

# Behaviour of Members and the Sustainability of Solidarity Savings and Loan Groups

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## Abstract

This study aims to understand the factors of sustainability of solidarity savings and loan groups by focusing on the behaviour of their members. A multinomial logistic regression was done on a sample of 465 members from the SLGs spread over three administrative zones in two communes of Bubanza province in Burundi. Participation by members in several SLGs, implementation of joint activities in addition to credit savings, trust among members and the continuation of reporting after the SLG is no longer supported were examined to see if they have an influence on the sustainability of the SLGs. The results of the multivariate analysis conducted indicate that three of the four aspects studied are responsible for the sustainability of the SLGs. Only the participation of members in several SLGs does not have a significant impact on the sustainability of the SLGs.

## Keywords

Solidarity Savings and Loan Groups, Sustainability, Behaviour of SLG Members, Burundi

## 1. Introduction

Solidarity Savings and Loan Groups (SLGs) are essential mechanisms for the

financial empowerment of local communities. They are an alternative to formal financial institutions. According to some authors, the latter have not been shown to have a transformative effect on poverty (Brannen & Sheehan-Connor, 2016). On the contrary, these institutions have sometimes had a negative impact on the poor individuals they are supposed to assist (Artis & N'Goran, 2019).

Considered as strategies for social security and the promotion of local economic development (Mbaye, 2023), SLGs bring together people who pool their resources to provide services (Mendy, 2020). They allow members to help each other with savings and access to credit. In this way, they promote the economic and social development of low-income populations. This is all the more important since the majority of people in developing countries do not have access to formal finance, and thus depend on community-organized groups (Tan & Savani, 2022). These ones are effectively designed to provide basic financial services to their members (Nkunda & Manirakiza, 2022b).

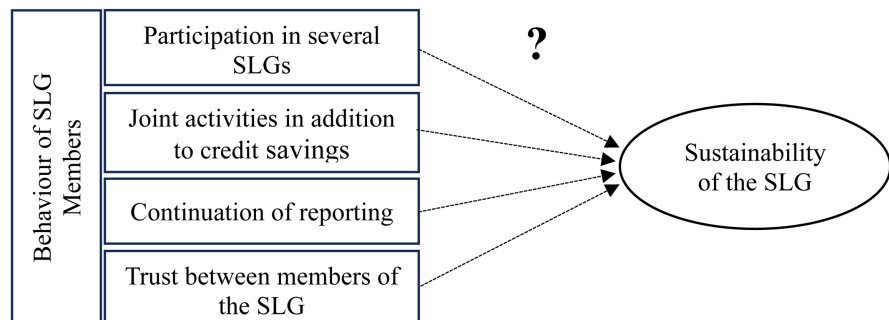
Presented in different forms, SLGs are thus considered as an alternative solution to global poverty and financial inclusion for social development, hence the urgent need for such initiatives to be sustainable (Anakpo et al., 2023). This article focuses therefore on the issue of the sustainability of SLGs, with a particular focus on the behaviour of members. In some contexts, formal structures that help people to achieve financial inclusion have failed to fulfill their mission of reducing poverty and increasing incomes for the poorest in a sustainable way (Maichanou & Daouda, 2021). But on the other hand, it has been found that the quality of financial products and the complementary relationship between MFIs and commercial banks promote sustainable financial inclusion (Maleck & Ndour, 2024). An analysis of SLGs in the non-formal sector is also necessary. The sustainability of these SLGs appears to be a crucial issue, particularly in the context of Burundi, and more particularly in the Bubanza province, which is the area of this study. The latter is home to SLGs in which behaviour plays a decisive role in sustainability. As everywhere else, in most cases, these SLGs are set up by charitable organizations or structures, but their appropriation by members constitutes the obstacles in the evolution and sustainability of financial services (Paul & Vedaste, 2019). Nkunda et al. (2024) have realized that gender influences the sustainability of such SLGs. However, their analyses were limited to the demographic characteristics of the members. They suggested that future studies should analyze the sustainability of SLGs in relation to the behaviour of members. With the field observations that have been made on the practice of SLGs in Bubanza province in particular and the documentary analyses within the organizations involved in the implementation and support of SLGs, four factors have been identified in relation to the behaviour of SLG members. These are participation in several SLGs, with some members committing to more than one SLG, the joint implementation of activities in addition to savings and credit, with some members choosing to join forces in activities other than savings and loan.

The level of trust between members in the granting and payment of loans is another

factor noted. The last factor is the reporting that is made by the members after the end of the support, some preferring to continue with this report, unlike others.

The research question of this study is to know if the behaviour of SLG members influences the sustainability of the group.

To provide an answer to the research question, reference can be made to the conceptual framework of the study represented by the following **Figure 1**:



Source: Authors, from field observations.

**Figure 1.** Conceptual framework of the study.

From the schematic representation of the conceptual framework, it emerges that four factors related to the behaviour of members should be considered. These factors are likely to influence the stability and cohesion of the group and are obviously changing over time more than the demographic characteristics, which are more stable in comparison.

Thus, the hypothesis proposed is that i) participation in several SLGs at the same time, ii) the implementation of joint activities in addition to savings-credit, iii) trust between members and iv) the continuation of reporting after the SLG is no longer supported, influence the sustainability of the SLG in Bubanza province. For this reason, the sustainability of SLGs is a dependent variable for this study. These factors related to member behaviour will serve as independent variables in our analysis. More details on dependent and independent variables are provided in the section below on research methodology.

## 2. Method and Material

### 2.1. Area of Study and Sampling

The geographical area of this study is the province of Bubanza as mentioned above where three organizations have created SLGs. After creation, the SLGs benefited from support in the communes of Mpanda and Gihanga, in three administrative zones namely Musenyi, Butanuka and Gihanga. A total of 14 census collines was targeted, where data were collected. Analyzed data came from a survey. At zone level, **Table 1** gives details on the sampling:

### 2.2. Independent and Dependent Variables

The assumption that is therefore made is that the participation in several SLGs

by members has an influence on the sustainability of these SLGs, because they become ineffective by engaging in several SLGs. This can influence the stability and cohesion of the group. On one hand, participation is measured by the number of SLGs in which a member is involved. On the other hand, sustainability is measured by proportions of group members saying that their SLG is very well functioning, somehow functioning or not at all functioning. In contrast, joint activities beyond credit-savings in which members choose to unite create interactions that strengthen the solidarity and sustainability of the SLG. This is a variable captured by proportions of members confirming they have or not joint activities beyond credit-savings activity. In addition to this, trust between members is an essential element for the proper functioning of the SLGs and consequently influences the sustainability of the group. The level of trust between members can be low, medium or high, revealed by themselves. Finally, reporting after the SLG is no longer receiving support is a behaviour that is linked to the sustainability of the SLG, as it allows members to stay together for longer. SLG members can themselves confirm they are still or no longer reporting to the organization or structure that has created it despite the cessation of support.

**Table 1.** Sample per administrative zone and per colline (locality).

Administrative Zone	Colline	Sample	Percentage
Butanuka	Butanuka	18	3.9
	Gahwazi1	100	21.5
	Gahwazi2	14	3.0
	Gatagura	14	3.0
Musenyi	Gifugwe	36	7.7
	Mitakataka	5	1.1
	Murengeza	34	7.3
	Musenyi	18	3.9
	Nyamabere	86	18.5
	Nyomvyi	10	2.2
	Rubira	47	10.1
Gihanga	Rugunga	1	.2
	V-6	19	4.1
	Buramata	63	13.5
	Total	465	100.0

Source: Secondary data.

### 2.3. Statistical Test for Analysis

As the dependent variable which is the sustainability of the SLGs has three modalities, it is the statistical test of the multinomial logistic regression that is used to explain the durability of the SLGs by the four independent categorical and numerical variables. As mentioned above, those variables are participation in several SLGs, joint activities in addition to savings-credits, trust between members and reporting after the SLG is no longer receiving support. It is therefore a multivariate analysis in which a dependent variable is explained by several independent variables. The confidence interval that was used is 95%.

### 2.4. Material

Data have been collected using a predesigned questionnaire put in Kobocollect and administered to the sample of 465 SLG members. IBM SPSS 25 software was used to process and analyze data.

## 3. Results

The multinomial logistic regression test that was applied made it possible to generate results explained through **Tables 2-4**.

**Table 2.** Summary of the processing of observations.

		N	Marginal percentage
Is the SLG functional?	Not functional at all	12	2.6%
	Somehow	54	11.6%
	Very well functional	399	85.8%
Number of SLGs to which a member belongs	One SLG	332	71.4%
	Two SLGs	98	21.1%
	Three or more SLGs	35	7.5%
Joint activities beyond credit savings	No	262	56.3%
	Yes	203	43.7%
Reporting to the organization despite the cessation of support?	No	246	52.9%
	Yes	219	47.1%
Level of trust between the members of the SLG, with regard to the granting and payment of loans?	Low	19	4.1%
	High	359	77.2%
	Medium	87	18.7%
Valid		465	100.0%
Missing		0	
Total		465	

Source: Generated by SPSS.

This summary table of the processing of the observations contains information on the variables that were used to do the multivariate analysis. The dependent variable with its three modalities as well as the independent variables with each all its modalities equally are presented in terms of frequencies and proportions.

**Table 3.** Information on the SLG's model fit for sustainability.

Model	Model fit criteria		Likelihood ratio tests	
	Log likelihood -2	Chi-square	dof	GIS.
Constant only	216,042			
Final	66,322	149,720	12	.000

Source: Generated by SPSS.

The model fit information table compares the model with different independent variables against the model with constant only. The results of this table show us the influence of the set of independent variables on the dependent variable.

**Table 4.** Likelihood ratio testing for SLG sustainability.

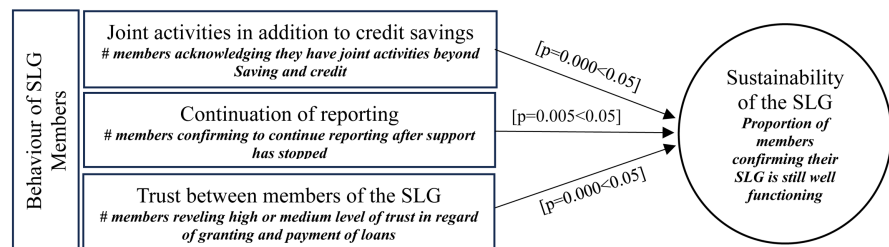
Effect	Adjustment criteria of the model	Likelihood ratio tests		
	Log likelihood -2 of the scale model	Chi-square	dof	GIS.
Constant	66.322 <sup>a</sup>	0.000	0	.
Number of SLGs to which a member belongs	73.472	7.150	4	0.128
Joint activities beyond credit loan	87.401	21.079	2	0.000
Send reports to the organization despite the end of the support?	77.043	10.720	2	0.005
Level of trust between the members of the SLG, with regard to the granting and payment of loans?	176.133	109.811	4	0.000

<sup>a</sup>. This reduced model is equivalent to the final model, because the omission of an effect does not increase the degrees of freedom; Source: Generated by SPSS.

**Table 4** presents the likelihood ratio tests for the partial effects of the model. The overall model test is also presented automatically. The likelihood ratio compares the full model with all independent variables, to the null model for the constant only. If the p-probability value associated with the test is low, in reference to 5% for a 95% confidence interval, this suggests that the full model is significantly better than the null model.

The results show that among the four independent variables, only participation in several SLGs simultaneously has no influence on the sustainability of the SLG. The final model becomes the one represented by **Figure 2** which finally shows only the variables that influence the sustainability of SLGs among those mobilized

in the analysis. For the variable “Joint activities in addition to credit and savings” measured by the number of members acknowledging they have joint activities beyond saving and loan we have  $p$ -value [ $p = 0.000 < 0.05$ ]. It is the same for “Continuation of reporting” measured by number of members confirming to continue reporting after support has stopped where  $p$ -value is also [ $p = 0.005 < 0.05$ ]. Same for the third variable, “Trust between members of the SLG” measured by number of members affirming high or medium level of trust in regard of granting and payment of loans,  $p$ -value is also [ $p = 0.000 < 0.05$ ]. Among the four variables of the conceptual framework of the study on Figure I, results show that those three variables influence the Sustainability of the SLG which is captured by the proportion of members confirming their SLG is still well functioning.



Source: Authors, from results of the research.

**Figure 2.** Graphical model for the sustainability of SLGs in relation to member behaviour based on obtained results.

## 4. Discussion of the Results

### 4.1. Results of Table 3. Information on the SLG's Model Fit for Sustainability

The Constant only in the initial model has a value of 216.042. This value represents the log of the probability that the dependent variable (sustainability of savings and loan groups) is in a reference category among the three modalities. In other words, when all independent variables are zero, the probability of the reference category is high. The final model has a log likelihood of 66.322. This value is used to compare the fit quality between different models. A lower value indicates a better fit. In this case, the final model is significantly better than the initial model. In the likelihood ratio tests, the Chi-square has a value of 149.720. Again, the likelihood ratio test compares the final model to the initial model. In this comparison, a high value of the Chi-square suggests that the final model is significantly better than the initial model. Regarding the dof (degree of freedom), logistic regression shows that the final model has 12 dof, referring to the number of independent variables in the model. The probability value Sig. associated with the likelihood ratio test is 0.000. Given that the confidence interval is 95% and that the probability value is [ $p = 0.000 < 0.05$ ], the conclusion that is made is that the final model is statistically significant. In other words, considered as a whole, the independent variables have a significant effect on the sustainability of savings and loan groups. In conclusion, the final model is well fitted and the independent variables have a

significant impact on the sustainability of the savings and loan groups. However, it is important to check whether each of the independent variables used influences the sustainability of the SLG.

#### 4.2. Results of Table 4. Likelihood Ratio Tests

The results show that the constant, which is the value of the log likelihood  $-2$  of the reduced model when all the independent variables are zero, has a value of 66.322, as is the case elsewhere for Table III which gives the information on the fit of the model. This is a value that has no direct practical significance, but serves as a reference for the other coefficients. In this way, it represents the log probability that the dependent variable is in a reference category among the three modalities. When all independent variables are zero, the probability of the reference category is high. For the independent variables, for the number of SLGs to which a member belongs, the coefficient is 73.472. For joint activities, in addition to savings and credit, it is 87.401. And for reporting after the weaning period it is 77.043; and 176.133 for the level of confidence among the members of the SLG with regard to the granting and repayment of credits. These coefficients measure the effect of each independent variable on the probability of sustainability of the savings and loan groups. As an indication for the variable concerning the number of SLGs to which they belong, an increase of one unit in the number of savings and loan groups leads to an increase of 73.472 in the log of the groups sustainability ratings.

At the level of likelihood ratio (Chi-square) tests, the likelihood ratio test compares the full model (with all variables) to the reduced model (with only the constant). Thus, we have for the constant a value of 0.000; and a value of 7.150 for the number of SLGs to which a member belongs. For joint activities, the value of the chi-square is 21.079; as long as it is 10.720 for reporting, and 109.811 for the level of trust between the members of the SLG with regard to the granting and payment of credits. The higher these chi-square values, the more they suggest that they have a significant effect on sustainability. Thus, for example, at this level it becomes evident that the significance is higher for the confidence factor and lower for the participation of members in several SLGs. These are two of the four extreme values that correspond to the four independent variables that were used in the analysis.

Referring to the dof, for each variable, the following values should be noted: 0 for the constant, 4 for the number of SLGs to which a member belongs, 2 for joint activities beyond savings and credit, 2 for reporting, and 4 for the level of trust between the members of the SLG with regard to the granting and payment of loans. These degrees of freedom correspond to the number of independent variables in the model. Thus, as an indication, the constant has 0 dof (because it is fixed), while the number of savings-credit groups has 4 dof. These values are used to calculate the likelihood ratio tests.

Regarding the Sig. value, for each variable, the probability values  $p$  associated with the independent variables become obvious. Thus, for the number of SLGs to

which a member belongs  $p = 0.128$ . For joint activities, the value is  $p = 0.000$ ; and for reporting the probability value is  $p = 0.005$ . It is  $p = 0.000$  for the level of confidence between members regarding the granting of credits and repayment. As a probability value of less than 0.05 (95% confidence interval) indicates that the variable has a significant effect on sustainability. It is at this level that we have the final conclusion on the independent variables that have a significant impact on the sustainability of savings and loan groups. Thus, as a conclusion, the participation of members in several SLGs does not influence the sustainability of the SLG. On the other hand, the fact that members have joint activities in addition to savings and loan influences the sustainability of the SLG. The same is true for reporting despite the cessation of support by the organization that set up the SLG. It also influences the sustainability of the SLG. The confidence level also influences the sustainability of the SLG, as the probability value associated with it is below the 0.05 threshold. In view of the chi-square value associated with it, which is the highest of the four shown by the result of Table III of the likelihood ratio tests, the level of confidence influences the durability of the SLG to a large extent.

These results confirm of other authors. Indeed, SLGs in the form of savings and credit cooperatives have shown their ability to offer diversified and adapted financial services in a sustainable way to poor populations excluded from the traditional banking system, based on proximity and trust, among other factors (Avogan, 2022). Thus, the principle of mutual selection that governs the creation of such initiatives implies that the participants are united by close relationships and maintain bonds of trust (Le Polain, 2018). That being said, the real power of these SLGs does indeed lie in the confidence and ability they build in members to uplift themselves and others (Anyango et al., 2007). In this way, trust contributes to the sustainability of the SLG and, in a mutual way, according to this author, the SLG also contributes to the strengthening of trust among members. Other authors have identified trust as one of the characteristic elements of social capital and have reported on the importance of social capital in the sustainability of SLGs, while stressing that pre-existing social ties are not a necessary starting condition for the sustainability of the group (Tan & Savani, 2022). This is a finding that is likely to encourage practitioners of empowerment approaches who use the SLG model in all its diversity, since in most cases SLGs are governed and managed by members who have the same common link (Avogan, 2023). And since it has been evident that adherence to design principles is positively associated with the sustainability of the SLG (Tan & Savani, 2022), it would be useful to insist on the three aspects that influence the sustainability of the SLG from the implementation of the group, namely the scheduling of joint activities by the members of the SLG, the emphasis on ongoing reporting and the level of trust between members. On the other hand, less effort should be devoted to the insistence on discouraging members from belonging to multiple SLGs if there are able. With these results, SLGs that have conquered the most remote areas with the possibility of being replicable on a large scale in economically fragile and vulnerable contexts (Mbaye, 2023) will be able

to really reach the poorest of the poor in their various forms (Nkunda & Manirakiza, 2022a).

In summary, the discussion of the results of the analyses shows that the four independent variables influence the sustainability of the SLGs if they are considered together. However, if they are taken separately, those with influence are identified. The analysis shows that one of them which is participation in several SLGs has no influence on the significance that has been noticed at the global level, on the sustainability of the SLG. The remaining three variables have influence on the sustainability of the SLG.

## 5. Conclusion and Prospects for Future Research

The present study examined the sustainability of SLGs by focusing on the behaviour of their members in three communes of the province of Bubanza. As a result, it was evident that SLGs whose members participate in joint activities, in addition to savings and credit, tend to become sustainable. In addition to this, the persistence of reporting by members to the organization or structure that created the SLG also contributes to its sustainability. The level of trust among members regarding the granting of credits is a key factor in the sustainability of the SLG, and to a large extent compared to the first two factors. In contrast, the number of SLGs to which a member participates does not have a significant impact on the sustainability of the SLG.

At the end of this study, two main perspectives in relation to subsequent research are proposed. The first is a broadening of the scope of the study. For a better generalization of the results, it would be wise to extend the study to other provinces of Burundi and or to other communes in the province of Bubanza. This is a limitation to be noted in relation to the present study. The second perspective relates to the aspects of the SLG itself. In addition to examining the behaviour of members, it would be interesting to study the sustainability of the SLGs by looking at choices for the internal organization of the SLG and the orientations adopted for the day-to-day management of these SLGs.

This study will have contributed to a better understanding of the aspects related to the behaviour of members in relation to the sustainability of the SLG, offering possibilities for improving their management in order to guarantee their sustainability. Thus, with the results obtained from the research, SLG practitioners will have understood that it will no longer be necessary to spend energies preventing members of these groups from being part of more than one SLG. On the other hand, more efforts should be made to encourage members to initiate various activities in addition to savings and credit. At the same time as such activities are likely to enable them to be more productive, they also make it possible to consolidate the SLG and thus to make it sustainable. In addition, the initiators of the SLGs should make the members aware of the reporting aspect from the outset, as this is a factor of sustainability. It is by promoting this culture in the members from the beginning that it will be easy for them to continue this exercise, even

after the group is no longer receiving support from outside. Finally, since trust between members is another aspect of sustainability, organisations or structures that are involved in the creation of SLGs should also focus on it in a special way from the outset. When creating, it would be preferable to advise future members to come together on the basis of this criterion of the degree of trust between them in order to perpetuate their group. By considering these factors related to the behaviour of members, SLG practitioners therefore have the opportunity to make them sustainable and thus to perpetuate the impact they induce within local communities, for the benefit of populations who live for the most part in a notorious poverty situation.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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