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DETERMINANTS OF INFORMAL FINANCIAL GROUP PARTICIPATION: EVIDENCE FROM RURAL CAMEROON

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Abstract

This paper analyzes the determinants of individual participation in informal financial groups (IFGs). The findings indicate that group characteristics are a primary factor explaining IFG participation, while transaction costs also play an important role. Results highlight the broad scope of individuals (by gender, age, occupation) participating in IFGs.

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Introduction

Informal finance has been a subject of increasing attention for development economists in recent years. "Puzzled" by the flourishment of informal finance where formal financial systems fail (Adams, 1989), several studies have focused on different forms of informal financial intermediation[1]. Among these, informal financial groups (IFGs) have been the subject of both empirical research (e.g., Izumida, 1989, Schrieder and Cuevas, 1989), as well as interpretive essays (e.g., Callier, 1990, Von Pischke, 1989).

In addition to documenting the relative importance of IFGs in funds mobilization in low ncome countries, the studies referred to above have raised several challenging, interrelated questions: (a) what is the appropriate theoretical framework to analyze IFG behavior and performance?, (b), what applied models can be formulated to explain group behavior and performance, and (c), how to model individual member participation in IFGs?. Addressong these questions in a recent article, Callier suggests that "the logic of... (IFGs) is the logic of collective action, not the logic of the market..." (Callier, 1990, p.274), referring to the limitations of the financial intermediation framework to explain the emergence of informal financial groups, and to account for the specific features of these groups. Although Callier is relying primarily upon the works of Olson on collective action (1965 and 1982), a number of alternative theoreti-

[1] A collection of articles on informal finance is forthcoming in Adams, D. W, and D. Fitchett, editors. Informal Financial Markets in Low Income Countries.

cal frameworks can be proposed to explain group and/or membership behavior. The economic theory of clubs[2], and transaction-costs economics (Williamson, 1979) are among these approaches. Although not necessarily mutually exclusive, these two approaches may lead to different explanations of individual participation in IFGs: is it primarily the characteristics of the group, as a social and economic entity, that drives member involvement?, or is it primarily the individual's attempt to reduce the transaction costs associated with financial contracts what determines the extent of members partiicpation in IFGs?

This paper attempts to address the questions above by providing an empirical insight into the determinants of individual participation in IFGs. The model relies upon data obtained among informal financial groups in rural Cameroon (Schrieder, 1989). The significance of IFGs in Cameroon has been documented elsewhere (DeLancey, 1977, Schrieder and Cuevas, 1989), hence this paper will focus on analyzing the factors underlying the decision to participate in IFGs, as well as the factors explaining the degree of members' involvement in these groups. The following section presents the empirical model and briefly discuss the different groups of variables representing the explanatory factors associated with transaction costs and group characteristics. Subsequently, the results of the regression models are analyzed, before offering several concluding remarks.

A Model of Informal Financial Group Participation

The extent to which an individual is involved in financial self-help groups is measured here through three alternative indicators: (1), the number of IFGs in which the individual participates; (2), the amount of savings held by the individual in IFGs; and (3), the individual's total borrowing from IFGs.

[2] See the comprehensive review by Sandler and Tschirhart (1980).

Whereas the first indicator reflects the individual's natural propensity or willingness to participate in groups, the second and third measures of participation are more likely to capture the member's ability to contribute deposits and his/her credit worthiness in the informal financial group.

It is hypothesized here that individual participation in informal savings and lending associations is determined by: (a), factors associated with the individual, and (b), factors pertaining to the informal financial group. The factors associated with the member (individual) characteristics are in turn classified into three groups: personal and household characteristics, motivation to participate in IFGs, and access to alternative financial institutions. The latter reflects the opportunity cost for group members of performing financial transactions elsewhere, i.e., the transaction costs hypothesis for member participation.

The second set of variables, which captures several IFG characteristics, represents the hypothesis that it is the nature of the group and the group dynamics what determine member involvement in IFGs. The chart below summarizes these factors and the related proxies that are postulated to influence an individual's decision to participate in informal financial groups.

Factors Explaining an Individual's Participation in Informal Financial Groups

Factor Groups	Explanatory Variables
Factors Associated with the Individual	
Personal and household characteristics	Age Gender Education Occupation Family size
Initial motivation to participate	To obtain a loan To save To socialize
Access to alternative financial institutions (Transaction costs)	Bank distance Access to loans from other institutions Access to alternative savings institutions
Factors Associated with the Group	
	Group age Group size Type of group Form of leadership Meeting sequence (monthly) Group common bond: ethnic group, and gender

The following multiple linear regression model was specified to explain the relationship between participation (involvement) in IFGs and the explanatory factors described above:

$$P = \beta_1 + \beta_2 MA + \beta_3 MG + \beta_4 ME + \beta_5 MO + \beta_6 FS + \beta_7 LO + \beta_8 SA + \beta_9 SO + \\ + \beta_{10} BD + \beta_{11} AL + \beta_{12} AS + \beta_{13} GA + \beta_{14} GS + \beta_{15} GT + \beta_{16} GL + \\ + \beta_{17} GF + \beta_{18} BE + \beta_{19} BG \qquad (1),$$

where, P represents individual involvement in IFGs, measured through three alternative indicators: (a), the number of groups in which the individual participates, (b), the total savings held by the individual in informal groups, and (c), the total borrowing from IFGs.

The explanatory variables in equation (1) and their measurement are described as follows:

MA : Member age, years
MG : Member gender, male = 1, female = 0,
ME : Member education, literate = 1, illiterate = 0,
MO : Member occupation, farmer = 1, 0 otherwise
FS : Family size, number of members
LO : To obtain a loan as primary motivation, yes = 1, no = 0,
SA : To save as primary motivation, yes = 1, no = 0,
SO : To socialize as primary motivation, yes = 1, no = 0,
BD : Bank distance, kilometers
AL : Access to loans from alternative formal institutions, yes = 1, no = 0,
AS : Access to alternative savings institutions, yes = 1, no = 0,
GS : group size, measured alternatively as
total membership per group, number of members
total group of savings (CFA'000), or
total group lending (CFA'000),
GA : Group age, years of operation,
GT : Type of group, rotating = 1, non-rotating = 0,
GL : Leadership structure of group, board = 1, individual = 0,
GF : Meeting sequence (monthly)
BE : Group common bond, ethnic group = 1, 0 otherwise,
BG : Group common bond, gender = 1, 0 otherwise.

The data used in the estimation of equation (1) correspond to 136 individual interviews with members of informal financial groups in the North West, Central, and West provinces of Cameroon (Schrieder, 1989).

Regression Results and Interpretation

The results of the OLS estimation of equation (1) for the three definitions of the dependent variable P are presented in Table 1. These results correspond to the definition of group size (GS) in terms of total group savings, which gave consistently the best goodness of fit for all three definitions of the dependent variable.

The joint significance of the explanatory variables comprising each factor hypothesized as determinant of IFG participation is presented in Table 2. The F-ratios presented here test the joint null hypothesis that the β coefficients

associated with the variables in a given group (factor) are all equal to zero, [3] against the alternative hypothesis that not all β_i are zero.

Table 2 shows that group related factors are consistently significant for all three definitions of the dependent variable, while other factors appear as significant only to specific definitions of IFG participation. Access to alternative financial institutions is a significant factor for two of these definitions, whereas other factors associated with the individual are only significant for one definition. A discussion of each variable group follows.

Personal and Household Characteristics

The test results in Table 2 indicate that personal and household characteristics do not determine significantly a person's decision to participate in several groups, or the individual's savings balances in these groups. However, this factor does appear to influence positively the amounts borrowed from IFGs.

Among the individual variables comprising this factor, only occupation and family size show significant estimates in Table 1. Although there is no evidence that occupation affects participation in IFGs (first column in Table 1), farmers are significantly less engaged in informal savings as well as borrowing activities compared to non-farmers (second and third columsns). This finding can be associated with the lower income level of farmers relative to non-farmers. In addition, cash-crop farmers face a less steady flow of income which makes it more difficult for them to subscribe a fixed contribution regularly. Although food-crop producers - traditionally women - have a steady flow of income, their income level is stilll lower relative to non-farmers. Therefore, farmers appear as likely to participate in IFGs as non-farmers but are not able to deposit as much

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[3] e.g. the joint null hypothesis to test for the significance of the factor "personal and household characteristics" is $\beta_2=0$, $\beta_3=0$, $\beta_3=0$, $\beta_4=0$, and $\beta_6=0$.

funds as other occupations do. Moreover, since the loan amount a group member is eligible to obtain is usually directly dependent on the member's total deposits, farmers not only save less but also are bound to borrow less as compared to non-farmers.

Family size was found to significantly increase member's borrowing. This finding is consistent with both the widespread notion that loans from informal institutions are primarily spent for consumption purposes, as well as with the notion that family labor is a key ccoperating factor in rural household investments. As family size increases, consumption expenditures increase, and the availability of labor increases, thus increases the overall demand for funds.

Initial Motivation to Participate in IFGs

This group of variables appears to significantly affect IFG participation when measured as the number of groups in which individuals participate. However, the motivation factor does not significantly influence the amount an individual chooses to save and borrow (see Table 2). The results presented in Table 1 suggest that a person intending to save and to borrow in IFGs participates in more groups than a person whose primary intention is to socialize with the other members.

Access to Alternative Financial Institutions

The signifcance tests presented in Table 2 indicate that this factor strongly influences the number of groups in which an individual is involved. As expected, the participation in informal financial groups increases as distance to the nearest bank branch increases, thus reflecting the opportunity costs of performing financial transactions in formal institutions. Interestingly, access to alternative savings institutions does not reduce participation in multiple groups or the amount of informal savings and borrowing, while access to alterna-

tive formal loan institutions does not show a significant effect on IFG participation (see Table 1). These results are consistent with the idea that informal finance is not indeed replaced by formal finance when this becomes available. Instead, IFG members will tend to diversify their asset and liability portfolios, and benefit from a better selection of financial services. It must also be recalled that in the North West province of Cameroon, there is a strong and reliable credit union organization providng services to individuals as well as to IFGs as a group, integrating rather than substituting for IFG activity.

Factors Associated with the Informal Financial Group

As Table 2 indicates, group related factors significantly influence all three definitions of the dependent variable. In addition, all group-related parameter estimates with respect to the number of IFGs in which a person is involved are significant at the one percent level (Table 1). Well established, long standing savings and lending associations seem to discourage their members from participating in additional informal financial groups, while group size has the opposite effect on members' participation in IFGs. The larger the group, the greater the likelihood that a person eventually participates in other groups. This result supports the notion that the information advantages associated with IFGs tend to disappear as group size increases. Hence, members will tend to diversify their savings and borrowing options by contributing to a larger number of groups.

People participating in groups with a monthly meeting frequency have an increased tendency to join additional IFGs. This result is explained by the fact that unexpected money needs are easier to satisfy if one belongs to several groups rather than to just one which in addition meets only once a month. Finally, it was found that members of savings and lending associations wherein

the ethnic group is the common bond participate in fewer informal financial groups, while their engagement in informal savings activities is significantly increased. In contrast, members of IFGs wherein gender is considered to be the common bond, tend to participate in more groups. These findings suggest that ethnicity is a stronger source of mutual trust than a common gender, since there would less of an incentive to diversify group membership when ethnic group is the common bond, than when gender plays this role.

Concluding Remarks

This paper has analyzed factors hypothesized to affect individual participation in informal financial groups in Cameroon. Three major remarks arise from this analysis. First, group characteristics appear as the more significant and consistent determinant of IFG participation. This suggests that research aimed at understanding IFG should focus on modelling group behavior and performance, in order to identify the factors that determine those group characteristics. In particular, the interaction between group size, mutual trust and information costs deserve special attention.

Second, although less significant than group characteristics, transaction costs are also an important factor in explaining IFG involvement by individuals in rural areas. The findings reported here support the notion of complementarity between informal and formal finance in Cameroon, a result probably due in part to the presence of a healthy credit union movement in the regions surveyed for this study.

Finally, the lack of significant influence of personal characteristics such as age, gender, or occupation, on IFG participation reflects the wide range of individuals these organizations are capable of reaching. Hence, initiatives that

support informal finance must not alter the essential features of informal groups that allow them to gather such a diverse cross section of the rural population.

References

Adams, Dale W. "Taking a Fresh Look at Informal Finance." Seminar on Informal Financial Markets in Development, Washington, D.C., October 1989.

Callier, Philippe. "Informal Finance: The Rotating Saving and Credit Association - An Interpretation." Kyklos 43 (1990): 273-6.

Izumida, Yoichi. "The Kou in Japan: A Precursor of Modern Finance." Seminar on Informal Financial Markets in Development, Washington, D.C., October 1989.

Olson, Mancur. The Logic of Collective Action. Cambridge, Mass.: Harvard University Press, 1965.

Olson, Mancur. The Rise and Decline of Nations: Economic Growth, Stagflation and Social Rigidities. New Haven: Yale University Press, 1982.

Sandler, Todd, and John T. Tschirhart. "The Economic Theory of Clubs: An Evaluative Survey." J. Economic Literature, 18 (1980): 1481-521.

Schrieder, Gertrud R. "Informal Financial Groups in Cameroon: Motivation, Organization and Linkages." M.S. Thesis, The Ohio State University, 1989.

Schrieder, Gertrud R., and Carlos E. Cuevas. "Taking Over the Monetized Economy: Informal Financial Groups in Cameroon." Seminar on Informal Financial Markets in Development, Washington, D.C., October 1989.

Von Pischke, J. D. "Roscas: State-of-the-Art Financial Intermediation." Seminar on Informal Financial Markets in Development, Washington, D.C., October 1989.

Williamson, Oliver E. "Transaction-Cost Economics: The Governance of Contractual Relations." J. Law and Economics, 22 (1979): 223-261.

Table 1

Results of Regression Models

Factors and related explanatory variables	Dependent Variable: Engagement in No. of groups		Engagement in informal savings (in 1000 F CFA)		Engagement in informal borrowing (in 1000 F CFA)	
	Estimate	t-ratio	Estimate	t-ratio	Estimate	t-ratio
Personal and household characteristics:						
Member age	0.002	0.451	-1.437	-0.346	0.529	1.138
Member gender	-0.261	-1.420	180.732	1.138	62.244	0.435
Member education	0.049	0.371	55.683	0.493	-45.117	-0.435
Member occupation	-0.169	-0.650	-487.746	-2.213o	-372.976	-1.843+
Family size	-0.002	-0.241	2.080	0.299	16.926	2.645*
Motivation:						
To obtain a loan	0.750	2.595*	-358.298	-1.468	-75.217	-0.334
To save	0.473	2.364o	-98.167	-0.570	208.700	1.337
To socialize	-0.306	-2.396o	53.843	0.487	64.573	0.649
Access to alternative fin. institutions:						
Bank distance	0.674	3.827*	-15.196	-0.852	-135.400	-0.987
Alternative loan institutions	-0.089	-0.497	124.290	0.792	-137.610	-0.981
Alternative saving institutions	0.693	5.787*	183.415	1.635+	158.804	1.701+
Group related factors:						
Group age	-0.041	-3.854*	1.196	0.138	0.382	0.047
Group size	0.309^{-6}	3.528*	2.425	1.082	-0.001	-0.780
Group type	-8.155	-2.926*	-390.563	-0.865	1924.389	0.886
Group leadership	-2.264	-4.046*	395.812	0.813	11.494	0.026
Meeting sequence (monthly)	8.623	3.756*	335.362	0.523	-2225.259	1.243
Common bond:						
Ethnic group	-6.943	-4.086*	771.577	2.370o	870.582	0.657
Gender	8.022	3.641*	439.621	0.725	-2202.891	-1.282
Intercept	-9.219	-3.171*	171.871	-0.228	2941.755	1.298
R^2	0.632		0.409		0.561	
F value	11.166		4.490		8.300	

* significant at .01
o significant at .05
\+ significant at .10

Table 2

Significance of Explanatory Factors. Joint Tests of the Hypothesis $\beta = 0$, where β is a Vector of Parameter Estimates

	Dependent Variable					
	Engagement in:					
Factors	no. of groups		informal savings activities		informal borrowing activities	
	F-value	Prob>F	F-value	Prob>F	F-value	Prob>F
Personal and household characteristics	0.530	0.7142	0.633	0.6398	2.064+	0.0900
Initial motivation to participate in IFGs	5.520*	0.0018	0.838	0.4759	0.826	0.4822
Access to alternative financial institutions	17.82*	0.0001	2.153+	0.0974	1.340	0.2647
Factors associated with the informal financial group	13.82*	0.0001	3.015*	0.0060	4.029*	0.0005

* significant at .01

+ significant at .10