Forthcoming in *Economic Development and Cultural Change*

When Does Community Conservatism Constrain Village Organizations?

by

Tanguy Bernard*, Alain de Janvry**, and Elisabeth Sadoulet**

January 2009

Abstract

Formal village organizations (VO) can be classified into market-oriented (MO) and community-oriented (CO) organizations, with the former aimed at raising members' incomes and the latter at the provision of local public goods. This paper investigates the role of community conservatism in opposing economic differentiation and, thereby, constraining the emergence, configuration, and activities of MOs in West Africa. To do this, we develop a model where we show that, if these conservative forces are important, MOs need to be larger than would otherwise be optimal in order to gain acceptability and emerge. This, in turn, has an impact on their governance structure, as the needed extra members demand a more participatory decision-making process in order to secure the delivery of club goods, constraining the exercise of leadership. With very high resistance to economic differentiation, no MO can emerge. Using a dataset of 646 VOs in Burkina Faso, we identify a sharp contrast in initial size and governance structure between the first MO to emerge in a village and subsequent MOs. This is consistent with the results of the model assuming that first MOs encounter strong opposition to their emergence, while the social environment is more tolerant for subsequent MOs..

* International Food Policy Research Institute; t.bernard@cgiar.org.

** University of California at Berkeley; alain@are.berkeley.edu; sadoulet@are.berkeley.edu.

The authors are grateful to Marie-Hélène Collion, Pierre Rondot, and Adama Touré from the World Bank and to Jean-Louis Arcand and Maguelonne Chanron from CERDI for their collaboration on this project, as well as to Gershon Feder and the Norwegian Trust Fund at the World Bank for financial support. We also thank Jean-Philippe Platteau, Marcel Fafchamps, John Gibson, Nancy Mc Carthy, Jordan Chamberlain, and Maribel Elias for valuable comments.

I. Introduction

In West African countries, village-level organizations[1] (VOs) have the potential of being an important instrument to deliver local public goods and to support market-oriented income-generating activities. Yet, despite the rapid development of these organizations over the past two decades and the growing interest of development agencies in working with them (see Uphoff (1993); Collion and Rondot (1998)), their contributions to village-level poverty reduction seems to have been modest. This is evident in Burkina Faso, where 91% of the rural households have access to at least one village-level organization and 57% are actual members of such VOs, but only 32% have received individual benefits from one organization and, when they do, these benefits are usually quite small (Bernard et al. (2007)).

Several factors may explain the apparently limited role of VOs in improving rural incomes. The generally low level of financial resources available to these organizations, as well as the lack of complementary public goods and institutions, are certainly major constraints to their success.[2] However, the role of social pressures in the rural communities where VOs operate also needs to be considered. In many African rural communities, economic differentiation is perceived as a threat to the traditional social structure and to the solidarity system. Consequently, these communities tend to enforce strict redistributive practices, whereby enriched individuals are socially compelled to share with the rest of the community not only their good fortunes but also the differentiated product of their hard work (see Platteau (2000); Platteau and Abraham (2002); and Fiske (1991) and Englebert (1996) for Burkina Faso in particular). In this paper, we show that community conservatism may have two consequences on VOs: (i) it may prevent organizations with *direct* income-generating potential from emerging because of the expected economic differentiation of their members from the rest of the community, and (ii) even when they manage to emerge, these organizations may still be constrained in selecting members, choosing a governance structure, and having to engage in the provision of club goods for their members in order to secure social acceptability.

The governance structure of VOs can range from situations where all decisions are taken by the leaders, to situations where they are made via an extensively participatory process. In what

[1]We define village organizations (VOs) as village-level groups of individuals that are formally organized with legal status. This distinguishes them from the multiplicity of traditional village institutions that do not have legal status.

[2]In Burkina Faso, the PNGT (Programme National de Gestion des Terroirs) aims at relaxing these types of constraints by providing funding for public goods in rural areas using a Community Driven Development approach in which VOs are important partners.

follows, we refer to the former as *leadership-based* governance and to the latter as *participation-based* governance. The literature on VOs recognizes the role of governance structure in affecting the performance of the organizations. Some authors contend that leadership leads to better economic outcomes (e.g. Tendler (1983), Bianchi (2002)). The argument is that leaders provide technical expertise, drive, and continuity, while too much direct participation by inexperienced members may impair the organization's capacity to pursue high-income strategies. Other authors, by contrast, argue that participative governance is a means of enhancing the sustainability and effectiveness of the organization as it helps better adjust decisions to local conditions and customs (Atwood and Baviskar (1987)). In the case of public goods, it leads to the provision of goods that are more desirable to a larger share of members (Foster and Rosenzweig (2001)). In addition, many development agencies consider participative governance as valuable in itself to empower members.[3]

One way of reconciling these divergent views on the best governance structure is to recognize the existence of two kinds of village organizations: (i) community-oriented organizations (COs) which are aimed at the provision of public goods, and (ii) market-oriented organizations (MOs) which are aimed at income generation for their members (see Uphoff (1993), Diagne and Pesche (1995), and Collion and Rondot (1998) for similar distinctions). In accordance with this dichotomy, one would expect to find more leadership-based governance in MOs and more participation-based governance in COs.

We argue, however, that leadership-based governance may be strongly constrained in MOs that face community resistance to economic differentiation. To show this, we build a simple model where we assume that emerging MOs, because they are expected to induce economic differentiation between their members and the rest of the community, are perceived as threats to reproduction of the traditional social structure and the solidarity system. As a result, the size of the emerging MO is partly determined by the necessity of counteracting resistance to its existence from the rest of the community: by incorporating a sufficient critical mass of villagers, even if not entrepreneurial, who will share in the benefits created by the organization. This, in turn, influences the MOs' governance structure, as the included non-entrepreneurial members require a more participative type of governance.[4] The model predicts that, in an environment with high resistance to economic differentiation, one should initially find relatively larger MOs, governed in

[3] See Mansuri and Rao (2004) for a comprehensive survey of Community Driven Development approaches in which empowerment through member participation is seen as central.

[4]See Acemoglu and Robinson (2001) for an in depth explanation of this argument applied to country-level democratization processes.

a more participative mode, and delivering club goods in addition to supporting entrepreneurial initiatives. If community conservatism is too strong, no MO will be able to emerge in the village. Where community conservatism is weak, economic differentiation is less of a problem, and emerging MOs can be smaller and the leadership mode of governance can dominate.

Our empirical specification follows directly from the model. Using a survey of 646 VOs in Burkina Faso that we collected in 2002-2003, we find predicted relationships between strength of social homogeneity (which we take as a proxy for social pressure), membership size, form of governance, and type of activities in the emerging MOs consistent with regime I for the first MOs and consistent with regime D for the subsequent MOs. The results are robust to several econometric specifications. This is consistent with the idea that community conservatism is particularly strong against differentiation when the issue comes about for the first time in a community, but more tolerant when other members want to create subsequent MOs.

II. The defense of the solidarity system in African villages

In this section, we give evidence on the prevalence of a solidarity system in African rural communities and on community conservatism in resisting economic differentiation that could undermine solidarity. Mutual insurance mechanisms in traditional societies have long been studied by economists (Scott (1976)). The main finding is that, in environments characterized by high risk and insurance market failures, community institutions often provide members with ways of allocating risk efficiently. These mechanisms can take various forms such as gift exchange, reciprocal credit, land loans, and labor assistance (Fafchamps (1992)). Empirical studies have shown that risk-sharing does exist, even though it falls far short from achieving Pareto efficiency (see in particular Townsend (1994), Udry (1994) and Ravallion and Chaudhuri (1997)).

Studies of African village communities, however, show that sharing tends to go beyond the exercise of mutual insurance and that anti-differentiation redistributive practices can happen at the cost of an ex-post aggregate welfare loss for the community (Platteau (1996)). The most common example of such practices is found in the "extended family" solidarity network in Africa. Hoff and Sen (2005) develop a model showing how redistribution within such networks is often imposed on the better-off members, and may have adverse effects on the efficiency of market interactions. In this case, a kin group takes collective action to block exit by some members, even though the group as a whole would gain from their migration if they would continue to contribute to the solidarity system. Because there is no guarantee that they will, community conservatism opposes their taking advantage of such new opportunities in order to prevent the solidarity system from being weakened by their departure. In contexts where anti-

differentiation pressures are very strong, redistribution can even aim at achieving relative equality across members of a community. For Fiske (1991), analyzing Mossi communities in Burkina Faso[5], the goal of "even matching" supports the continuous exchange of wealth. This is also observed by Englebert (1996) who reports that "*Mossi society bans individual accumulation that could differentiate one Mossi from another. This is also supported by the absence of much visible stratification in Mossi villages*."

Platteau (2000) gives a comprehensive explanation of community conservatism in opposing economic differentiation in traditional African communities. His argument relies on three characteristics of these communities. First, traditional rural communities are characterized by severe exposure to income risks due to a high degree of dependence on nature in their productive activities. With low levels of accumulation of liquid assets, this implies the need for mutual insurance to secure subsistence at all times. Second, historically traditional communities have typically lacked scientific knowledge about the determinants of successful outcomes. Individual success was attributed to luck rather than to hard work, and luck should naturally be shared among community members. Moreover, the one who was repeatedly more successful when the others were less so could be blamed of manipulating supernatural forces. Facing this risk, only sharing could be used to appease jealous feelings. Although the relationship between effort and output is likely better understood in these communities today, sharing practices are reproduced over time and often assisted by beliefs in magic and potential calls on witchcraft. Finally, even though rural African communities are usually small and characterized by highly personalized relationships, where all members constantly observe each others' behavior, the enforcement of sharing remains problematic. In this context, successful accumulation by a few generates fear among the others that, if left free to choose, those with high realized incomes will defect on their solidarity obligations, leaving the rest of the group worse-off. Because the economic differentiation of a few individuals may undermine the community's overall social cohesiveness and threaten the reproduction of the solidarity network, such accumulative behavior is repressed within the community. Economic differentiation is also resisted as it may challenge the social hierarchy of the community.

These redistributive practices can generate strong disincentives to effort and investment, and thereby constrain income generation by entrepreneurs and lower average income in the community. This can result in what Bowles (2006) has called "institutional poverty traps" and Kuran (1988) "collective conservatism". This practice is similar to the resistance to trade

[5] In Burkina Faso, the Mossi represent more than 45% of the population.

liberalization analyzed by Fernandez and Rodrik (1991) when there is uncertainty about the identity of losers and winners and no credible commitment that compensations will be paid, in spite of net social gains. The daily practice of community conservatism is embedded in cultural beliefs (Greif (1994)) and in identity mechanisms (Akerlof and Kranton (2000)) that only allow for a slow and often discontinuous evolution of norms. In this context, only a coalition of a sufficient critical mass may have the bargaining power to undertake the change (Akerlof (1976), Platteau (2000), Barrett (2005)).

Extensive fieldwork undertaken for this project supports the proposition that MOs provoke resistance from villagers. We often observed negative feelings of non-members towards MOs with exclusive benefits, whose members are considered as "non-team players" by the rest of the community. Communities use ostracization and even threat of witchcraft against these individuals. We observed a case where the emergence of a first organization led to such clashes among community members that the community split into two neighborhoods. One leader that attempted and failed to start an organization complained that he could not assemble enough participants as village elders put pressure on potential younger members not to participate. We also encountered a number of MO-type organizations with a two-tier type of membership, where only a subset of members were effectively active in the organization, whereas the remaining members, although participating in meetings, did not invest in the organization. Based on the literature and on our own village case studies done for this project, we are quite confident that community resistance to economic differentiation is an important factor in constraining individual and group entrepreneurship in many African villages.

III. Data and Measures

3.1. The data

The information used in this paper comes from a survey of 260 villages conducted in Burkina Faso in 2002-2003. It includes basic characteristics of the villages and a census of all organizations that have existed at some point during the previous 20-year period. Information on each village organization, whether active or inactive, was collected from a group interview with the organization bureau and rank and file members. It includes the history, activities, governance structure, and external links of each organization. The sample design included six geographical strata to be representative of the agro-ecological conditions of Burkina Faso. In each stratum, four

departments[6] were randomly selected, within which villages were also randomly chosen. All descriptive statistics and estimations presented in this paper take into account sampling weights. All standard errors are corrected for cluster (department) and strata effects.

We obtained rainfall data from the Directorate of Meteorology in Burkina Faso, covering 160 stations over the years 1961-1995.[7] Although certain stations were missing a number of data points, we were able to retrieve monthly rainfall values for over 20 consecutive years of observations for 96 stations. These time series of rainfall observations were used to construct an indicator of rainfall predictability, as described in paragraph 3.4. The stations were then geographically matched to our sample villages. Note, however, that geographic coordinates are missing for 34 (13%) of the villages in our sample, with the result that the sample is reduced for all estimations that include rainfall data.

3.2. Community-oriented and market-oriented organizations: a typology

The survey encountered 646 VOs in the regions surveyed. As shown in Table 1, presence of village organizations is widespread as an estimated 90% of Burkina Faso villages have at least one VO. From the history of their activities, organizations were classified as COs if they had never engaged in market-oriented activities and as MOs if they had. COs are more evenly distributed across villages as there is one in 75% of the villages while there is an MO in only 60% of the villages. In the total population of VOs, an estimated 61% are COs and 39% MOs (Table 2).

The social activities undertaken by COs include cultivation of a collective field or management of a cereal bank for solidarity purposes, management of the environment and cleaning of the village, construction of stone bunds for rainwater infiltration, sports and social activities, and potable water management. The main activities undertaken by MOs include support to processing and marketing, to livestock breeding and animal husbandry, to horticulture and irrigated agriculture, and to cotton production. Notable is that 69% of the MOs have also undertaken social activities of public good or club good type.

3.3. Indicators of governance structure

We use a principal component approach to construct synthetic measures of governance

[6]In Burkina Faso, the department is the smallest administrative unit above the village. On average in the surveyed zones, each department is composed of about 30 villages.

[7] These data were organized into a large geo-referenced database compiling seven different sources of information. We are grateful to Stephan Dercon and David Bigman for the use of these data.

structure across organizations. We use eight organizational features that correspond to the organizations' by-laws and are thus taken to remain unchanged over time. Table 3 reports the loadings on the first two principal component vectors. The first five variables, which are closely related to the role of leadership in the decision-making process, have high loadings on the first principal component. The second component is mainly representing the last three variables, and is more closely related to the formal governance rules within the organization. Overall, these two vectors have clear interpretations. The first component measures the role of leadership in the decision-making process, while the second mostly refers to the existence of formal rules in the organization.

3.4. Indicators of community pressure

We use two separate classes of indicators to characterize community resistance to social differentiation: social homogeneity and exposure to environmental risk.

Both the literature review and field work done for village case studies suggest that community conservatism is associated with social homogeneity, while community liberalism is associated with what the Burkinabe call "social mixing" when a village is composed of several competing social groups. Following the work of McCarthy, Dutilly-Diané, and Drabo (2002) and of Englebert (1996) for Burkina Faso, we measure social homogeneity using a spatial concentration indicator in the [0,1] interval, defined as:

$$1 - \frac{number\ of\ neighborhoods\ in\ the\ village}{population\ of\ the\ village}.$$

The use of neighborhoods is justified by the fact that large villages with multiple ethnic or clan/kinship groups tend to split in neighborhoods along these lines.[8] The direct use of an ethnic fragmentation index, on the other hand, would be difficult, because there is a very large number of ethno-linguistic groups in Burkina Faso, but many are sub-groups, often inclusive of others, and the social distance among different ethnic groups varies considerably.[9] By using the spatial concentration indicators, we let the villagers themselves tell us about social divisions.

[8] Neighborhoods are defined as either "quartier" or "hameau". They regroup a number of households that are not necessarily linked by family bondage (although they may share a common great-great grandfather) but often belong to the same caste or clan.

[9] Ethnic fragmentation captures the probability that two randomly drawn individual within a given population belong to the same ethnic group. These measures usually rely on a Herfindhal type indicator. It is estimated that up to 60 different languages exist in Burkina Faso. But, certain ethnic groups may consider particular groups as "cousins" in contrast to others seen as "non-related."

We use rainfall indicators to capture the community's exposure to environmental risk and hence its need for sharing norms.[10] Such indicators are extensively used in the development literature, essentially as a source of exogenous variation to identify parameters in household models (e.g., Duflo and Udry (2001) in Cote d'Ivoire and Fafchamps (1993) in Burkina Faso) as well as in cross-country estimations (Miguel et al. (2004)). In most of these studies, rainfall data are used to identify short-term exogenous income shocks in poor environments dominated by rain-fed agriculture. Here we take a different approach in that we seek to capture not so much the variation in rainfall patterns, but the extent to which farmers can effectively predict the coming rainfall patterns.

Farmers in Burkina Faso use a wide variety of instruments to forecast the upcoming rainy season, ranging from observing the timing of natural phenomena (blooming of certain trees, wind force and direction, temperature, etc.), to the appearance of certain star constellations, and to mystic knowledge (see Roncoli and Kirshen (2001) for an in-depth description). Among the various aspects of the rainfall pattern, forecasting the effective start of the season is among the most important as farmers may waste seeds if planting time is not appropriate.

For each rainfall station and for each year,[11] the variable *start* designates the first month when rainfall was greater than 50mm per square meter, while the variable *end* identifies the last month of the rainy season. For each station, we then calculate the R^2 corresponding to the following regression, where *t* indicates the year and ε is an error term:

$$start_t = \sum_{i=1}^{3} \beta_i start_{t-i} + \sum_{i=1}^{3} \gamma_i end_{t-i} + \delta t + \varepsilon_t .$$

The obtained R^2 is therefore a measure of the predictability of the start of the rainy season based on previous years patterns. We then generate a village-level value as a weighted average of the station values, with weights inversely proportional to the distance between the village and the stations.[12]

IV. Four regularities in search of an interpretation

Descriptive statistics display four regularities that will help us construct an interpretation of the emergence, configuration, and activities of MOs.

[10] A similar argument is found in Thompson and Wilson (1994) who show that common property regimes are often associated with rainfall variability at the local level.

[11] Only stations with more than 20 consecutive years of complete information were considered.

[12] This interpolation method, called Inverse Distance Weighting, is often used to simulate weather data for crop modeling and risk assessment (e.g., Jones and Thornton (1993)).

Initial membership size is larger in first MOs. We distinguish in Table 2 the first MO to emerge in a village from the subsequent ones. The information covers all the organizations in existence at some point between 1982 and 2002, including those that no longer undertake any activity. We observe that, on average, first MOs are, at their inception, 32% larger than non-first ones.

Leadership is associated with performance of MOs and rules with performance of COs. Table 4 reports on the association between a performance indicator and the two indicators of governance structure constructed above: leadership and rules. The performance indicator is a dummy variable indicating if the organization is active (in the sense of having a project) at the time of the survey. We perform logit regressions, controlling for age of the organization, an important determinant of the level of activity. Reported results show that rules are positively associated with activity in COs, but not leadership (col.1); that for MOs in general, neither rules nor leadership are associated with performance (col. 2); but that, for the non-first MOs (col. 4), both rules and leadership are associated with performance. The size of the marginal effects indicates a stronger relationship between rules and performance in COs than in MOs, and a stronger link between leadership and performance than between rules and performance for non-first MOs.

Leadership decreases with size in first MOs. Data on the governance structure of organizations show an important level of participation in most decisions. For example, decisions on the allocation of benefits are taken by members (as opposed to the president) in more than 86% of the organizations; there is an elected executive committee in 58% of the organizations and a control commission in 59%. However, the importance of leadership vs. participation in governance varies both with the type of VO and with the size of the organization. To illustrate this, we report in Figure 1 the non-parametric estimations of the relationship between initial size of the organization and leadership measured by the first principal component index in Table 3. Standard theory tells us that leadership should increase with the size of the organization to facilitate decision-making (e.g., Staatz, 1987). This is indeed what we observe in non-first MOs. However, we observe the remarkable regularity that this relationship is, to the contrary, negative for first MOs. Leadership is unrelated to size in COs.

At the beginning of their existence, first MOs are more engaged in social activities than are non-first MOs. Table 2 shows that the first MOs engage in more social activities and in less market-oriented activities compared to non-first MOs during their first two years of existence. This difference can be made conditional on the social context: high versus low social

homogeneity, or "social mixing", with a split at the median. We see in Table 5 that, where there is high social homogeneity, first MOs engage significantly more in the delivery of public goods, using cultivation of a collective field as an indicator of public good.[13] When contrasting who captures the benefits of this activity, we see that first MOs have a greater number of collective fields with benefits restricted to members (32%) compared to non-first MOs (12%). This public good is hence in the nature of a club good. These club goods are not being delivered by MOs in contexts where there is low social homogeneity. In the interpretation that follows, high social homogeneity is used as an indicator of strong community pressures to defend sharing practices.

These regularities, together with field observations noted above, suggest the following interpretation on the emergence of MOs in a context of social conservatism.

First, where resistance to economic differentiation is strong, first MOs are forced to incorporate additional members ("non-differentiators") and make them share into benefits. As a consequence, they tend to be larger than subsequent MOs that are less subjected to these pressures.

Second, leadership matters in that it is being associated with better performance in non-first MOs.

Third, the pressure to incorporate additional members in order to defeat community conservatism affects the existence and leadership structure of first MOs. MOs that emerge with incorporation of non-differentiators have a governance structure tilted toward participation as opposed to leadership.

Fourth, first MOs are more engaged in club goods delivery than non-first MOs in order to satisfy the demands of their constituency of non-differentiators.

V. An endogenous governance model

In this section, we present a model of endogenous governance in market-oriented, village-level organizations. Central to the model is the community's resistance to economic differentiation described above. As a result, any group of individuals intended on "differentiating" must face the costs associated with the rest of the community's discontent (sharing of benefits, witchcraft, etc.). Following Platteau (2000), we assume that these costs decrease with the number of individuals wanting to differentiate. In the absence of coordination,

[13] Cultivation of a collective field is a convenient indicator of public or club good provision given the relatively large number of organizations engaged in this practice.

it is likely that no potential "differentiator" will risk the consequences of private accumulation.

As put by Platteau (2000, p.216), *"to break through, he (here the differentiator) needs the protection afforded by the deviant actions of a sufficient number of other innovators in his locality. Rising economic opportunities will not suffice to generate dynamic entrepreneurs in the absence of a critical mass of cultural energies harnessed towards countering social resistance to self-seeking accumulation behavior."*[14]

In this context, MOs can provide the necessary coordination device. However, the number of differentiators in an MO may not be sufficient to overcome the community's resistance. In this case, the organization needs to include a number of "non-differentiators" to enlarge its ranks and overcome community resistance. These extra members will use their bargaining power to impose a more participative form of governance on the organization. In fact, we make the important assumption that, although participation helps reveal the preferences of all members, non-differentiators derive more benefits from a participative decision-making process than differentiators do. This comes from the different objectives of the two groups. Differentiators are usually entrepreneurs in a same sector of economic activity who organize to improve their business operations (e.g., producers of a specific product like cotton who cooperate to buy inputs or to market their products). By contrast, non-differentiators who participate in the MO are community members who agree to support the differentiators provided some resources from the group are also spent on a variety of club goods for the members of the organization or even public goods for the whole village. It follows that the former are more homogenous in their demands on the organization than the latter, who may request provision of an heterogeneous club good that can only be properly defined and obtained through their participation in decision-making.[15]

We formalize a normative model of the optimal size, composition, and governance of an MO. This is done from the point of view of the organization itself as an entity. The model disregards heterogeneity among differentiators that would explain which potential differentiators would join the group and which would be excluded. It also neglects the issue of the emergence of several organizations in the village when the number of potential differentiators exceeds the optimal group size, and the ensuing issue of finding a stable equilibrium of sub-coalitions.

[14] A similar argument can be found in Barrett (2005)

[15] This does not imply that differentiators are either more or less heterogeneous than non-differentiators along other dimensions. In this model, we ignore this potential within group heterogeneity to focus on the contrast between differentiators and non-differentiators in terms of their objectives for the MO.

5.1. The set up

Let $\bar{n}^d$ be the total number of potential differentiators in a community of population $\bar{n}$ and n^d $\left(n^d \leq \bar{n}^d\right)$ the number of differentiators that are actually members of the MO in its optimal composition and size. These differentiators are the core of the organization and, for the purpose of our model, decide on whether to incorporate non-differentiators or not in the organization. Denote by n^p $\left(0 \leq n^p \leq \bar{n} - \bar{n}^d\right)$ the number of non-differentiators that are incorporated in the MO. The size of the organization is thus $n = n^d + n^p$.

We describe the aggregate welfare generated by the organization with four terms: two benefit terms -- the economic surplus and a general utility derived from the organization's activities --, and two costs terms -- the internal management cost and the social resistance imposed by the community. Differentiators and non-differentiators contribute asymmetrically to the organization and perceive differently the benefits provided by the organization.

- *Economic surplus B*: Differentiators alone contribute to the generation of the aggregate economic surplus $B\left(n^d, X^B\right)$ which is an increasing function of n^d and where X^B are positive shifters of opportunity for economic activity (e.g., good access to market).
- *Management cost C*: For management costs, we keep with standard assumptions in making them increasing in the size of the group and decreasing in the strength of leadership in the organization. Let $L \in [0,1]$ be a leadership indicator that characterizes the governance structure of the organization. When $L = 1$, all decisions are taken by the leader; when $L = 0$, all decisions are taken by the members and governance is most participative. Management costs are $C\left(n, L, X^C\right)$, where X^C are positive shifters of management cost such as social heterogeneity.[16]
- *Welfare from group activities U*: A third element is the welfare derived from the activities undertaken by the group. As mentioned above, there are benefits from participative governance with respect to the choice of these activities, and non-differentiators attribute more value to participative governance than differentiators. Without going into the specificity of the mechanisms of choice, we characterize the resulting welfare with a utility function $U\left(L, X^U\right) g\left(n^p/n\right)$ that is directly defined in terms of the governance structure and the group

[16] Adding the heterogeneity variable n^p/n would enrich the specification without changing any of the qualitative results and the expression that we will be taking to the data.

composition. $U\left(L, X^U\right)$ is the benefits from participative governance, as perceived by the differentiators; it is a decreasing function in leadership L. X^U are positive shifters of the utility for participative governance. The multiplicative term $g\left(n^p/n\right)$, increasing in its argument, represents the weight of non-differentiators in increasing the organization's preference for participative governance, with $g(0)=1$ for normalization.

- *Social cost on differentiating group S*: The fourth term is the social cost imposed by the community on the group that attempts to differentiate by forming an organization. Let $S\left(n, X^S\right)$ represent this cost which is a decreasing function of the size of the group, where X^S are positive shifters of social resistance to differentiation. They include factors that reflect the need for solidarity (e.g., riskiness of the environment) as well as ability of the community to exercise pressure (e.g., social homogeneity of its population).[17]

Using all four components, aggregate welfare from the point of view of the organization is:

$$W = B\left(n^d, X^B\right) + U\left(L, X^U\right) g\left(n^p/n\right) - C\left(n, L, X^C\right) - S\left(n, X^S\right).$$

However, aggregate welfare perceived by the differentiators who value less the participative process in decision-making is:

$$W^d = B\left(n^d, X^B\right) + U\left(L, X^U\right) - C\left(n, L, X^C\right) - S\left(n, X^S\right).$$

The differentiators choose whether to incorporate or not non-differentiators, knowing that, if they do, the latter will participate in the decision regarding the organization's size, composition, and governance. This is formalized as:

$$\max_{I^p} W^d = B\left(n^d, X^B\right) + U\left(L, X^U\right) - C\left(n, L, X^C\right) - S\left(n, X^S\right)$$

$$\text{where } I^p = 1\left(n^p > 0\right)$$

$$\text{s.t. } \left(n^d, n^p, L\right) = \arg\max W = B\left(n^d, X^B\right) + U\left(L, X^U\right) g\left(n^p/n\right) - C\left(n, L, X^C\right) - S\left(n, X^S\right).$$

Comparing the welfare of differentiators according to the I^p decision rule shows the contribution of non-differentiators and why differentiators may or may not want to incorporate

[17]Miguel and Gugerty (2004) show how social heterogeneity reduces the capacity of Kenyan communities to exert social pressures on peers who do not contribute to local public goods.

any of them. By their sheer number, non-differentiators contribute to ease the social pressure of the community that cannot easily oppose the formation of an organization that incorporates a large number of its population. On the other hand, increasing the size of the organization makes more difficult and costly to coordinate and manage it. In addition, as non-differentiators are incorporated in the organization, they increase the organization's preference for a participative form of governance relative to the differentiators' own preference.

5.2. Solution

The solution to this model is found by backward induction, solving first for the optimal group size, composition, and governance in each of two possible regimes, with and without incorporation of non-differentiators, and then choosing the regime that gives the maximum welfare to the differentiators.

Regime D: Differentiators only

In this regime, non-differentiators are not invited to join the MO. The differentiators choose the size of the group and the leadership level that maximize the welfare of the organization:

$$\max_{n,L} W^d = B\left(n, X^B\right) + U\left(L, X^U\right) - S\left(n, X^S\right) - C\left(n, L, X^C\right)$$

s.t. $n \le \bar{n}^d$.

Under standard assumptions for the second order conditions,[18] and assuming for now interior solutions, the optimal levels n^* and L^* are solutions to the first order conditions:

$$\frac{\partial W^d}{\partial L} = \frac{\partial U\left(L, X^U\right)}{\partial L} - \frac{\partial C\left(n, L, X^C\right)}{\partial L} = 0 \qquad (1a)$$

$$\frac{\partial W^d}{\partial n} = \frac{\partial B\left(n, X^B\right)}{\partial n} - \frac{\partial S\left(n, X^S\right)}{\partial n} - \frac{\partial C\left(n, L, X^C\right)}{\partial n} = 0 \qquad (1b)$$

which can be written as a system of equations:

$$L^* = L\left(n^*, X^C, X^U\right) \qquad (2a)$$

[18] W is quasi-concave in n and L, $U_{LL} - C_{LL} < 0$, $B_{nn} - C_{nn} - S_{nn} < 0$, and C_{nL} not too large so that $\left(U_{LL} - C_{LL}\right)\left(B_{nn} - C_{nn} - S_{nn}\right) - C_{nL}^2 \ge 0$.

$$n^* = n\left(L^*, X^B, X^S, X^C\right). \tag{2b}$$

Substituting (2a) for L^* in (2b) gives the reduced form expression for the optimal group size:

$$n^* = f\left(X^U, X^B, X^S, X^C\right). \tag{3}$$

The system of equations (2a and 3) gives the theoretical support for two stage estimation of the relationship (2a) between optimal governance and group size, with X^B and X^S as instruments for group size.

Comparative static results for the relationship (2a) are obtained by total differentiation of (1a) with respect to L^* and n^*:

$$\left(\frac{\partial^2 U\left(L, X^U\right)}{\partial L^2} - \frac{\partial^2 C\left(n, L, X^C\right)}{\partial L^2}\right) dL = \frac{\partial^2 C\left(n, L, X^C\right)}{\partial L \partial n} dn$$

evaluated at $L = L^*$ and $n = n^*$. With the left hand side expression negative, from the second order conditions, and the right hand side negative by assumption, this expression shows an expected positive relationship between the optimal leadership level and size of the group.

Similarly, total differentiation of (1a) with respect to L^* and either X^C or X^U gives:

$$\left(\frac{\partial^2 U\left(L, X^U\right)}{\partial L^2} - \frac{\partial^2 C\left(n, L, X^C\right)}{\partial L^2}\right) dL = \frac{\partial^2 C\left(n, L, X^C\right)}{\partial L \partial X^C} dX^C$$

$$\left(\frac{\partial^2 U\left(L, X^U\right)}{\partial L^2} - \frac{\partial^2 C\left(n, L, X^C\right)}{\partial L^2}\right) dL = \frac{\partial^2 U\left(L, X^U\right)}{\partial L \partial X^U} dX^U$$

evaluated at $L = L^*$ and $n = n^*$. This indicates that if X^C contributes not only to increase management costs, but also to increase (decrease) the beneficial effect of leadership, the optimal level of leadership L^* will be increasing (decreasing) in X^C. Similarly, if X^U contributes to reduce (increase) the negative effect of leadership on the public goods activities, then the optimal level of leadership L^* will be increasing (decreasing) in X^U.

Finally, differentiation of (1b) with respect to X^B, X^S, or X^C shows that $\partial W^d / \partial n$ increases with X^B if X^B contributes positively to the marginal contribution of differentiators

(i.e., $\partial^2 B\left(n, X^B\right)\Big/\partial n \partial X^B > 0$ which is likely), increases with X^S if group size decreases the responsiveness of social pressure to non-differentiating pressure X^S (i.e., $\partial^2 S\left(n, X^S\right)\Big/\partial n \partial X^S < 0$), but decreases with X^C if X^C increases the sensitivity of management cost to group size ($\partial^2 C\left(n, X^C\right)\Big/\partial n \partial X^C > 0$). This suggests that corner solutions, obtained if $\partial W^d/\partial n\Big|_{n=\bar{n}^d} > 0$, are more likely to occur in contexts that are favorable to economic activities (X^B large), experience resistance from the community (X^S high), and when management costs are low (X^C low).

Regime I: Incorporation of non-differentiators

In this regime, an optimal number of non-differentiators is incorporated. The size of the group, its composition, and its level of participation in the governance structure are determined by the group itself according to the following maximization program:

$$\max_{n^d, n, L} W = B\left(n^d, X^B\right) + U\left(L, X^U\right) g\left(n^p/n\right) - S\left(n, X^S\right) - C\left(n, L, X^C\right)$$

with $n = n^p + n^d$

s.t. $\begin{vmatrix} n^d \le \bar{n}^d \\ n^d \le n \le \bar{n} \end{vmatrix}$.

Assuming an interior solution for the leadership level and that availability of non-differentiators is not binding, the optimal levels n^{**} and L^{**} are solution to:

$$\frac{\partial W}{\partial L} = \frac{\partial U\left(L, X^U\right)}{\partial L} g\left(\frac{n^p}{n}\right) - \frac{\partial C\left(n, L, X^C\right)}{\partial L} = 0$$

$$\begin{aligned} &\frac{\partial W}{\partial n^d} = \frac{\partial B\left(n^d, X^B\right)}{\partial n^d} + U\left(L, X^U\right) g' \frac{-1}{n} \ge 0 \\ &\frac{\partial W}{\partial n^d}\left(n^d - \bar{n}^d\right) = 0,\ n^d \le \bar{n}^d \end{aligned} \qquad (4)$$

$$\begin{aligned} &\frac{\partial W}{\partial n} = U\left(L, X^U\right) g' \frac{n^d}{n^2} - \frac{\partial S\left(n, X^S\right)}{\partial n} - \frac{\partial C\left(n, L, X^C\right)}{\partial n} \le 0 \\ &\frac{\partial W}{\partial n}\left(n - n^d\right) = 0,\ n - n^d \ge 0. \end{aligned}$$

If we assume that $\partial B\left(n^d, X^B\right)\Big/\partial n^d > U\left(L, X^U\right) g'\left(1/n\right)$ (i.e., that the marginal differentiator

makes a greater welfare contribution than the marginal non-differentiator), then $n^d = \bar{n}^d$.[19] In other words, in this regime I, all potential differentiators are members of the group and non-differentiators are only included if the optimal group size is greater than the number of potential differentiators in the community.

Under these conditions and standard assumptions for the second order conditions,[20] the system can be simplified and re-written to determine the optimal total group size and the optimal leadership level as:

$$\frac{\partial W}{\partial L} = \frac{\partial U\left(L, X^U\right)}{\partial L} g\left(\frac{n - \bar{n}^d}{n}\right) - \frac{\partial C\left(n, L, X^C\right)}{\partial L} = 0 \tag{5a}$$

$$\frac{\partial W}{\partial n} = U\left(L, X^U\right) g' \frac{\bar{n}^d}{n^2} - \frac{\partial S\left(n, X^S\right)}{\partial n} - \frac{\partial C\left(n, L, X^C\right)}{\partial n} = 0\,. \tag{5b}$$

This leads to a system of equations:

$$L^{**} = L\left(n^{**}, X^C, X^U, \bar{n}^d\right) \tag{6a}$$

$$n^{**} = n\left(L^{**}, X^U, X^S, X^C, \bar{n}^d\right). \tag{6b}$$

Substituting (6a) for L^{**} in (6b) gives the reduced form expression for the optimal group size:

$$n^{**} = f\left(X^U, X^C, X^S, \bar{n}^d\right). \tag{7}$$

The system of equations (6a) and (7) gives the theoretical support for two stage estimation of the relationship between governance and the optimal group size, with X^S as instruments for group size.

Comparative static results on the relationship between optimal size and governance are obtained by total differentiation of (5a) with respect to L^{**} and n^{**}:

$$\left(\frac{\partial^2 U\left(L, X^U\right)}{\partial L^2} g - \frac{\partial^2 C\left(n, L, X^C\right)}{\partial L^2}\right) dL = \left(-\frac{\partial U\left(L, X^U\right)}{\partial L} g' \frac{\bar{n}^d}{n^2} + \frac{\partial^2 C\left(n, L, X^C\right)}{\partial L \partial n}\right) dn$$

[19] It means that the group has not been high-jacked by the non-differentiators. This will happen when the economic contribution of the differentiators is large and/or non-differentiators and differentiators don't differ too much in the preference for participative governance.

[20] W is quasi-concave in n and L.

evaluated at $L = L^{**}$ and $n = n^{**}$.

The left hand side is negative from the second order conditions. The right hand side has two components, a positive term related to the greater value given to participative governance as the number of non-differentiators incorporated in the group increases, and a negative term related to the increasing management cost resulting from increased group size. If this expression is dominated by the management cost component, the relationship between leadership and size, at the equilibrium, is positive, as in regime D. However, if non-differentiators attach much more value to participation than differentiators do (i.e., g' is large), then the equilibrium relationship between group size and leadership is negative.

Total differentiation of (5a) w.r.t. L^{**} and either $\bar{n}^d, X^U$, or X^C shows that L^{**} will increase with the number of differentiators while its relationship to X^U and X^C is the same as in the other regime.

Choice of regime

Differentiators choose the regime that gives them the highest welfare, provided it is positive, of course. Four cases need to be distinguished:

- If the optimal size of the group in regime D, n^*, is not feasible (i.e., $W^d\left(n^*, L^*\right) < 0$), differentiators have no choice but to consider including some non-differentiators in the organization.
- If the optimal size of the group in regime D is lower than $\bar{n}^d$ and feasible, the welfare of differentiators will be higher without including any non-differentiators in their organization.
- If the optimal size of the group in regime D is given by the corner solution $n^* = \bar{n}^d$, differentiators need to compare their welfare under the two regimes.

The optimal size and participation under the two regimes provide the following welfare to differentiators:

Regime D: $W^d = B\left(\bar{n}^d, X^B\right) + U\left(L^*, X^U\right) - S\left(\bar{n}^d, X^S\right) - C\left(\bar{n}^d, L^*, X^C\right)$

Regime I: $W^d = B\left(\bar{n}^d, X^B\right) + U\left(L^{**}, X^U\right) - S\left(\bar{n}^d + n^{p**}, X^S\right) - C\left(\bar{n}^d + n^{p**}, L^{**}, X^C\right)$

with $n^{p**} = n^{**} - \bar{n}^d$ and $L^* > L^{**}$.

In regime I, differentiators have to bear with less leadership than they would optimally want and are burdened with greater management costs. The gain to them is the reduction of the costs

linked to social pressures. Therefore, the differentiators will only choose regime I if the social pressures are sufficiently important (X^S large) and management cost are not too high.

- Finally, if the optimal solution under regime I is not feasible (i.e., $W\left(n^{**}, L^{**}\right) < 0$), there cannot exist any differentiating organization in the community. This case is more likely to happen when community pressures are important (X^S large) and the level of local economic opportunities is relatively low (X^B low)

VI. Econometric model

6.1. Alternative regime: contrasting first MOs to non-first MOs

We concluded from the model that incorporation of non-differentiators would be optimal in a context of strong social resistance to differentiation. Heterogeneity in the intensity of community conservatism exists across communities due to differences in the need for risk sharing and ability of the community to impose social pressure designated by X^S in the model. A probably even sharper contrast exists over time within a community, whereby social pressure is very strong to resist the first case of differentiation, i.e., attempt at emergence of a first MO, but weaker for any subsequent attempt. The argument is that emergence of the first MO represents a major institutional change in a community as it implies that non-differentiating norms will no longer be credibly enforced.[21] We use this idea to identify regime: we hypothesize that the first MO encounters strong resistance in emerging and therefore optimally chooses to incorporate some non-differentiators, thus belonging to regime I; while subsequent MOs are less constrained by the community and can be organized among differentiators only, thus belonging to regime D.[22] If this hypothesis is correct, we expect to find a positive relationship between size and leadership in non-first MOs, but a negative relationship in the sample of first MOs.

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[21] To see this, let n^1 be the number of individuals participating in the first MO and N the total size of the community. The first set of differentiators face pressures $X^{S1} = f\left(N - n^1\right)$, with $f' > 0$. The second MO to emerge, however, will face a weaker level of pressures: $X^{S2} = f\left(N - n^1 - n^2\right)$.

[22] Because the membership coverage of organizations is still very low, and nothing prevents anyone from belonging to several organizations, we ignore the possibility that MOs could enter into competition for members, and hence assume that the subsequent MOs can choose their optimal size, composition, and governance. One step into the direction of endogenizing the formation of groups is taken by Arcand and Fafchamps (2007), but they do not address the decision on size and governance which is the main concern of our paper.

Another interesting counterfactual that we will exploit to check the validity of the previous hypothesis is the contrasted structure of first COs, organizations whose main object is the provision of public goods. Since they do not result in economic differentiation, they are not constrained by community conservatism. Because of the diversity of public goods that these organizations deliver, participative governance is predominant and should remain important at any size. We thus expect to observe a weak, although potentially positive, relationship between group size (at the time of formation of the organization) and leadership.

6.2. The empirical relationship between group size and governance

The empirical relationships that we estimate derive from equations (2a) and (6a) above for the non-first and first MOs, respectively. Specification of indicators that characterize the different shifters and the total number of differentiators $\bar{n}^d$ is as follows:

$\bar{n}^d$: The main determinant of the potential number of differentiators in a community is the economic opportunity for market-oriented activities, i.e., the X^B indicators.

X^B: We characterize opportunities for market-oriented activities by market access, measured as the travel time from the village to the closest city of 5000 inhabitants or more (remoteness variable). This variable was constructed from a road map, accounting for differential road quality.[23]

X^U : Utility derived from participative governance varies with ethnic characteristics as some ethnic groups traditionally value consensus building more than others. For this reason, dummies for the main ethnicities of the village are introduced in estimations involving X^U .

X^S: We assume that social resistance to differentiation is more important when the need for solidarity is greater -- i.e., in more risky environments characterized by lower rainfall predictability-- and when the capacity of the community to enforce the non-differentiation norm is stronger -- i.e., when characterized by greater social homogeneity (as defined in section 3.4).

X^C : Beyond group size and leadership, management costs are usually associated with heterogeneity of the members of a group. This, however, is largely endogenous, and thus cannot be used in an empirical analysis, unless one would explicitly deal with the endogeneity problem. Moreover, while we observe the current composition of the group, we do not have information on the members of the group at the time of its formation. This element will therefore remain omitted

[23] Standard speeds used in similar GIS work for Africa are 50 km/h for primary roads, 35 km/h for secondary roads, and 25 km/h for tertiary roads.

in the empirical analysis.

τ_c: Finally, we use department fixed effects to control for general agro-ecological and developmental conditions, which may have direct influence on the type of governance in the organization.

A linear approximation of the structural relationship (2a) and (6a) between leadership and group size in first and non-first MOs from village v in department c is written as follows:

First MO: $$L^1_{vc} = \alpha^1 + \beta^1 n_{vc} + X^B_{vc}\gamma^1 + X^U_{vc}\phi^1 + \tau^1_c + \varepsilon^1_{vc} \quad (8)$$

Non-first MO: $$L^2_{vc} = \alpha^2 + \beta^2 n_{vc} + X^U_{vc}\phi^2 + \tau^2_c + \varepsilon^2_{vc} \quad (9)$$

where L_{vc} is the leadership indicator, n_{vc} the initial group size (at formation), and ε_{vc} unobserved heterogeneity. The superscripts 1 and 2 stand for first and non-first MOs, respectively. If our classification of MOs into first and non-first does reflect the intensity of social pressure, our theory predicts β^1 to be negative and β^2 to be positive.

The first stage estimation for the endogenous group size n_{vc} is derived from the reduced form expression (equations (3) and (7)) for the two categories of MOs:

$$n_{vc} = \alpha^n + X^S_{vc}\delta^n + X^B_{vc}\gamma^n + X^U_{vc}\phi^n + \tau^n_c + \varepsilon^n_{vc}, \quad (10)$$

where X^S_{vc} represents the two social resistance indicators, i.e., rainfall predictability and social homogeneity in the village. The market opportunity variable X^B stands for itself in the regime D equation (3) and as determinant of $\bar{n}^d$ in the regime I equation (7). Our hypothesis that first MOs are constrained by social pressures while it is less so for subsequent MOs can be verified from this equation, in which we expect δ^n to be positive for first MOs and smaller or equal to zero for non-first MOs.

According to the model, if community pressures are very important, no organization of size smaller than or equal to the whole village will be able to emerge in the community. To test this, we estimate the following Tobit model, where the size of the first organization in villages without any organization is censored to the village size:

$$\begin{aligned} n^*_{vc} &= \alpha^n + X^S_{vc}\delta^n + X^B_{vc}\gamma^n + X^U_{vc}\phi^n + \tau^n_c + \varepsilon^n_{vc} \\ n_{vc} &= n^*_{vc} \text{ if } n^*_{vc} < \bar{n}, \text{ 0 otherwise.} \end{aligned} \quad (11)$$

where X^B stands as determinant of $\overline{n}^d$.

Similar estimations can be performed on the sub-samples of first COs. In these cases, we do not expect to find any significant relationship between the social pressure variables and group size.

VII. Empirical analysis: Social pressures, membership size, and governance structure

In this section, we verify that the implications of the model developed in Section V under regime I apply to first MOs and under regime D to non-first MOs. We first identify the negative correlation between size and leadership in the first MOs and contrast it with the results obtained in first COs and non-first MOs. We then estimate the demand for a first MO to deliver social services by contrast to demands on non-first MOs.

In the odd columns of Table 6, we report the OLS estimates of the relationship between initial size and leadership. In Panel A, column 1 corresponds to equation (8) for first MOs and column 3 to equation (9) for non-first MOs. Results show a negative partial correlation between size and leadership among the first MOs, and a positive relationship among non-first MOs. Robustness checks consist in verifying that the obtained coefficients on size are not due to the imposed theoretical structure of equations (8) and (9) for first and non-first MOs, respectively. This is verified by using equation (9) for the first MOs and (8) for the non-first MOs in Panel B. As a further robustness check, we find in Panel C that the initial size is not correlated with leadership in first COs, using either equation (8) or (9).

Although these results are consistent with the theory outlined in the previous sections, alternative explanations may be devised for the observed phenomenon. In particular, one may argue that external agents (government, NGOs, donors etc) favor inclusive organizations governed on a participatory basis. Under the assumption that such partners tend to support MO-type rather than CO-type organizations, and first MOs rather than subsequent ones, the observed relationship could be driven by external partners rather than community pressures per se. We therefore use the theoretical model developed above to justify a two-stage least squares estimation where the size of the organization is instrumented by social homogeneity and rainfall predictability and by remoteness. The validity of the instruments is based on the argument that it is unlikely that rainfall predictability and social homogeneity would have a differentiated influence on the governance structure of first MOs, non-first MOs, and first COs through other mechanisms than the size of the organization.

In Table 7, we present the estimated coefficients of the reduced form estimation of the initial size of the organization described in equation (7) for first MOs and (3) for non-first MOs, with the empirical specification in equation (10). Results show that more social homogeneity is associated with larger initial size in first MOs (col. 1). The size of this effect is important: a one standard deviation increase in the level of social homogeneity is associated with a 20% increase in the size of the first MO. By contrast, for non-first MOs, the coefficient on social homogeneity is small and not statistically significant (col. 3). Again, we use the sub-sample of first COs as a robustness check, showing that neither social homogeneity nor rainfall predictability is correlated with their initial size (col. 5). Overall, R^2 statistics as well as partial F-tests on the X^S (in col. 1) and on X^S and X^B (in col. 3) variables show them as reasonably strong potential instruments for the IV estimations presented in Table 6. We interpret the contrasted effects of social homogeneity as consistent with the role of social pressure described in the theory. Another channel of transmission from riskiness of the environment and remoteness to group size could be the nature of their activities. Controlling for activities, in columns 2 and 4 of Table 7, improves the fit of the estimations without affecting the relationship of interest between social homogeneity and group size. Since the choice of activity is truly an endogenous decision of the group, we use the reduced form estimations of columns 1 and 3 as first stage for the IV estimations of Table 6. Similarly for the interpretation of the role of social homogeneity, one could argue that it can reduce the transactions costs involved in setting up an organization, thus allowing it to be larger. This effect, however, would have no reason to be different for MOs and COs, or across MOs.

In even columns of Table 6, we use the results of Table 7 as the first stage in a two-stage least squares estimation of the relationship between size and leadership. In Panel A, column 2 corresponds to equation (8) using X^S as instruments for the size of the organization, and column 4 to equation (9), using X^S and X^B for instruments. The estimated coefficients give strong support to our hypothesis, in that initial size has significant negative impact on leadership in first MOs, whereas the opposite is true for non-first MOs. We note that, as compared to the OLS results, the point estimates are larger in absolute value. In the last row of Panel A, we report p-values for a Hausman (1978) overidentification test, according to which we cannot reject joint exogeneity of our instruments. Again, we present in Panels B and C robustness checks for these results. In particular, we show in Panel C that size is still not a significant correlate of governance

structure in first COs.[24]. Estimations of reduced form models for leadership (not reported in tables) show a strong and significant negative correlation of social homogeneity with leadership for the first MO (coefficient of -8.1 [st. error 3.6]), but a small and non-significant effect for non-first MOs and first COs (-2.2[4.3] and 3.2[3.7], respectively).

These estimations are all done with cross-section data and hence may suffer biases from unobserved village characteristics. However, the main point here is to contrast first and non-first MOs from the same villages. And for an omitted variable bias to produce a negative correlation between group size and leadership among first MOs and a positive correlation among non-first MOs, it would have to be the case that this variable has an opposite correlation with the size or the governance in the two groups of MOs. This seems a remote risk.

According to model predictions, when community pressures are too important, only organizations greater than the village size can form. In this case, one will observe no organization. In keeping close to the theory, we estimate in Table 8 a village-level Tobit relationship between initial membership size of an organization and community pressures. Absence of any organization corresponds to a right-censored observation where the optimal size of the organization is larger than the village. The 71 right-censored observations correspond to villages without any MO-type organization by 2002. Column (1) reports the estimated marginal effects of social heterogeneity and rainfall predictability on the size of the first MO in the village corresponding to equation (11). Results show that social homogeneity is positively associated with the initial size of a first MO. This is not the case for first COs.

Finally, we look at the impact that social pressures may have on the activities of a first MO. Incorporation of additional members in response to these pressures would induce not only a move away from leadership as a form of governance, but also to the delivery of club goods to reward the non-entrepreneurial members. The club good of relevance is maintenance of a collective field by the MO to the benefit of all members. In Table 9, we see that first MOs tend to engage in the management of a collective field for the specific benefit of their members more than their non-first counterparts (column 1), but that this prevails only in villages with a high level of social homogeneity (column 2). No such relationship is found when we consider collective fields for all community members. This supports the proposition that the social activities of first MOs are of a club good nature.

[24] Identical estimations were also performed on all COs, with similar results. Estimations on a reduced sample not including the exceptionally large organizations show that outliers are not the driving force of these results.

In conclusion, the empirical results show that social homogeneity constrains the size, governance structure, and activities of MOs. More specifically, higher social homogeneity induces a larger size, a more participative type of governance, and more provision of public goods in first MOs but not in subsequent MOs, nor in COs. We interpret this as coming from strong social resistance to differentiation pushing the first emerging MO to incorporate non-differentiators for benefit sharing. Once a first MO has emerged, social resistance to differentiation decreases. Subsequent MOs can have a smaller size, can choose a leadership-type governance in response to membership size, and can devote themselves to supporting the entrepreneurial activities of their members, doing away with a role in the provision of club goods.

VIII. Conclusion

In this paper, we analyzed the emergence, size, governance structure, and activities of village organizations, contrasting market-oriented organizations (MOs) and community-oriented organizations (COs), in a context where MOs are perceived as threatening the reproduction of the community's traditional social structure and solidarity system by inducing economic differentiation between their members and the rest of the community.

We built a model that shows that, in an environment where there are strong pressures against economic differentiation, the size of an MO to emerge is partly determined by the necessity to incorporate a sufficiently large number of participants to counteract the resistance to differentiation from the rest of the village. This, in turn, influences the MO's governance structure, as the organization is pressured to include less entrepreneurial members for whom participation is conditional on intra-organizational redistribution under the form of club goods and, hence, on a more participative form of governance. Where these pressures are weak, the emerging organizations can be smaller, the leadership mode can dominate, and the organization can concentrate on the delivery of income-generating services for its members.

Based on our field experience, we hypothesize that the first MO to emerge in a village encounters strong resistance, while subsequent MOs are not subject to these conservative pressures. We verify the corresponding model predictions using data from 646 village-level organizations in Burkina Faso. We find support for the important role of social homogeneity in constraining first MOs, but not subsequent MOs.

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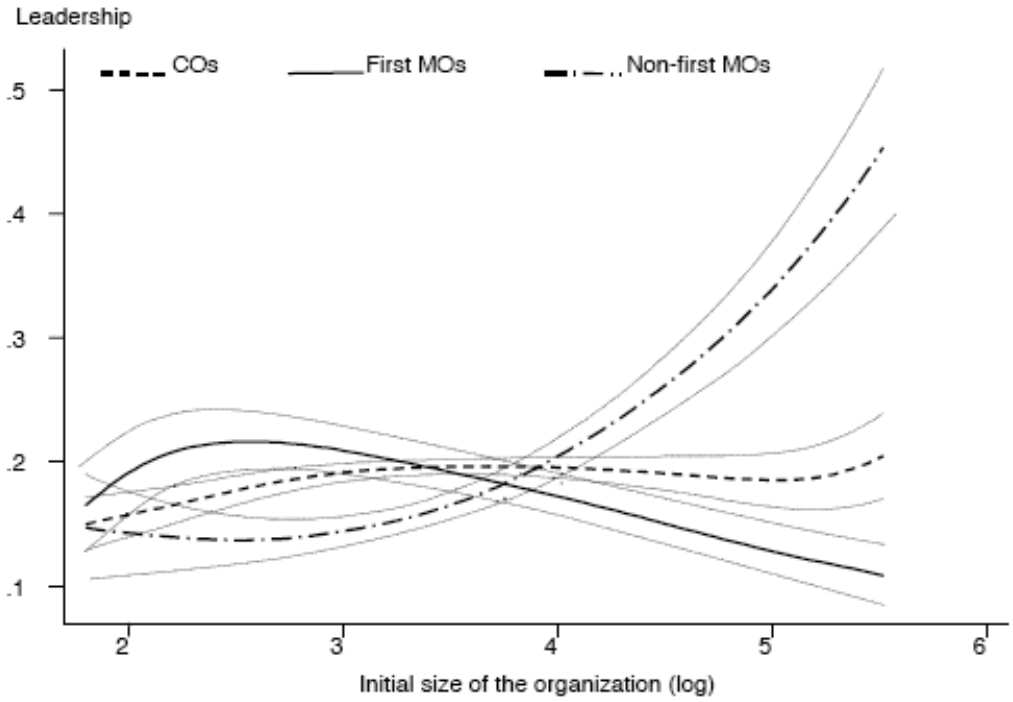

Locally weighted regressions. The thinner lines are 2 standard errors above and below the estimated regression functions calculated from 50 bootstraps of each local regression.

Figure 1. Leadership and size of the organization

Table 1. Existence of MO-type and CO-type organizations, by village

	% of all villages	% of villages with at least one VO
There is at least one VO in the village	90	
There is at least one MO in the village	60	66
There is at least one CO in the village	75	83

Percentages in the population of villages, computed using sampling weights.

Table 2. Structure and activities of village organizations

	MO	CO	Difference: p-value	First MO	Non-first MO	Difference: p-value
	Activities ever undertaken			Activities started in the first 2 years		
Social activities						
Collective field or cereal bank for solidarity purpose	59.5	72.3		61	47.5	
Manage the environment and clean village	14.9	26.0		15.3	11.1	
Construct stone bunds	3.7	8.1		5.4	1.3	
Social activities	2.9	3.5		1.8	3.9	
Water management	3.9	2.7		4.3	2	
Market-oriented activities						
Processing and marketing	37.1	0.0		33.7	35.7	
Livestock breeding and animal husbandry	29.0	0.0		27.7	24	
Horticulture and irrigation	24.6	0.0		21.2	27.6	
Cotton	12.1	0.0		11.1	10.3	
Had led a community-oriented activity (%)	69.4	100		71.8	56	0.01
Initial size	59.5	44.6	0.15	66.7	50.4	0.02
% of village organizations (in the population of VOs)	38.8	61.2		56.0	44.0	
Number of observations	318	328		197	121	

Percentages in the population of organizations, computed using sampling weights.

Table 3. Indicators of governance structure in village organizations

	Principal component scores	
	Leadership	Rules
Decisions on benefit allocation taken by president only	0.46	0.11
Decisions on spending taken by president only	0.55	0.15
Decisions on the start of a new activity taken by president only	0.52	0.10
Within the committee, decisions taken by president only	0.28	0.00
Within the general assembly, decisions taken by president only	0.31	0.04
Committee (including the president) put into place by elections	-0.13	0.72
Committee (including the president) put into place for a given time	-0.08	0.42
There is at least one control commision in the organization	-0.15	0.50

Observations weighted by sampling weights.

Table 4. Governance structure and performance, logit estimation

Dependent variable: Active at time of survey	Mean (st. dev.)	CO (1)	MO (2)	First MO (3)	Non-first MO (4)
Leadership	0.16	-0.008	0.067	0.104	0.025
	(0.23)	(-0.08)	(1.04)	(0.96)	(4.71)**
Rules	0.58	0.152	0.030	0.041	0.007
	(0.27)	(3.58)**	(1.55)	(1.09)	(4.46)**
Age of organization in 2002		yes	yes	yes	yes
Number of observations		298	318	197	121

Reported: marginal effects at the mean of the independent variables. t-statistics for the underlying parameter in parentheses. * significant at 5%; ** significant at 1%
Observations weighted by sampling weights. Standard errors corrected for cluster and strata effects.

Table 5. MOs and local public goods:
Percent of MOs that have had a collective field within the first two years

	High social homogeneity			Low social homogeneity		
	First MO	Non-first MO	Difference: p-value	First MO	Non-first MO	Difference: p-value
Collective field:						
General	62.7	44.8	0.10	57.6	49.6	0.48
With benefits for the community	22.5	21.8	0.95	28.2	38.6	0.38
With benefits for the members	32.0	12.4	0.00	8.3	9.9	0.78

Observations weighted by sampling weights.

Table 6. Initial size and leadership: Structural model estimations and robustness checks

Dependent variable: leadership

Panel A. Structural model	First MOs *Equation (8)*		Non-first MOs *Equation (9)*	
	OLS	*IV*	*OLS*	*IV*
	(1)	(2)	(3)	(4)
Initial size (log) (n)	-0.044	-0.114	0.101	0.149
	[0.012]**	[0.049]*	[0.028]**	[0.065]*
Remoteness (X^B)	yes	yes		
Village size	yes	yes	yes	yes
Main ethnicity dummies (X^U)	yes	yes	yes	yes
Department fixed effects	yes	yes	yes	yes
Number of observations	175	175	121	107
R-squared	0.23	0.17	0.41	0.39
OID test (Hausman 1978): p-value		0.77		0.50

Panel B. Robustness checks	First MOs *Equation (9)*		Non-first MOs *Equation (8)*	
	OLS	*IV*	*OLS*	*IV*
	(1)	(2)	(3)	(4)
Initial size (log) (n)	-0.028	-0.147	0.098	0.036
	[0.007]**	[0.063]*	[0.025]**	[0.059]
Remoteness (X^B)			yes	yes
Village size	yes	yes	yes	yes
Main ethnicity dummies (X^U)	yes	yes	yes	yes
Department fixed effects	yes	yes	yes	yes
Number of observations	197	175	107	107
R-squared	0.16	0.08	0.41	0.38

Panel C. Counterfactual: first COs	*Equation (9)*		*Equation (8)*	
	OLS	*IV*	*OLS*	*IV*
	(1)	(2)	(3)	(4)
Initial size (log) (n)	0.04	-0.02	0.02	0.03
	[0.026]	[0.063]	[0.014]	[0.155]
Remoteness (X^B)			yes	yes
Village size	yes	yes	yes	yes
Main ethnicity dummies (X^U)	yes	yes	yes	yes
Department fixed effects	yes	yes	yes	yes
Number of observations	205	168	168	168
R-squared	0.21	0.31	0.34	0.34

Leadership: mean = 0.156, std. dev. = 0.235. Log initial size: mean = 3.55, std. dev. = 0.80.
Remoteness is measured as the traveling time to the closest city of 5,000 or more inhabitants.
Standard errors in brackets. * signif at 5%, ** signif at 1%.
Observations weighted by sampling weights, std. errors corrected for cluster and strata effects.
Instruments: in equation (8) = social homogeneity and rainfall predictability; in equation (9) = social homogeneity, rainfall predictability and remoteness.

Table 7. Community pressures and initial size of the organizations (first stage)

Dependent variable:	Mean	First MOs		Non-first MOs		First COs
Initial size (log)	(st. dev.)	(1)	(2)	(3)	(4)	(5)
Social homogeneity (X^S)	0.995	68.3	59.7	7.6	22.4	20.5
	(0.003)	[14.6]**	[11.2]**	[15.5]	[8.61]*	[26.3]
Rainfall predictability (X^S)	0.312	-3.1	0.9	12.0	8.2	-2.9
	(0.078)	[2.5]	[1.73]	[5.6]	[4.0]	[4.5]
Remoteness (X^B)	1.796	0.15	0.23	1.00	0.60	-0.37
	(1.363)	[0.10]	[0.12]	[0.38]*	[0.26]*	[0.14]*
(Remoteness)^2 (X^B)		-0.02	-0.02	-0.13	-0.07	0.04
		[0.01]*	[0.01]	[0.05]*	[0.03]*	[0.01]**
Activities undertaken by organization in first two years			yes		yes	
Village size		yes	yes	yes	yes	yes
Main ethnicity dummies (X^U)		yes	yes	yes	yes	yes
Department fixed effects		yes	yes	yes	yes	yes
Number of observations		175	175	107	107	168
R-squared		0.25	0.50	0.37	0.51	0.26
Partial F-test on X^S variables: p-value		0.001				0.71
Partial F-test on X^S and X^B variables: p-value				0.006		0.07

Log initial size: mean = 3.6, std. dev. = 0.86

Remoteness is measured as the traveling time to the closest city of 5,000 or more inhabitants.

Standard errors in brackets. * signif at 5%, ** signif at 1%.

Observations weighted by sampling weights. Standard errors corrected for cluster and strata effects.

Table 8. Initial size of the organization: Reduced form Tobit estimations

Dependent variable: Initial size (log)	First MOs (1)	First COs (2)
Social homogeneity (X^S)	65.6	6.12
	[12.0]***	[23.2]
Rainfall predictability (X^S)	-3.28	-0.87
	[2.24]	[3.47]
Remoteness (X^B)	-0.02	-0.34
	[0.128]	[0.224]
(Remoteness)^2 (X^B)	-0.01	0.036
	[0.015]	[0.019]*
Village size	yes	yes
Main ethnicity dummies	yes	yes
Department fixed effects	yes	yes
Number of observations	224	224
Right-censored observations	71	74

Remoteness is measured as the traveling time to the closest city of 5,000 or more inhabitants.
Standard errors in brackets. * signif at 5%, ** signif at 1%.
Observations weighted by sampling weights. Standard errors corrected for cluster and strata effects.

Table 9. Provision of club goods by MOs, OLS estimation

Dependent variable: MO has undertaken a collective field activity for its members in the first two years	(1)	(2)
First MO	0.129	-0.029
	[0.041]**	[0.080]
Social homogeneity high[1]	0.221	0.038
	[0.127]	[0.191]
Social homogeneity high x First MO		0.299
		[0.120]*
Rainfall predictability	yes	yes
Remoteness	yes	yes
Village size	yes	yes
Main ethnicity dummies (X^U)	yes	yes
Department fixed effects	yes	yes
Number of observations	282	282
R-squared	0.17	0.20

[1]High homogeneity is for homogeneity above the median value in the sample.
Standard errors in brackets. * signif at 5%, ** signif at 1%.
Observations weighted by sampling weights. Std. errors corrected for cluster and strata