Insurance) and poverty alleviation. The aims are to investigate these associations individually and with mediating influence of micro savings, with the combined effect of the associations on poverty reduction.

The importance of this study is that it aims at improving the existing knowledge of what microfinance contributes to poverty reduction (Editors et al., 2016). Altogether, this study will help to eliminate gaps existing in the current literature by presenting a research material that could be used to improve the current policies and programs for microfinances to support the fight against



poverty all over the world (Hermanto & Astuti, 2013). This study presented huge contributions toward the academics, theory and practical in the fields of microfinance and poverty alleviation. Microfinance which encompasses services like micro credit (MC), micro savings (MS), micro insurance (MIN), non-financial services (NFS), and social intermediation services (SIS) has been largely accepted as one of the instruments of empowerment of the poor and poverty alleviation.

2. Literature review

This literature review focuses on determining the variables of the Micro Credit (MC), Micro Savings (MS), Non-financial services (NFS), Social Intermediation services (SIS), Micro Insurance services (MIN), as well as Poverty Alleviation (PA). The interventions for each variable are also discussed individually to determine how they would contribute to poverty outcomes (Fonseca et al., 2024). Over the last decades, micro finance has attracted the attention of the world as an efficient way of fighting poverty and enhancing sustainable development (Chi et al., 2021). Microfinance indicated as a concept of offering banking services and products like microcredit, micro-savings, and micro-insurance. This financial inclusion enhances the living standards, women entrepreneurship, income and small businesses, and hence, the sustainable development goals such as the goals of no poverty, gender equality, decent work and economic growth, or goal 1, 5, and 8 respectively (Kumari, 2020).

2.1 Theoretical Development

There are three theories that lend understanding to the effect of microfinance services on poverty eradication.

2.1.1. Financial Inclusion Theory

According to the Financial Inclusion Theory, saving, borrowing, and insurance are some of the financial services that would enhance the economic standards of living for the poor (Sultan & Masih, 2016). Micro credit, micro savings and micro insurance services are the types of products that empower the consumer who cannot bank with the formal banking institutions (Drean, 2021). Micro credit assists low income earners especially the low income earners to engage in economic activities through availing working capital to start and expand their businesses to improve on their earnings, economic stability (Hermanto & Astuti, 2013). Likewise, micro-savings and micro-insurance have similar functions that help a person to save, insure and act as a buffer in case of an economic shock in order to regulate consumption during a crisis (Fonseca et al., 2024). These services open the opportunity of improving the quality of life and breaking a vicious cycle of poverty by making financial services available to more people (Iqbal et al., 2024).

2.1.2 Social Capital Theory

Social Capital Theory is closely associated with social networks, trust, and cooperation of people within the community from an economic point of view (ASLAM, 2014). Thus, Social Intermediation Services that include group lending, community support, and peer pressure correspond to the concept of social capital in the microfinance (Onyele & Onyekachi-Onyele, 2020). These services also enable creditors to mitigate the risks that come with providing loans to the low-income earners since the formation of trust and are accountable to one another in the community (Bein & Eboasetale, 2017). Social influence and group cohesion increases the ability of loan repayment and the overall success of any borrower in business ventures (Wu et al., 2024). This theory also points out that social relations in the granting of economic opportunities,

especially for poor females who suffer from social restraints that hinder them from accessing credit facilities (Mahmoud Ali & Ghoneim, 2019).

2.1.3 Empowerment Theory

Empowerment Theory defined as a process of enhancing people's control over their lives, their choices, and decisions they make. In the context of microfinance, this theory is most appropriate for Micro Credit Services and Non-Financial Services (NFS) as services that helps the low-income people to become more economic and social agents (Chi et al., 2021). For instance, microcredit enables those, especially women, to work in order to earn income, which helps them to be more independent when making decisions (Abdulhameed & ..., 2023). Other non-financial services such as business training and financial literacy also contribute to the emancipation of the individuals since they trained on how to manage their businesses profitably and how to make sound financial decisions. Thus, while in this case it is defined as economic freedom, it calls for social and political capacity to bring about change on ones' own (Zaidi, 2017).

2.2 Hypothesis Development

2.2.1 Micro Credit (MC)

Microcredit, as the term suggests is a small amount of credit availed to the low-income earners who usually locked out of the formal money lending institutions. Hashmi (2009) conducted a study to show that microcredit is helpful especially in poverty reduction since it helps the beneficiaries fund income generating ventures (Sangwan & Nayak, 2021). Microcredit has been very useful in encouraging small businesses especially among women and this has had positive impact in their income and economic status (David & Mulenga, 2024). However, some critics opine that, though the microcredit helps in increasing the business activity, it has no impact on the standards of living for the long time (Chikwira & Vengesai, 2022). Microcredit effectiveness is to be attributed to factors like the amount of money provided for lending, terms given to the borrowers for the repayments, and the management of the borrowed resources (Li et al., 2023).

Formulating a hypothesis is central to research since it mediates between theory and practice in science (Subramaniam & Masron, 2024). This is a proposed explanation in regard to the relationship between two or more variables, which is usually postulated based on past knowledge, previous theories or analysed data (Sangwan & Nayak, 2021). Hypotheses elaborated and form the basis of research and frame work of research activity and result analysis. In both qualitative and quantitative researches, the development of hypothesis is mandatory as it defines the direction and goals of the research (David & Mulenga, 2024).

Among the research hypotheses, there are null hypotheses (H_0), which state that there is no significant effect or relationship between the studied factors, and the alternative hypotheses (H_1 or H_a) that affirm the existence of an effect or a relationship between the factors under consideration (Chikwira & Vengesai, 2022). Hypotheses can also be directional or non-directional; the former give direction of relationship (for instance positive or negative) while the latter suggest that there is a relationship. A good hypothesis is clear, solid and should be derived from a theoretical framework (Li et al., 2023). This one must also be refutable, in that it could be disproved by experience or by the absence of a particular pattern (Education, 2022).

2.2.2. Micro Savings (MS)

Micro saving-facilities commonly enable people to save small amounts of money, which is an important means towards poverty reduction, because it contributes to economic stability and



decrease of the sensitivity to different economic shocks (Creswell, 2014). This paper argues that this gives the poor an ability to overcome the economic shock and also to invest in critical areas such as education and health (Wu et al., 2024). In addition, savings programs can help inculcate the spirit of savings amongst the low-income households (Mahmoud Ali & Ghoneim, 2019). Though, major factors like trust deficit in financier's institutions and deficiency in awareness level regarding of saving by saving micro programmes are core issues that hinder the enhancement of micro savings programs as the basic needful (Hermanto & Astuti, 2013).

Micro savings (MS) are small low value amounts of deposit established by the working poor, the lower-income earners and the under banked with a view of enhancing their financial security (Mahmoud Ali & Ghoneim, 2019). While micro savings accounts are very similar to conventional savings products, they are specifically targeted at targeting the unbanked population with low funds, low balances, low fees and are offered through partners such as CBOs and online systems (Drean, 2021). These services are very important tools in financial inclusion frameworks in the developing countries as they allow individuals to save, mitigate risks and shocks and use the savings to finance education, health or business among others (Bein & Ebosetale, 2017).

Micro savings are widely used in financial inclusion strategies all over the world. Even the World Bank and the Consultative Group to Assist the Poor has noted that the ability to save safely and affordably ensures that people have options in the future and is not vulnerable to adverse circumstances (Aslam, 2014). Mobile banking and other financial innovations have thus been helpful in increasing savings via micro savings especially among the rural clients where physical infrastructures for financial institutions are hard to come by (Kar & Das, 2015). Research has also found out that even small amount saved frequently and periodically had likely effects on improving the financial health and reducing on reliance on informal sources of money (Dr. Wahid Raza et al., 2023).

Therefore, the understanding we have gained from behavioural economics has helped in developing sound micro saving products. Some of them include: Commitment savings also known as the money box accounts which discourage early withdrawals, and automatic transfers which act as a cure to short-term bias and lack of discipline (El-Nasharty, 2022). Based on previous studies, it is crucial to use tailored messages, teaching, and other reinforcement techniques to reach the desired level of saving and encourage goal adopting performance (Editors et al., 2016). Other developments such as matched saving or interest bonuses have also been shown to increased usage and hence improved participation of micro-savings programs (Ezeanyeji et al., 2020).

2.2.3. Non-Financial Services (NFS)

The non-financial products of microfinance consist of training, business development services, and financial education (Bel hadj Miled & Ben Rejeb, 2018). They are typically offered together with microcredit and savings goods and services for the promotion of sustenance and improvement of business as well as borrowing capacities (Miled & Rejeb, 2015). There are indications that non-financial services enhance the success rates of microenterprises by offering knowledge in various aspects that include market, finance, and production (Awaworyi Churchill et al., 2018). The above services assist clients to finance their loans and enhance the sustainability of microfinance programs in poverty reduction. Nonetheless, funding for non-financial services is scarce and the range of such services is limited to be expanded (Zaidi, 2017).

Non-Financial Services (NFS) are services at the non-financial character that are offered by financial institutions, development organizations, or government for the improvement of well-being and efficiency of individual and businessmen (Abdulhameed & ..., 2023). Other services in this regard are business development training, financial literacy, market access, health education, legal services, and capacity building (Chi et al., 2021). NFS now seen as being very critical, as they complement credit and savings and especially in the development and microfinance environments. NFS are now seen as being very critical, as they complement credit and savings and especially in the development and microfinance environments (Mahmoud Ali & Ghoneim, 2019). NFS play a significant role in the capacity development of micro and small enterprises through the development of knowledge and skills for growth. The problem with such access is that it does not guarantee success because the entrepreneur lacks the managerial, marketing and technical competencies to make good use of financial products (Wu et al., 2024). Apart from microfinance, other complementary services such as business consultancy, trainer-ship, and business linkages have been equally useful in enhancing enterprise performances and enterprises sustainability (Onyele & Onyekachi-Onyele, 2020).

2.2.4. Social Intermediation Services (SIS)

Social intermediation services mean the creation of trust, granting of a financial facility, and enabling general welfare for borrowers in the socio-economic structure (Creation, 2023). It has group lending models, community support and such other frameworks that minimize the risks involved with extending credit to the needy and the less privileged. It is seen that SIS enhances social capital and increases loan repayments by ensuring that members pressure each other to pay back the loans (A. A. Khan et al., 2021). Such services are significant for women since they are considered and restricted by social and cultural norms from accessing financial services (Aiyedun, 2024). Studies also note that SIS can improve borrowers' social circles, opening up more opportunities in terms of economic and social statuses (Education, 2022).

SIS focuses on the processes and activities in readiness and enhancement of the opportunities of the disadvantaged groups especially the low income earners in financial institutions and the development of economic activities (Li et al., 2023). These services are extended through MFIs, NGOs, and development agencies to facilitate the financial sector to reach out to such unserved or less served segments (Chikwira & Vengesai, 2022). SIS consists of group formation, financial education, training and development of the community's capacity as well as confidence to embrace changes that lead to sustainable financial services inclusiveness (David & Mulenga, 2024).

2.2.5. Micro Insurance Services (MIN)

Micro insurance services intended to offer basic insurance products to the low-income earners for health, life and property risks. Several studies have pointed out that micro insurance is effective in poverty reduction, because it ensures the vulnerable households against shock that lead to deeper level of poverty (Iqbal et al., 2024). Micro insurance services can improve the ability of households to manage situations such as illness, natural disasters and other shocks hence improving financial resilience. Nonetheless, there are some problems which are relevant to micro insurance, and they include; issues of product development, issues of affordability and issues of low awareness (Fonseca et al., 2024). Micro insurance has incorporated factors such as adjusting premium and claims practices to be affordable to low-income earners.

Micro insurance services refer to insurance products that are accorded to low income earners who are usually locked out of the insurance market (Hermanto & Astuti, 2013). These services help to cover certain probable hazards for instance, sickness, injury, poor yields, natural calamities or death, at relatively low contributions and easy conditions (Drean, 2021). Thus, MIN assists in mitigating financial risks and promotes economic stability of the vulnerable families, especially in the developing nations (Bein & Ebosetale, 2017).

2.2.6. Poverty Alleviation (PA)

Micro finance intended to bring about poverty reduction and therefore using poverty reduction measures, evaluated in terms of income, access to social necessities and quality of life. Thus, microfinance could have helped reduce poverty through its contribution to improving access to financial services; however, there is polite controversy about its long-term efficacy (Zaidi, 2017). It is claimed that microfinance graduates the people from ultra-poverty, however, the arguments regarding its capacity to address underlying fundamental problems like education, health care, and infrastructure are more disputable (Abdulhameed, 2023). Microfinance poverty reduction is likely to be sustainable as part of development approaches that are accompanied by strategies such as education, health and other support service delivery interventions (Chi et al., 2021). Besides, the effects of microfinance on poverty reduction are also realized depending on the type of service that is offered, the environment that it finds itself in (Mahmoud Ali & Ghoneim, 2019).

Poverty Alleviation (PA) is a process through which a society uses strategies, policies, and program to decrease the poverty level and enhance the quality of life of the poor citizens. Poverty, defined conventionally in terms of income, also has other aspects like poor literacy, health, inadequate or no supply of safe water, and no political freedom (Wu et al., 2024). Thus, to properly combat and reduce poverty, solutions not only directed at increasing income but also these types of deprivations.

2.4 Hypothesis Developed:

H1: There is a significant relationship between micro credit and poverty alleviation

H2: There is a significant relationship between non-financial services and poverty alleviation

H3: There is a significant relationship between social intermediation services and poverty alleviation

H4: There is a significant relationship between micro insurance services and poverty alleviation

H5: There is a significant relationship between micro credit and poverty alleviation with mediating effect of micro savings

H6: There is a significant relationship between non-financial services and poverty alleviation with mediating effect of micro savings

H7: There is a significant relationship between social intermediation services and poverty alleviation with mediating effect of micro savings

H8: There is a significant relationship between micro insurance services and poverty alleviation with mediating effect of micro savings

H9: There is a significant relationship between micro saving and poverty alleviation

3. Methodology

This chapter discuss on the research approach used in this study and for better understanding, it is divided using Saunders' Research Onion. The different parts of the chapter are research philosophy, research approach, research strategy, method, time horizon, and data collection and

analysis method. These procedures enhance the validity of the research as all details of the research have been provided in the research (Hailat et al., 2024).

3.1 Saunders' Research Onion Framework

The research onion by Saunders et al consists of the following layers: It consists of six layers, namely research philosophy, research methodology, research method, decision, time frame, and data gathering and processing. In this study, the Research Onion approach is adopted in order to explain the methodological choices made step by step (Saunders M. & Thornhill, 2015).

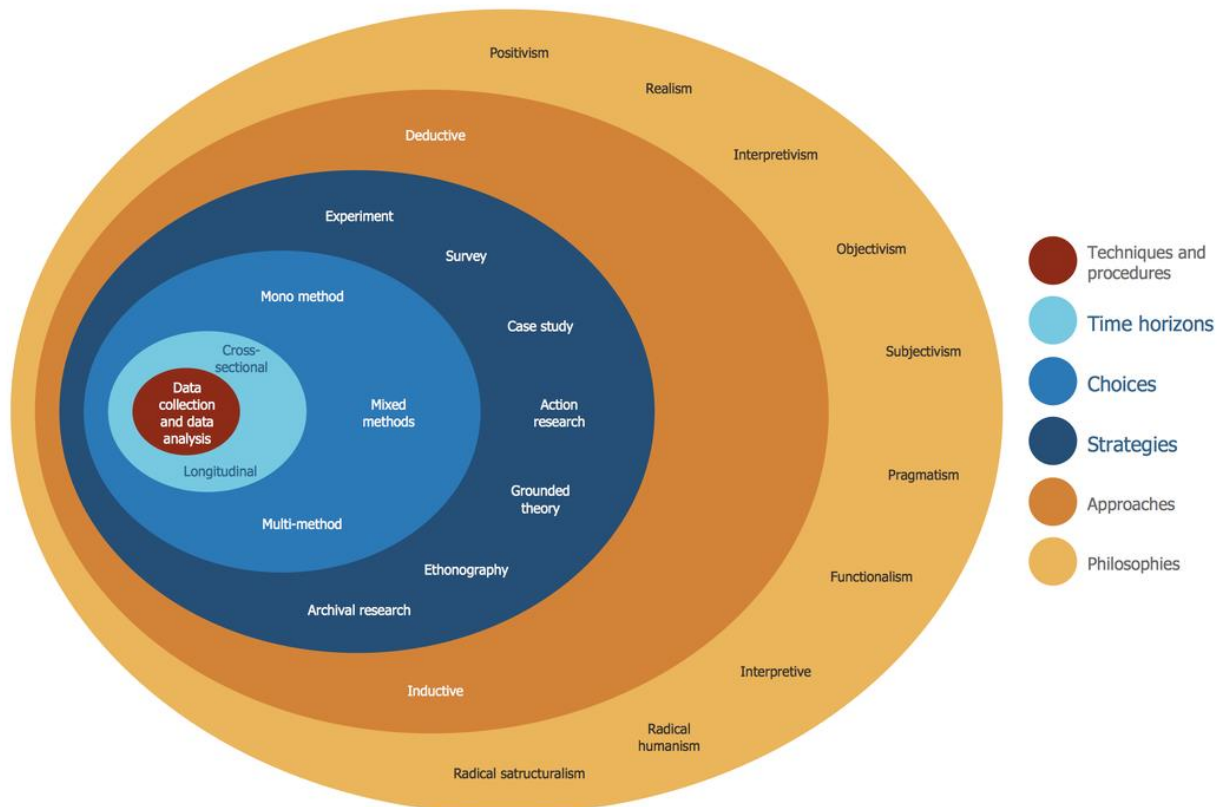


Figure. 2 Saunders's Research Framework

The study has a positivism paradigm. Positivism derives from objectivity, and its conclusions are based on numerical operations since it deals with phenomena that are measurable (Elsafi et al., 2020). They also facilitate forming of hypothesis and statistical confirmation of the relations, which is the knowledge of which mechanisms are constituent to this work (Jamil, 2024). The research is also positivist, which includes hypothesis formulation before collecting data from the literature theory. Such hypotheses are compared to quantitative data which can be collected from the target population (Creswell, 2014). A survey method is used and questionnaires are administrated to collect primary data from university students (Zainal et al., 2020). Due to the type of variables defined in the study, quantitative research enables measurement of the variables and statistical analysis such as Partial Least Squares Structural Equation Modelling (PLS-SEM) (Khakwani et al., 2024). Cross-sectional design is most appropriate when the researcher is

interested in showing how two variables are related, but does not have to follow the data for some time (Mahmood et al., 2024).

3.2 Population and Sampling

3.2.1 Population

This research will focus on both loan seekers from microfinance banks and professionals associated with those banks. People involved directly in microfinance activities, either as borrowers or by providing such services, were part of the research. Experts are chosen from this population because they have first-hand knowledge of digital financial tools, telework experience and how organizations help employees in the microfinance sector (Munir, Ali, et al., 2025). Given that the sector is moving quickly to digital services and working remotely more since COVID, this group is very important (Munir, Mahmood, Mahmood, et al., 2025). The cases they present give useful insights into telework and help us see how it affects work-life balance, employee strength and the desire to stay working remotely in the world of digitized finance.

3.2.2 Sampling Technique

To ensure both microfinance loan seekers and microfinance bank staff well represented, we chose a stratified random sampling method (Mahmood et al., 2025). Due to this method, the study could collect information from various groups depending on their institution, the microfinance service they accessed or offered and their gender, age and region. The set sample size is 248 respondents based on the 1:10 item to sample ratio for structural equation modelling.

3.2.3 Data Collection

Questionnaire is developed to capture the six research independent variables; micro credit, micro savings, non-financial services, social intermediation services, micro insurance service and the dependent variable; poverty reduction (Ngong et al., 2022). Questionnaire will be administered both online and face-to-face to consumers of different micro finance organizations (Hailat et al., 2024).

3.2.4 Sampling: Thus, with the use of stratified random sampling, the target population will be adequately represented regarding demographic and geographical characteristics (Jamil, 2024). A sample size of 248 respondents proposed because the study's statistical analysis will involve hypotheses testing and 248 is sufficiently large to attain a statistically significant sample size. This approach will be useful in helping maintain consistency and reliability of responses with a 5-point Likert scale, which ranges from 1 that is Strongly Disagree to 5 that is Strongly Agree (Munir, Mahmood, Noreen, et al., 2025).

3.3 Data Analysis

The data collected will be analysed by employing smart PLS are termed as PLS-SEM in context of marketing discipline. Smart PLS software used for the analysis of the data by adopting the PLS-SEM technique. In this study, PLS-SEM used to determine the relationship between microfinance services and poverty alleviation with the mediation effects of micro savings. The data analysed based on reliability and validity of the measurement model in terms of Cronbach's Alpha, Composite Reliability, and Average Variance Extracted (AVE) (D. N. S. Gohar Mahmood et al., 2025). The Fornell Larcker criterion and the HTMT ratio used to test discriminant validity. Tests of the significance of the path coefficients and mediating effects performed by bootstrapping with 5000 resamples (D. Q. M. K. Gohar Mahmood et al., 2025). Path coefficients and t-statistic used to test the hypothesis and structural model to investigate the direct and mediating effects (Q. M.



Khan et al., 2025). The study will provide useful information in achieving flexibility and efficiency among employees in microfinance institutions, especially in the changing digital banking landscape after the pandemic. The willingness of the participants to complete the questionnaires and other qualitative data gathered not identified in any way and all the collected data will not use for any purpose other than research.

4. Results and analysis

This study aims at assessing the impact of micro finance services in the fight against poverty particularly in the aspects of micro credit, micro savings, micro insurance, micro enterprises, and non-financial services and social intermediation (Zaidi, 2017). The PLS-SEM therefore used to assess how these constructs affect saving behaviours and impacts on poverty eradication. Using a sample of 248 respondents, the study looks into the direct and indirect impacts of financial and non-financial supports (Iqbal et al., 2024). The study based on the premise of financial inclusion, empowerment and social capital whereby the work adopts this approach to conceptualize microfinance within a multidimensional perspective on how it enhances the quality of life of the targeted groups.

4.1 Demographic Analysis

The distribution of the gender and age of the respondents is presented in table 4.1 below: Overall, the total sample comprised 248 respondents; 46.4% of them being males (115) while 53.6% (133) being females (Awaworyi Churchill et al., 2018).

Table 4.1 Demographic Analysis

1. Gender		
Classification	Frequency	Percent
Male	115	46.4%
Female	133	53.6%
Total	248	100.0%
2. Age		
Classification	Frequency	Percent
18-29	15	6.0%
30-39	67	27.0%
40-49	105	42.3%
50-60	61	24.6%
Total	248	100.0%
3. Marital Status		
Classification	Frequency	Percent
Single	21	8.5%
Married	121	48.8%
Divorced	106	42.7%
Total	248	100.0%
4. Qualification		
Classification	Frequency	Percent
Uneducated	6	2.4%
Under Matric	43	17.3%



Matric	90	36.3%
Graduate	109	44.0%
Total	248	100.0%
5. No. of Time Loan Obtained		
Classification	Frequency	Percent
First-Time	21	8.5%
Second-Time	49	19.8%
Third-Time	124	50.0%
More Than Third Time	54	21.8%
Total	248	100.0%
6. Credit Limit		
Classification	Frequency	Percent
Rs.10000-Rs.20000	5	2.0%
Rs.20001-Rs.30000	26	10.5%
Rs.31000-Rs.40000	58	23.4%
Rs.40001-Rs.50000	159	64.1%
Total	248	100.0%

It observed that the sample was representative in terms of gender – slightly skewed to female participants. The use of such a distribution is useful when identifying the gender differentiated effects of microfinance services, especially because most micro finance schemes target women (Miled & Rejeb, 2015). The analysis of respondents’ age distribution chart shows that most of them are 40-49 years old and make up 42.2% of the sample. In third place are men who are 30-39 years old, 27%, then men 50-60 years old, 25%. It is crucial to note that only 6% of people falling under the age of 30, a bracket that most employment opportunities categorize as youth employment. This means that the study focused on middle-aged adults; it probably targeted the population most interested in or concern with microfinance programmers (Kumarie, 2021). The results of the survey indicate that most of the respondents are married, 48.8% of the total sample population. Of this population, 42.7% are divorced implying that there are several participants who have been previously married. With regard to marital status, only 8.5% of the respondents are single (Kumari, 2020). It is also imperative to point out that the data on distribution of microfinance programs indicate that some of the recipients may be in the period of major life change, for instance, divorce, and may require financial assistance or self-employment (Fonseca et al., 2024). This is perhaps evident by the qualification data from the respondents, since the majority of them have their education level not below the matriculation level or even above that. Particularly, 44.0% has graduated education and 36.3% completed matriculation – it is the most educated population of the sample (Bel hadj Miled & Ben Rejeb, 2018). Taken together, these two groups make 80% of the respondents that indicates that the sample population is quite educated. Thus, 17.3% of participants are “under matric,” and only 2.4% of participants are illiterate. This distribution shows a literacy level of the population which perhaps is able to grasp and make good use of micro finance instruments (Zainal et al., 2020). The high number of graduates attributed to the growing consciousness of educational attainment and education provision that may affect financial management, business skills, and decision-making. Further, the educational status may imply that



microfinance institutions are more available to or that there is more demand in the case of individuals with formal education (Elsafi et al., 2020). The results of the poll to the number of times loans has been taken reveals that majority of the respondents (50%) are in their third cycle of borrowing, meaning frequent usage of microfinance services (Chikwira & Vengesai, 2022). Also, more 21.8% of the respondents reported to have taken loans 3 or more times implying the continual use of microfinance institutions. Second time borrowers constituted 19.8% of the sample while the first time borrowers were only 8.5%. This pattern suggests that micro-finance is not a one-off support measure but a continuous promotional instrument for many of the participants (Jamil, 2024). This is because the high number of repeat borrowing attributed to factors such as satisfaction with the services, need for credit, and lack of other sources of credit. It might also invite issue of dependency or over borrowing that may lead to long-term borrowing costs. This means that the majority of the microfinance clients are getting access to higher amounts of money more frequently, which probably used for diverse activities related to the client's business or personal life. Another 23.4% of the total respondents stated that they borrowed between Rs.31,000 and Rs.40,000, which means that approximately 88% of the borrowers borrow above than Rs.30,000 (El-Nasharty, 2022). A small portion only, 10.5% borrowed a lesser amount between Rs.20 001 and Rs.30000 while 2.0% borrowed between Rs.10, 000 and Rs.20, 000. This may be due to borrower's confidence in handling bigger credits or micro financing institutions extending higher limits depending on their previous track record of repayment (Sangwan & Nayak, 2021).

4.2 Statistical Analysis

The outer loadings table shows, in particular, the factor loadings for the measurement model that thus establishes the links between the indicators and latent variables. Usually it is desirable to have coefficients greater than 0.70, which indicates that indicators are very reliable, while the coefficient less than 0.70, but close to it, can be retained if the overall reliability of the model is high (David & Mulenga, 2024).

4.2.1 Structural model

Table 4.1 Outer loadings

	Micro Credit	Micro Insurance Services	Micro Savings	Non-Financial Services	Poverty Alleviation	Social Intermediation Services
IN1		0.789				
IN2		0.742				
IN3		0.808				
IN4		0.651				
MC1	0.704					
MC2	0.795					
MC3	0.681					
MC4	0.682					
MS1			0.609			
MS2			0.740			
MS3			0.758			



MS4			0.632			
MS5			0.724			
NF2				0.767		
NF4				0.757		
NF5				0.799		
PA1					0.751	
PA2					0.693	
PA3					0.696	
PA4					0.689	
PA5					0.685	
SIS2						0.716
SIS3						0.718
SIS4						0.734
SIS5						0.737

All the indicators of Poverty Alleviation (PA1–PA5) falls in the acceptable range of (0.685–0.751) thus construct heterogeneity also found to be reasonable. Finally, Social Intermediation Services items (SIS2–SIS5) also show consistent and adequate loading values (0.716–0.737). The outer loadings show that the measurement model is good and constructed appropriately, and all the indicators are valid for their respective factors.

4.2.2 Correlations

Correlation matrix shows the magnitude and direction of linear relationship between the six variables under research in the study (Li et al., 2023). All the variables positively signed, which means that there is a direct relationship between the variables and as such, whenever a variable improves, it is likely to improve other variables, endorsing the complementary nature of microfinance services and poverty eradication.

Table 4.2 Correlations

	Micro Credit	Micro Insurance Services	Micro Savings	Non-Financial Services	Poverty Alleviation	Social Intermediation Services
Micro Credit	1.000					
Micro Insurance Services	0.305	1.000				
Micro Savings	0.552	0.388	1.000			
Non-Financial Services	0.503	0.379	0.653	1.000		
Poverty Alleviation	0.419	0.624	0.515	0.538	1.000	
Social Intermediation Services	0.358	0.492	0.591	0.560	0.748	1.000

It can also be observed that Micro Credit has a moderate positive relationship with Micro Savings; with a correlation coefficient of 0.552; and Non-Financial Services 0.503 correlates moderately positively with Micro Credit, which corroborates with the hypothesis that credit, help in improving or supporting the micro savings and non-financial services. It has moderate correlation with Poverty Alleviation (0.419), which mean that credit can alleviate poverty though it is not one of the most effective factor (Education, 2022). In general, the results provide evidence for hypothesis that microfinance services integration has a positive impact and contributes to poverty decrease.

4.2.3 Quality Criteria

The R-square (R^2) values pertain to the extent to which the structural model has explained the variance in the dependent variables with the help of independent variables. In this analysis for Micro Savings, its R^2 is 0.555 and for the R^2 adjusted is 0.547.

Table 4.3 Quality criteria

	R-square	R-square adjusted
Micro Savings	0.555	0.547
Poverty Alleviation	0.664	0.657

It is found that about 55.5% of the variation in Micro Savings is accounted for by its antecedents (Creation, 2023). The value of adjusted R^2 , which takes into consideration the number of predictor variables and sample size, is also relatively similar providing for the overall solidity of the model. More importantly, the model of Poverty Alleviation exhibits a relatively high correlation of determination with the value of 0.664 and an adjusted R^2 of 0.657. This is an indication that 66.4% of the variance in Poverty Alleviation is accounted for by the pondered variables which are compiled of Micro Credit, Micro Savings, Micro Insurance Services, Non-Financial Services, and Social Intermediation Services (Mahmood et al., 2024). This is a relatively high coefficient of determination typical for the social science research and suggests reasonable degree of explanation.

4.2.4 Quality Criteria

The table below lists the Cronbach's Alpha, Composite Reliability and Average Variance Extracted (AVE) for the measurement model, which are used in the evaluation of constructs' reliability and validity. These are the reliability and validity of the latent variables; the reliability being internal consistency while validity is convergent (Khakwani et al., 2024).

Table 4.4 Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Micro Credit	0.689	0.693	0.808	0.514
Micro Insurance Services	0.737	0.739	0.836	0.563
Micro Savings	0.731	0.740	0.823	0.483
Non-Financial Services	0.667	0.667	0.818	0.600
Poverty Alleviation	0.744	0.746	0.830	0.494



Social Intermediation Services	0.703	0.704	0.817	0.527
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Coherency estimates ought to not significantly below 0.7, which is the maximum value of Cronbach’s Alpha. Here, all the constructs are relatively high or are close to the acceptable level though Micro Credit (0.689) and Non-Financial services (0.667) are slightly low but justified due to exploratory nature of the study (Kouser et al., 2024). The rest of the constructs for example Micro Insurance Services with a reliability coefficient of 0.737 and Poverty Alleviation with a coefficient of 0.744 considered satisfactory.

Composite Reliability is more powerful than Cronbach’s Alpha; all the constructs are above 0.7, which suggest that the items have good internal consistency. For instance, Micro Insurance Services has a reliability of 0.836, which is quite high, so is Social Intermediation Services with 0.817. AVE also used to measure construct convergent validity and has an average of 0.26. A value of 0.5 or higher can be considered desirable (Saunders M. & Thornhill, 2015). Thus, apart from Micro Savings (0.483) and Poverty Alleviation (0.494), all constructs meet this criterion. However, they are rather low, and therefore deemed acceptable only in case and only if other aspects of reliability are high.

4.2.5 Discriminant validity

Table 4.5 Heterotrait-Monotrait ratio (HTMT) - Matrix

	Micro Credit	Micro Insurance Services	Micro Savings	Non-Financial Services	Poverty Alleviation	Social Intermediation Services
Micro Credit						
Micro Insurance Services	0.405					
Micro Savings	0.758	0.529				
Non-Financial Services	0.742	0.546	0.921			
Poverty Alleviation	0.566	0.841	0.692	0.759		
Social Intermediation Services	0.491	0.671	0.815	0.801	1.014	

The Heterotrait-Monotrait Ratio (HTMT) test checks the discriminant validity to ascertain whether the constructs in the model are distinct. Almost all the HTMT values in the given matrix are less than 0.85, which means that the examined constructs like Micro Credit, Micro Insurance Services, and Micro Savings are distinctive from each other (Creswell, 2014). However, two HTMT values are beyond the acceptable threshold; Micro Savings and Non-Financial Services (0.921), Social Intermediation Services, and Poverty Alleviation (1.014). These higher numbers imply that discriminant validity might not be very strong, which could mean that these variables are not well distinguished by the respondents (Cooper & Schindler, 2014). This could be because some of the concepts are related –for example, training, which is a non-financial service, may be bundled with the saving programmes, or social intermediation activities may have a direct impact on poverty levels. Such overlaps may in fact regulate the capacity of the model to filter out the interferences

of the other variables. Hence, more elaboration of constructs or items might be required in the future studies to increase the discriminant validity (Cooper & Schindler, 2014).

4.2.6 Fornell-Larcker Criterion

Table 4.6 Fornell-Larcker Criterion

	Micro Credit	Micro Insurance Services	Micro Savings	Non-Financial Services	Poverty Alleviation	Social Intermediation Services
Micro Credit	0.717					
Micro Insurance Services	0.305	0.750				
Micro Savings	0.552	0.388	0.695			
Non-Financial Services	0.503	0.379	0.653	0.775		
Poverty Alleviation	0.419	0.624	0.515	0.538	0.703	
Social Intermediation Services	0.358	0.492	0.591	0.560	0.748	0.726

The Fornell-Larcker criterion is one of the traditional methods that are used in determining the discriminant validity of the structural equation models (Onyele & Onyekachi-Onyele, 2020). Based on this criterion, a construct expected to have higher communality with its own measures than with other constructs. This is confirmed when the square root of the AVE (shown on the diagonal line) is higher than inter-construct correlations presented by the off-diagonal values in the corresponding row and in the column. Micro Credit has a coefficient of 0.717, which is more than is the case with Micro Insurance Services with a coefficient of 0.305 and Micro Savings with a coefficient of 0.552. Likewise, Micro Insurance Services (0.750) has higher frequency with all other constructs of the study. However, Micro Savings exhibit a nearly similar correlation coefficient with Non-Financial Services = 0.695 and Social Intermediation Services has a near correlation coefficient to its relationship with poverty alleviation = 0.726 (Wu et al., 2024). Although the last three pairs are not far from each other, it is essential to pay attention to them

4.2.7 Model fit

Table 4.8 Fit summary

	Saturated model	Estimated model
SRMR	0.108	0.108
d_ ULS	3.784	3.784
d_ G	3.468	3.468
Chi-square	2851.354	2851.354
NFI	0.344	0.344

The fit index of a structural model gives different measures through which one can be able to determine how effective the model is in describing the actual data. Such items are SRMR, d_ ULS, d_ G, Chi-square, and NFI. SRMR (Standardized Root Mean Square Residual) for both the

saturated and estimated models is equal to 0.108 more than the threshold level of 0.08. This implies that the model does not perfectly fit and it may require a little modification if it has to capture the exact empirical evidence to the letter.

4.2.9 Path coefficients

Table 4.9 Mean, STDEV, T values, p values

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Micro Credit -> Micro Savings	0.265	0.266	0.047	5.654	0.000
Micro Credit -> Poverty Alleviation	0.109	0.106	0.062	1.764	0.078
Micro Insurance Services -> Micro Savings	0.036	0.042	0.057	0.640	0.023
Micro Insurance Services -> Poverty Alleviation	0.311	0.309	0.088	3.544	0.000
Micro Savings -> Poverty Alleviation	0.039	0.040	0.059	0.661	0.059
Non-Financial Services -> Micro Savings	0.347	0.345	0.061	5.674	0.000
Non-Financial Services -> Poverty Alleviation	0.097	0.098	0.066	1.459	0.045
Social Intermediation Services -> Micro Savings	0.284	0.282	0.064	4.402	0.000
Social Intermediation Services -> Poverty Alleviation	0.524	0.529	0.088	5.925	0.000

The results of the path coefficients are the strength and significance of the relationships between the constructs in the structural model. These values also define the level of statistical significance of the microfinance services on Micro Savings and Poverty Alleviation.

- **Micro Credit → Micro Savings** ($p = 0.000$, $r = 0.265$): It found that there is a significant and positive relationship between the micro credit and micro savings.
- **Micro Insurance Services → Poverty Alleviation** ($\beta = 0.311$, $p = 0.000$) clearly, insurance contributes to poverty reduction since it minimizes risk and complements the client's ability to meet daily basic needs.
- **Non-Financial Services → Micro Savings** ($\beta = 0.347$, $p = 0.000$): Training and financial education aid in saving among the clients.
- **Non-Financial Services → Poverty Alleviation** ($r = 0.097$, $\text{sig} = 0.045$): The coefficient is a little value, however, the result shows that it is significant which means that support service plays part in poor alleviation.
- **Social Intermediation Services → Micro Savings** ($\beta = 0.284$, $p = 0.000$): Micro-savings facilitated through group-based mechanisms and communities.

- **Social Intermediation Services → Poverty Alleviation** ($\beta = 0.524, p = 0.000$): Considering this variable, it said that social intercession services stress the importance of social networks and support for poverty reduction.
- **Micro Credit → Poverty Alleviation** ($\beta = 0.109, p = 0.078$): The path is not statistically significant at 5 percent hence, the micro credit has the potential to alleviate poverty but this obtained with the help of other antecedents.
- **Micro Insurance Services → Micro Savings** ($r = 0.036, p = 0.023$): The level of significance is small implying that the extent of influence is feeble.
- **Micro Savings → Poverty Alleviation** ($\beta = 0.039, p = 0.059$): Micro savings does not have a significant impact on the poverty alleviation as the p-value is just above the significance value of 0.05.

This study states that non-financial and social intermediation services have the greatest potential for influencing the levels of saving and poverty. However, micro credit and savings themselves are clearly not enough when accompanied by other services.

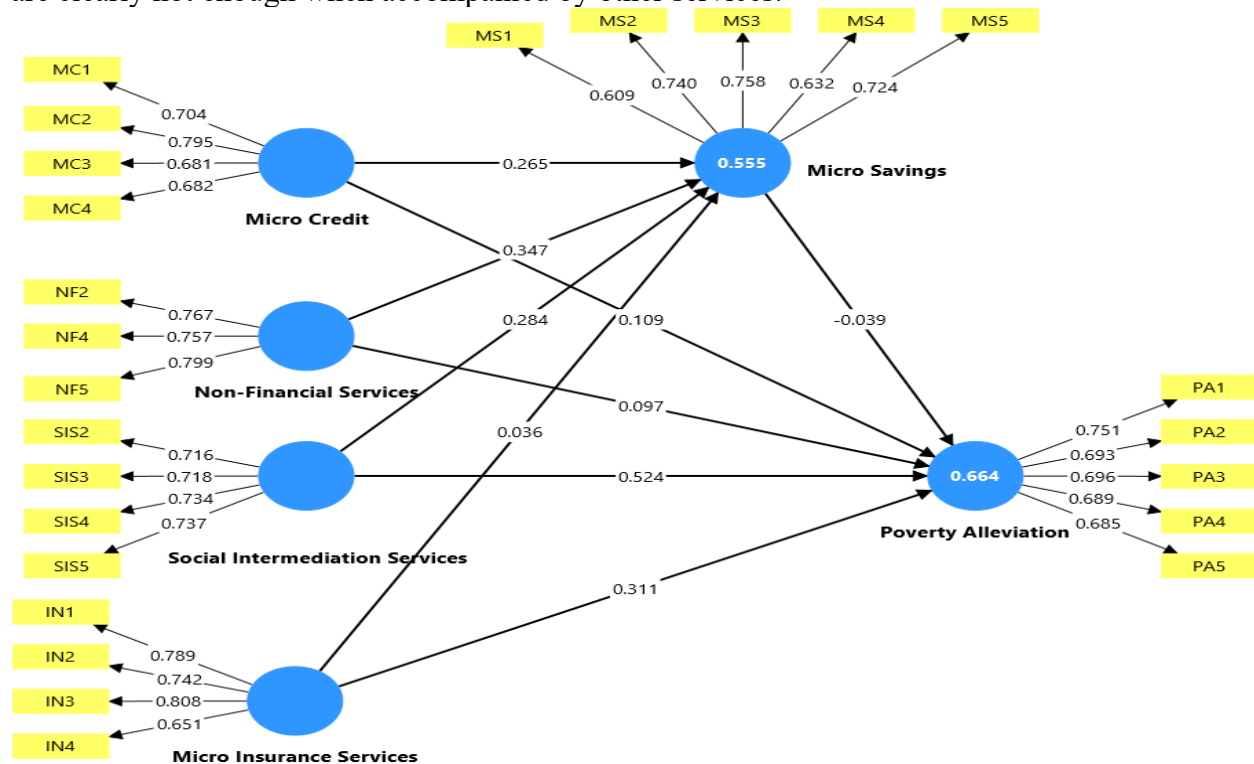


Figure 4.8 PLS-SEM Research Framework

The findings show that the sector other than the financial services and social intermediation exert the greatest influence on micro savings and poverty reduction. Micro credit and micro insurance have positive impacts on micro savings and poverty reduction though not to a greater extent. Micro savings do not directly reduce poverty or the poor's poverty level. Thus, discriminant validity and reliability coefficients validate the measurement model, with some areas needing further adjustment based on model fit indices. Therefore, the study shows that microcredit or micro save

fail or succeed to reduce poverty by credit or save alone but requires integrated, community, and educational support.

5. Conclusion

This study analysed the impacts of microfinance services for poverty reduction by focusing on credit services, micro savings, micro insurance, non-financial services and social intermediation services (Abdulhameed, 2023). Based on the analysis of the data collected from these implemented services using Partial Least Square Structural Equation Modelling (PLS-SEM), it assessed the extent to which they affect poverty and the saving pattern of the people. It is within this context that the study leans on three theoretical frameworks, namely, the financial inclusion theory, the empowerment theory, and the social capital theory (Bel hadj Miled & Ben Rejeb, 2018).

This study showed that though micro credit has some significance on creating micro savings, it is not very useful for poverty reduction directly. Micro insurance had a highly significant direct relationship with poverty reduction thus supporting the securing of lives through financial safety nets against negative shocks (Sultan & Masih, 2016). The complementary products and services including training and business related services focused on improving the saving practices and had a positive impact on eradicating the poverty levels. The most statistically significant impact on poverty reduction was that of social intermediation services emphasizing on the need for group based credit lending, group support and the financial management within the community (Ezeanyeji et al., 2020).

In addition, while many of the services had a positive effect in micro savings, the direct effect it had on poverty was statistically insignificant (Awaworyi Churchill et al., 2018). This means that while savings, as a way of behaving, can help improve the lot of the poor people, this is not automatically the case if the monies saved are not well-utilized or accompanied by other essential services (Editors et al., 2016). Nevertheless, it has a moderation effect, which depends on credit access, social support, and financial training.

Consequently, it is possible to state that the problem of poverty eradication should be solved within the framework of the integrated model of microfinance when financial services are complemented with social, educational, and community activities (Hilmi et al., 2018). The main discovery about microfinance is not about specific techniques, tools or products but about the system of operations when it delivered as a package. Therefore, this study emphasizes on the fact that microfinance is complex and has a great impact on poverty reduction when properly and fully applied. The result supports the postulates of financial inclusion, empowerment, and social capital where it is also important to note that the approach of penetration is not a one-size-fits-all approach that practical interventions have to base on sound context relevant approaches, which acknowledge networks of difficulties experienced by the poor. There are numerous best practices in financial services that taken to the next level – the path of development that would not only make the services available but also link them to positive social changes, education, as well as empowering the community for positive change.

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