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Mobile Network Operators' Agency Banking Quality, Financial Inclusion Practices and the Sustainable Development Goals: Evidence from Cameroon

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Abstract

The Sustainable Development Goals were launched by the United Nations in 2015. Empirical evidence suggests that despite the excitement at their launching by the international community and other stakeholders, their attainment by enterprises is still poor. Thus, using the technology of agency banking and mediated by financial inclusion practices, this study sought to determine the role played by Telecommunication Companies (MNO) in the attainment of the Sustainable Development Goals in Cameroon. To attain this objective, the study mobilized the Baron and Kenny (1986) model in the analysis of partial mediation effect using Ordinary Least Squares Regression. The purposive sampling technique was used to engage 1,420 users of MNOs' services from the Cameroon's 10 regional capitals in the study. The results showed that the effect of agency banking quality on Sustainable Development goals via the financial inclusion practices (Adjusted R^2) is higher for the agents of Commercial banks and Micro, Small and Medium Sized Enterprises (MSMEs) than Microfinance Institutions. Thus, we suggest that Cameroon's public authorities should focus more on Commercial banks and MSMEs than Microfinance Institutions to increase financial inclusion and ease the attainment of the Sustainable Development Goals in Cameroon.

Keywords: agency banking quality, financial inclusion, sustainable development goals, mobile phone communication companies

1. Introduction

The sustainable Development Goals (SDGs) represent a great hope to save humanity from environmental and economic growth practices (United Nations Development, 2020). The goals were adopted in 2015 to replace the Millennium Development Objectives. The emergence of SDGs generated a lot of excitement among stakeholders of sustainable development like governments, international development organizations, as well as the private sector and the civil society. This enthusiasm can be explained by four elements of the SDGs comprising their scope, beneficiaries, expected effects and implementation.

In relation to scope, the SDGs have 17 goals covering all aspects of human life and according to Shayan et al. (2022) can be divided into three dimensions including environmental protection (SDG 6: clean water and sanitation; SDG 7: affordable and clean energy; SDG 13: Climate Action; SDG 14: Life below water; SDG 15: Life on land), the improvement of life conditions in the society (SDG 1: No poverty; SDG 2: Zero hunger; SDG 3: Good health and Well-being; SDG 4: Quality education; SDG 5: Gender equality; SDG 10: Reduce inequality; SDG 11: Sustainable cities and communities; SDG 12: Ensure sustainable consumption and production patterns; SDG 16: Peace, justice and strong institutions) and promotion of a sustainable economy (SDG 8: Decent work and economic growth; SDG 9: Industry, innovation and infrastructure; SDG 17: Partnerships to achieve the goals). In line with the beneficiaries, they are directed to communities, societies, industries, civil societies and countries under the umbrella of governments. In other words, the SDGs are addressed, firstly, to countries which are members of the United Nations (Ordonez-Ponce et al.; 2020). These countries are also the leading force for their implementation. In relation to the expectations, these ones have to be achieved by 2030 (Ordonez-Ponce et al.; 2020). According to Garcia-Sanchez et al. (2022), these goals can only be effectively achieved within their timeframe if and only if they are associated with the private sector and specifically business organizations. Unfortunately, these organizations are not willing to fully engage in SDGs' realization and implementation because the SDGs are unrealistic to be achieved (Spangenberg, 2017). This position of enterprises can be justified with three reasons namely the profit-making nature of business organizations, the cost of compliance in social laws and the difficult implementation of some SDGs. In terms of profit making, the SDGs' objectives are globally at the opposite of profit objective and they impact negatively on the profitability of enterprises in the short run. As far as the social governance laws are concerned, the compliance with the SDGs raise augments relating to the transaction and coordination costs of firms. This still negatively influences their returns. Lastly, a commitment to profit maximization might lead to environmental destruction. This therefore makes it difficult for enterprises to implement some of the SDGs.

Contrary to the above view, many other studies perceive the SDGs as a source of opportunities (Ordonez-Ponce & Khare, 2020). They enable firms to carry out financial, social, institutional and technological innovations (Messomo, 2020). In addition, they permit firms not only to create sustainable value and sustainable businesses to ensure a stable economy but to prevent crisis and preserve the future of humanity (Shayan et al., 2022). This is the case in Cameroon where enterprises like Mobile Network Operators (MNOs) see SDGs as a source of business opportunities by increasing transactions in electronic financial services capable of SDGs' achievement like electronic payments, withdrawals, deposits and transfers. For instance, the number of electronic transactions undertaken in Cameroon between 2016 and 2020 was 49,831,982 in 2016, 210,276,929 in 2017, 415,024,972 in 2018, 615,357,306 in 2019 and 806,055,732 in 2020. This shows following these transactions, the digital financial sector has increased opportunities to fund SDGs in Cameroon by 321.9% in 2017, 97.37% in 2018, 48.39% in 2019 and 30.99% in 2020 (BEAC, 2020). Thus, they either invest in them by carrying out many financial innovations using mobile money or financial inclusion practices or by entering into partnerships with other economic agents like Commercial banks, Microfinance Institutions (MFIs) and Small Enterprises through agency banking quality. All these innovations by MNOs in our knowledge have not yet been studied to find out their effect on SDGs' implementation in Cameroon. This therefore inspired the setting up of the main question of this study as follows:

What is the influence of agency banking quality mediated by financial inclusion practices on sustainable development goals in Cameroon?

Using the Baron & Kenny Model (1986), and based on the partial mediation effect, thus, three specific questions emerged for this study:

What is the effect of agency banking quality of MNOs by Commercial banks, MFIs and MSMEs on financial inclusion practices in Cameroon?

What is the effect of agency banking quality of MNOs by Commercial banks, MFIs and MSMEs on the achievement of Sustainable development goals in Cameroon?

How does agency banking quality of MNOs by Commercial banks, MFIs and MSMEs and financial inclusion practices contribute to the attainment of the Sustainable Development Goals in Cameroon?

The core objective of this study is to determine variables of agency banking quality of MNOs by Commercial banks, MFIs and MSMEs mediated by financial inclusion practices that influence the achievement of sustainable development goals in Cameroon. The Baron & Kenny model (1986) of partial mediation effect is used for this purpose. This model was chosen because it is amenable to a sequential explanatory and welfarist analyses made up of; firstly, agency banking quality by MNOs and financial inclusion of customers; secondly, agency banking quality by MNOs for SDGs and thirdly agency banking quality by MNOs and SDGs mediated by financial inclusion which is an innovation in financial practices. Overall, the findings revealed that for the model agency banking quality and SDGs mediated by financial inclusion, the most significant variables increasing SDGs in Cameroon are proximity and convenience for Commercial Banks, security and convenience for Microfinance Institutions and security and empowerment for Micro, Small and Medium Sized Enterprises (MSMEs). This study has two contributions. Firstly, it shows that the successful realization of SDGs depends on the development of service financial innovations like agency banking quality. Secondly, it shores up the idea that SDGs' success requires the use of local financial and non-financial agents like Commercial banks and MSMEs.

The remaining parts of this study are divided in six sections. Section 2 analyses the relationship between agency banking, financial inclusion and sustainable development goals, section 3 provides the theoretical framework of study, section 4 presents the methodology, section 5 reveals the findings and presents the discussion while section 6 concludes the study and section 7 features policy implications.

2. Literature Review

2.1 Specificities of SDGs' Adoption by Enterprises

The involvement of businesses in the achievement of the SDGs in the world for the past eight years has been of very big concern in the literature. This can be justified by two main reasons. Firstly, the adoption of SDGs by the United Nations was not associated with constraint mechanisms to secure their smooth implementation by governments. Secondly, the SDGs' framework relates to public governance. This therefore assigns to the governments the responsibility of attaining these goals. Following these, the SDGs' main aim is therefore to maximize the social mission which is at the opposite end of the main mission of enterprises which is the maximization of shareholders' wealth. It then justifies the reluctance of businesses to invest in the SDGs. However, despite the short-term orientations of the SDGs to profitability, governments and United Nations did not stop persuading enterprises to partake in their realization (Tulder, Rodrigues, Mirza & Sexsmith, 2021). Following this call by governments, many enterprises started entering the SDGs' framework through various mechanisms such as partnerships, financial inclusion and agency banking within the framework of sustainable complementary alliances with governments and societal stakeholders with an emphasis on collaboration and innovation (Global Compact, 2021).

A partnership is collaboration between two or more organizations to deliver a product or a service. Generally, partnerships are built on the understanding that each of the partners is in shortage of a component enabling to supply a service or to produce a good or a service. Thus, there can be a need for them to complement say their technology through complementary alliances (Bojin & Schoettl, 2013). These types of alliances are common in the area of provision of telecommunication services. In line with SDGs, partnerships are very important because they enable governments and enterprises to complement their resources in order to attain the SDGs. The partnership action is very necessary for socio-environmental goals due to their complexity, variation and high needs of resources. The goals are 17 and are associated with 231 indicators. This diverse nature requests for a very high volume of technical, financial, organizational and social resources from businesses and governments for their achievements. This is also supported by financial inclusion policies.

2.2 Agency Banking and Financial Inclusion

Sarma (2008) defines financial inclusion as the process of ensuring access and making available the usage of formal financial services for all members of an economy. This implies that financial inclusion aims for the provision of inclusive financial services without any discrimination of customers in their characteristics. Thus, the scope, breadth and depth of financial inclusion are in line with SDG 1 (no poverty) because it enables the poor to have access to finance to realize poverty alleviation and social cohesion (Sinclair & Branley, 2011). This access to finance enables more individuals and communities to end hunger (SDG 2), to afford good health and well-being (SDG 3), to get quality education (SDG 4), and to be responsible for their consumption and production (SDG 12). Businesses in the finance industry can assist towards financial inclusion by adopting financial inclusive practices that integrate a variety of economic agents; low, moderate and high income-earners, micro, small and big enterprises in supplying financial services for SDGs.

According to Akpansung & Gidigbi (2014), many financial sector reforms have been carried out in the Sub-Saharan African banking sector to enable more individuals and communities to get access to credit. This has made more banks in Sub-Saharan Africa to provide financial inclusion services and make banks to be profitable (Anarfo & Aveh, 2020). Thus, following this, businesses can finance SDGs and remain profitable. Therefore, the profit-making motive is not divergent from the social motive and agency banking can reinforce this through its processes like geographical and social proximity, convenience, cost and benefits, flexibility, technology and infrastructure through digitalization of financial services of Mobile Network Operators (MNO). These characteristics of quality agency banking can lead to the practice of digital agency financial inclusion by MNOs. Such a practice enables to innovate in agency banking and in digital financial services like mobile money, internet banking, electronic transfers, insurance, loan and fintech apps that reach out excluded and remote populations. According to Tay et al. (2022), the digitalization of delivery of financial services increases financial inclusion and SDGs. These authors state that the digital financial inclusion is a leverage to achieve SDGs. This is guided by quality agency practices. Effective implementation of digital financial inclusion and quality agency characteristics contribute to realize 13 of the 17 SDGs (Tay et al., 2022). These Goals are No poverty (SDG 1), Zero hunger (SDG 2), Good health and well-being (SDG 3), Quality education (SDG 4), Gender equality (SDG 5), clean water and sanitation (SDG 6), Affordable and clean energy (SDG 7), decent work and economic growth (SDG 8), Industry, Innovation and infrastructure (SDG 9), reduced inequalities (SDG 10), sustainable cities and communities (SDG 11), climate action (SDG 13) and peace, justice and institutions (SDG 16).

2.3 Agency Banking and SDGs

Agency banking can enable Telecommunication enterprises (MNO) to build up organizational networks of agents made up of financial institutions, small enterprises and Small and Medium Sized Enterprises in order to create spatial proximity with customers found in suburban, rural and remote areas. Such mechanisms of agency banking enable non-financial enterprises to fund and support the realization of SDGs through technological and organizational innovations. The latter can lead to partnerships between governments and corporations through the creation of Non-Governmental Organizations in charge of combating climate change (SDG 13), protecting not only life below water (SDG 14), but life on land (SDG 15), reducing inequalities (SDG 10), funding the development of sustainable cities and communities (SDG 11), promoting decent work and economic growth (SDG 8) building resilient industry, innovation and infrastructure (SDG 9), and promoting peace, justice and strong institutions (SDG 16) (GSMA, 2020). MNO can be useful in realizing the above SDGs as shown in hypothesis development.

Sustainable development goal (SDG) have been the concern of many stakeholders; governments, civil societies, researchers and beneficiaries (Mensah 2019). In the area of academic research, the topic has generated either at the theoretical or the empirical research many studies in terms of their origin (Mensah 209), their financing (Ubedo et al, 2022, Lagoarde-Segot, 2020) and their dissemination among the populations.

But, despite this diversity of actions of SDGs, the basic question still stands for SDGs, namely how to achieve them at their various dimensions. The latter are economic, social and environmental (Alaimo, etal, 2021). Many instruments have been stated in the literature for this purpose like public policy (Tahavall & Arome, 2019), partnerships amongst stakeholder (UC6-CSO, 2017), financial inclusion (Ozili, 2022) and agency banking. But for the latter few studies have been undertaken on this issue, henceforth justifying our focus on this instrument of agency banking and SDGs.

Agency banking is the decentralization of financial services by principals (owners of services) to customers mediated by agents. The aim is to breach the distance between the customer and the suppliers of financial services. The rationale of agency banking can be on one hand to create an appropriation of those services by customers in their usage and on the other hand to adapt the financial services to the characteristics of customers and the location of usage of those services. Thus, looking at this analysis, the agency banking has specificities that can contribute to accelerate the realization of its three dimensions. According to Mingi and Mokaya (2017), the particularities of agency banking are convenience, reliability and quality of agency services. This model also favors physical and social proximity, liquidity of financial services' transactions, powerful of customers as shown by the FINCA model in Democratic Republic of Congo. In addition, the agency banking also has the characteristics of availability (Ivatory & Mas 2008), efficiency (Lyman, Timothy, Ivatory & Stefan, 2008), security, responsiveness and trust (Jepleting et al, 2013). All these elements of agency banking have contribution to the achievement of SDGs; this is shown in relevance to economic, social and environmental dimensions of SDGs.

In terms of economic SDGs namely decent work and economic growth (SDG8), industry innovation and infrastructure (SDG9) partnership to achieve the goals (SDGs), the characteristics of agency banking like convenience, reliability, trust efficiency and liquidity can assist in the realization of these goals. For instance, convenience and efficiency can enable to achieve economic growth that is only useful for the current generation while preserving resources for future generation (Brundtland report, 1992). This permits to avoid waste and leads to efficient allocation of resources according to the usage needs. Liquidities enable to fund industry, infrastructure and innovation necessary to alleviate poverty of beneficiaries of SDGs and also contribute to the wellbeing of all. This is named as the complimentary principle in SDGs (Mensah, 2019). Reliability and confidence enable to build up partnership necessary for the implementation and the success of SDGs (Gwo, 2017).

The social SDGs are related to no poverty (SDG1), zero hunger (SDG2), good health and wellbeing (SDG4), quality education (SDG4), gender equality (SDG5), reduction of inequality (SDG10), improvement of life in cities and communities (SDG11), assurance of sustainable consumption and production patterns (SDG12), peace, justice and strong institutions (SDG16). These SDGs can be backed up for their achievements by the characteristics of agency banking in participation, empowerment, liquidities, responsiveness and security, availability, social and physical proximity. Participation, empowerment, liquidities responsiveness, physical proximity and availability of agency banking services enable to reduce and eliminate hunger, reduce poverty and inequality and to fund quality education. Empowerment through training and experience enable to ensure sustainable consumption and production. This is also the case of SDG11 relevant to development of cities and communities. Participation strengthens peace, justice and strong institutions (SDG16) because it enables to divert financial services to many excluded and also enable many stakeholders to participate in decisions associated with justice, governance of the institutions and to build up peace in their communities and cities.

Responsiveness and social proximity permit to react fast in the needs of good health and wellbeing of populations and communities thanks to characteristics of liquidities and participation of agency banking. Social proximity breaks asymmetric information which creates hindrance to finance SDGs. The environmental dimension covers the provision of clean water and sanitation (SDG6), affordable and clean energy (SDG7), climate action (SDG13), life below water (SDG14) and life on land (SDG15). The agency banking specificities of convenience, liquidities, empowerment, availability, security and participation can enable the population to have access to more financial resources through financial literacy that enables to create awareness and knowledge on how to get financial services and to use effectively them to protect life below water and on land and also to afford clean water, energy and sanitation. This now leads us to the theoretical framework.

3. Theoretical Framework

Seven theories are mobilized to guide in the contextualization of the relationship between agency banking quality, financial inclusion and sustainable development goals. These theories are the Agency theory by Jensen and Meckling (1976), the Diffusion innovation theory by Rogers, the resource base view by Wernefield (1984), Rumelt (1984), Barney (1991), the public service theory of financial inclusion, the special agent theory of financial inclusion, the collaborative intervention theory of financial inclusion and system theory of financial inclusion.

The agency theory enables MNOs to delegate their power, knowledge and technology to commercial banks, microfinance institutions and MSME in order to supply digital financial services to population and their customers. The delegation is only done to agents that have the required resources to undertake this task as stated by the special agent theory of financial inclusion. In this perspective, such resources needed by CB, MFI and MSME are financial, human, social, innovation, technological and physical. The financial are resources needed by special agents (availability) in order to fund the excluded and non-excluded to financial services. The human resource provides the managerial talent and quality needed by special banking agents like convenience, efficiency, proximity in order to satisfy the vulnerable population and non-vulnerable the attainment of the sustainable development goal. The social resource enables MNOs and its special financial agent to build up collaborative network as thought by the system theory and the collaborative intervention theory of financial inclusion favours the participation of many actors with various knowledge and practices, technology (resources) to an adequate achievement of sustainable development goals (Guo, 2017).

This is important because of the diversity of sustainable development goal, requesting different expertise and a variety of contexts in implementation. The technology and the innovation resources distinguish MNO’s agent according to their capacities and capabilities of trademark resources, efficiency, ability to innovate in financial product process services and organizational services. Such innovations enable sustainable delivery of financial services adequate to facilitate the attainment of sustainable development goals in depth, breadth, scope and length.

The physical resource gives access to physical infrastructure necessary for the achievement of sustainable development goals like mobile phones, kiosk, internet point of sales and computers for digital account management, ATM and debit cards. Technology, innovation and physical resources contribute to build up the security quality of the financial agent of MNO useful to develop trust and assurance for sustainable development goal transactions and achievements. This theoretical analysis leads us to the theoretical design in Figure 1.

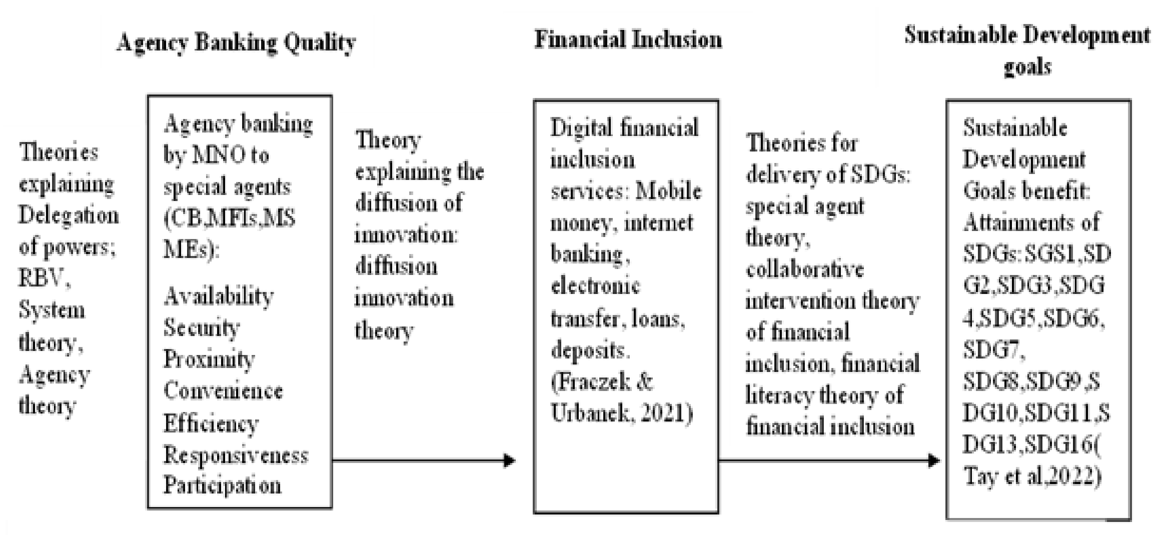

Figure 1. Theoretical design on agency banking quality, financial inclusion and sustainable development goals

Figure 1 presents the relationships between agency banking quality (independent variable) and the mediation variable financial inclusion and sustainable development goals (dependent variable). This is supported by their relevant theories that justify these relationships. This theoretical framework also assists in backing up the hypotheses developed below.

4. Hypotheses Development

The Mobile Network Operators (MNO) are the new actors in the supply of banking services. These companies use the technological innovation in digitalization to supply electronic banking services to their customers. According to Fox and Van Droogenbroeck (2017), MNOs innovated in process by setting up agents empowering them to be effective in the supply of electronic banking services namely electronic payments, transfers and deposits. In other words, MNO use their mobile phone network to make accessible their financial services to all. In Kenya for instance, the success of M-Pesa's agency banking results from the partnership with the MNO Safaricom. M-Pesa used its 50000 agents made up of individuals, micro and small enterprises to increase its banking services to populations. Thus, in 2015, KCB-MPesa supplied 10.3 billion Kenyan Schellings to customers as short-term loans (Polle, 2016). Ondiege (2016), through his study on the role of the legal environment on the growth of financial inclusion through Mobile Phone, showed that in Eastern Africa, operations by MNO increase financial inclusion in Eastern Africa. He thus concluded that the mobile banking technology was less effective than the non-banking mobile technology of the supply of electronic services by MNOs. Thus, based on the above, we set up our hypothesis 1 related to agency banking of MNO and its financial inclusion practices for the case of MNO operating in Cameroon namely Mobile Telecommunication Network (MTN) and Orange as follows:

H1: Agency banking of MTN and Orange by Micro, Small and Medium Sized Enterprises, Microfinance Institutions (MFIs) and Commercial Banks (CB) affects the financial inclusion of its users in Cameroon.

Agency banking of MNO has been implemented through mobile money. This solution has enabled MNO to carry out many interventions falling within the framework of SDGs, which are social, economic and ecological as shown by some studies. Socially, Dermish et al. (2011) in studying mobile banking solutions for the poor showed that agency banking transforms financial services by providing financial services where poor people are located. Economically, Nesse et al. (2017) in their study carried out in Pakistan showed that agency banking practices enable customers to get a variety of financial services supplied by banks in partnership with MNO owing to their smart phones. Ecologically, the infrastructure of MNO assists their agents to fund agricultural projects in Kenya that comply with environmental requirements (Fox and Van Droogenbroeck, 2017). These studies thus reveal that MNO's agency banking can assist in SDGs' achievements. This is also possible for the case of Cameroon that has the same MNOs operating internationally and offering the same services like those offered in the above studies. Thus, Hypothesis 2 was crafted as follows:

H2: Agency banking of MNOs by Micro, Small and Medium Sized Enterprises, Microfinance Institutions (MFIs) and Commercial Banks (CB) affects the achievement of social development goals of its users in Cameroon.

Many studies focusing on MNOs with mobile money have shown that agency banking of MNOs and financial inclusion influence the achievement of SDGs. This was the case of Mashigo and Kabir (2016) who's study carried out in South Africa showed that financial services supplied by MNO's agency banking are negatively affected by infrastructure support, high transaction costs and the need for traditional collaterals. Munyegera and Matsumoto (2016) in their own part, in the study undertaken in Uganda stated that MNO's agency banking through mobile money services' adoption influence the education level of populations. Besides, GSMA (2010) in its study on the impact of Mobile Money industry on the achievement of SDGs showed that mobile money provided by MNOs has eased the attainment of 13 of 17 goals namely SDG 1 (no poverty) where M-PESA enable its users to absorb large negative income shocks such as job loss, livestock death, harvest or business failure or poor health. For SDG 2 (zero hunger), the partners of the MNO Airtel with the Ministry of Agriculture provide mobile money to farmers in Kenema. Regarding SDG 3 (good health and well-being), mobile money has enabled a great number of operators through their agents and proximity to offer mobile health insurance to customers. In SDG 4 (quality education), MNOs and mobile money have enabled to digitalize education services like payment of school fees. In 2016, for instance, 99.3% of Cote d'Ivoire 's 1.7 million school students paid their annual school registration fee via mobile money. In SDG 5 (gender equality), mobile money has enabled many women to be empowered through ease of access to financial services in a safe and secured way. With regard to SDG 6 (Clean water and sanitation) and SDG 7 (Affordable and clean energy), the pay as you-go model has helped address the market for energy and sanitation services by covering 40% of people in Sub-Saharan Africa who live on less than one dollar per day. MNOs and their mobile money products have also facilitated the attainment of SDGs 8, 9, 10, 13, 16 and 17 up till 2020. These realizations in sub-Saharan countries with MNOs operating mobile money just like in Cameroon, led us to come up with hypothesis 3 of this research as follows:

H3: Agency banking of MNO by Micro, Small and Medium Sized Enterprises, Microfinance Institutions (MFIs), and Commercial Banks (CB) and financial inclusion practices affect the attainment of sustainable development goals of their users in Cameroon.

5. Methodology

The research was designed to explain the relationship between agency banking approach of MNOs in financial inclusion and the sustainable development in Cameroon. A set of institutions and industries (commercial banks, MFIs and Micro, Small and Medium Size enterprises) were considered as agents of the MNOs. The study was considered to be innovative because it sought to penetrate beyond agency banking and financial inclusion studies (Lotto, 2016 and Munoru, 2013, Bizah, Gumbo & Mugweva, 2017) and agency banking and Sustainable Development in financial service industry to include Telecommunication companies and a mediation effect where agency banking played the causal variable, financial inclusion played the role of the mediation factor and the sustainable development goal was the effect variable.

The study also adds value to the literature by looking for the relationship between agency banking and financial inclusion practices in the Cameroon context. This section offers an in-depth review of the research variables; their respective proxies and measurements, methods of data collection including the sample size and sampling approach, and ends with the presentation of analytical approaches.

5.1 Research Variables and Measurements

Three set of variables were applied for each of the industry or sector (commercial banking, Micro Financial establishment, and Micro, Small and Medium Size Enterprises) in assessing the agency banking quality of services of MNOs. Agency banking quality services of MNOs was the prime exogenous variable which was depicted with common qualities using non-bank-based model of agency banking (Lyman et al., 2006). The core qualities of agency banking of MNOs by commercial banks are availability, security, proximity, convenience, efficiency and for MNOs by MFIs, they are availability, security, proximity, convenience, efficiency and responsiveness. For the third type of agent of MNOs namely Micro, Small and Medium Sized Enterprises (MSME), they are availability, security, convenience, efficiency, responsiveness and empowerment. The variation in additional proxies is due to the specificity of the agent of the MNO. This then justified the three sets of models developed for each type of agent of MNOs studied that are commercial banks, Microfinance Institutions and Micro, Small and Medium Sized Enterprises (MSMEs). This choice is in line with the study of Mauer, Nelms and Rea (2013) which used agency services by small agents in Telephone Mobile Network Operators to measure their agency banking. This approach was adopted because these agents are representative of Mobile Phone Operators and are the ones in charge of administering data in the electronic money transfer system (Mauer, Nelms and Rea, 2013). A likert scale was applied on each of the indicators (proxies) of agency banking in order to establish a measurement scale.

The endogenous variable under investigation was sustainable development goals. These goals were adopted by the United Nations in 2015. In this study, they were measured as a composite index of 13 goals out of 17 suitable to be achieved by agency banking quality and digital financial inclusion. These Goals are No poverty (SDG 1), Zero hunger (SDG 2), Good health and well-being (SDG 3), Quality education (SDG 4), Gender equality (SDG 5), clean water and sanitation (SDG 6), Affordable and clean energy (SDG 7), decent work and economic growth (SDG 8), Industry, Innovation and infrastructure (SDG 9), reduced inequalities (SDG 10), sustainable cities and communities (SDG 11), climate action (SDG 13) and peace, justice and institutions (SDG 16) (Tay et al., 2022). The study adopted the measurement of attainment of SDGs because it has been shown by the study of Garcia-Sanchez et al. (2022) that SDGs can be operationalized.

The third set of variables was the mediator, in this case financial inclusion practices. Financial inclusion practices were captured as the accessibility to digital financial services in mobile money, internet banking, electronic transfers, insurance, loan and fintech apps (Fraczek and Urbanek (2021). We selected these measures because they increase financial inclusion and are suitable to branchless banking by MNOs (San and De Lima, 2013). Accessibility to financial services like credit, savings, and transfer, insurance is an apex proxy for financial inclusion (DemirgutKunt & Klapper, 2013). The financial inclusion in this study was captured as the composite index of the digital financial inclusion services adopted.

5.2 Method and Instruments of Data Collection

The research was purely approached from the primary perspective using questionnaire. It was designed to study individuals or customers who make use of Mobile Network Operators' services. The unit of research was users of MNOs' services in the 10 capitals of the 10 regions of Cameroon. These cities held a cosmopolite population of users of digital financial services in Cameroon. The cities are Yaoundé, headquarters of Center Region; Douala, headquarters of Littoral Region; Buea; headquarters of South West Region; Bamenda, headquarters of North West Region; Garoua, headquarters of North Region; Bafoussam, headquarters of West Region; Maroua, headquarters of Far North Region; Bertoua, headquarters of East Region; Ngaoundere, headquarters of Adamaoua Region and Ebolowa, headquarters of South Region. The study targeted individuals using digital financial services of MNOs through financial agents of MNOs of commercial banks, MFIs and MSMEs. The MNOs studied are MTN, Orange Cameroon and Nextel were the targeted telecommunication network. Purposive sampling technique was adopted in collecting the data. This was because of the need to identify the respondents being both customers of MNOs and their agents summing up to 1,500 respondents.

The study targeted 1,500 participants. A higher number of participants were allocated to cities with the higher demographic customers' users. These cities are Yaounde, 250 participants; Douala, 300 participants; Bafoussam, 150 users; Buea, 125 users; Maroua, 125 users; Bertoua, 100 users; Garoua, 100 users; Ebolowa, 100 participants; Ngaoundere, 100 users and Bamenda, 150 users. This split of the targeted respondents took in account the facilities of MNOs and characteristics of regional capitals selected.

A five-point Likert scale (extremely strong, very strong, strong, less strong and not strong) was adopted as a measurement scale. Each of the proxy was measured using this scale that range between 5 (extremely strong) to 1 (not strong). The collection instrument that is the questionnaire was divided into four sections. Section 1 was structured to gather general information about the participants. Section 2 captured information about the agents (commercial banks, MFIs and MSMSE). Section 3 raised questions on financial inclusion (the mediator) while section 4 centred on the SDGs. At the collection, 1420 good questionnaires were received for the analysis.

5.3 Method and Instruments of Data Analysis

The Ordinary Least Square (OLS) Multiple regression approach was adopted to investigate and test the research hypotheses generated. This choice was made in order to meet up with the structural analysis of the basic model of this study which is the Baron and Kenny (1986). The model promotes a sequential analysis made up of regression equations. The conditions of the analysis of this model for this study center on three sets of research hypotheses made up of Agency banking of Commercial banks, Microfinance Institutions, Micro, Small and Medium Sized Enterprises (MSMEs) and Financial Inclusion in Cameroon (Hypothesis one); Agency banking of CB, MFIs and MSMEs and Sustainable development in Cameroon (Hypothesis two), Agency banking and financial inclusion of CB, MFIs and MSSMEs and sustainable development in Cameroon (Hypothesis three). OLS is also chosen because the sample of our study is normally distributed and OLS equations assist to explain the influence of agency banking and financial inclusion constructs on SDGs' attainment by users of MNO services in Cameroon. The descriptive tools of minimum, maximum and mean were mobilized to describe the current situation of agency banking by MNOs in Cameroon as well as their level of supply of digital financial inclusion services and attainment of SDGs by users of MNO services in Cameroon. Descriptive analysis was associated with hypothesis three. This is done because the third hypothesis integrates the three variables studied that are the agency banking, the financial inclusion and the SDGs in Cameroon. Results now are presented below.

6. Results and Discussions

The presentation of findings and their discussions start with the provision of findings followed by their discussions. Referring to the nature of data collected, we disclose firstly the findings on the number of participants, secondly inferential findings of the first two objectives and thirdly descriptive and inferential findings on the third objective.

6.1 Results

The presentation of findings of this study opens on the number of customers (respondents) of MNOs studied. This is provided in Table 1.

Table 1. Percentage of use of agency banking quality services of mobile network operators

	MTN	**Orange**	**Nextel**	**Others***
Number	797	210	57	356
Percentage (%)	56.1	14.8	0.4	28.7

Source: Field data Analyses (2024)

*Others = Combination of one or more of the MNOs plus any not in the list of three (MTN, Orange and Nextel)

The results of Table 1 of this study confirm that more than average respondents (56.1%) are agency banking customers and users of MTN Company. This explains why this company, without neglecting the others, should be used to spread information to foster financial inclusion and sustainable development in Cameroon. MTN has taken the leadership from Orange that had been the leading firm in the MNO industry in Cameroon. Nextel entered the industry few years back justifying its 0.4% figure. This can be justified by the fact that most of Nextel users are former customers to either orange or MTN. The 28.7% value for others is mostly the combination of two or more MNOs and in most cases Nextel is inclusive. This firm (Nextel) is gaining enough momentum (increase awareness of its present activities and services).

6.1.1 Findings of Objective One: Agency Banking Quality and Financial Inclusion in Cameroon

Model One: Agency banking quality by commercial banks and financial inclusion in Cameroon

$$FIC = a_0 + a_1 availibity + a_2\ security + a_3\ proximity + a_4 convenience + a_5 effiency + e$$

Where: FIC= Financial Inclusion by Commercial Banks; e =error term a_{0-5} represent the coefficients of the respect variables.

Table 2 reveals the findings of model one above on financial inclusion.

Table 2. Influence of agency banking quality on financial inclusion by commercial banks

Independent variables	**Unstandardized coefficients B**	**Standardized coefficient Beta**	**T**	**Sig.**	**VIF**
constant	1.048***		6.818	0.000	
Availability	-0.246***	0.262***	-3.781	0.000	3.157
Security	0.337***	0.325***	4.847	0.000	2.961
Proximity	0.304***	0.345***	8.528	0.006	2.027
Convenience	0.129***	0.154***	2.773	0.003	1.413
Efficiency	0.142***	0.139***	2.998	0.003	1.413
ANOVA F-test	35.454				
P-value	0.000				
R Value	0.519				
R 2	0.269				
Adjusted R 2	0.261				
Observations	1420				

Source: From Field Data Analyses (2024)

Table 2 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 26.9%, which means that more than 26% of variation in the financial inclusion is explained by the independent variables chosen of agency banking quality by commercial banks. Moreover, all independent variables have coefficients that are statistically significantly different from zero (The p-value for the regression coefficient is less than 0.01), meaning that, they are significant predictors of financial inclusion in Cameroon.

Also in Table 2, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all banking agency services by commercial banks except availability quality, increase financial inclusion in Cameroon. The availability quality has an inverse relationship with financial inclusion in Cameroon.

Model Two: Agency banking and financial inclusion by Microfinance Institutions in Cameroon

FIM= X_0 + X_1availability + X_2security + X_3convenience + X_4proximity + X_5responsiveness + X_6efficiency + e

Where: FIM= Financial Inclusion by Microfinance Institutions; e = error term. $X_{0\text{-}6}$ are the coefficients of the variables of Agency banking. Table 3 presents the findings of model two above on financial inclusion.

Table 3. The influence of agency banking quality on financial inclusion by MFIs

Independent variables	Unstandardized coefficients B	Standardized coefficient Beta	T	Sig.	VIF
constant	1.992***		20.932	0.000	
Availability	0.292***	0.469	5.378	0.000	5.048
Security	-0.241***	-0.446	-4.166	0.000	7.624
Convenience	0.91**	0.184	2.408	0.016	3.877
Proximity	-0.45	-0.082	-1.408	0.160	2.231
Responsiveness	0.316***	0.448	7.801	0.000	2.187
Efficiency	-0.105***	-0.139	-2.730	0.007	1.647
ANOVA F-test	30.516				
P-value	0.000				
R Value	0.525				
R 2	0.276				
Adjusted R 2	0.267				
Observations	1420				

Source: From Field Data Analyses (2024)

*** = 1% significant; ** = 5% significant

Table 3 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 26.7%, which means that more than 26% of variation in the financial inclusion is explained by the independent variables chosen for agency banking by MFIs for MNOs. Moreover, all independent variables have coefficients that are statistically significant different from zero (The p-value for the regression coefficient is less than 0.05), meaning that, they are significant predictors of financial inclusion in Cameroon.

Also in Table 3, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all agency banking qualities by MFIs increase financial inclusion in Cameroon except security, proximity and efficiency. Security, proximity and efficiency by MFIs have an inverse relationship with financial inclusion in Cameroon.

Model three: Agency banking by Micro, Small and Medium Sized Enterprises (MSMEs) and financial inclusion in Cameroon

FIMSME= β_0 + $\beta_1$availibility + $\beta_2$security + $\beta_3$efficiency + $\beta_4$participation + $\beta_5$empowerment + $\beta_6$responsiveness + $\beta_7$convenience + $\beta_8$proximity + e

Where: FIMSME= Financial Inclusion by MSMEs; e= error term. $\beta_{0\text{-}8}$ are the coefficients of all the variables of

Agency banking by Micro, Small and Medium Sized Enterprises (MSMEs).

Table gives the findings of model 4 above on financial inclusion.

Table 4. Influence of agency banking quality by MSMEs on financial inclusion

Independent variables	Unstandardized coefficients B	Standardized coefficient Beta	T	Sig.	VIF
Constant	1.247***		12.407	0.000	
Availability	-0.063***	-0.072***	-1.254	0.210	4.348
Security	0.234	0.273***	5.411	0.000	3.317
Efficiency	0.110***	0.130***	3.944	0.000	1.417
Participation	-0.060	-0.061	-1.553	0.121	1.989
Empowerment	0.103**	0.115**	2.447	0.015	2.871
Responsiveness	-0.036	-0.041	-0.896	0.371	2.677
Convenience	0.494***	0.621***	11.773	0.000	3.627
Proximity	-0.095**	-0.108**	-2.276	0.023	2.930
F-test	103.324				
P-value	0.000				
R Value	0.797				
R 2	0.635				
Adjusted R 2	0.629				
Observations	1420				

Source: From Field Data Analyses (2024)

*** = 1% significant; ** = 5% significant

Table 4 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 62.9%, which means that more than 62% of variation in the financial inclusion is explained by the independent variables chosen of agency banking quality. Moreover, all independent variables have coefficients that are statistically significant different from zero (The p-value for the regression coefficient is less than 0.05), meaning that, they are significant predictors of financial inclusion in Cameroon.

Also in Table 4, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all agency banking quality by MSMEs increase financial inclusion in Cameroon except availability, participation and proximity. They have an inverse relationship with financial inclusion in Cameroon.

6.1.2 Findings of Objective Two: Agency Banking Quality and Sustainable Development in Cameroon

Model one: Agency Banking by Commercial Banks and Sustainable Development in Cameroon

SDGcm= a_0 + $a_1$availibility + $a_2$security + $a_3$proximity + $a_4$convenience + $a_5$efficiency + e

Where: SDGCB= Sustainable Development Goals by Commercial Banks; error term. Table 5 provides the results of model one above on sustainable development.

Table 5. Effect of agency banking quality by commercial banks on sustainable development goals in Cameroon

Independent variables	Unstandardized coefficients B	Standardized coefficient Beta	T	Sig.	VIF
Constant	2.426***		26.516	0.000	
Availability	-0.381***	-0.568***	-9.843	0.000	3.157
Security	-0.030	-0.040	-0.718	0.473	2.961
Proximity	0.226***	0.359***	10.624	0.000	1.082
Convenience	0.297***	0.495***	10.708	0.000	2.027
Efficiency	-0.189***	-0.260***	-6.743	0.000	1.413
ANNOVA F-test	93.235				
P-value	0.000				
R Value	0.701				
R 2	0.492				
Adjusted *R* 2	0.486				
Observations	1420				

Source: From Field Data Analyses (2024)

*** = 1% significant, ** = 5% significant

Table 5 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 48.6%, which means that more than 48% of variation in the sustainable development is explained by the independent variables chosen of agency banking quality by commercial banks in Cameroon. Moreover, all independent variables have coefficients that are statistically significant different from zero (The p-value for the regression coefficient is less than 0.01), meaning that, they are significant predictors of sustainable development in Cameroon.

Also, in Table 5, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all agency banking quality by commercial banks increase sustainable development in Cameroon, except availability and proximity of agency banking services. They have an inverse relationship with sustainable development in Cameroon.

Model two: Agency Banking by MFIs and Sustainable Development:

SDMF= x_0 + $x_1$availibility + $x_2$security + $x_3$convenience + $x_4$proximity + $x_5$responsiveness + $x_6$efficiency+ e

Where: SDMF= Sustainable Development by MFIs; e = error term. Table 6 relates to findings of model above on sustainable development

Table 6. Effect of agency banking quality by MFIs on sustainable development goals in Cameroon

Independent variables	Unstandardized coefficients B	Standardized coefficient Beta	T	Sig.	VIF
Constant	1.886***		20.873	0.000	
Availability	-0.270***	-0.430***	-5.244	0.000	5.048
Security	0.185***	0.339***	3.369	0.001	7.624
Convenience	0.222***	0.444***	6.181	0.000	3.877
Proximity	0.098***	0.178***	3.270	0.001	2.231
Responsiveness	0.047	0.066	1.224	0.222	2.187
Efficiency	-0.053	-0.068	-1.450	0.148	1.647
F Statistics	45.034				
F (P-value)	0.000				
R Value	0.600				
R 2	0.360				
Adjusted R 2	0.352				
Observations	1420				

Source: From Field Data Analyses (2024)

Table 6 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 35.2%, which means that more than 35% of variation in sustainable development is explained by the independent variables chosen of agency banking quality by microfinance institutions. Moreover, all independent variables have coefficients that are statistically significant different from zero (The p-value for the regression coefficient is less than 0.01), meaning that, they are significant predictors of financial inclusion in Cameroon.

Also in Table 6, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all banking agency services by microfinance institutions increase sustainable development in Cameroon except availability and efficiency. They have an inverse relationship with sustainable development in Cameroon.

Model three: Agency banking by MSMEs and Sustainable Development

SDMSME= β_0 + $\beta_1$availibility + $\beta_2$security + $\beta_3$efficiency + $\beta_4$participation + $\beta_5$empowerment + $\beta_6$responsiveness + $\beta_7$convenience + $\beta_8$proximity + e

Where: SDSME= Sustainable Development by Micro, small and medium sized enterprises;

e = error term. Table 7 states the results of model three above on sustainable development.

Table 7. Effect of agency banking quality by MSMEs on sustainable development goals in Cameroon

Independent variables	Unstandardized coefficients B	Standardized coefficient Beta	T	Sig.	VIF
Constant	1.179***		10,140	0.000	
Availability	-0.819***	-1.021***	-14.094	0.000	4.348
Security	0.449***	0.568***	8.971	0.000	3.317
Efficiency	0.208***	0.266***	6.423	0.000	1.417
Participation	0.225***	0.247***	5.035	0.000	1.989
Empowerment	0.360***	0.432***	7.349	0.000	2.871
Responsiveness	0.023	0.028	0.493	0.622	2.677
Convenience	0.184***	0.250***	3.780	0.000	3.627
Proximity	-0.071	-0.087	-1.143	0.143	2.930
ANOVA F-test	44.246				
F (P-value)	0.000				
R Value	0.600				
R 2	0.360				
Adjusted *R* 2	0.352				
Observations	1420				

Source: From Field Data (2024)

*** = 1% significant; ** = 5% significant

Table 7 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 41.7%, which means that more than 41% of variation in the sustainable development is explained by the independent variables chosen of agency banking quality by MSMEs. Moreover, all independent variables have coefficients that are statistically significant different from zero (The p-value for the regression coefficient is less than 0.01), meaning that, they are significant predictors of sustainable development in Cameroon. Also in Table 7, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all banking agency quality by MSMEs increases significantly sustainable development in Cameroon out of responsiveness and proximity. They have an inverse relationship with sustainable development in Cameroon.

6.1.3 Findings of Objective Three: Agency Banking, Financial Inclusion and Sustainable Development in Cameroon

Model One: Agency Banking, Financial inclusion by Commercial banks and sustainable development

$$\mathbf{SDGCB = a_0 + a_1 availibility + a_2 security + a_3 FIC + a_4 proximity + a_5 convenience + a_6 efficiency + e}$$

Where: SDGCB = Sustainable Development Goals by Commercial Banks; FIC = Financial Inclusion by commercial banks Commercial Banks; e = error term. Table 8 presents the descriptive findings of variables of agency banking by commercial banks, financial inclusion and sustainable development studied.

Table 8. Descriptive statistics of agency banking quality by commercial banks, financial inclusion and sustainable development goals

Variables	N	Min.	Max.	Mean	Std. Deviation	Skewness		Kurtosis	
	Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	Std. Error	Stat.	Std. Error
SDCB	1420	1.00	3.88	2.2449	0.64675	-0.068	0.111	-0.434	.221
Availability	1420	1	5	2.64	0.964	0.098	0.111	-0.101	.221
Security	1420	1	5	2.76	0.873	0.323	0.111	0.143	.221
Financial Inclusion CB	1420	1.000	9.333	2.862	0.907	1.298	0.111	9.691	.221
Proximity	1420	1	5	2.54	1.028	0.253	0.111	0.242	.221
Convenience	1420	1	5	2.87	1.079	0.416	0.111	-0.292	.221
Efficiency	1420	1	5	2.74	0.888	0.045	0.111	0.375	.221
N	1420								

Source: From Field Data Analyses (2024)

According to Table 8, the most significant agency banking quality and financial inclusion service by commercial banks is convenience quality with a mean of 2.87 while the least agency banking mediated by digital financial inclusion service of commercial banks is efficiency quality with the mean of 2.54. Table 9 is associated with findings of model one above on the mediation effect of financial inclusion on sustainable development.

Table 9. Influence of agency banking by commercial banks and financial inclusion on sustainable development goals in Cameroon

Independentvariables	Unstandardized Coefficients B	Standardized Coefficients Beta	T	Sig.	VIF
Constant	2.394***		24.996	0.000	
Availability	-0.374***	-0.557	-9.512	0.000	3.251
Security	-0.040	-0.054	-0.944	0.346	3.106
Financial Inclusion	0.031	0.043	1.126	0.261	1.368
Proximity	0.216***	0.344***	9.498	0.000	1.245
Convenience	0.293***	0.489***	10.485	0.000	2.060
Efficiency	-0.194***	-0.266***	-6.835	0.000	1.440
F-test	77.951				
P-value	0.000				
R Value	0.702				
R^2	0.493				
Adjusted R^2	0.487				
Observations	1420				

Source: From Field Data Analyses (2024)

*** = 1% significant; ** = 5% significant

Table 9 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 48.7%, which means that more than 48% of variation in sustainable development is explained by the independent variables chosen of agency banking quality and financial inclusion services by commercial banks. Moreover, all independent variables have coefficients that are statistically significant different from zero (The p-value for the regression coefficient is less than 0.01), meaning that, they are significant predictors of sustainable development in Cameroon. Also in Table 9, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all agency banking services by commercial banks except availability, security and efficiency quality by commercial banks increase sustainable development in Cameroon. Availability, security and efficiency of have an inverse relationship with sustainable development in Cameroon.

Model Two: Agency banking Quality by Microfinance Institutions, Financial inclusion by MFIs and sustainable development

SDMF = x_0 + $x_1$availibility + $x_2$security + $x_3$convenience + $x_4$proximity + $x_5$responsiveness + $x_6$efficiency + x_7FIMFI + e

Where: SDMF= Sustainable Development by MFIs; FIMFI= Composite index financial inclusion for MFIs; e= error term. Table 10 gives descriptive findings of agency banking by Microfinance Institutions (MFIs), financial inclusion and sustainable development studied.

Table 10. Descriptive statistics of agency banking quality by MFIs, financial inclusion and sustainable development goals

Variables	N	Min.	Max.	Mean	Std. Deviation	Skewness		Kurtosis	
	Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	Std. Error	Stat.	Std. Error
Sustainable Dev.	1420	1.00	3.75	2.597	0.718	-0.563	0.111	-.573	.221
Availability	1420	1	5	2.69	1.142	-0.020	0.111	-1.012	.221
Security	1420	1	5	2.95	1.319	0.010	0.111	-.883	.221
Convenience	1420	1	5	2.83	1.438	0.142	0.111	-1.300	.221
Proximity	1420	1	5	2.61	1.299	0.438	0.111	-.736	.221
Responsiveness	1420	1	5	2.65	1.008	-0.171	0.111	-.913	.221
Efficiency	1420	1	4	2.21	0.917	-0.034	0.111	-1.169	.221
Financial Inclusion	1420	1.00	4.33	2.811	0.711	-0.221	0.111	.340	.221
Observations	1420								

Source: From Field Data Analyses (2024)

According to Table 10, the most significant agency banking quality by Microfinance Institutions in Mobile Network Operators in Cameroon is security with a mean of 2.95. The least agency banking quality by microfinance institutions is efficiency of microfinance institutions with the mean of 2.21. Table 11 discloses inferential findings on the mediating effect of financial inclusion of Microfinance Institutions.

Table 11. Contributions of agency banking quality and financial inclusion by MFIs to sustainable development goals

Independentvariables	Unstandardized Coefficients B	Standardized Coefficient Beta	t	Sig.	VIF
Constant	1.631***		13.164	0.000	
Availability	-0.308***	-0.489	-5845	0.000	5.352
Security	0.216***	0.396	3.894	0.000	7.899
Convenience	0.210***	0.421	5.869	0.000	3.924
Proximity	0.104***	0.189	3.481	0.001	2.240
Responsiveness	0.007	0.009	0.163	0.871	2.463
Efficiency	-0.040	-0.051	-1.082	0.280	1.672
Financial Inclusion	0.128***	0.127	2.982	0.003	1.381
ANOVA F-test	40.504				
F (P value)	0.000				
R Value	0.609				
R^2	0.371				
Adjusted R^2	0.362				
Observations	1420				

Source: From Field Data Analyses (2024)

Table 11 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 36.2%, which means that more than 36% of variation in the sustainable development is explained by the independent variables chosen of agency banking and financial inclusion by microfinance institutions in Cameroon. Moreover, all independent variables have coefficients that are statistically significant different from zero (The p-value for the regression coefficient is less than 0.01), meaning that, they are significant predictors of sustainable development in Cameroon. Also in Table 11, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all banking agency quality by microfinance institutions increases sustainable development in Cameroon except availability and efficiency qualities. They have an inverse relationship with sustainable development in Cameroon.

Model Three: Agency Banking quality, financial inclusion by MSMEs and sustainable development

SDSME= β_0 + $\beta_1$availibility + $\beta_2$security + $\beta_3$efficiency + $\beta_4$participation + $\beta_5$empowerment + $\beta_6$responsiveness + $\beta_7$convenience + $\beta_8$proximity + β_9FIMSME + e

Where: SDMSME= Sustainable Development by Micro, Small and Medium Sized enterprises; FIMSME = Financial inclusion by MSME; e = error term. Table 12 reveals the descriptive findings of agency banking by MMSMEs in the mediating effect.

Table 12. Descriptive statistics of agency banking, financial inclusion by MSMEs and sustainable development goals

Variables	N	Min.	Max.	Mean	Std. Deviation	Skewness		Kurtosis	
	Stat.	Stat.	Stat.	Stat.	Stat.	Stat.	Std. Error	Stat.	Std. Error
Sustainable Dev.	1420	1.00	4.88	2.6114	.89974	.206	.111	-.387	.221
Availability	1420	1	5	2.79	1.120	-.111	.111	-.908	.222
Security	1420	1	5	2.91	1.132	-.188	.111	-.648	.221
Efficiency	1420	1	5	2.62	1.144	-.204	.111	-1.289	.221
Participation	1420	1	5	2.21	.984	.419	.111	-.026	.221
Empowerment	1420	1	5	2.54	1.077	-.032	.111	-.632	.221
Responsiveness	1420	1	5	2.89	1.094	-.279	.111	-.797	.221
Convenience	1420	1	5	3.13	1.221	-.218	.111	-.767	.221
Proximity	1420	1	5	2.69	1.104	.138	.111	-.356	.221
Financial Inclusion	1420	1.0000	5.0000	3.359290	.9694208	-.071	.111	.066	.221
Valid N	1420								

Source: From Field Data Analyses (2024)

According to Table 12, the most significant agency banking quality by Micro, Small and Medium Sized Enterprises in Cameroon mediated by financial inclusion is convenience with a mean of 3.35. The least agency banking quality mediated by financial inclusion services by MSMEs is participation quality with the mean of 2.21. Table 13 presents the inferential findings of agency banking by MSMEs in the partial mediation of digital financial inclusion services.

Table 13. Influence of agency banking quality and financial inclusion by MSMEs on sustainable development goals

Independentvariables	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	VIF
	B	Beta			
Constant	0.939***		7.109	0.000	
Availability	-0.807***	-1.006***	-14.044	0.000	4.362
Security	0.404***	0.511***	7.936	0.000	3.522
Efficiency	0.187***	0.238***	5.748	0.000	1.464
Participation	0.236***	0.259***	5.349	0.000	1.999
Empowerment	0.340***	0.408***	6.988	0.000	2.907
Responsiveness	0.030	0.036	0.650	0.516	2.681
Convenience	0.088	0.120	1.623	0.105	4.686
Proximity	-0.53	-0.065	-1.098	0.273	2.962
Financial Inclusion	0.193***	0.209***	3.675	0.000	2.740
ANOVA F-test	41.865				
F (P value)	0.000				
R Value	0.665				
$R2$	0.443				
Adjusted $R2$	0.432				
Observations	1420				

Source: From Field Data Analyses (2024)

*** = 1% significant; ** = 5% significant

Table 13 shows that, the model studied is significant under the ANOVA test. The adjusted R square is 43.2%, which means that more than 43% of variation in the sustainable development is explained by the independent variables of agency banking quality and financial inclusion by Micro, Small, Small and Medium Sized Enterprises. Moreover, all independent variables have coefficients that are statistically significantly different from zero (The p-value for the regression coefficient is less than 0.01), meaning that they are significant predictors of sustainable development in Cameroon. Also in Table 13, Beta expresses the relative importance of each individual variable in standardized terms. According to this, all agency services by MSMEs, increase sustainable development in Cameroon except availability and proximity. They have an inverse relationship with sustainable development in Cameroon.

6.2 Discussions

The analysis of agency banking quality of MNOs by commercial banks, MFIs and MSMEs showed three types of findings. First, Agency banking quality of MNOs by commercial banks, MFIs and MSMEs significantly affect financial inclusion services and attainment of sustainable development goals in Cameroon. The agency banking quality of MNOs by commercial banks, MFIs and MSMEs that increase both digital financial inclusion services and sustainable development of users of MNO services in Cameroon are security and proximity. Such findings can be explained by three criteria that are: firstly, the physical proximity of MNOs services to the population, secondly the flexibility of MNO services that enable customers to easily get access to the financial services of MNO agents at any time and in a simple way, and thirdly the solidarity nature of Cameroon’s society that enables relatives to easily fund their relatives’ mobile account owners through deposits without or with less bureaucracy at MNO’s agents. These findings are in line with that of Bizah, Gumbo and Magweva, 2017; Chaia, Schiff and Silva**,** 2010 which showed that financial services by agency banking increase financial inclusion and also sustainable development.

The second set of findings relating to Baron and Kenny (1986)’s partial mediation effect showed that agency banking quality and financial inclusion of MNOs by commercial banks, MFI’s and MSMEs significantly increase sustainable development in Cameroon. The common independent variables of agency banking and financial inclusion by commercial banks and MFIs significantly increase sustainable development goals of beneficiaries in Cameroon are proximity and financial inclusion. Security and financial inclusion do it for MFI’s and MSMSEs. Only financial inclusion significantly increases sustainable development by the three sets of agents (commercial banks, MFI’s and MSMEs). The findings above highlight the key role of financial inclusion in the relationship between agency banking of MNOs and sustainable development attainment in Cameroon. The findings are similar with those of Voica (2017), who showed that financial inclusion is a driver of social inclusion and sustainable development. This study excludes affordability which is at the demand side of financial inclusion. This discussion then leads us to the conclusion of the work.

7. Conclusion

Sustainable development raises an important issue for which solutions are found at micro, meso and macro levels. This study stands at micro level to analyze the influence of agency banking quality of MNOs by commercial banks, Microfinance institutions, MSME on financial inclusion and sustainable development goals in Cameroon. The Baron and Kenny (1986) model was adopted to carry out the analysis using data collected from users of Mobile telephone companies in Cameroon. The findings showed in general that agency banking quality of MNOs by commercial banks; MFIs and MSMEs significantly affect sustainable development of users of MNO services’ agents in areas studied in Cameroon. These findings increase the scope and value of the agency theory in two ways. Firstly, the findings showed that the theory can also be applied to Mobile Network Operators. Secondly, agency theory can generate a mediation effect on sustainable development. In this study, it has been shown using partial mediation effect that all the findings gotten for this purpose were significant. We then suggest that the agency theory with financial inclusion and sustainable development should also be assessed for the complete mediation effect using the Baron and Kenny Model (1986).

8. Policy Implications

This study leads to three policy implications. Firstly, the ‘doors’ of financial institutions should be opened to Mobile Telecommunication Companies. This is because they are strong vehicles of inclusive financial services and products. Secondly, monetary and financial authorities should put in place incentives that contribute to the development of partnerships between Mobile Network Operators and commercial banks, Microfinance institutions and MSMES to speed the implementation of SDGs in Cameroon before 2030. Thirdly, Cameroon’s authorities should play a great role in the private sector in their willingness to achieve SDGs by 2030 and as such, a lot of attention should be given to the innovations of MNOs.

Abbreviations

ATM: Automated Teller Machine

CB: Commercial Banks

FINCA: Foundation for International Community Assistance

GSMA: Groupe Speciale Mobile Association

KCB-M-Pesa: Kenya Commercial Bank Limited Mobile Money

M-Pesa: Mobile Money in Swahili

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