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SHARED-SUPPLY ALLIANCES AND SUSTAINABILITY OF MICROFINANCE INSTITUTIONS IN CAMEROON: THE INSTITUTIONALIST PERSPECTIVE

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A B S T R A C T

Purpose: The downscaling activities of commercial banks and innovative financial services offered by other financial institutions continuously exposed the microfinance institutions to stiff competition, necessitating the quest for new strategies of growth. Alliances have become imperative in enterprise growth, thus the formation of shared-supply alliances in the microfinance sector. This study aims to examine the influence of shared-supply alliances on the sustainability of MFIs in Cameroon. The objectives are to examine how shared-supply alliances in the Production of Financial Services (PFIS) and shared-supply alliances in the Production of Non-Financial Services (PNFIS) affect the sustainability of MFIs in Cameroon.

Materials and Methods: The study used a cross-sectional research design to examine the effects of the independent variables on the dependent variable. Purposive and snowball sampling techniques were used in this study. The target population of the study comprised the 361 MFIs in the Centre, Littoral, NW, SW, and West regions of Cameroon that have carried out strategic alliances, which were retained and used to develop the sample size. Data was collected through the use of open- and closed-ended questionnaires administered to senior management of the MFIs. Data collected was analysed using the Maximum Likelihood Structural Equation Modeling (ML-SEM), with Ordinary Least Square (OLS) regression estimation techniques used to check the robustness of the data set.

Findings: OLS and ML-SEM findings suggest that shared-supply alliances among microfinance institutions have a positive and significant relationship with the sustainability of MFIs in Cameroon, given their β coefficients of 0.227*** and 0.047** respectively. These coefficients are, however, significant at 1% and 5%, with 99% and 95% confidence levels respectively. Specifically, the results show that the Production of Non-Financial Services (PNFIS) and the Production of Financial Services (PFIS) have a significant positive effect on the sustainability of MFIs in

K E Y W O R D S

Strategic Alliances, Shared-supply Alliances, Partnership, Sustainability, Partner microfinance institutions, Financial Services, Non-Financial Services.

Cameroon based on ML-SEM, given their β coefficients of 2.935*** and 1.159**. These coefficients are significant at 1% and 5% respectively.
Corporate implications and Policy: It is recommended that MFIs should partner with other microfinance institutions in terms of the production of financial and non-financial services. This will strengthen their business relationships, create more products/services, strengthen the supply of microfinance services, enable them to have access to resources and expertise from partner microfinance institutions to expand their operations, generate revenue that will keep them going, and boost their financial growth and that of the economy at large.

Introduction

The birth of modern microfinance by Muhammad Yunus in Chittagong in 1976 paved the way for the success of many Microfinance Institutions (MFIs). His activities were centered on the welfarist approach, whose main focus was client-based. The welfarist propounds that the ultimate goal is to reach the maximum number of poor beneficiaries for their wellbeing, irrespective of who bears the cost of the services (Aslam & Thiagarajan, 2018). There has, however, been a mixed reaction in several studies, in different time periods and with different methodologies, with respect to profitability and outreach of MFIs (Mohammad et al., 2018). It is crystal clear that Professor Muhammad Yunus and his Grameen Bank model in Bangladesh gave rise to numerous success stories in the microfinance sector, in line with the demand and supply of microfinance services. For example, numerous small, micro, and medium-sized enterprises whose founders did not have access to traditional banking services developed due to the collateral-free lending and group lending environment that it offers. It is also important to note that the Grameen Bank model tackled several challenges related to access to credit from mainstream financial institutions, such as commercial banks. These challenges stem from high transaction costs resulting from low amounts of credit applied for, lack of loan guarantees, lack of legal status, which did not permit them to produce the administrative documents required, and, even more worryingly, these enterprises could disappear at any time without the lending institution being able to take legal action against them (Singhe, 2020). It is, however, not denied that, to ensure that microfinance does not deviate from its mission of providing affordable and accessible financial services to all, particular attention should be paid to the MFIs' capacity to remain sustainable in their operations. The welfarist approach enabled several MFIs to emerge, especially in Cameroon in the early and late 1990s, because of increased funding received from donor institutions and government, outreach activities, diversified services, and the social impact which attracted more clients, donors, and partners.

The emergence of many MFIs at the time, accompanied by poor regulation (Akanga, 2016; Cull et al., 2008), exposed the institutions to excessive competition among MFIs and commercial banks, leading to several MFIs collapsing. There was therefore the need for the MFIs to go back to the drawing board in order to save the drowning institutions. This led to the emergence of another school of thought in the late 1990s and early 2000s known as the institutionalist (Aslam & Thiagarajan, 2018; Gonzalez-Vega, 2003 and 2011; Ledgerwood, 2003; Morduch, 2000; Brau & Woller, 2004; Ejigu, 2009; Gutiérrez-Nieto et al., 2000). The institutionalist approach in microfinance focuses on creating sustainable, self-sufficient MFIs that provide a broad range of financial services to underserved populations, aiming for financial inclusion and mass distribution rather than solely poverty alleviation (Gonzalez-Vega, 2003; Rajeev and Bhatt, 2013). This approach prioritizes transforming MFIs into

formalized, supervised entities, like banks, capable of covering their operating costs and attracting private investment to achieve long-term operational viability and serve more clients effectively. The institutionalists opine that service recipients must not be the poorest or those below the poverty line but rather those a little above the poverty line. This was to ensure the profitability and sustainability of the Microfinance Institutions, who are the lenders. MFIs with a profit motivation had a higher chance of sustaining their business (Rajeev & Bhatt, 2013). Pioneer scholars of the institutionalist approach advocated for the sustainability of the MFIs themselves via financial self-sufficiency, which will give the MFIs the opportunity to continuously finance their operations (Woller et al., 1999; Gonzalez-Vega, 2003; Adair & Berguiga, 2010). By so doing, the future of microfinance will be largely dominated by many great institutions with lucrative goals and high-quality services to a great number of poor customers. Institutionalists dissuade recourse to any form of subsidies (Woller et al., 1999). In all, the institutionalist approach in microfinance focuses on creating sustainable, self-sufficient financial institutions that provide services to the poor, rather than relying on donor aid. It prioritizes achieving financial self-sufficiency (sustainability) and broad outreach over deep targeting of the poorest. It should be noted that institutionalists emphasize integrating microfinance into the mainstream financial market, viewing profitability as essential for reaching a large scale of clients (Aslam & Thiagarajan, 2018).

To keep MFIs sustainable, institutionalists firstly opted to internalize their operations. By internalization, the microfinance sector began by strengthening the regulations in existence. In Cameroon, this saw the emergence of the 2002 COBAC regulation on MFIs. This regulation organizes the MFIs into three categories, including Category 1, which comprises institutions that collect savings and deposits and lend them to their members. It includes associations, cooperatives, and credit unions, and there was no stipulated capital for Category 1 institutions. COBAC gives a minimum capital required to be sufficient to cover and meet stipulated prudential norms. Category 2 MFIs were those that collect savings and deposits and lend them to third parties. This category consists of limited liability companies that function more like micro-banks, and the minimum capital for Category 2 institutions, as stipulated by the text, was FCFA 50 million. MFIs must show proof of this amount, which must be in the form of a bank statement from any of the commercial banks. Finally, Category 3 was made up of lending institutions that do not collect savings and deposits. They include microcredit and project financing institutions. The minimum capital requirement for a Category 3 MFI institution was FCFA 25 million. This amount must be fully paid, with evidence shown in the form of a bank statement from a commercial bank at the time of application for accreditation (Fotabong, 2012). This regulation did not, however, enable the MFIs to achieve their expected results, as many MFIs collapsed during this period. We have the case of COFINEST and FIFA, where in February 2012, the Ministry of Finance paid salaries of over 300 civil servants in COFINEST due to lack of funds and promised to reimburse depositors. Also, Crédit du Golfe, which was placed under liquidation in 2012 by COBAC after three years of provisional administration, finally shut its doors (Djamaman, 2012; Fotabong, 2012).

Then came the 2017 COBAC law on MFIs to further strengthen the microfinance sector in Cameroon in terms of corporate governance in microfinance institutions, rules laying down the terms and conditions for the accreditation of microfinance institutions, their managers and external auditors, regulation on microfinance capital requirements for Category 2 and 3 MFIs, regulation on the legal forms of MFIs, and rules laying down the terms and conditions for the accreditation of MFIs, their

managers, and external auditors. These internalization measures via regulation still did not yield the expected results, as even after these laws, we continued to witness the collapse of MFIs such as City Trust Credit Fund (CITEF) and CADECCI (Compagnie Équatoriale pour l'Épargne et l'Investissement) in 2018 and 2019, which were placed under liquidation in 2021 following its loss of 8.281 billion FCFA in 2017 (CADECCI) due to the failure of its recovery initiatives (Everestus, 2024). In summary, the failures resulting from the welfarist approach instituted by Yunus in 1976 prompted the emergence of the institutionalist approach that advocated for the sustainability of the MFIs themselves, which will enable them to fulfill their missions of outreach and financial inclusion. According to them, without financial self-sufficiency, MFIs will remain unsustainable in their operations. To implement the institutionalist approach, the institutionalists started by strengthening the regulations, which did not work out to the benefit of the MFIs, given that their initial internalization strategies were faced with excessive competition in the micro, mezzo, as well as the macro environment in which they find themselves. It should, however, be noted that these MFIs were also exposed to governance lapses (Singhe, 2020; Ekanga, 2016; Bakker, 2024; COBAC, 2002). MFIs continued to experience a series of closures even after the new microfinance regulations of 2017 (Everestus, 2014), necessitating that they sought other measures. Faced with these challenges, MFIs have therefore sought external growth strategies in the form of strategic alliances (Angwin & Bonnici, 2015; Bojin & Jean-Marc, 2012; Bouayad & Legris, 1996), with many MFIs forming partnership alliances.

The concept of strategic alliances is a borrowed concept from management sciences that is commonly applied to large corporations like transport, telecommunications, as well as commercial banks (Nwangi, 2014; Klus et al., 2019; Nwamuhye & Ragui, 2021; Everestus, 2024). This article contextualizes this concept in line with microfinance institutions, with a focus on the Cameroon experience. This has therefore given rise to the question: why the introduction of strategic alliances in the microfinance sector in Cameroon? MFIs face stiff competition from the downscaling activities of commercial banks, financial and non-financial institutions in Cameroon. These institutions include other MFIs, insurance companies, Mobile Telecommunication Network (MTN), and money transfer companies such as Western Union, Ria Money, WorldRemit, etc. These institutions all perceive each other as rivals in the financial market; therefore, collaboration in the form of partnership alliances or strategic alliances amongst these institutions, which are competitive firms, is ideal (Everestus & Elle, 2014).

It is, however, important to note that, in Cameroon, there are already some complementary alliances between MFIs and commercial banks, MFIs and insurance companies, as well as MFIs and telecommunication agencies, which have contributed greatly to the sustainability of MFIs in Cameroon (Everestus & Elle, 2024). An example is seen with Unity Cooperative Society (UNICS) Plc and Mutengene Loans and Savings Cooperative Ltd, which are hosts to ATM services of United Bank of Africa (UBA). We also have Ntarikon Cooperative Credit Union Ltd and MMockmbie Cooperative Credit Union Ltd having Visa and GIMAC cards that can be accessed with other MFIs such as Community Credit Company (CCC) Plc, MC2, as well as commercial banks (Everestus & Elle, 2024). Elle (2017) presented the various microfinance and commercial bank relationships and innovations that exist in Cameroon's financial environment, as well as the study of Dze and Soldi (2011), which shows strategic alliances and performance measurement in the financial service industry with reference to Beneficial Life Insurance S.A and MFIs in Cameroon. It is, however, not clear whether their studies (Elle, 2017; Dze & Soldi, 2011) actually contributed to the sustainability of MFIs in Cameroon.

Angwin & Bonnici (2015), Bojin & Jean-Marc (2012), and Bouayad & Legris (1996) identify three forms of strategic alliances, including shared-supply alliances, complementary alliances, and quasi-concentration alliances. Many studies have shown how these alliances have contributed to the performance and sustainability of commercial banks in Saudi Arabia, Nairobi, Kenya, Rwanda, and Kenya (Isoraite, 2009; Wandia & Ismail, 2018; Nshimiyimana, 2021; Mwamuye, 2021), as well as their impact on the performance of microfinance banks in Nigeria (Enyinnah, 2020). The study of Everestus & Elle (2024), for example, demonstrated how complementary alliances affect the sustainability of MFIs in Cameroon. This study shall focus on shared-supply alliances and how they affect the sustainability of MFIs in Cameroon by providing answers to the following research questions:

1. What is the effect shared-supply alliance in the form of production of financial services on the sustainability of MFIs in Cameroon?
2. How does shared-supply alliance in the production of Non-financial Service affect the sustainability of MFIs in Cameroon?

Given the questions above, the objectives of this study are therefore to examine how shared-supply alliances in the form of production of financial services and shared-supply alliances in the production of non-financial services affect the sustainability of MFIs in Cameroon. This work is therefore important because its results could facilitate the design, development, and implementation of strategic decisions by the management of MFIs in particular and the growth of Cameroon's financial system at large. Strategic decisions in line with shared-supply alliances will ensure sustainability and provide quality and innovative services to microfinance clients, expand their operations, and enable the MFIs to gain access to resources, expertise, and the latest technology.

The study is divided into six sections, which comprise the introduction, literature review, methodology, findings, discussion, conclusion, and corporate implications.

2.0 Literature Review

2.1 Strategic Alliances

A strategic alliance is a voluntary arrangement or mutual relationship between competitive firms that enables each to achieve certain strategic objectives which neither would be able to achieve on their own. It is an agreement between institutions that remain independent in their operations and are usually in competition or see each other as rivals (Grimsley, 2021). It is constituted to allow its partners to pool resources and coordinate efforts in order to achieve results that neither could obtain by acting alone. Therefore, a strategic alliance is characterized, firstly, by two or more institutions (business units or companies) that agree to achieve objectives of a common interest considered important, while remaining independent of the alliance. Secondly, the partners share both the advantages and control of the management of the alliance for its entire duration, and thirdly, the partners contribute, using their own resources and capabilities, to the development of one or more areas of the alliance important to them, such as technology, marketing, production, R&D, and other areas specified in the alliance. Angwin and Sammut-Bonnici (2015) divided strategic alliances into alliances among competitive firms and those among non-competitive firms. This study focuses on strategic alliances among competitive firms. This is because MFIs face stiff competition in the financial market with other MFIs, commercial banks, etc. Almahdi (2019), Kone (2019), Bojin & Jean-Marc (2012), Dussauge & Garrette (1999), and Everestus (2024) identified three types of strategic alliances among competitive firms. They

include complementary alliances, shared-supply alliances, and quasi-concentration alliances. This paper shall focus on shared-supply alliances.

2.2 Shared-Supply Alliances, its characteristics in Cameroon, sustainability of MFIs

Shared-supply alliances are strategic partnerships between institutions of comparable size, operating in the same zone, with the same assets and skills, that join forces to achieve economies of scale on a given component or on an individual stage in the production process (Angwin & Sammut-Bonnici, 2015; Kone, 2019; Yu, Xu & Dong, 2019; Bojin & Jean-Marc, 2012). From this definition, it can be deduced that shared-supply alliances are characterized by firms of the same size, operating in the same zone, having similar assets and skills, and being able to come together to carry out production activities. Though widely applied in management sciences and among large corporations, the concept of strategic alliances, and particularly shared-supply alliances in this paper, is contextualised in line with the banking sector and, in particular, the microfinance sector of Cameroon. Based on the characteristics of shared-supply alliances just cited, we can deduce that these are two MFIs (given that they are of the same size) that form an alliance to jointly produce (carry out production activities) financial services such as savings accounts, deposit accounts, payment services, as well as non-financial services such as financial education, health services, legal advising, counselling, technical assistance, and business development training, to mention just a few. It should be noted that MFIs in Cameroon, within the different categories, share the same characteristics in line with the requirements for their formalisation, have the same operational patterns and size, as well as carry out production activities. Shared-supply alliances, in this case, are strategic partnerships between an MFI and another MFI to carry out production activities. These MFIs produce financial and non-financial services that are used to generate income to finance their operations, as well as meet the exigencies of these MFIs for a long period of time (Chand, 2021; Almahdi, 2019).

Financial products in MFIs comprise deposit accounts, loan services, savings accounts, insurance, leasing, and fund transfers, while non-financial products include support to HIV/AIDS patients, relief materials for disaster victims, business development, advisory services, vocational skills training, and civic education. They contribute to the growth of MFIs in terms of increases in their membership, savings, loans, revenue, job creation, and asset accumulation (Wang & Ismail, 2018; Chand, 2021; Zahoo et al., 2021). This study sees the production of financial services in terms of loan services, savings accounts, and deposit accounts, while the production of non-financial services in MFIs includes financial education (skills and attitudes necessary to manage money and finance), health services, legal advising, counselling, technical assistance, and business development training.

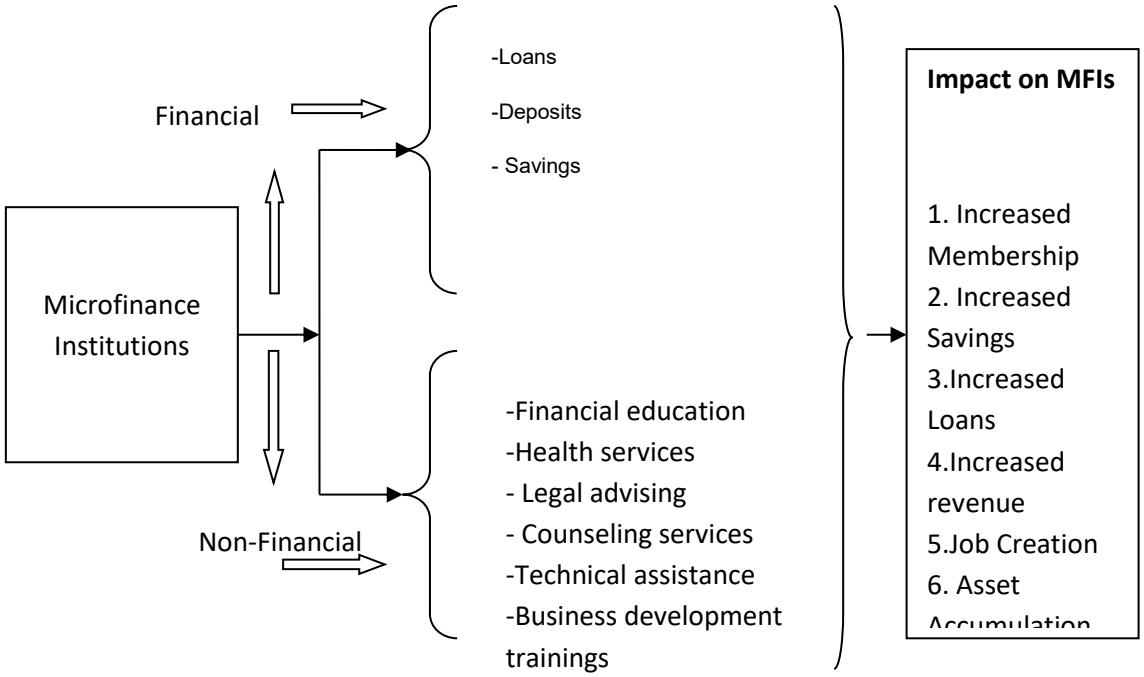

Figure 2.1 Financial and non-financial products and impact on MFIs

Source: Author 2025

In Cameroon, no studies exist to show evidence of shared-supply alliances among MFIs, though some MFIs are beginning to engage in shared-supply alliances among themselves. This is seen in the case of Unity Cooperative Society (UNICS) Plc, a Category 2 MFI, which has created a shared-supply alliance with Crédit du Sahel Plc (another Category 2 MFI) in the Far North region of Cameroon, where customers of UNICS Plc resident in the Far North region can perform their banking services such as savings and withdrawals via Crédit du Sahel Plc. There also exists a shared-supply alliance between Community Credit Company (CCC) Plc, a Category 2 MFI, and Mmockmbie Cooperative Credit Union, where holders of GIMAC ATM cards can carry out withdrawals from their accounts via ATMs installed in any of these institutions.

This strategic partnership contributes greatly to the sustainability of MFIs through its advantages of mutual trust, shared control, shared risk, partner accountability, mutual needs, and teamwork (Lubello et al., 2015; Cozarenco, 2015; Dussauge & Garrete, 1999; Delios et al., 2009; Arrigo, 2012; Certo & Certo, 2012; Ko et al., 2020). Through these shared-supply alliances, partnerships among MFIs achieve sustainability through economies of scale (Ko et al., 2020), reduction in transaction costs, brand awareness, enhancement of competitive position, and the acquisition of knowledge, risk sharing, acquisition of new technology (Arrigo, 2012), provision of access to resources (Certo & Certo, 2012), financial capital, quality products and services, and R&D knowledge (Lubello et al., 2015), as well as expansion of market share in terms of clientele (Cozarenco, 2015; Delios et al., 2009; Dussauge & Garrete, 1999). This has been visible with BancoSol and PRODEM in Bolivia, and Bank Rakyat Indonesia (BRI) and other MFIs in Indonesia, keeping them sustainable.

The notion of sustainability today is at the very heart of management science, though it has been relatively little addressed in the literature, except for a few studies by some authors (Afzal & Lim, 2022; Maeenuddin, 2023; Beatriz Armendáriz & Szafarz, 2011b; Robert Cull, Demirgüç-Kunt, &

Morduch, 2011; Robert Cull & Morduch, 2007; Niels Hermes & Lensink, 2011; N. Hermes et al., 2011). Earlier, some authors like Morin et al. (1994), de Geus (1997a, 1997b), and Mignon (1998, 1999, 2000, and 2002) all tackled it from several angles. For example, Morin et al. (1994: 81) see sustainability as "the degree to which stability and, ultimately, an organization's growth, stand the chance of being maintained in the test of time." Similarly, Arie de Geus (1997) opines that sustainability is achieved "when the company has, in the course of its history, managed to withstand the test of deep upheavals in its environment and to preserve, up to today, the greater part of its identity." From these two thoughts, it can be deduced that sustainability is a reflection of the company's ability to maintain itself in business and, beyond this, to sustain its growth rate in the long term. de Geus (1997a) pointed out four principal elements that characterize sustainable companies, which include, firstly, sensitivity to the environment, which has to do with the company's ability to learn from the environment and to adapt to it; secondly, the twin notions of cohesion and identity, which reflect the company's innate disposition to form itself into a community and to acquire its own personality; thirdly, tolerance and its corollary, namely decentralization, which are symptoms of the company's ecological conscience, that is, its ability to establish constructive links with other entities both within and outside; and lastly, financial prudence, which appears to be a dimension of a company's indispensable ability to steer its expansion and its evolution (de Geus, 1997a: 20).

Sustainability, according to the UN World Commission on Environment and Development (UN-WCED), is development that meets the needs of present generations without compromising the ability of future generations to meet their own needs. According to the University of California, Los Angeles (UCLA) Charter, sustainability is the integration of environmental health, social equity, and economic vitality in order to create thriving, healthy, diverse, and resilient communities for this generation and generations to come. Based on these definitions, this paper contextualizes sustainability in MFIs in Cameroon in line with these three dimensions, including economic, social, and environmental sustainability. Thus, the sustainability of MFIs is the ability of MFI programs (economic, social, and environmental) to meet present needs without compromising the ability of future generations to meet their own needs. In other words, sustainability of MFIs refers to the ability of MFIs to maintain their activities and continue producing financial and non-financial products in the long term, that is, to "keep the MFIs going."

2.3 Hypotheses Development

Several empirical studies have justified the incorporation of strategic alliances in the strategic decision-making of enterprises around the globe. For example, Nshimiyimana (2021) posited that there exists a positive relationship between strategic alliances and the performance of MFIs in Rwanda. He recommended that policymakers as well as managers/CEOs in MFIs should promote strategic alliances as a tool for improving the performance of these organizations. Mersland and Urgeghe (2017) found that MFIs participating in strategic alliances had higher financial performance and lower costs. In Lagos, Nigeria, Enyinnah et al. (2020) showed that strategic alliance dimensions have a significant and positive effect on market share. Klus et al. (2019) established that in times of digitalization, firms increasingly need to form alliances due to the higher complexity and greater dynamics of the markets. Muange and Maru (2015), on their part, demonstrated that strategic alliances are important and have a positive effect on organizational performance. Similarly, Setyadi et al. (2017) reported that strategic alliances are used to strengthen the position of an organisation in the face of competition. This was in line with the study of Maselo (2019), who outlined the significant positive relationship existing between strategic alliances and the growth of market share at KCB Bank Plc in Kenya. Finally, Almahdi (2019) showed that the creation of an alliance agreement allows Saudi commercial banks to improve their efficiency. Though few of these studies focused on MFIs per se, theories have, however, supported the formation of strategic partnerships among MFIs.

For example, the Resource Dependence Theory suggests that organizations form alliances to access critical resources that they cannot obtain independently (Pfeffer & Salancik, 1978). These resources positively influence the sustainability of MFIs by reducing operational costs and improving efficiency. Going by the signaling theory of Michael Spence (1973), MFIs participating in strategic alliances signal their commitment to adopt best practices that improve sustainability. Based on the Resource-Based Theory of Barney (1991), MFIs can access resources and expertise from their partner organizations, such as technical know-how, distribution networks, or additional funding sources. These resources can enhance MFI operations, expand their reach, and contribute to sustainability. Borrowing from these empirical as well as theoretical experiences, the concept of strategic partnerships can be applied in the Cameroon context to mitigate the meltdown experienced by MFIs. Thus, this study shall test the following alternative hypotheses:

H01: Shared-supply alliances in the form of production of financial services significantly affect the sustainability of MFIs in Cameroon.

H02: Shared-supply alliances in the form of production of non-financial services significantly affect the sustainability of MFIs in Cameroon.

3. Methodology

3.1 Operationalisation of the Research Variables

Research Variable	Sub-Variable	Measures
Shared-supply Alliances- MFI with MFI. Strategic partnerships between institutions of comparable size and operating in the same zone with the same assets and skills that joint forces to achieve economic of scale on a given component or on an individual stage in the production process. They are characterized by R&D and Production activities e.g MFI and MFI	**Production of Financial Services**	- Loans services - Saving accounts - Deposit accounts
	Production of Non-financial Services	-Financial education (skills and attitudes necessary to manage money and finance) -Health services - Legal advising - Financial Counseling -Technical assistance -Business development trainings
Sustainability (composite index): "Keep the MFIs going". The ability of the MFI programs (economic, Social, and environmental) to meet the needs of the present without compromising the ability of future generations to meet their own needs. Or the ability of microfinance institutions to maintain their actions and continue providing financial and non-financial services in the long-term.	**Economic sustainability**	-Profits -sufficient liquidity cash flows -Increase Average returns to shareholders -MFI increasingly enter new markets
	Social sustainability	-Employees grow and acquire skills -Employees' motivation and loyalty - Training opportunities - Benefits to employees
	Environmental sustainability	-financing of environmental-friendly activities - Regulation and compliances governing the environment -Environmental preservation -Workplace safety/ make environmental-friendly laws
Control Variables	**Financial innovation:** This study sees financial innovation as the creation of new financial products, services, and processes, as well as the modification of existing ones, with the aim of improving efficiency and increasing revenue streams.	MFIs' ability to create new processes and products
	Regulatory compliance: it is seen in terms of the *MFIs'* adherence to laws, regulations, guidelines and specifications relevant to its business process	Adherence to laws and regulations

3.2 Population and Sample size

This study uses a cross-sectional research design. The target population for this study comprises category 1 and 2 microfinance institutions located in the Centre, Littoral, North West, South West, and West regions of Cameroon that are undertaking strategic alliances. These two categories of MFIs collect savings and deposits and lend them to their members (category 1) and to third parties (category 2). The study focuses on 361 category 1 and 2 MFIs in the Centre, Littoral, North West, South West, and West regions of Cameroon. Those that have carried out shared-supply alliances were retained and used as the sample size. These MFIs belong to eight microfinance networks.

Table 3.2: MFIs and affiliated Networks in Centre, Littoral, North West, South West and West regions of Cameroon.

REGION & CATEGORY / AFFILIATION	CENTER REGION		LITTORAL REGION		NORTH WEST REGION		SOUTH WEST REGION		WEST REGION		TOTAL
	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 2	Cat 1	Cat 2	
		28		26		6		7		5	72
Independent	16		6		3		2		3		30
CVECA Network	2		1								3
CAMCCUL Network	2		17		58		45		14		136
MUCADEC Network	6										6
MUFID Union Network	12		8		8		3		36		67
RECCUCAM Ltd Network	1				12						13
RAINBOW Network	2				5						7
NOWEFOCH					9						9
BINUM TONTINE									18		18
TOTAL	41	28	32	26	95	6	50	7	71	5	361
TOTAL PER REGION	69		58		101		57		76		361

Source: MINFI (2025) and Finance law (2024)

Table 3.2 above reveals that, as of December 2024, there were 361 category 1 and 2 MFIs in the Centre, Littoral, North West, South West, and West regions of Cameroon, representing 89.8% of the MFIs in the country. Of these 361 MFIs, 289 belong to category 1 (80.0%) and 72 belong to category 2 (20.0%). In summary, the target population of the study comprises 289 category 1 and 72 category 2 MFIs in the Centre, Littoral, North West, South West, and West regions of Cameroon (Finance Law, 2024; MINFI, 2025) that are undertaking strategic alliances. These regions were targeted because they represent over 80% of the total number of MFIs in Cameroon.

Table 3.3: Summary table showing the distribution of category 1 and 2 MFIs in Centre, Littoral, North West, South West, and West regions of Cameroon.

Category / Region	Category 1	Category 2	**Total**
Centre	41	28	**69**
Littoral	32	26	**58**
North west	95	6	**101**
South West	50	7	**57**
West	71	5	**76**
Total	**289**	**72**	**361**

Source: Author, 2025

Based on Table 3.3 above, the North West region dominates in terms of the number of MFIs. It is worth noting that the first MFI (a cooperative savings and loans institution) in Cameroon was created in Njinikom, North West region, in 1963 by a Roman Catholic clergy member. The West region ranks second, while the Centre, Littoral, and South West regions occupy the third, fourth, and fifth positions, respectively.

3.3 Sampling and instruments

The study used purposive and snowball sampling techniques to select members of the population for inclusion. Using the purposive/judgmental sampling technique, top management of the MFIs responsible for designing corporate strategies were selected. Through the snowball technique, these top managers provided information to contact other relevant members. Primary data were collected through questionnaires. Two questionnaires were distributed to top-level management of each MFI. To avoid bias, responses were summed and averaged to produce a single copy retained for each MFI. The questionnaires were distributed both manually and via an online link shared with respondents via WhatsApp. In total, a sample size of 204 MFIs was generated. The questionnaire was validated, and reliability was established. The reliability of the research instrument was confirmed using Cronbach's alpha, which measured 0.7.

The raw data collected from the field were cleaned, coded, and analyzed using AMOS version 23, STATA version 14, and SPSS version 20.

3.4 Model Specification and Apriori Expectations

Theories and empirical debates have motivated the specification of a model that examines the effects of shared-supply alliances on MFIs' sustainability. For instance, the Transaction Cost Theory (TCT) emphasizes the efficiency gains achieved through joint procurement by reducing transaction costs (Williamson, 1979). By pooling their procurement efforts, MFIs can achieve economies of scale, reduce research and negotiation costs, and mitigate the risks associated with microfinance providers. These cost savings and risk reductions can contribute to the long-term sustainability of the MFIs. The Signalling Theory (Spence, 1959) posits that sellers provide buyers with signals to help them evaluate the quality of the products. MFIs create alliances with other MFIs based on signals obtained from various instruments to bridge the information gap. Shared-supply alliances can be seen as an institutional response to the increasing expectations for efficiency and cost-effectiveness in the microfinance sector. By participating in such alliances, MFIs signal their commitment to adopting best practices and improving sustainability, which can enhance their reputation and attract funding from stakeholders. According to economies of scope, shared-supply alliances can enable smaller MFIs to expand their product offerings and reach a larger customer base by leveraging the hub MFI's expertise and infrastructure. This will lead to increased revenues and improved sustainability for the MFIs (Panzar & Willig, 1981).

Empirical research on the effects of shared-supply alliances on MFI sustainability has yielded mixed findings. For example, a study by Mersland and Urgeghe (2017), Bansi (2013), Wales (2013), and Afzal and Lim (2022) found that MFIs participating in shared-supply alliances had higher financial performance and lower costs. However, another study by Hudon and Traca (2018) reported no significant impact of shared-supply alliances on MFI performance. These empirical debates highlight the need for a more comprehensive model that considers various contextual factors to understand the

complex relationship between shared-supply alliances and MFI sustainability. Based on these theories and empirical debates, a model can be specified to examine the effects of shared-supply alliances on the sustainability of MFIs as follows:

$Y_i = \beta_0 + \beta_1 PFIS_i + \beta_2 PNFS_i + \beta_3 RCP_i + \beta_4 FINI_i + \varepsilon_i \ldots\ldots\ldots\ldots (1)$

Where;

Y_i = represents sustainability scores of MFI

$PFIS_i$= Production of Financial Services

$PNFS_i$ = Production of Non-Financial Services

RCP_i = Regulatory compliance of the MFI

$FINI_i$ = Financial innovation of the MFI

B_0 = Constant Term, β_1, β_2, β_3 = Beta coefficients,

ε= error term or stochastic term

i= entity

The Dependent variable (Y) is Sustainability which depends on the independents variables which are $PFIS_i$ (Production of Financial Services) and $PNFS_i$ (Production of Non-Financial Services). The control variables are Regulatory compliance (RCP_i) as well as financial innovation ($FINI_i$) of the MFIs. This model is used to test for hypotheses.

The a priori expectations for Shared-supply Alliances are;

$\beta_1>0$, $\beta_2>0$, $\beta_3>0$, $\beta_4>0$.

$\beta_1>0$: increase in $PFIS_{1i}$= Production of Financial Services/products by MFIs via Shared-supply alliance will contribute to sustainability of MFIs by the corresponding increase in value of beta or coefficient of the variable.

$\beta_2>0$: when a MFI produces non-financial Services ($PNFS_{2i}$) through shared-supply alliances, there is a greater possibility that this will lead to sustainability of the MFI.

$B_3>0$: when a MFI complies with the regulation, it is predicted that this will likely improve sustainability of the MFI

$B_4>0$: When a MFI has the ability to create new financial products, services, or processes, it is predicted that this will likely contribute to its long term survival.

3.5 Estimation Techniques

Structural Equation Modeling (SEM) is the principal estimation technique used in this paper to analyze the relationships among variables and test complex theoretical models. It combines elements of factor analysis and regression analysis to examine both the measurement model (relationships between latent variables and their observed indicators) and the structural model (relationships between latent variables themselves). The Ordinary Least Squares (OLS) technique was used to test the robustness of the SEM results. OLS was used due to its BLUE advantages (Best, Linear, Unbiased, and Efficient Estimator).

To validate the use of Principal Components Analysis (PCA), several tests and procedures were conducted to ensure the appropriateness and validity of PCA for the given dataset and research objectives. These include: the Kaiser-Meyer-Olkin (KMO) Test, which was used to assess the sampling adequacy for Principal Component Analysis; Bartlett's Test of Sphericity, which evaluates whether the correlation matrix is significantly different from an identity matrix, indicating that the data is appropriate for PCA; Cumulative Variance Explained, which provides information about the amount

of total variance explained by each retained component; and Factor Loadings, which represent the correlations between variables and the retained components.

Ordinary Least Squares (OLS) regression findings were validated by conducting several tests to assess the model's goodness of fit, reliability of the estimates, and the validity of the assumptions. These tests include R-squared (to measure the proportion of variance in the dependent variable explained by the independent variables in the model), F-test (assesses the overall significance of the regression model), Standard Errors and t-tests (to measure the precision of the estimated coefficients), Breusch-Pagan Test (to detect heteroscedasticity) or White Test, and Multicollinearity Tests.

4.0 Findings

4.1 Descriptive Results

Response Rate

The population of the study was category 1 and 2 MFIs in Cameroon. The target population for this study was the category 1 and 2 microfinance institutions located in the Centre, Littoral, North West, South West, and West regions of Cameroon that have carried out strategic alliances. The choice of these five regions was because they have a total of 361 MFIs of category 1 and 2 out of 402 MFIs in Cameroon (MINFI, 2024), making a 90% representation.

A total of 231 MFIs responded to the questionnaires, comprising 82 questionnaires received manually and 149 received via online platforms, making a total of 231. Of the 231 responses obtained from 231 MFIs, 204 responses were finally retained, representing the MFIs that indicated having carried out strategic alliances; this constitutes the sample size. The remaining 27 MFIs, which acknowledged not having carried out any form of strategic alliance, were dropped and not considered for the analysis.

Based on the total number of responses received from the target population, the response rate stood at 70%. This was critical, given that a good level of response rate strengthens the validity of the study. According to Bryman and Bell (2007), a response rate of 50% is acceptable for analysis and publication, 60% is good, and 70% is very good. The overall 71% response rate achieved for this study was therefore very good. Bruce (1999) stresses that response rate is one of the most critical factors used to determine study quality and adds that a response rate greater than 70% is appropriate.

Table 4.1: Descriptive Statistics for Shared-supply Alliances

Variable	Obs	Mean	Std. Dev.	Min	Max
n npfs(PNFS)	204	0.773	0.179	0	1
n fi (FINI)	204	0.664	0.238	0	1
n pfs (PFIS)	204	0.755	0.191	0	1
n rc (RCP)	204	0.79	0.156	0	1
n ens (ENSUS)	204	0.565	0.231	0	1
n es (ECOSUS)	204	0.755	0.153	0	1
n ss (SOSUS)	204	0.761	0.173	0	1
n_ssa (SSA)	204	0.810	0.166	0	1
n_mfis (MFIs)	204	0.531	0.190	0	1

Source: Computed by Author using STATA Version 14

The results in Table 4.1 present the descriptive statistics for shared-supply alliances and sustainability. They reveal that the total observations in the sample were 204. The results indicate that Shared-Supply Alliances (SSA) have a mean of 0.810 and a standard deviation of 0.166. The value of the variable Shared-Supply Alliances (SSA) was normalized between 0 and 1 to eliminate negative values, which pose some interpretation difficulties. All the variables in the model were normalized between 0 and 1. The objective of the normalization was to ease interpretation challenges posed by the negativity of the variables. The data were further subjected to correlation analysis in order to track the level of association between the variables.

4.2 Inferential Results

Table 4.2 KMO and Bartlett's Test for Shared-supply Alliances

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.705	
Bartlett's Test of Sphericity	Approx. Chi-Square		684.776
	df	105	
	Sig.		0.000

Source: Computed by Author using SPSS Version 20

The results in Table 4.2 show a strong correlation structure between the items, as the KMO, which is a measure of sampling adequacy, and Bartlett's test of sphericity were significant. The cut-off criterion test value for KMO is 0.705. The results also indicate that the factorability of the items was an essential condition that needed to be verified before running inferential analyses of the data. Factor analysis is very robust because of its assumptions of linearity, no multicollinearity, and homoskedasticity. Factor analysis was used because of the Likert nature of the question items under each of the concepts in the study.

In addition, Kaiser-Meyer-Olkin values (measure of sampling adequacy) must exceed 0.50 for both the overall test and each individual item. Items with values less than 0.50 were omitted from the factor analysis one after the other, starting with the item with the smallest value, following the recommendation by Hair et al. (2018). The diagonal elements of the anti-image correlation measure individual item-level sample adequacy. These values were above the minimum cut-off point of 0.5, providing evidence of sampling adequacy.

Table 4.3 Results of Communalities for Shared-supply Alliances

Variables	Initial	Extraction
Individual loans are produced by your MFI when in partnership with another MFI(s)	**1**	**0.630**
Your MFI grows in savings accounts when in partnership with another MFI(s)	**1**	**0.674**
There are more Fixed Termed Accounts when your MFI partners with another MFI(s)	**1**	**0.546**
Your MFI easily enhances financial education of its clients when in partnership with another MFI(s)	**1**	**0.662**
Business development training is more effective when your MFI is in partnership with another MFI	**1**	**0.663**
More and better health services are provided by your MFI when in partnership with another MFI	**1**	**0.617**
Your MFI carries out legal advice to its clients when in partnership with another MFI(s)	**1**	**0.597**
Financial counselling is more effective when your MFI is in Partnership with another MFI(s)	**1**	**0.573**
Your MFI continuously enjoys high profits over the years	**1**	**0.667**
Your MFI has continuously maintained a sufficient liquidity cash flows over the years	**1**	**0.523**
Your MFI employees are motivated and loyal	**1**	**0.666**
Customer base of your MFI is expanded	**1**	**0.752**
Your MFI activities increasingly support environmental preservation activities such as cleanliness, planting of tress, water management etc	**1**	**0.495**
Your MFI continuously finances environmentally-friendly activities such as waste management	**1**	**0.486**
Your MFI has always adhered to or complied with regulations that protect the environment	**1**	**0.635**

Extraction Method: Principal Component Analysis.

Source: Computed by the Author using the SPSS Version 20

The communalities measure the extent to which an individual item on the questionnaire correlates with the rest of the items in the construct. Items with low communalities, that is, less than 0.5, were considered for elimination, as recommended by Hosany, Ekinci, and Uysal (2006). Using the Principal Component Analysis (PCA) method of extraction, the communalities for all seven items in Table 4.3 were reasonable, as more than 50% of the variance in the various items was explained. However, the communalities do not indicate the number of factors or components extracted using the Varimax extraction approach with PCA.

The results of the Total Variance Explained for Shared-supply alliances show that the total variance explained was 61.244%. The results indicate that Component 1 explained 16.81% of the shared variance, with a corresponding Eigenvalue of 3.608. Component 2 explained 14.27% of the variance, and Component 3 explained 11.52%. The fourth and fifth components extracted explained 9.62% and 9.04% of the variance in the hypothetical model, respectively.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.608	24.052	24.052	3.608	24.052	24.052	2.521	16.805	16.805
2	1.980	13.200	37.252	1.980	13.200	37.252	2.140	14.268	31.072
3	1.285	8.568	45.820	1.285	8.568	45.820	1.728	11.517	42.590
4	1.238	8.251	54.071	1.238	8.251	54.071	1.442	9.616	52.205
5	1.076	7.173	61.244	1.076	7.173	61.244	1.356	9.039	61.244
6	.867	5.778	67.022						
7	.810	5.400	72.422						
8	.768	5.118	77.540						
9	.728	4.854	82.394						
10	.622	4.147	86.541						
11	.563	3.753	90.294						
12	.486	3.239	93.533						
13	.357	2.378	95.911						
14	.323	2.157	98.068						
15	.290	1.932	100.000						

Extraction Method: Principal Component Analysis.

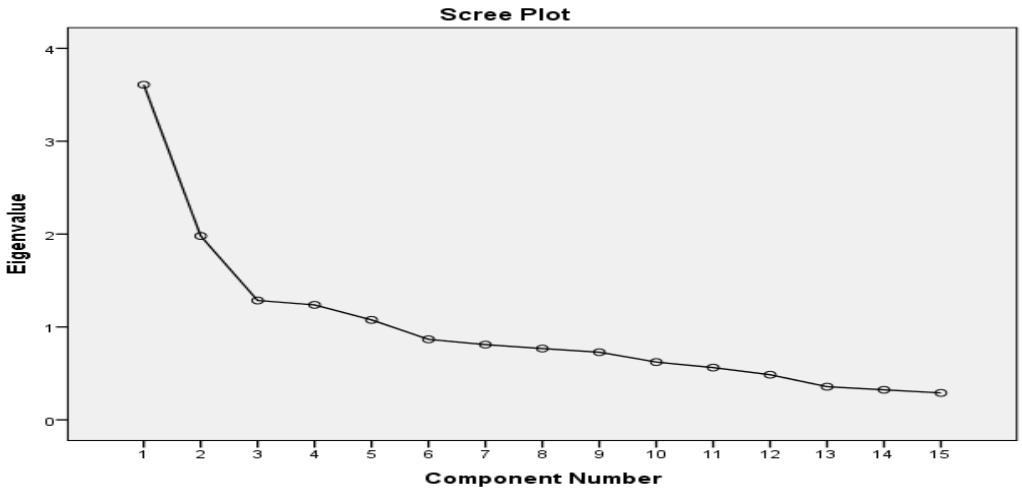

Figure 4.1 Scree Test for component Analysis- Shared-supply Alliances

The scree plot test shown in Figure 4.1 indicates that five factors were appropriate when considering the changes in eigenvalues. The implication is that two of the five components extracted explained shared-supply alliances, while three of the factors captured the sustainability of MFIs. The output suggests that the constructs "Shared-supply Alliances (SSA)" and "Sustainability of MFIs" are not one-dimensional.

Table 4.4 Rotated Component Matrix[a]- Shared-supply Alliances

Variables	Components				
	1	2	3	4	5
Your MFI easily enhances financial education of its clients when in partnership with another MFI(s)	.784				
Financial counselling is more effective when your MFI is in Partnership with another MFI(s)	.718				
Your MFI carries out legal advice to its clients when in partnership with another MFI(s)	.669				
There are more Fixed Termed Account when your MFI partners with another MFI(s)	.634				
Your MFI grows in savings accounts when in partnership with another MFI(s)		.802			
Individual loans are produced by your MFI when in partnership with another MFI(s)		.753			
Business development training is more effective when your MFI is in partnership with another MFI		.666			
More and better health services are provided by your MFI when in partnership with another MFI		.547			
Your MFI has continuously maintained a sufficient liquidity cash flows over the years			.703		
Your MFI activities increasingly support environmental preservation activities such as cleanliness, planting of tress, water management etc			.695		
Your MFI continuously finances environmentally- friendly activities such as waste management					
Your MFI continuously enjoys high profits over the years				.775	
Your MFI has always adhered or comply to regulations that protect the environment				.708	
Customer base of your MFI is expanded					.807
Your MFI employees are motivated and loyal					.687

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.

Source: Computed by Author using SPSS Version 20

Table 4.4 shows the factor loadings under the five components that were extracted using the principal component and Varimax rotation method. The factor-loading matrix contains the factor loading of each variable on each factor. We used the rotation method to ensure that each variable uniquely loads on the factor with the greatest variability, and it must be greater than 0.5 to be retained for further study—that is, for confirmatory purposes. However, there is no evidence of cross-loading between components. The results show strong evidence of convergent validity and item reliability, as all the loadings were well above the minimum cut-off.

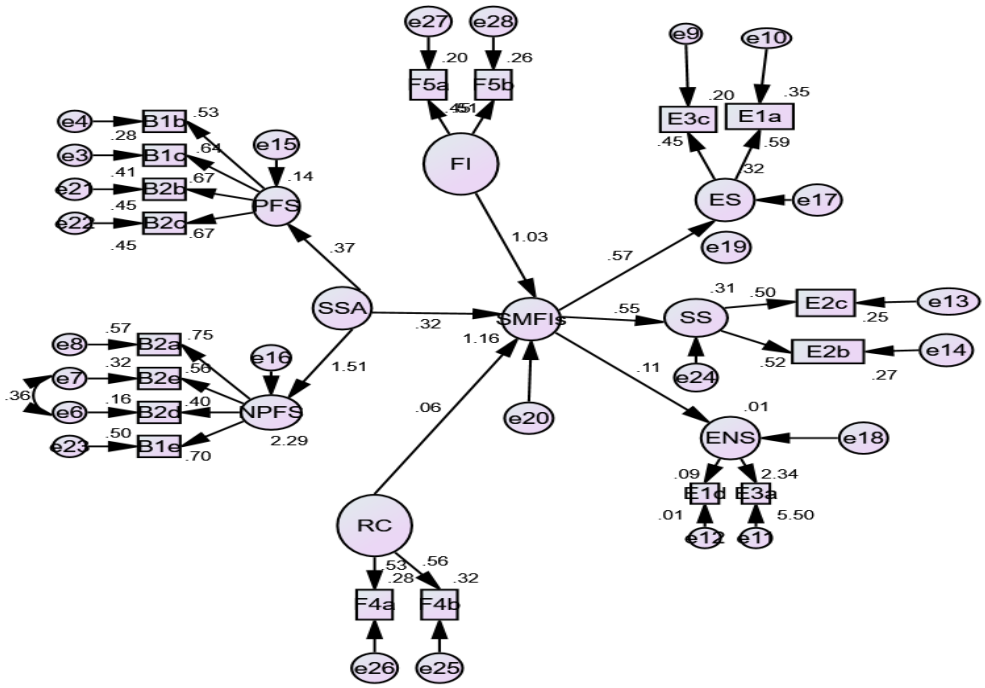

Figure 4.2. Structural Mimic Model of shared-supply alliance and SMFIs

Source: Computed by Author using AMOS version 23

The result presented in Figure 4.2 shows the relationship between the inner model constructs, as well as the relationships between the observed variables, or indicators, and constructs. The circle represents the construct, while the rectangle represents the observed or manifest variables used in the construction of the model (Thalut, 2016). The model indicates that Shared-Supply Alliances (SSA) is an exogenous latent construct, while the sustainability of MFIs is an endogenous latent construct. Financial innovation and regulatory compliance were control exogenous constructs in the model. Meanwhile, shared-supply alliance was an exogenous variable captured using two constructs: production of financial services (PFS) and production of non-financial services (NPFS), respectively. The sustainability of MFIs was captured using three constructs: economic sustainability, social sustainability, and environmental sustainability.

The use of these constructs can be justified by the fact that Shared-Supply Alliances (SSA) and the sustainability of MFIs are multifaceted. This suggests that using a single observed variable on the questionnaire may not be appropriate to proxy for these concepts. The question items used as manifests

of the constructs are valid and reliable, as indicated in the results of the communality and the measure of sampling adequacy on the anti-image correlation matrix.

It should be noted that the MIMIC model is designed to confirm the influence of exogenous causal variables on a latent variable, and the impact of this latent variable on observed indicator variables. It is a theory-based approach where multiple indicators reflect underlying latent variables, and multiple causes (observed predictors) affect these latent variables. However, it is crucial to note that the basic assumptions of the MIMIC model can be violated in cases where a variable acts as both an indicator and a cause, leading to issues like reverse causality and model identification challenges. To address such complexities, specialized estimation techniques like the 2SLS (Two-Stage Least Squares) estimator have been developed for MIMIC models.

Table 4.5 Cronbach alpha for Objective One

Cronbach's alpha values measures the internal consistency or how closely related a set of items are as a group.

Variable	Obs	Number of items	Cronbach Alpha
Production of non-financial services	204	5	0.7371
Financial innovation	204	2	0.5692
Production of financial Services	204	5	0.6878
Regulation compliance	204	2	0.5634
Environmental sustainability	204	2	0.4124
Economic sustainability	204	2	0.4385
Social sustainability	204	2	0.4265
Shared- Supply Alliance	204	10	0.7882
Sustainability of microfinance	204	13	0.5658

Source: Computed by Author using SPSS Version 20

Based on table 4.5, shared-supply alliances have a cronbach alpha value of 0.788 suggesting that the items have relatively high internal consistency. It should be noted that a reliability coefficient of 0.70 is considered acceptable in most social science research.

Table 4.6 Pairwise Correlations for Shared-supply Alliances

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) MFIs	1.000	--	--	--	--	--
(2) SSA	0.241*	1.000	--	--	--	--
	(0.001)					
(3) PNFS	0.294*	0.834*	1.000	--	--	--
	(0.000)	(0.000)				
(4) PFIS	0.119	0.856*	0.429*	1.000	--	--
	(0.089)	(0.000)	(0.000)			
(5) RCP	0.170*	-0.063	0.009	-0.112	1.000	--
	(0.015)	(0.370)	(0.897)	(0.111)		
(6) FINI	0.395*	0.169*	0.223*	0.069	0.207*	1.000
	(0.000)	(0.015)	(0.001)	(0.330)	(0.003)	

*** p<0.01, ** p<0.05, * p<0.1

Source: Computed by Author using STATA Version 14

Table 4.6 shows the result of the correlation between the variables in the model in line with the objectives of the study. The result reveals a significant positive relationship between Shared-Supply Alliances (SSA), in the form of Production of Non-Financial Services (PNFS) and Production of Financial Services (PFIS), as well as Financial Innovation (FINI), Regulatory Compliance (RCP), and the sustainability of MFIs. This implies that as MFIs engage in strategic alliances with other MFIs in the form of production of financial and non-financial services, this will lead to an increase in the sustainability of MFIs in Cameroon. There was no reason to suspect the model of multicollinearity, as all the correlation coefficients were well below 0.5, which most studies consider moderate.

Table 4.7 Variance Inflation Factor for Shared-supply Alliances

Variable	VIF	1/VIF
PNFS	1.29	0.77788
PFIS	1.25	0.802286
FINI	1.1	0.908287
RCP	1.06	0.940842
Mean VIF	1.17	

Source: Computed by Author using STATA Version 14

Based on Table 4.7, the data were checked for multicollinearity. The scores of the Variance Inflation Factor (VIF) were all below 10 and, most importantly, below 5, which indicates a low concern for multicollinearity (Ringim et al., 2012). It is, therefore, tolerable.

Table 4.8 Result of Shared-supply Alliances base on SEM-ML and OLS

VARIABLES	ML-SEM SMFIs	ML-SEM SMFIs	(OLS) SMFIs	(OLS) SMFIs
SSA	0.047**	--	---	0.227***
	(0.020)			(0.0556)
PNFS	--	2.935***	0.444***	--
		(0.763)	(0.120)	
PFIS	--	1.159**	0.0330	--
		(0.432)	(0.0902)	
FINI	0.526**	0.319**	0.508***	0.531***
	(0.233)	(0.142)	(0.106)	(0.105)
RCP	0.001	0.066	0.244*	0.266**
	(0.083)	(0.076)	(0.131)	(0.134)
Constant		--	1.183***	1.172***
			(0.151)	(0.156)
Observations	204	204	204	204
R-squared	0.199	0.211	0.211	0.199
VIF			1.17	1.06

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Source: Computed by Author using AMOS version 23 and STATA Version 14

The results in the table above revealed that Shared-Supply Alliance has a significant positive effect on the sustainability of MFIs using Maximum Likelihood Estimation in the Structural Equation Model

and the Ordinary Least Squares (OLS) estimation technique. Shared-supply alliances have a significant and positive effect on the sustainability of MFIs in Cameroon. This implies that a one-point increase in shared-supply alliances will improve sustainability by 0.227 points. This result is significant at 1% with a 99% confidence level.

The result also shows that the Production of Non-Financial Services (PNFS) and the Production of Financial Services (PFIS) have a significant positive effect on the sustainability of MFIs using OLS regression. This implies that a one-point increase in the production of financial services, such as loans, savings, and deposit accounts, and the production of non-financial services, such as financial education, health services, legal advice, and technical assistance, will increase sustainability by 2.935*** and 1.159** points, respectively, all else being equal. These variables are significant at the 1% and 5% levels, with 99% and 95% confidence levels, respectively. The control variables "Financial Innovation" and "Regulatory Compliance" were also found to have a significant and positive effect on the sustainability of MFIs.

OLS was used to check the robustness of the findings based on Maximum Likelihood Estimation in the Structural Equation Model. The results show evidence of robustness, as the direction did not change, although the magnitude of the estimated coefficients varied. The significance of the effect of Shared-Supply Alliance on the sustainability of MFIs in Cameroon permits us to accept Alternative Hypothesis One, which states that Shared-Supply Alliance has a significant positive effect on the sustainability of MFIs in Cameroon.

The value of R-squared shown in Table 4.8 is 0.199. This means that 19.9% of the variations in the sustainability of MFIs in Cameroon are explained by Shared-Supply Alliances, with 80.1% explained by other variables affecting sustainability..

Table 4.9. Breusch–Pagan heteroskedasticity Test for Shared-supply Alliances

Breusch–Pagan/Cook–Weisberg test for heteroskedasticity
Assumption: Normal error terms
Variable: Fitted values of n_mfis
H0: Constant variance
chi2(1) = 0.10
Prob> chi2 = 0.7524

Source: Computed by Author using STATA Version 14

As seen on Table 4.9, the p-value of Breusch-Pagan heteroskedasticity test is 0.752 which is insignificant. The alternative hypothesis that heteroskedasticity is absent in the model is rejected.

5.0 Discussion of Results

Data for this study was analyzed using the Structural Equation Modeling (SEM) method of estimation and the Ordinary Least Squares (OLS) estimation technique to check robustness. Based on the results obtained, there was a positive and significant relationship between shared-supply alliances and the sustainability of MFIs in Cameroon. This is justified by the OLS coefficient value of 0.227, which is statistically significant at 1%. This means that any effort to enhance shared-supply alliances will significantly lead to an improvement in the sustainability of MFIs by the corresponding value of the coefficient.

This finding aligns with the a priori expectation ($\beta 1 > 0$), which states that where there are shared-supply alliances via the production of financial and non-financial services, there is a likelihood that sustainability of MFIs will be significantly enhanced. The production of financial services (loans, savings, deposits, etc.) and the production of non-financial services (enhancing financial education, provision of health services, legal advice, and effective financial counseling) will increase the sustainability of MFIs in Cameroon, as seen by their ML-SEM values of 2.935 and 1.159, which are statistically significant at 1% and 5% levels, with 99% and 95% confidence levels, respectively.

This implies that MFIs should place emphasis on the production of both financial and non-financial services or products to meet their growth challenges. This is in line with the study of Vu (2018), who explored the pros and cons of integrating non-financial services in microfinance in Vietnam and concluded that emphasis should be placed on developing and providing non-financial services to microfinance clients. This approach offers clients entrepreneurial skills that improve repayment rates and reduce delinquent loans. Flores (2009) and Serres (2009) conducted a comparative assessment of five Latin American MFIs and found that performance varies depending on how non-financial services are integrated into their usual activities.

The study of Almahdi (2019), Klus et al. (2019), Enyinnah et al. (2020), and Nshimiyimana (2021), drawing inspiration from the Resource-Based View and Transaction Cost Theory, concluded that the creation of strategic alliances among microfinance banks improves the efficiency and performance of these institutions, as well as commercial banks and other non-financial institutions. The Resource Dependence Theory suggests that MFIs form alliances to access critical resources they cannot obtain independently, providing cost savings through bulk purchasing, enhanced bargaining power with suppliers, and access to specialized inputs. These resources positively influence the sustainability of MFIs by reducing operational costs in the production of financial and non-financial services.

Empirically, these results align with the integrated approach, which considers that providing households and enterprises with needed services, both financial and non-financial, eventually benefits MFIs, thereby contributing significantly to their sustainability (Yunus, 2007). However, the impact varies by location. For example, in Vietnam, training offered to women positively affects them through higher income, enhancing repayment behavior and MFIs' profits. In Mexico, non-financial services constitute a competitive advantage for MFIs (Biosca et al., 2014), while in Peru, non-financial services do not impact the financial performance of MFIs, as they do not increase clients' financial knowledge or repayment behavior, thus having no positive effect on MFIs' profits (Karlan & Valdivia, 2011).

This is, however, contradicted by the minimalist approach and its scholars, such as Morduch (2007), who advocated that MFIs should offer only financial services, arguing that non-financial services can negatively impact MFIs and clients due to low quality, making them inefficient and counterproductive. Lensink et al. (2017), in a study across 77 countries, concluded that providing non-financial services has no real effect on the financial performance of MFIs but suggested that these services increase clients' loan quality and the MFIs' depth of outreach.

Based on the integrated approach and scholars such as Harley (2011), the minimalist approach is erroneous, as financial services alone are insufficient to support clients' social wellbeing and financial sustainability. This necessitates the integration of both financial and non-financial services, which positively impact MFIs' performance (Rizk & Khalil, 2022). Integration enhances consumers' knowledge, changes cognitive behavior, and improves access to infrastructure, thereby strengthening MFIs' financial health.

As reported in the current study, shared-supply alliances have a positive and significant effect on the sustainability of MFIs in Cameroon. As a result, we accepted the alternative hypothesis, which states that shared-supply alliances have a significant and positive effect on the sustainability of MFIs in Cameroon.

6.0 Conclusion, and Corporate implications

The findings of this study showed that shared-supply alliances have a positive and significant effect on the sustainability of MFIs in Cameroon, with a 99% confidence level. It is thus recommended that, in strategic partnerships between MFIs and other MFIs characterized by the production of financial and non-financial products/services, MFIs, in the evaluation and review of their portfolio investments, should consistently invest in the provision of both non-financial and financial services to their clients. The non-financial services include financial education (skills and attitudes necessary to manage money and finance), legal advice, financial counseling, technical assistance, and business development training. Financial education should be carried out in the form of entrepreneurial training, training on writing business plans or developing business skills, and through business seminars. These activities will enable clients to gain the skills, knowledge, and behaviors needed to make informed decisions regarding the money and finances lent to them by these MFIs.

Effective financial counseling should also be enhanced through a financial adviser, either a professional from the MFI or a hired expert, to provide clients with emotional and financial guidance, helping them manage financial stress and improve money management skills.

Financial services and products should also be developed. These include the provision of loans, savings accounts, deposit accounts, and term deposits, among others. When resources are invested in these two business portfolios of shared-supply alliances in MFIs in Cameroon, the sustainability of MFIs is likely to be enhanced through an increase in repayment rates, a reduction in loan defaults, improved entrepreneurial skills, greater financial inclusion of vulnerable groups such as women and youth, and continuous growth in profits.

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Appendix 1: Total Variance Explained-SSA

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.608	24.052	24.052	3.608	24.052	24.052	2.521	16.805	16.805
2	1.980	13.200	37.252	1.980	13.200	37.252	2.140	14.268	31.072
3	1.285	8.568	45.820	1.285	8.568	45.820	1.728	11.517	42.590
4	1.238	8.251	54.071	1.238	8.251	54.071	1.442	9.616	52.205
5	1.076	7.173	61.244	1.076	7.173	61.244	1.356	9.039	61.244
6	.867	5.778	67.022						
7	.810	5.400	72.422						
8	.768	5.118	77.540						
9	.728	4.854	82.394						
10	.622	4.147	86.541						
11	.563	3.753	90.294						
12	.486	3.239	93.533						
13	.357	2.378	95.911						
14	.323	2.157	98.068						
15	.290	1.932	100.000						

Extraction Method: Principal Component Analysis.

Source: Computed by Author using SPSS Version 20