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The Impact of Microcredit Services on Socio-Economic and Environmental Status of the Low-Income Households in Kicukiro District, Rwanda

[1]Frederic Mpambara, [2]Prof. Gustave Tombola, M. & [3]Dr. Felician Mutasa

[1]University of Rwanda, College of Business and Economics
[2]University of Tourism, Technology and Business Studies, Rwanda
[3]The Open University of Tanzania

Email: fredhopef@gmail.com, f.mpambara@ur.ac.rw,

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Abstract: *This study investigated "The extent to which socioeconomic and environmental status (SEES) of deep-rooted MFI clients exceeds that of non-MFI clients in Kicukiro District, Rwanda". Mixed-methods research was adopted to achieve this objective. Quantitative data were collected using a structured questionnaire from the primary sample of 389 deep-rooted MFI clients and a control group of 111 non-MFI clients. This study used SPSS version 22 for quantitative analysis. The analysis revealed that the microcredit services influence the SEES at 0.109 Pearson correlation coefficient with p = 0.032. The independent t-test revealed that on average, the SEES of deep-rooted MFI clients was 2.2 million higher than the SEES of the non- MFI clients; t (249.47) = 5.83 with p = .000. This study used NVivo 10 to thematically analyze qualitative data from in-depth interviews and focus group discussions. The qualitative findings complement the quantitative results by triangulation. This study concludes that microcredit services have a low positive and significant impact. It recommends that MFIs should ensure that they associate microcredits with non-financial services. Additionally, policymakers and regulators should reinforce the policy to promote much more credit-lending models.*

Keywords: *Impact, microcredit services, socio-economic and environmental status, low-income households.*

1. Introduction

Sustainable development (SD) has been the foremost preoccupation of all countries around the world. The SD emphasizes a positive and significant transformation anchored essentially in social, economic, and environmental (SEE) pillars (Mensah & Casadevall, 2019). Policymakers, international development agencies, nongovernmental organizations, and other interested parties have concocted various development approaches. One of these strategies is microfinance through micro-savings, microcredit, and non-financial services models (Mensah & Casadevall, 2019).

Theoretically, microcredit is a banking service provided to unemployed, self-employed, and low-income individuals or groups whose activities provide a stable source of income as they have been reported by (Ledgerwood, 1999). This group of people otherwise is excluded from access to formal financial services because of low income and lack of collaterals. The modern microfinance day was attributed to Bangladesh's economic professor, Dr. Mohammad Yunus, who developed a successful lending model that led to the conception of Grameen Bank (GB) in 1983 (Martina & Karel, 2018; Ullah & Haq, 2017). During this contemporary microfinance wave, the microcredit-lending services model is categorized into fourteen models (Ledgerwood,1999; Gupta, 2008; Srinivas, 2015) through which the microfinance business, self-help group, and cooperative models are included.

Globally, the access and efficient availability of microcredit services can allow the low-income clients to

develop small businesses, boost income earning capacity, well manage risks, smooth consumption, and enjoy an improved quality of life. However, most African countries are challenged by severe and deteriorating socio-economic and environmental development. Microcredit services are mostly offered by microfinance institutions (MFIs) that operate as non-profits aiming at promoting socio-economic and environmental standing of the low-income people as it has been reported by (Vandenberg & Merten, 2004). Low-income households, individuals, and enterprises constitute the major clientele of microfinance institutions (Restaino, 2010; Beaman, 2011). Providing microcredits to low-income clients has been welcomed by promoters as an effective tool to positively impact socio-economic and environmental status (SEES) of the beneficiaries. The core reasoning is that availing microcredit services to low-income households will allow them to invest, acquire productive assets, start new businesses, or increase their skill levels.

Based on the 2018 Worldometer estimations of the latest United Nations data, Rwanda "The land of thousand hills" is located in East Africa with a total population of 12,301,970 inhabitants with 499 inhabitants per square kilometer (UN, 2019). The Rwandan economy relies seriously on agriculture, which employs 70% of the total population with a contribution of 32% to the gross domestic product (GDP) as it has been reported by (AMIR, 2015). It was reported that 45% of the population lived below the national poverty line ($1.9 a day), and 24% lived below the national poverty line (The World Bank, 2015). Therefore, Rwanda is considered a low-income country with a GDP per capita of US$764 per year, or less than 2US$ per day (FAO, 2019).

Consciously, Rwanda has taken the issue of socio-economic and environmental development as a grave problem, hereafter devised consistent ways to overcome it. With the National Strategy for Transformation 1, which is scheduled for the latest seven-year plan (2017-2024) of Rwanda's development strategy, the government of Rwanda lays the foundations for achieving upper-middle-income country status by 2035 and high-income status by 2050 (The World Bank, 2018). The sustainable development goals (SDGs) constitute most of the guidance and microfinance remains a valuable tool to implement the NST_1 (Minecofin, 2017). As of December 31, 2018, twenty (20) microfinance institutions (i.e.8 licensed MFIs, 2 commercial banks with microfinance products in their portfolios, and 10 Umurenge SACCOs) operated in the limits of Kicukiro District (BNR, 2018).

However, the latest Rwanda Poverty assessment by (The World Bank, 2015) reported that there was solid progress since 2000, though low socio-economic and environmental development remains widespread and prevalent in Rwanda. In Kicukiro District, one of the three districts of Kigali city, the lingering malnutrition, higher child dependency rate, lack of education, dependency on agriculture to live, isolation of low-income households, and inadequate environmental health are the main features of low SEES as it has been reported by (The World Bank, 2015). From this prevalent SEES of low-income households, the research sought to respond to the questions "*To what extent did socio-economic and environmental status (SEES) of deep-rooted MFI clients exceeds that of non-MFI clients in Kicukiro District, Rwanda?*

The microcredit services are increasingly important in socio-economic and environmental development strategies, but the knowledge about their impacts remains partial and contested as it has been reported by (Hulme, 2000). Some studies have confirmed a positive and significant impact of microcredit services (Mueni & Kiiru, 2007; ADB, 2007; Bamwesigye, 2008; Shirazi, 2012; Meganathan & Arumugam, 2012; van Rooyen, Stewart, & de Wet, 2012; Arora & Singhal, 2013; Mutamuliza, 2016), while others denied such impact (Berg, 2010; Dikki, 2014). However, deficiencies are noted in these previous studies. First, they mostly dealt with either social, either economic, or both. Environmental status was mostly neglected or forgotten. Assessing the impact of microcredit has to closely examine the effect of micro-lending models on the social, economic, and environmental status of low-income households. Second, the existing studies of assessing the impact of microcredit services were primarily mono-method, mostly quantitative. To Creswell, (2011), qualitative investigations give detailed opinions of microcredit clients on their experiences with microcredit services. Qualitative inquiries involve participants in data collection procedures that boost the validity and complete quantitative by triangulation in mixed-method research (MMR).

By assessing the extent to which SEES of the intervention group differs from the SEES of the control group, using mixed approaches of data collection and data analysis, the study better appreciates the impact of microcredit services in maintaining sustainable development of low-income households. With this consideration, the research sheds light on the right stand of the impact of microcredit services. Policymakers and regulators, providers of microcredit services, international development agencies, non-governmental organizations, academicians, and other interested parties can plan more involvements to boost SEES of microcredit beneficiaries in general and low-income households in particular.

2. Literature Review

Theoretically, the classic microfinance theory of change allows low-income households and individuals to go to a microfinance provider and take a loan to start or expand a microenterprise which yields enough net revenue to repay the loan with a major return on investment (ROI) and still have enough profit to increase personal or household

income enough to raise the person's socioeconomic and environmental status (Dunford, 2012). Based on this preceding theory, this study focused on credit-lending models to guide the conception and methodological applications. Microfinance Institutions (MFIs) all over the world follow a variety of delivery models to dispense credits products to the clientele, as they have been reported by (Ledgerwood,1999; Gupta, 2008; and Srinivas, 2015). Those models are a total of fourteen (14), namely the associations, bank guarantees, community banking, cooperatives, credit unions, Grameen, group, individual, intermediaries, Non-Governmental Organizations (NGOs), peer pressure, Rotating Savings and Credit Associations (ROSCAs), small business, and village banking models. Theoretically, the sustainable development of low-income households is influenced by credit-lending as reinforced by the type and amount of credit received. The credit earned allows investing in an income-generation project to sustain the development of socioeconomic and environmental status.

Empirically, this study appraised many and interrelated studies. Bamwesigye (2008) conducted a study on the banking the unbankable: Microfinance and poverty reduction in Rwanda, a case study of Urwego Opportunity Microfinance Bank. The main objective was to analyze the role of microfinance in poverty reduction in Rwanda context. A sample of twenty-seven (27) clients was selected either from one rural and one urban branch. Interview and focus group discussions have been used to collect data. This study did a qualitative analysis. It found that microfinance was extensive and impacted positively on the poor. Also, the study has noted rural-urban differences, and it recommended MFIs to develop appropriate products between the two. However, this study would have carried out mixed research as qualitative deems insufficient to tackle the impact of microfinance. Again, considering one MFI would not allow the generalization of the findings. The extent to which the poverty of the intervention group differs that of the control group was not determined.

Mutamuliza (2016) conducted a study on the analysis of microfinance services and their effects on smaller farmers' income in Nyamagabe district, Rwanda. The focal objective of this study was to examine the contribution of microfinance services to the smallholder farmers in Nyamagabe district. A sample of 240 respondents randomly selected from 3 sectors of Nyamagabe district, namely Gasaka, Kibirizi, and Tare, was selected. This study used structured questionnaires to collect primary data. Descriptive statistics, logistic model, and propensity score matching model were used to analyze data. The study found that microfinance services had positive effects on smallholder farmers. It recommended that smallholder farmers should be encouraged to participate in microfinance services. However, quantitatively approaching microfinance impact was not enough; the study needed a qualitative approach. Again, this study mainly focused on the income (economic) variable, and it overlooked social and environmental variables. The extent to which the status of the smallholder farmers using microfinance differs that of smallholder farmers not using microfinance was not identified.

Salia (2014) assessed the effect of microcredit on the welfare of households of women borrowers in Tanzania. The study surveyed four hundred (400) respondents (two hundred and seventeen (217) borrowers and one hundred and eighty-three (183) non-borrowers. Using the Chi-square, the study revealed that borrowers' households were more likely to possess living houses than those of non-borrowers. The use of principal component analysis revealed that borrowers' households had acquired more household assets than those of non-borrowers. Besides, qualitative analysis revealed that borrowers had used part of their loans to fiancé children's education, health treatment, and the household pressing needs. This study concluded that microcredit had contributed to the improved welfare of women's households by enabling them to own long term assets. However, this study overlooked the environmental side in the welfare of women's households. It did not pinpoint the extent to which the welfare of borrowers' households exceeded that of non-borrowers.

Kaka (2017) conducted a study on the effect of microcredit on poverty reduction in northeast Nigeria. The main objective was to establish the impact of micro-credit on poverty alleviation in northeastern Nigeria. An intensive research design with an extensive period of 6 months with a 24-weekly visit was employed. A sample of eighty-seven (87) respondents, fifty-three (53) in the Development exchange center microcredit institution, and thirty-four (34) non-beneficiaries were selected. This study employed random sampling to select the respondents. Questionnaires and in-depth interviews were used to collect quantitative and qualitative data. By STATA, Ordinary least square (OLS) was used to determine whether independent variables could predict the dependent variable, and the real effect of microcredit on business income and expenditure was assessed by the mean difference between the beneficiaries and non-beneficiaries. The study found that there was a relevant and significant effect of microcredit on business income and expenditure. Besides, the study discovered a highly significant difference in the mean value of the beneficiaries as linked to the non-beneficiaries on income and expenditure. The study concluded that microcredit could increase revenue and cost and hence, reduce poverty among DEC micro-credit beneficiaries. However, the same weakness in exploring the economic side continues. This study found a partial impact as it ignored social and environmental status. Again, the extent to which the microcredits influence business income and expenditure were simply stated but not pinpointed.

Choudhury et al. (2017) conducted a study on the effectiveness of the micro-credit program focusing on household income, expenditure, and savings: Evidence from Bangladesh. The main objective of this study was to assess the efficacy of microfinance on household income, expenses, and savings. A structured questionnaire was distributed at the household level (N=3000) to collect information from clients of one of the largest NGOs, ASA. This study used multiple regression analysis; it revealed that the microcredit program of ASA has a significant favorable influence on household income, expenditure, and saving. Again, the study showed that education significantly influenced household income, expenses, and savings. Therefore, it concluded that microfinance has a positive impact on alleviating poverty in Bangladesh. However, this study concentrated on the economic and a bit on the social status of respondents; it ignored the side environmental variables. Importantly, the extent to which microcredit services impacted poverty was not mentioned.

The conceptual framework of this research based on the interaction between the three prevalent microcredit services models and concepts of the socio-economic status of low-income households as presented in the literature review (Wrenn, 2005). Figure 1 shows the interplay of the independent variable (microcredit services models) with the assumption that the independent variable influences the dependent variable (socio-economic and environmental status).

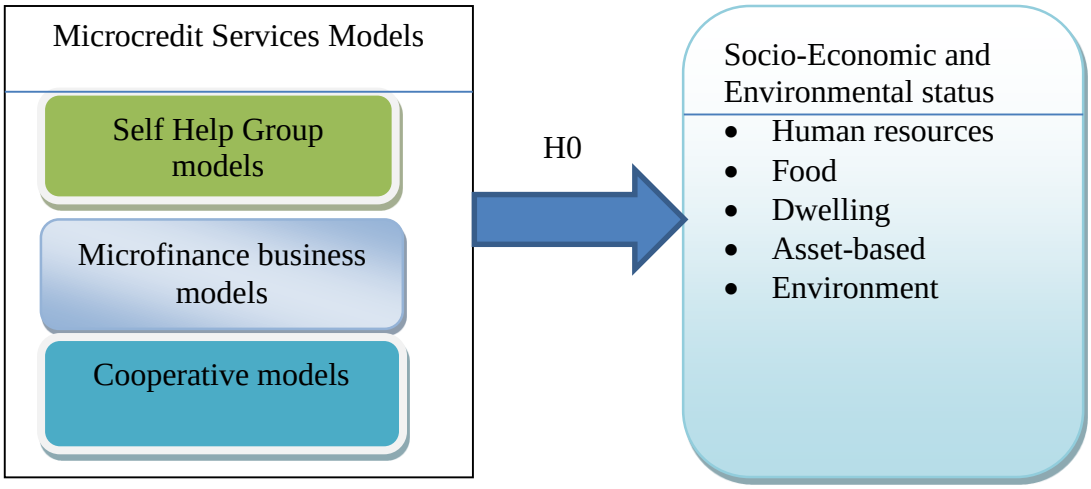

Figure 1: Conceptual Framework

The conceptual framework for the impact of microcredit services on the SEES of the low-income households in Kicukiro District is broken down into three main levels. The first level includes an independent variable in terms of microcredit services like self-help group, microfinance business, and cooperative models as they have been found in the pre-study of this research. The second level contains the dependent variable in terms of socio-economic and environmental status. It was assessed through human resources indicators (number, age, health, education, occupation), food-related indicators (quantity, frequency, specificity, stock maintenance), dwelling-related indicators (size, durability, the extent of keeping right conditions), asset-based indicators (size of landholdings, the value of livestock, value of transportation-related assets, value of appliances and electronics), and environmental-related indicators (energy cooking habits, fuel-saving devices, friendly construction technologies, environmental education projects, and area of degraded land). The third level showed arrows proposing relationships between the independent variable and the dependent variable in terms of the socioeconomic and environmental status of the low-income households in Kicukiro District. The dynamics of this conceptual framework exists in the extent to which microcredit services impact human resources, food-related, dwelling-related, asset-based, and environmental-related indicators of the low-income households in Kicukiro District, Rwanda.

To the research gap, an impact assessment of microcredit services had to carefully examine the extent to which credit-lending services models influence the SEES status of deep-rooted MFI clients. Nevertheless, deficiencies are noted in those studies. First, most of them dealt with either social, either economic, or both. Second, they used mono-method in their methodological choice. Most importantly they failed to stress the extent to which the SEES of intervention group differs from the SEES of the control group (Bamwesigye, 2008; Salia, 2014; Mutamuliza, 2016; Kaka, 2017; and Choudhury et al., 2017).

Therefore, this study came up with mixed-methods research (MMR) and explored first, the relationship between microcredits services and SEES of low-income households, second identify the difference between the

SEES of deep-rooted MFI clients and the SEES of non-MFI clients in Kicukiro District, Rwanda. This study hypothesized that "*There is no significant difference between the SEES of deep-rooted MFI clients and the SEES of non-MFI clients" (H0).*

3. Methodology

The study adopted pragmatism as a philosophical worldview that arises out of actions, situations, and consequences rather than antecedent conditions (Creswell, 2014).

For assumptions, this study used Ontology. The problem to be assessed was, "To what extent did SEES of deep-rooted MFI clients differ from that of non-MFI clients in Kicukiro District, Rwanda?" This study assumed reflexivity about the time in the field, good field-notes, detailed knowledge of literature and theories, capacity to quantitative and qualitative methods, high- level skills for the writing up of quantitative and qualitative analysis. To the respondents' side, it assumed the appropriate sample; and a real, objective, truthful, and good quality of data. Globally, this study assumed that microcredit services improve the SEES of the low-income households; and that the impact of microcredits is a change in the SEES of the low-income households in Kicukiro District. This study used the functionalist paradigm as it is concerned with rational descriptions and developing sets of references within the current structures as specified by Saunders et al. (2016). It used a mixed research paradigm through which it united quantitative with qualitative. The study opted for the deduction research approach to theory development. It found the core assumption in the mixture of quantitative and qualitative methods as it offers a complete understanding of a research problem than either approach alone (Creswell, 2014).

The study used mixed-methods research (MMR) design in which merges quantitative and qualitative data to provide a complete analysis of the research problem (Creswell, 2014). The simultaneous triangulation was used to parallel how quantitative and qualitative data sets support one another, as it has been described by (Saunders et al., 2016). The cross-sectional research time horizon was chosen, as it implied the study of a specific phenomenon at a definite time. It founded on responses to schedules, observations, in-depth interviews, and focus group discussions (FGDs) conducted over a specified short period.

To the targeted population, sampling unit, and sample size, this study used the household as the primary sampling unit. Only deep-rooted MFI clients and non-MFI clients were considered eligible for the survey. By the end of 2012, the total number of thirteen thousand four hundred and fifty-five (13,455) households were living in Kicukiro District (NISR, 2012). As the number of population was finite, a ninety-five percent (95%) confidence level and $p = 0.5$ were assumed. By the use of Yamane's formula, the study found a sample size of three hundred and eighty-nine (389) households, deep-rooted MFIs clients (intervention group). A ratio of one (1) non-MFI client against three point five (3.5) deep-rooted MFI clients was adopted (Henry, Sharma, Lapenu, & Zeller, 2003) to select one hundred and eleven (111) non-MFI clients to constitute the control group. To the sampling procedure, this study used a complex random sampling (CRS). To qualitative sampling, the research followed the general rule of "Saturation", as it has been reported by (Elmusharaf, Farrokhi, & Mahmoudi-Hamidabad, 2012). Therefore, it only interviewed twenty-one (21) respondents. This study used a combination of research techniques, namely document analysis, direct observation, schedules (questionnaires), in-depth interviews, and focus group discussions (FGDs) as methods of data collection.

To determine validity, this study started by undertaking an extensive literature review to recognize and discuss the facets related to the research topic. The research instruments as schedules questionnaire (the highest instrument to collect quantitative data) and interviews (minor instruments to support quantitative findings), were presented to the experts as well as to the research advisor for improvements. Also, they have been pre-tested before administration for data collection. The results helped to reshape questions that looked irrelevant. Again, this study gave clear instructions on 'how to complete the questionnaire' as it has been reported by (Gray, 2004).

To reliability, a Cronbach's Alpha coefficient was calculated, as it has been described by (Gliem & Gliem, 2003). The Cronbach's Alpha of .85 signified higher consistencies and indicated higher reliability of the instruments. The design and distribution of the questionnaires passed through the validity testing, the pilot study, and the formal data gathering. The pilot and the final questionnaire, the direct observation, and the in-depth interview were self-administered.

Quantitatively, this study edited, coded, and recorded data in the Statistical Package for Social Sciences (SPSS) version 22 to organize, tabulate, and analyze. Several statistical techniques, namely Cronbach's alpha coefficient, descriptive statistics, Pearson product-moment correlation coefficient, and independent samples t-test were used. Qualitatively, the study used NVivo 10 for words. It imported the interview transcripts, explored the data to identify the keywords and ideas, and coded the keywords to make the feature of the node. It ran search query of all keywords and ideas, grouped keywords into themes and subthemes, and organized thematic representation of the data. Quantitative results were exposed to qualitative findings to corroborate evidence from different individuals, types of data, or methods of data collection in descriptions and themes as it has been reported by (Creswell, 2011). Through this triangulation process, this study drew on various sources of information and developed an accurate and credible report. Ethically, the study assured and preserved the confidentiality,

secured the privacy, diligently tracked the informed consent, and monitored the respect and dignity of the respondents.

4. Results and Discussion

The main objective of this study was to "examine the extent to which SEES of the deep-rooted MFI clients (intervention group) differs from the SEES of the non-MFI clients (control group) in Kicukiro District, Rwanda." To attain this objective, there was need to evaluate the impact of microcredit service models, namely the self-help group (SHG), microfinance business, and cooperative models. The impact assessment used two main approaches. Quantitatively, the study used two principal tests. First, it calculated the Pearson product-moment coefficient to find out whether there was a significant relationship between Microcredit services and SEES of low-income households. Second, independent samples t-test was used to identify the extent to which SEES of the primary differs from SEES of the control group.

Microcredit is a small loan granted to low-income households, individuals, or small businesses excluded from the traditional banking system (MicroWorld.org, 2018). The main objective of getting microloan is to invest in income generation activities (IGAs). The net cash flow (NCF) is then affected in social, economic, and environmental activities of ordinary living standards.
Table 1 shows relationship between microcredits (NCF) and socio-economic and environmental status of deep-rooted MFI clients.

Table 1: Relationship between *Microcredit NCF and SEES of Deep-rooted MFI Clients*

		Net Income	SEES of Low-income
Net Income	Pearson Correlation	1	.109*
	Sig. (2-tailed)		.032
	N	389	389
SEES of Low-income	Pearson Correlation	.109*	1
	Sig. (2-tailed)	.032	
	N	389	389

Source: Primary Data Analysis, November 21, 2019

Table 1 above reveals a Pearson correlation coefficient of 0.109 with a p-value of 0.035. It means that there is a positive and significant relationship between microcredit (Net Income from IGAs) and SEES of deep-rooted MFI clients in Kicukiro District, Rwanda. An increase of 1% in microcredit (NCF) will shift up the SEES by 10.9%. This increase is significant as the p-value is less than 0.05 significant levels. As the test of relationship using the Pearson correlation coefficient was not sufficient enough to confirm the impact of microcredit services on SEES of low-income households, this study went on comparing SEES of the intervention group (deep-rooted MFI clients) to the SEES of non-MFI clients (control group). The study tested for Equality of Means with an independent t-test.
To the mean difference in SEES, an independent samples t-test was run to determine whether there were differences in SEES between deep-rooted MFI clients and SEES of non-MFI clients.

Table 2: Difference in *SEES of Deep-rooted and Non-MFI clients*

	Independent T-test	N	Mean	Std. Dev.	Std. Error Mean
SEES of Low-income households	Deep-rooted MFI clients	389	13,886,759	4,592,539	232,850
	Non MFI clients	111	11,640,870	3,235,340	307,084

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
SEES of Low-income households	Equal variances assumed	21.74	.000	4.82	498	.000	2,245,889	465,896
	Equal variances not assumed			5.83	249.47	.000	2,245,889	385,384

Source: Primary Data Analysis, November 21, 2019

Table 2 revealed that there was a significant difference in the scores for deep-rooted MFI clients (M=13.8 million; SD=4.5million) and non-MFI clients (M=11.6 million; SD=3.2 million) SEES. As the p-value (.00) was less than .05, this study accepted that there was no equal variance (2.2 million SEES of difference). On average, the deep-rooted MFI clients have a higher SEES than the non-MFI clients; t (249.47) = 5.83 with p = .000. Thus, there is a significant difference between the SEES of deep-rooted MFI clients and the SEES of non-MFI clients (H0 rejected). These results suggest that microcredit services do influence SEES. Specifically, the results suggest that when low-income households use microcredit services, their SEES increases.

The positive and significant relationship between microcredit (Net Income from IGAs) and SEES of deep-rooted MFI clients and the significant difference between the SEES of deep-rooted MFI clients and the SEES of non-MFI clients were supported by the findings from in-depth interviews and focus group discussions (qualitative analysis). Both In-depth interviews and FGD focused on the reasons to join MFIs and the impact microcredit services have on SEES of the participants. To the motives to join MFIs, most of the respondents (57%) confirmed that they joined MFIs to get small loans to start small businesses, as they were not able to get such loans from commercial banks.

"I joined Urwego Opportunity Microfinance Bank because I was looking for a small loan to start selling fruits in the Kicukiro market. It has been tough to find the amount of money because I lacked collateral."(Interviewee 11, 52 years, female)

Three main microcredit services models were focused on by most of the participants. Those models are namely microfinance business, self-help group (SHG), and cooperative. To the impact, the study identified three main themes. First, the interviewees focused on boosting economic status with the representative as read below: *"Though the interest rate in loan repayment is high, the loan I got from Umurenge SACCO-Gatenga has allowed me to start the business of hair-cutting saloon in the Ziniya market. With the net cash flow, I purchased a small piece of land. Now I possess a plot in Kigali city." (Interviewee 5, 39 years, male).*

Second, they stressed on increasing social status with the representative quote as: *"I'm grateful to RIM Masaka. With the services of RIM, I can get inexpensive money for food, clothes/footwear, education of my children, and mutual health insurance. Informal moneylenders were about chasing me from my native area". (Interviewee 1, 42 years, female)*

Third, they pointed out ameliorating environmental status with the representative quote as: *"Before joining Abadahigwa SACCO, I used to look for fire-wood from the neighboring bushes. Abadahigwa had advised me on how to get a fuel-saving device, and they have assisted in getting it."(Interviewee 6, 40 years, female)*

The analysis of data from FGDs revealed that they joined MFIs to get microcredit services (80%), from microfinance business models (60%), from self-help group (SHG) models (30%), and Savings and Credits Cooperatives (SACCOs) model (10%). To the impact of microcredits, the analysis of FGDs identified themes like increased number and quality of assets, livestock, dwelling, savings, and change in schooling, nutrition, health, and environment.

These findings have implications for other studies. They directly complete the conclusions of (Bamwesigye, 2008; Salia, 2014; Mutamuliza, 2016; Kaka, 2017; and Choudhury et al., 2017), which show that microcredit has a positive and significant effect on household income and consumption levels. The perceptions of low-income households during an in-depth interview supported this significant positive effect of microfinance on the socioeconomic and environmental status of low-income families. They placed value on different models of microcredits. Most are happy with the joint liability model through which a group of four to ten (4-10) people mutually come together to form a group to avail loan from MFI without any collateral. But few respondents found peer pressure from joint liability group damaging social relationships. Two interviewees had a concern about the most daily, weekly, or monthly interest rate the MFIs charge. They found it is very high. The explanation supported by an example was convincing. If a borrower pays two point five percent (2.5%) interest rate per month, the two-point-five percent (2.5%) multiplied by twelve (12) months; it gives thirty percent (30%) per year while in the commercial bank, it is nineteen percent (19%) in Bank of Kigali (BK). It is daily, weekly, and monthly paid. But, once compared to the annual interest rate charged by commercial banks, it is high. One interviewee raised two fundamental issues namely the compensating balance and subtracting interest amount to the principal amount in advance. They found those issues hampering the impact of microcredit on their socio-economic and environmental status.

The findings from in-depth interviews and focus group discussions (FGDs) converged to three main microcredit service models in the order of microfinance business, self-help groups (SHGs), and saving and credit cooperatives (SACCOs) models. However, this study had two main limitations. The first is a slight but severe concern that arose when carrying out an in-depth interview. Respondents were not aware of when and how the repetitive loans would stop. The main objectives of microfinance are providing low-income clients with access to financial services as well as an opportunity for them to build their financial capacity and ability to grow to economic self-sufficiency (Devinck, 2013). If low-income households continue to work with MFIs forever, the autonomy will suffer. Instead, microfinance will be

promoting the culture of dependence. The second is the use of "poor" in most microfinance impact assessment studies. Kasangaki (2018) defines poor people as people who have nothing at all who do not qualify for microcredit as they cannot pay back the microcredit. He supported that they have the right to life, good health, education, and citizenship but not right to credit. What they need is charity, not credit (Kasangaki, 2018). MFIs rarely serve poor people (SEEP, 2006). Therefore, this study has opted for the use of low-income households/people (Churchill, 2013 & Kagan, 2019). The paper finds the first interviewees' concern on interest rate relevant for being taken into considerations in further researches.

5. Conclusion and Recommendations

5.1 Conclusion

To the main hypothesis "there is no significant difference between SEES of deep-rooted MFI clients and SEES of non-MFI clients in Kicukiro District, Rwanda, this study tested, first, the relationship between microcredit services and SEES of low-income households (deep-rooted MFI clients), which was positive and significant. Second, the independent t-test revealed a net difference between the SEES of the deep-rooted MFI clients and the SEES of the non-MFI clients. Based on these two relevant findings, the study concludes that the usage of microcredit services has a low positive and significant impact (change) on SEES of low-income households in Kicukiro District, Rwanda. From the findings, discussion, and conclusions, this study has theoretical and empirical implications. Theoretically, the study fills the research gap and constitutes a stepping stone for future studies on the impact of microcredit services models.

5.2 Recommendations

As microcredit services have a low positive and significant impact on the SEES of low-income households:

Policymakers and regulators have to regularly review the policy governing microcredit services. This study establishes a source of information to generate an affordable microcredit environment. From the findings, it is possible to set policies and regulations introducing diversified credit-lending services models to reach more low-income households.

MFIs (microcredit providers) should attempt to make the impact high positive and significant at a high positive level. They should revise the credit policy to adjust, namely the credit period, credit standard, discount if any, and collection period. MFIs should promote much income generation activities and discourage consumption loans.

MFI clients should give up the culture of requesting microcredit for consumption loans. Microcredits should allow the MFI clients to generate income that would contribute to their SEES. MFI clients should continually be honest and loyal to their respective MFIs. Microcredit defaulting should be avoided as it hampers the microfinance well-functioning.

Methodologically, this study added to the methodological literature of prior researches through the use of pragmatism philosophy, ontology assumptions, and functionalist research paradigm, which is concerned with rational explanations and developing sets of recommendations (Saunders et al., 2016). This study can inspire future researchers about the use of mixed-methods research design. The mix of quantitative and qualitative approaches sheds enormous light on the triangulation process to make the research findings more valid, reliable, and generalizable. This study contributes to the body of knowledge in providing findings that related microcredit services to the SEE indicators.

Though this study found a positive and significant impact of microcredit services on the SEES of low-income households and it creates a substantial input, it has a limitation. The study has been carried out in one district out of thirty (30) districts that are composing the whole country of Rwanda, the results are not generalizable. A study at the national level is recommended. A duplicate in more than one country to confirm should be better.

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