



Institutional Repository - Research Portal

Dépôt Institutionnel - Portail de la Recherche

researchportal.unamur.be

RESEARCH OUTPUTS / RÉSULTATS DE RECHERCHE

Micro-finance Lifespans: A Study of Attrition and Exclusion in Self-Help Groups in India

Baland, Jean-Marie; somanathan, rohini; vandewalle, lore

Publication date:
2007

Document Version
Early version, also known as pre-print

[Link to publication](#)

Citation for published version (HARVARD):

Baland, J-M, somanathan, R & vandewalle, L 2007, Micro-finance Lifespans: A Study of Attrition and Exclusion in Self-Help Groups in India: India Policy Forum, 4(1) 159-210..

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

JEAN-MARIE BALAND
University of Namur

ROHINI SOMANATHAN
Delhi School of Economics

LORE VANDEWALLE
University of Namur

Microfinance Lifespans: A Study of Attrition and Exclusion in Self-Help Groups in India*

Introduction

Microfinance is often advocated as a solution to multiple social problems. Productive investments financed by loans can bring households out of poverty, reduce income and wealth disparities, and groups can serve as forums for collective action to improve gender relations and local governance. Over the last few years, savings and credit groups have also helped manage some important social programs of the Indian government, such as the distribution of foodgrains and school meals in state-run primary schools.

There are two principal institutional forms through which group lending takes place in the microfinance sector of most countries. In the first, specialized institutions organize potential lenders into groups. Group composition may be determined by random factors, as in the case of FINCA in Peru, or the matching preferences of members as in the case of Grameen Bank.¹ These lending institutions are intimately and permanently involved with

* We thank the PRADAN team for many useful discussions and for their support in facilitating data collection; Sandeep Goyal, Sanjay Prasad, Amit Kumar, Rahul Sharan, and Saurabh Singhal for research assistance, and to FUCID (Fondation Universitaire de Cooperation Internationale et de Developpement, Namur,), and the Action de Recherches Concertees program of the French speaking community in Belgium for financial support. The authors would also like to thank Mr Bhupendra Mehta for drafting the maps in this paper.

1. See Karlan (2007) for a description of group operations in FINCA and chapter 4 of Armendariz de Aghion and Morduch (2005) for Grameen Bank lending practices.

their members—they form groups, set interest rates and fines, and their representatives are usually present in group meetings.

An alternative model is one in which several loosely connected institutions are involved with a given group of borrowers. Government and non-government agencies form credit groups, the groups determine their own rules for saving and lending, and some of these groups subsequently borrow from commercial banks. Microcredit is just a fraction of the loan portfolio of these banks who see it as a way of meeting their social responsibilities. This is the dominant institutional form in Indian microfinance, in terms of both outreach and total loan disbursements.

The present structure of the microfinance sector in India emerged in the early 1990s when the Reserve Bank of India (RBI) issued guidelines to nationalized commercial banks encouraging them to lend to informal self-help groups (SHGs). Since then, such groups have been actively promoted by a number of different agencies and the National Bank for Agriculture and Rural Development (NABARD) has provided banks with subsidized credit for lending to SHGs.² Official statistics currently report over two and a half million groups and 32 million households in them.³ Most of these groups are composed entirely of women (NABARD, 2006:38).

In spite of the phenomenal growth in the number of SHGs and total loans advanced to them, there is little systematic evidence on their internal functioning. In part, this is due to the nature of governance within the sector. Statistics on Indian SHGs have emerged because the organizations promoting these groups provide their donors an account of the number of new groups created and because commercial banks are required to report their lending to the Reserve Bank. In neither case are details on the uses of funds or their distribution within a group reported. We therefore know little about group demographics, about whether groups, once formed, continue to function effectively or how many members leave groups that they initially joined. This paper attempts to fill this informational gap by using survey data on SHGs created during the period 1998–2006. We describe the survival of groups and members within groups, document group activities, and estimate the determinants of group and member duration using an econometric survival model.

Our data come from a survey of 1,102 rural SHGs and the 16,800 women who were members of these groups at some point during the period 1998–2006. We consider all groups formed by PRADAN, [a non-government

2. See Reserve Bank of India (1991) and National Bank for Agriculture and Rural Development (1992) for the original policy statements.

organization (NGO) that has actively promoted SHGs since the start of the NABARD program] in the districts of Keonjhar and Mayurbhanj in northern Orissa and Raigarh district in the newly formed state of Chhattisgarh in central India. Groups are engaged in a variety of collective activities but saving and credit does seem the most important.³ Almost all groups we surveyed had made small loans to their members and 68 percent of them had received at least one loan from a commercial bank. Each borrower received about Rs. 2,200 per year from internal group funds. For groups with at least one bank linkage, 83 percent of members in the group received some part of this loan and the average amount received by these members was Rs. 2,189 per year.⁴ Although loans provided by some specialized micro-finance institutions are often larger, these SHG loans are sizable as a fraction of local earnings and, for women who received both group loans and banks loans, total borrowing from these two sources corresponds to roughly two months of labor earnings at the minimum wage in these areas.⁵

The Groups do undertake activities not directly related to credit. About 10 percent were involved in the preparation of school meals, 3 percent administered state programs to distribute subsidized foodgrains and about half of them had, at some point, been involved in resolving family or village conflicts. They also frequently reported helping members during periods of personal distress. These groups therefore seem to play a role in promoting solidarity networks in the community. The data we have collected so far do not allow us to investigate these activities in much detail. In terms of the fractions of groups and members involved however, they appear secondary.

We estimate models of both group and member duration and find that factors behind group survival are quite different from those affecting member longevity. The maximum level of education in the group is important for its survival, perhaps because some educated members are needed to facilitate transactions and ensure that group accounts are accurate. The presence of other SHGs in the same village also has a positive effect on the duration. It may be that a dense cluster of groups allows for the sharing of

3. See Table 8.

4. Our survey did not explicitly ask members about the bank credit received each year. This number has therefore been computed using the total amount received by members from bank sources and dividing it by the number of years that the group has been active since first bank linkage.

5. The minimum wages for each sector are determined by the Indian states under the Minimum Wages Act, 1948. The Central Government issues guidelines regarding these and currently recommends a floor of Rs. 66 per day. Agricultural workers who are privately employed typically receive about two-thirds of this amount.

costs and ideas or instills in members the desire to survive, compete, and be part of a larger network.

Based on a large literature that points to the importance of social heterogeneity in collective action, we explore whether such heterogeneity matters for the average duration of groups and of members within groups. For each surveyed member, we recorded both their individual caste or *jati* and the official category to which this caste belongs. Our fractionalization measures are a function of the shares of group members that belong to each caste. There are over a hundred different castes in our surveyed area and all four of the official categories are present—the Scheduled Tribes (ST), Scheduled Castes (SC), Other Backward Classes (OBC), and the residual category of Forward Castes (FC). We find that commonly used measures of fractionalization and social heterogeneity based on these classifications do not have systematic effects on group survival but they do explain the departure of individuals from groups. Heterogeneity matters even within broad caste categories, suggesting that the official classification fails to fully capture the relevant social hierarchy. Members from traditionally disadvantaged groups, especially poor communities within the ST, are the most vulnerable to group heterogeneity. In addition to heterogeneity, lower levels of education, smaller landholdings and the absence of relatives within the group are all associated with greater exit of member. We find that most of the differences in the duration of membership within a group between Chhattisgarh and Orissa can be attributed to characteristics of groups in these areas and regional variations in duration are negligible once these characteristics are incorporated into our model.

Our results suggest that it is problematic to evaluate the success of microfinance interventions based on conventionally reported coverage figures because these figures do not adequately account for attrition. The formation of groups is much better recorded in official data than their closure and groups, rather than their members, are the unit of analysis. As a result, estimates of microfinance outreach are inflated because they are based on the initial and not the actual membership of SHGs.

One might argue that the attrition rates observed in our data are not particularly high compared with many government programs. Even groups that are no longer active functioned for a little over two years and members that left functioning groups stayed for an average of one and a half years. Besides, even if attrition rates were higher, it would be difficult to derive their welfare implications without more information on the types of credit contracts that these members have access to upon leaving their group. It is

possible, and perhaps desirable, that SHGs are an intermediate stage in the process of financial integration of these households and that members leave groups when individual contracts with formal financial institutions become sustainable.

We find, however, that attrition rates are systematically related to measures of social disadvantage. It is predominantly the poorer and socially marginalized communities that leave the SHG network, and this makes it unlikely that women moving out of SHGs enter individual contracts with lending institutions. It also means that some of those in desperate need of credit cannot obtain it from within this sector. An additional concern is that lending by commercial banks to SHGs is considered priority sector lending by the banking system and may therefore crowd out other lending. Disbursements by commercial banks to SHGs were 29 percent of all direct bank credit to small farmers in 2004–05 and SHG credit has been rapidly rising since.⁶

To arrive at concrete policy prescriptions for this sector, more information is needed about the financial opportunities available to members once they leave this sector and the extent to which SHG lending substitutes for other types of lending to the poor. Although the duration of membership is only one, admittedly crude, measure of the performance of the microfinance sector, our study suggests that survey data on the histories of members and groups in this sector is critical to an assessment of Indian microfinance.

We provide a brief institutional history of the microfinance sector in India in Section 2. Our survey data, some summary statistics, and empirical methods are described in Sections 3 and 4 respectively. Results are presented in Section 5 and are followed by some reflections on their implications for policy.

Microfinance Institutions in India

Many detailed accounts on the history of rural banking in India are available. The All India Rural Credit Survey in 1954 was the first major study of household access to credit. It found that the rural poor were heavily

6. The loan disbursements to farmers with less than 2.5 acres of land were Rs. 10,833 crore in 2004–05 while SHG linked loans increased by Rs. 2,994 crore over the same period (RBI, 2007, tables 59 and 72).

indebted and had very limited access to bank.⁷ As part of a process aimed at providing banking services to this population, the State Bank of India was set up in 1955, the 14 largest commercial banks were nationalized in 1969, and the NABARD was created in 1982. Each nationalized bank was designated a lead bank for a particular state and these banks were required to maintain specific ratios of urban to rural branches in their state. As a result of these policies, a vast network comprising thousands of credit cooperatives and regional rural banks was created. There is some evidence that this expansion reduced regional poverty (Burgess and Pande, 2005), but it was accompanied by operating costs and default rates that were too high to be sustainable. Moreover, the reliance on informal credit sources persisted among the very poor.

In the early 1990s central bankers tried to revitalize this elaborate and largely inefficient banking system. The start of institutionalized microfinance in India is often attributed to the circular that was issued by the Reserve Bank to all nationalized commercial banks in 1991, announcing the objective of linking informal groups of rural poor with these banks. Some NGOs at the time had organized women into groups that used their pooled savings for mutual insurance and small credit needs. Based on studies of these informal groups, it was believed that they had the “potential to bring together the formal banking structure and the rural poor for mutual benefit” (RBI, 1991). The following year NABARD launched a pilot project that linked 500 groups with commercial banks. The banks were offered finance from NABARD for such lending at the rate of 6.5 percent per annum. It was recommended that banks either lend directly to groups at 11.5 percent per annum or route their loans through voluntary agencies at the lower rate of 8.5 percent in order to cover the transaction costs of these agencies (NABARD, 1992). Banks were also permitted to classify such lending under Advances to Weaker Sections, and this category has historically accounted for a large fraction of their unprofitable loans.

Another major change came in April 1999, with the launching of the Swarnajayanti Gram Swarozgar Yojana, popularly known as the SGSY (RBI, 1999). This program was introduced to increase the membership of SHGs among families living below the poverty line. The introduction of the SGSY reflected a significant change in state policy by directly subsidizing borrowers (as only part of the initial loan had to be repaid) and by restricting the composition of a group to families living below the poverty line.

7. See, for example, Bell (1990) for summary statistics on rural borrowing and indebtedness based on rural credit surveys and Karmakar (1999) for recent figures on the numbers of different types of rural banking institutions.

Subject to caps, the rates of subsidy were 50 percent for borrowers from the SC and ST and 30 percent for other poor households. A proper evaluation of the changes that the SGSY brought about in the composition and performance of SHGs is yet to be undertaken.⁸

The NABARD pilot program of 1992 was widely regarded as successful. As seen in table 1, the number of SHGs linked to the banking system has been rising rapidly over the last 15 years and is currently over 2.5 million. Over the past few years, alternative models of lending have appeared and private banks have also entered the sector. However, in spite of the rapid growth of specialized microfinance institutions (MFIs) in India, they are estimated to cover only about one-half the number of households covered by SHGs.⁹ This contrasts sharply with countries such as Bangladesh and Indonesia, where each of the major MFI is, in proportional terms, larger than the combined non-SHG sector in India (RBI, 2005); Basu and Srivastava, 2005).

TABLE 1. Cumulated Bank Linkages, 1992–2007

<i>Year (end-March)</i>	<i>No. of SHGs linked</i>	<i>Bank loans (Rs. crore)</i>
1992–93	255	0.29
1993–94	620	0.65
1994–95	2,122	2
1995–96	4,757	6
1996–97	8,598	12
1997–98	14,317	24
1998–99	32,995	57
1999–2000	114,775	193
2000–01	263,825	480
2001–02	461,478	1,026
2002–03	717,360	2,048
2003–04	1,079,091	3,904
2004–05	1,618,456	6,898
2005–06 ^a	2,238,565	11,397
2006–07 ^b	2,580,000	14,479

Sources: Figures from 1992–2005 have been taken from RBI (2006) and RBI (2007).

Note: a. provisional estimates; b. up to end February 2007.

8. Our own surveys indicate that the combination of restrictions of group composition and subsidies may have been a factor causing the closure of some groups. Surveyed groups were asked about whether or not they received a subsidy. Although very few of the subsidized groups failed, other groups sometimes cited their exclusion from state subsidies as a reason for the failure of their group. In some cases, a few members were excluded from the group by the others because they were not on government poverty lists and the group was required to have a certain fraction of their members on these lists in order to be eligible for SGSY subsidies.

9. Ghate (2007, p. 17) estimates that about 14 million households are served by SHGs and 7.3 million by MFIs.

The dominance of SHGs in Indian microfinance appears to have resulted from the combined presence of a vibrant non-government sector engaged in rural development and an extensive but unprofitable network of rural banks and agricultural cooperatives that were created with the explicit purpose of providing small loans to the rural poor¹⁰ Policy makers may have been impressed by the phenomenal expansion in the outreach of MFIs like the Grameen Bank in Bangladesh and other countries. The Grameen Bank alone, starting from a humble beginning, had reached almost a quarter of all Bangladeshi villages by 1991.¹¹ The linking of banks with SHGs was a creative approach that harnessed existing investments in rural banking to rapidly increase outreach among the poor and gave India its own particular brand of microfinance.

Data

Our data comes from a survey of all of the 1,102 SHGs created by PRADAN in two of its field locations, one in northern Orissa and the other in central Chhattisgarh. We collected information on the history of every group formed since the start of the program in these areas and on each of the 16,800 women who, at any stage, had been members of these groups. Our group-level survey records all loans taken by the group from commercial banks, rules on interest rates, fines and repayment, and a summary of the production and social activities undertaken collectively by group members over the year preceding the survey. Through member interviews we obtained their social and economic characteristics, and their borrowings from internal and bank sources. In the few instances in which current or former members of a group could not be traced at the time of the survey, we relied on other informed respondents. We begin this section with a brief outline of PRADAN's microfinance program. This is followed by a description of our survey methodology and some descriptive statistics on groups and members.

The PRADAN SHG Program

The first SHG formed by PRADAN was in Alwar, Rajasthan in 1987. In subsequent years, the program expanded in several states in central India:

10. Harper (2002) provides some additional reasons for why SHGs rather than Grameen type institutions are more successful in the Indian context.

11. This proportion is based on figures for the total number of Bangladeshi villages published by the Bangladesh Bureau of Statistics (www.bbs.gov.bd) and the number covered by the Grameen Bank (available at www.grameen-info.org).

Jharkhand, West Bengal, Madhya Pradesh, Orissa, and Chhattisgarh. Table 2 provides a list of PRADAN locations in each of the six states in which the organization operates, together with the year of the first SHG and the total number of SHGs in existence at the end of March 2006.¹²

TABLE 2. Number of PRADAN SHGs in India (As on March 31, 2006)

<i>State</i>	<i>Location</i>	<i>Year^a</i>	<i>First SHG</i>	<i># SHGs</i>
Chhattisgarh	Raigarh	1998	1999	532
Jharkhand	Godda	1987	1989	314
Jharkhand	Barhi	1992	1992	411
Jharkhand	Lohardaga	1992	1995	449
Jharkhand	West Singhbhum	1992	1996	363
Jharkhand	Gumla	1994	1994	484
Jharkhand	Dumka	1995	1989	318
Jharkhand	East Singhbhum	1997	1996	392
Jharkhand	Khunti	2000	1997	314
Jharkhand	Koderma	2000	1992	359
Jharkhand	Petarbar	2000	1998	322
Jharkhand	Deogarh	2002	1989	280
Rajasthan	Dausa	1999	1999	171
Rajasthan	Dholpur	1999	2000	180
Madhya Pradesh	Kesla	1986	1996	300
Madhya Pradesh	Vidisha	2000	2000	44
Madhya Pradesh	Sidhi	2002	2005	49
Madhya Pradesh	Dindori	2005	2005	110
Orissa	Keonjhar	1990	1998	506
Orissa	Balliguda	2001	2001	201
Rajasthan	Alwar	1986	1987	162
West Bengal	Purulia	1987	1995	218
West Bengal	Bankura	2005	2000	142
Total				6621

Source: Personal communication with PRADAN.

a. This refers to the year in which a PRADAN office was opened in the area. The Deogarh and Dumka SHGs were initially under the Godda office and the Koderma and Peterbar SHGs were managed by the Barhi office. This is why the first SHG in these areas predates the opening of the PRADAN branch office.

The groups formed by PRADAN are a small fraction of the total number of SHGs in the microfinance sector, but they have an important presence in the areas in which they operate. The program targets administrative blocks with high levels of rural poverty and proceeds by building a dense network of SHGs in these areas over a few years. In recent years, SHGs have been the first intervention by the organization in each village and group meetings have then been used to introduce other activities aimed at raising agricultural productivity and rural incomes. The social composition of

12. The current aggregate figures for the SHG program are available at www.pradan.net.

these villages is often different from other parts of the state and district; the proportion of communities classified as ST is higher and literacy rates are lower than the state average.

The groups themselves consist entirely of women and are formed according to the guidelines issued by NABARD and the Reserve Bank (RBI, 1999; NABARD, 1992). Each group has between 10 and 25 members and large villages often have multiple groups, one in each hamlet. The PRADAN professionals begin the process of group formation by meeting village women in a public space in the village. They discuss the benefits of membership and some general principles followed by successful groups (for example, compulsory attendance, weekly savings, sustainable interest rates, bookkeeping, and so on). Interested women are enlisted and a regular meeting time is set. A professional is usually present at meetings until membership becomes fairly stable and all members are familiar with group practices. Each group is provided with a register for keeping accounts and a cash box, and the group designates either designates one of the members to keep accounts or hires an accountant. The register, cash box, and keys are usually rotated among the members.

As groups mature, they get federated and select representatives who regularly attend cluster meetings organized by the federation. The groups that function smoothly typically open a savings account with a nearby commercial bank within a year of their inception. At this stage, PRADAN professionals discuss the feasibility of alternative self-employment projects with the group, and, once a few members decide on particular projects, the group applies for loan to a commercial bank. This loan constitutes their first bank linkage. Bank funds come into the group and are then lent to individual members. These members make payments to the group, which then repays the bank on the stipulated date.

Over time, the professionals who initiated the group withdraw and their interactions with members are limited to cluster meetings and occasional visits to the village. Regular communication with PRADAN takes place mainly through copies of weekly accounting transactions that are sent in to the local office. Groups are free to determine the rules under which they operate and the stringency with which they are implemented. After the inception of the SGSY in 1999, some subsidies to groups are routed through PRADAN, provided the groups satisfy the selection criteria required by the scheme. Therefore both subsidized and unsubsidized SHGs co-exist in the same area.

In the absence of regular visits to older SHGs, the organizations promoting these groups are not always informed about their functioning. Successful groups may stop sending in accounts as they reduce their reliance on

PRADAN, others may temporarily suspend meetings because some members migrate seasonally, and yet others may stop their activities altogether. Survey data is therefore required to accurately track the performance of groups over time.

The Survey Design

As mentioned above, we surveyed all PRADAN groups created in the districts of Keonjhar and Mayurbhanj in northern Orissa and the district of Raigarh in eastern Chhattisgarh. Both the districts in Orissa are serviced by the professionals in Keonjhar and we henceforth refer to these groups as the Keonjhar SHGs. The three survey districts are shown in figure 1 and surveyed areas within each district are indicated in figures 2–4. Although only a small fraction of each district is actually covered by the program, groups are geographically clustered in dense pockets. This makes it easier for professionals to visit these areas and it also allows groups to benefit from frequent contact with each other.¹³

In our analysis, we refer to a group as inactive if the group has not held any meetings over the three months prior to the survey and if its members declare that they have no plans to meet in the future. A group is considered as active if it is meeting regularly at the time of the survey. All women who left groups while the group was still functioning are called past members and the others are referred to as present members. This category therefore includes women in inactive groups if they remained with the group until its last meeting.¹⁴

At the group level we collected data on rules, activities, and the timing of some significant events. These events include the inception of the SHG, the creation of savings accounts, bank loans, the group's membership in an SHG federation, and, for inactive SHGs, their last meeting. Group rules include fines (for attendance and late repayment), minimum savings requirements, interest rates, and the assignment of group responsibilities. We asked group members about their collective activities such as the involvement of its members in resolving village and family conflicts, their visits to government officials, and their administration of state-funded school meal programs in primary schools. We also recorded the total number of other SHGs formed by PRADAN in the same village.

13. Some of these benefits are studied by Nair (2005).

14. Our main reason for using this classification is that we would like to distinguish between members who left existing groups and those whose membership ended because the group became inactive. It is likely that the factors underlying these two types of events are different. We intend to explore these differences more carefully in future research.

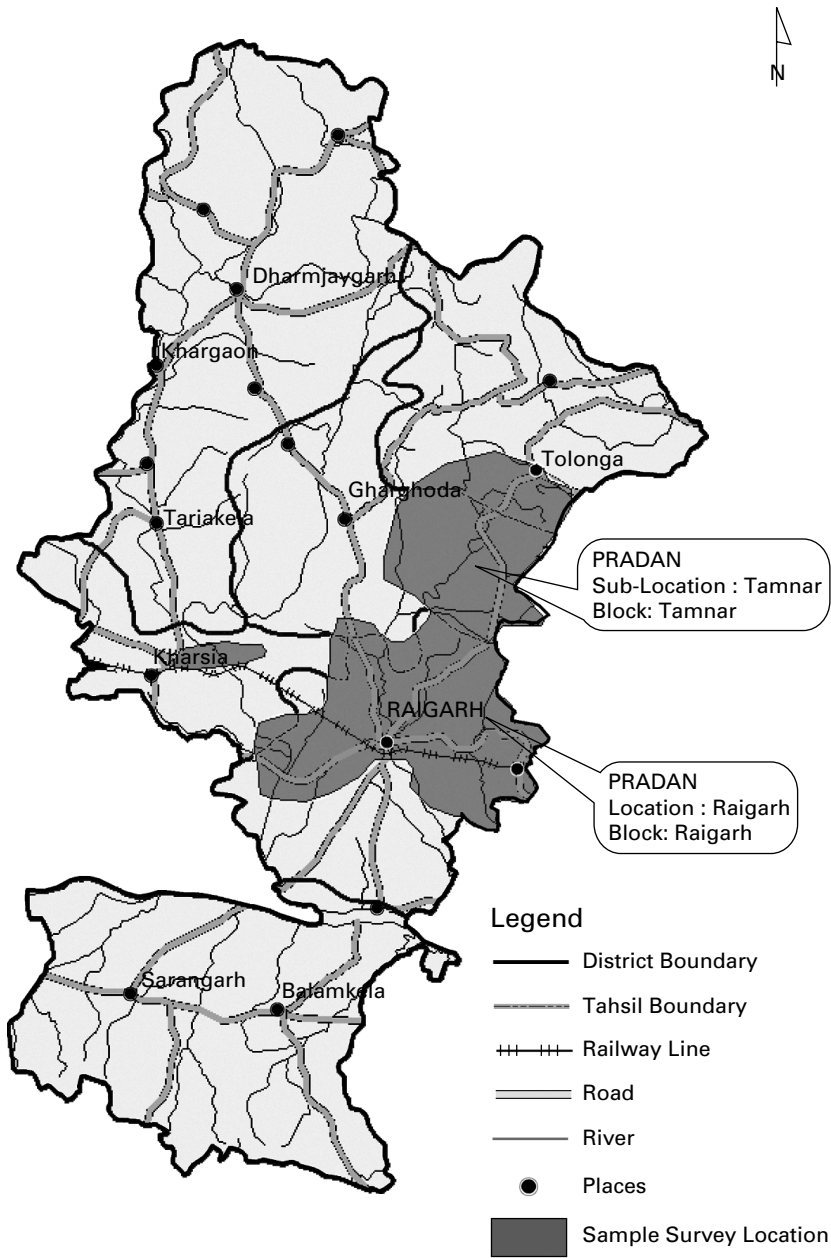
FIGURE 1. Study Area



Source: Census of India.

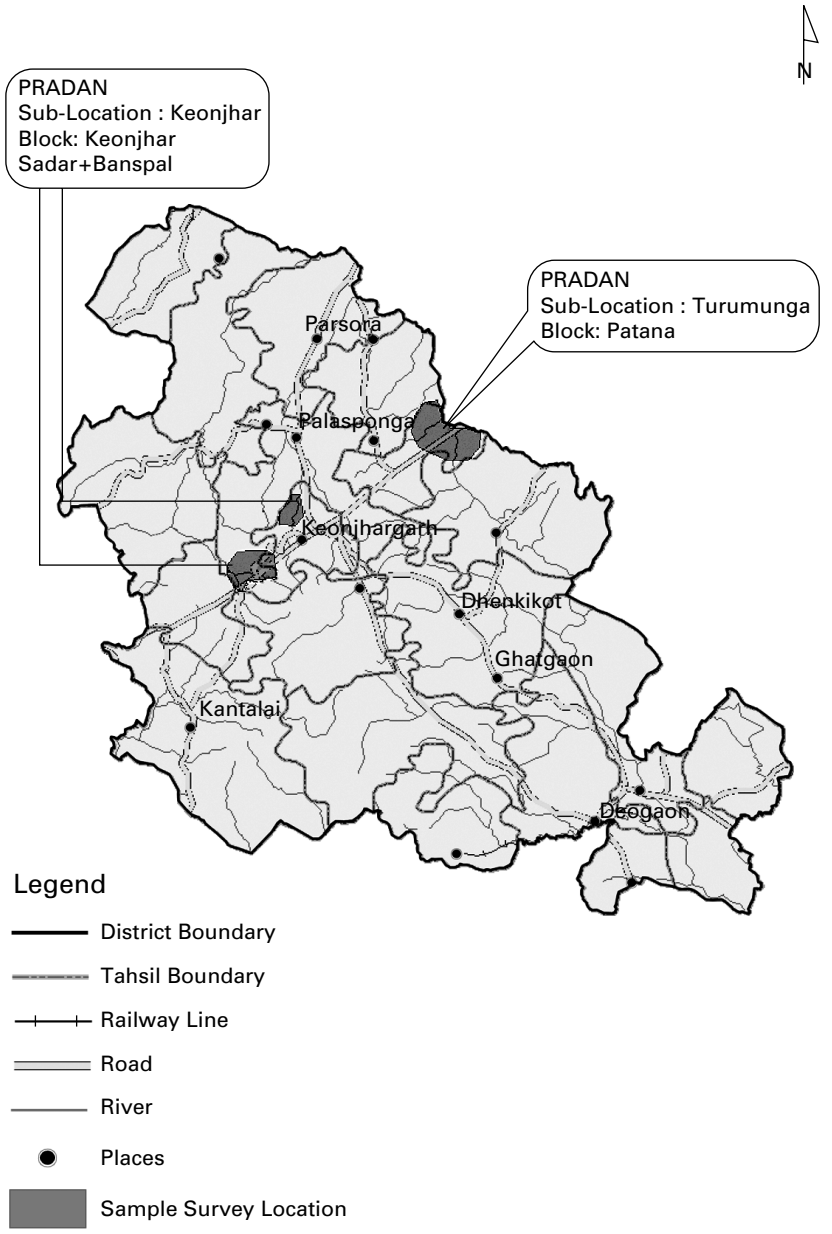
For all present and past members, we collected information on a standard set of characteristics relating to their social and economic background: caste, education, age, marital status, fertility, household landholdings, and some parental information. Our data on caste includes both the *jati* of each member and the official caste category to which the *jati* belongs. We classify a group as homogenous if all its members belong to the same *jati*. For each

FIGURE 2. Raigarh



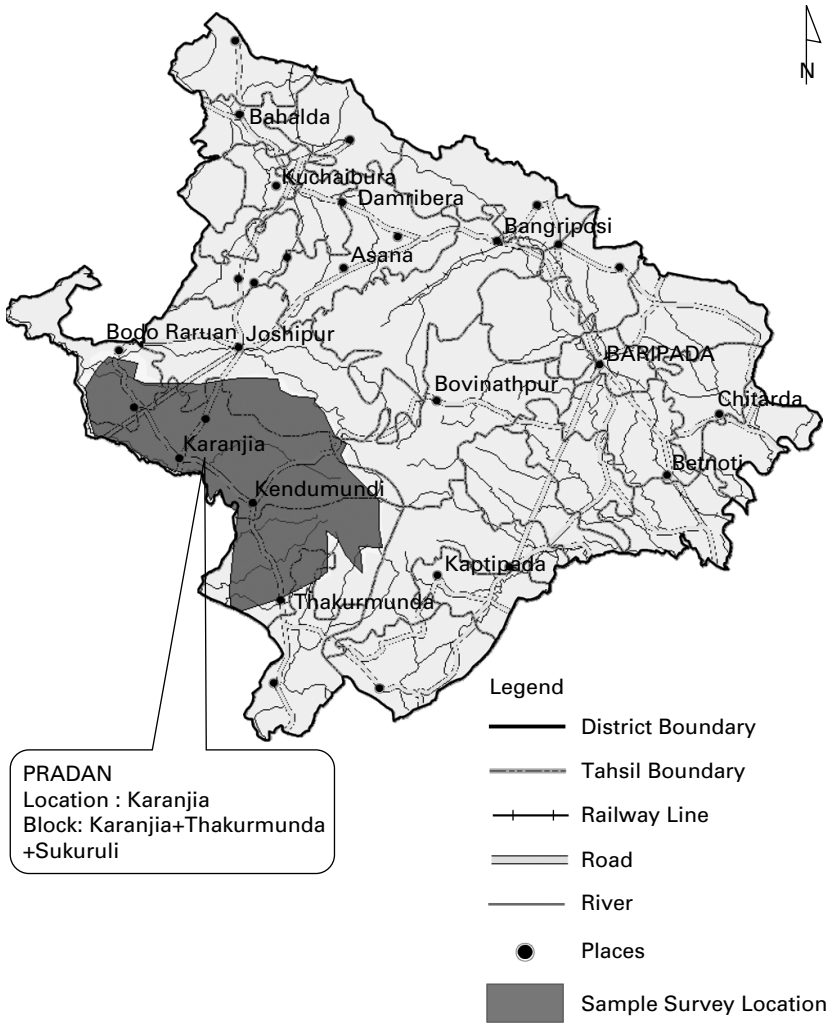
Source: Census of India.

FIGURE 3. Keonjhar



Source: Census of India.

FIGURE 4. Mayurbhanj



Source: Census of India.

member and for each accountant, we recorded their dates of entering and, if applicable, leaving the group, and the total value of loans taken by them. We also created a relationship matrix, which recorded family ties between members. For inactive groups, we asked members the main reason for group failure and recorded the most popular response. Similarly, we asked past members the main reason for their departure from a group.

Descriptive Statistics

Table 3 provides a chronology of the formation of SHGs in our study area. The survey in Keonjhar was conducted during the summer of 2006 and the Raigarh survey was in January 2007. In each case, we surveyed all groups created in the area from the start of the program until the date of our survey. This gives us a total of 1,102 groups created in the period 1998–2006. Of these 10 percent were inactive by the time of the survey (12 percent in Raigarh and 9 percent in Keonjhar).

TABLE 3. Year-wise Formation and Dissolution of SHGs Survey Data, 1998–2006

Year	Started		Inactive		Bank loan	
	Keonjhar	Raigarh	Keonjhar	Raigarh	Keonjhar	Raigarh
1998	4	0	0	0	0	0
1999	10	18	0	0	0	0
2000	51	61	0	0	0	3
2001	27	36	3	5	2	7
2002	155	30	4	5	14	23
2003	89	46	11	7	100	31
2004	95	172	9	8	95	100
2005	85	160	17	24	89	140
2006	16	47	2	20	62	91
Total ^a	532	570	46	69	362	395

Source: Survey Data, 1998–2006.

Note: a. There are two main reasons why the totals in this table do not match with those in table 2. First, we included all groups that were formed before the survey date, and some of these were created after March 2006. Second, table 2 is based on administrative data that do not always account for group failures since these are not consistently reported.

Table 4 contains descriptive statistics on groups by their survival status. A comparison of the two types of groups throws up some interesting patterns. First, active and currently inactive groups are both reasonably long-lived with inactive groups operating for an average of two years after they are formed. Second, there are many more homogenous groups in Keonjhar in both categories and these groups as a whole have lower survival rates. This pattern is driven by groups composed of ST, who form a majority of our surveyed population, and it does not hold systematically for the other caste categories. Since we have defined a homogenous group as one in which all women are of the same tribe or caste, the lower survival rates reflect in part lower levels of education among some tribal communities, which make it hard to sustain a group. We discuss this issue in detail in Section 5. Third, groups that survive are more involved in the village activities and in the lives

TABLE 4. Group Characteristics by Survival Status

	<i>Keonjhar</i>		<i>Raigarh</i>	
	<i>Active</i>	<i>Inactive</i>	<i>Active</i>	<i>Inactive</i>
Number of groups	486	46	501	69
Percentage	(91)	(9)	(88)	(12)
Average duration (days)	1105	884	1129	620
COMPOSITION				
Total number of castes in dataset	88	22	96	45
Average number of castes	2.4	1.8	4.0	3.4
Average number of caste categories (ST, SC, OBC, FC)	1.8	1.3	2.3	2.2
Fractionalization index	0.26	0.17	0.51	0.46
HOMOGENOUS GROUPS (%)				
ST (% of homogenous)	68.6	91.6	60.8	66.7
SC (% of homogenous)	8.9	4.2	19.6	33.3
OBC (% of homogenous)	22.5	4.2	17.7	0
FC (% of homogenous)	0	0	1.9	0
GROUP ACTIVITIES LAST YEAR				
Midday meals (%)	9	0	12	1
PDS (%)	3	0	4	0
Panchayat meetings (%)	34	22	56	35
Exposure trips (%)	70	41	13	6
Federation meetings (%)	12	2	2	0
Meeting government officials (%)	20	7	32	16
Involvement in family or village conflict or member in distress (%)	44	26	52	26
RULES				
Minimum weekly saving (%)	100	100	94	96
Saving compulsory (%)	30	20	38	39
Groups with absence fines (%)	97	67	38	26
Absence fine (Rs.)	3.1	2.6	3.8	3.2
Higher interest rates default (%)	15	13	92	91
OTHER CHARACTERISTICS				
Received a subsidy (%)	14	0	5	1
Developed a group project (%)	34	9	26	6
Accountant is a member (% of accts)	68	41	59	62
MEMBERS				
Average number of members	16	15	15	15
Past member (%)	13	14	15	14
Literate (%)	33	12	29	25
No school (%)	59	87	64	70
Maximum education (years)	9	5	8	7
Mean education (years)	2.8	1.0	2.0	1.6
Mean land (Acres)	1.7	1.4	2.0	1.9

Source: Survey Data, 1998–2006.

of their members. They are more likely to administer government schemes, meet government officials, attend cluster meetings, go on exposure trips organized by PRADAN to observe projects in other villages, and get involved in resolving family and village conflicts. In terms of their demographic characteristics, members of active groups are, on average, more educated, they own more land, and more of them act as accountants for their group.¹⁵ Differences in group size are negligible.

Table 5 compares present and past members, homogenous caste groups retain a slightly higher proportion of their members. Demographic characteristics of past and present members are similar. Members who eventually

TABLE 5. Characteristics of Present and Past Members

	<i>Keonjhar</i>			<i>Raigarh</i>		
	<i>Present</i>	<i>Past</i>	<i>All</i>	<i>Present</i>	<i>Past</i>	<i>All</i>
Number of women	7473	1116	8589	6995	1216	8211
(%)	(87)	(13)	(100)	(85)	(15)	(100)
Average duration (days)	1002	491	936	1071	542	993
CASTE CATEGORY COMPOSITION						
ST (%)	60.8	62.0	61.0	46.7	52.2	47.5
SC (%)	10.6	10.9	10.6	19.3	23.0	19.8
OBC (%)	27.1	25.8	26.9	32.1	23.0	30.8
FC (%)	1.5	1.3	1.5	1.9	1.8	1.9
BACKGROUND						
Education (number of years)	2.7	2.5	2.7	1.9	1.6	1.9
No school (%)	61	65	61	65	68	65
Read and write (%)	31	29	31	30	24	29
Father's education (number of years)	2.2	1.5	2.1	2.1	1.3	2.0
Land (acres)	1.7	1.7	1.7	2.0	1.8	2.0
RELATION TO GROUP						
Relatives within group (%) ^a	12.0	7.6	11.4	8.2	5.8	7.8
In homogenous groups (%)	35.3	32.3	34.9	9.8	7.3	9.4
Previous SHG membership (%)	4.4	9.0	5.0	5.7	6.5	5.8
Joined other SHG after leaving (%)		20.4			18.3	
CHAIRMAN^b						
membership < 2 years (%)	5.6	0.49	4.7	8.5	3.2	7.1
2 years < membership < 4 year (%)	7.7	3.3	7.3	9.1	3.7	8.7
4 year < membership (%)	8.3	0	8.1	8.7	5.8	8.5

Source: Survey Data, 1998-2006.

Note: a. Percentage of members who have at least one relative in their group.

b. Percentage of members who have been chairman, given the duration of their membership.

15. The average member characteristics for both types of groups are calculated using all members that were ever part of the group.

leave have fewer years of education and a smaller fraction of them are literate, but these differences are not large. A striking contrast between those who remain in SHGs and those who leave is seen in the networks these women have within their groups and in the extent to which they are responsible for group decisions. In Keonjhar, 12 percent of women currently in groups had another relative in the group while this was true of only 7.6 percent of past members, and those who stayed in their groups were at least twice as likely to have held the position of group chairman, conditional on the number of days spent in the group. Table 6 shows the distribution of present and past SHG members across the major caste groups in the area. We use these groups in our empirical analysis in the next section and investigate whether the durability of SHGs varies by community.

A variety of reasons were cited by respondents for group inactivity and exit of members from the groups. The principal responses are shown in table 7. We asked former members of inactive groups for their assessment

TABLE 6. Distribution of SHG Members by Caste

	<i>Keonjhar</i>	<i>Raigarh</i>
ST	5231	3878
(%)	(61)	(47)
SC	916	1616
(%)	(10)	(20)
BC	2397	2512
(%)	(27)	(31)
FC	124	157
(%)	(2)	(2)
SCHEDULED TRIBES^a		
Bhuiyans	1127	203
Kharia	15	466
Ho	444	5
Munda	533	12
Santhals	501	0
Bathundi	811	0
Gond	432	620
Ganda	375	127
SCHEDULED CASTES		
Harijans	421	11
Chauhan	0	886
OTHER BACKWARD CASTES		
Yadav	5	697
Mahanta	823	99
Kurmi	493	14
Teli	95	497

Source: Survey Data, 1998–2006.

Note: a. Only the largest groups are reported here.

TABLE 7. Stated Reasons for Group Failure and Member Exit

	<i>Keonjhar</i>	<i>Raigarh</i>
GROUP		
PRADAN withdrew support	18.2	11.8
Personal conflicts/leadership problems/accountant problems	45.5	38.2
Unpaid loans/irregular savings	27.3	25.0
Others	9.0	25.0
Total	100	100
Number of observations	46	69
MEMBER		
PERSONAL REASONS		
Illness/death	8.3	8.1
Left village/married/seasonal migration/going to school	17.8	12.0
RELATED TO GROUP		
The family was not supportive	6.2	9.1
Could not reimburse a loan taken/difficulty in saving	29.2	17.1
Could not attend the meetings	9.8	12.8
Personal conflict with the group	15.5	20.3
Excluded by the group	4.9	1.0
OTHERS		
Wanted to join another group	0.5	6.5
Others ^a	7.8	13.1
TOTAL	100	100
Number of observations	1116	1216

Source: Survey Data, 1998-2006.

Note: a. Others includes not understanding the working of the SHG, PRADAN official stopped visiting the group, the group is too big, and no clear reason.

of why the group stopped functioning. In both regions, problems of leadership and conflict turned out to be the most important (40 percent) followed by low savings and repayment rates. The stated reasons for member departures vary by region. Difficulties in saving and reimbursement are most important in Keonjhar while personal conflicts matter more in Raigarh. These responses are not surprising given the higher levels of education of departing members in Raigarh and the greater social heterogeneity of their groups. Between one quarter and a fifth of all members who have left cite personal reasons, which often involve leaving their village.

The borrowing and lending activities of groups are summarized in table 8. Almost all active groups provided their members with loans from internal funds in the year prior to the survey and a fairly high fraction of members received such loans (87 percent in Keonjhar and 63 percent in Raigarh). Borrowing members of active groups received an average of between two and three loans during the year prior to the survey and they

T A B L E 8. Borrowing and Lending Activities of Groups

	Keonjhar		Raigarh		Both Areas
	Active	Inactive	Active	Inactive	
GROUP LOANS					
Lending from internal funds (%)	100	91	96	30	88
Members receiving loans (%)	88	14	63	10	55
Loans per member last year (#)	3.1	2.4	2.1	2.1	2.1
Borrowing per member last year (Rs.) ^a	2,792	1,831	1,320	1,024	1,312
BANK LINKAGES					
At least one bank linkage					
Total groups (%)	74	15	74	23	68
Number of linkages (#)	1.7	1.0	1.8	1.3	1.8
Total bank borrowing (Rs.)	46,555	13,500	52,206	23,571	50,958
Members receiving bank funds (%)	77	89	89	84	90
Loans per borrowing member (Rs.)	4,222	984	4,154	1,488	4,070
Duration of group since first linkage (days)	613	318	768	526	759
Exactly one bank linkage					
Total groups (%)	52	100	38	75	40
Average loan size per member (Rs.)	2,386	1,979	1,303	512	1,285
Members who received part of loan (%)	88	61	59	18	56

Source: Survey Data, 1998-2006.

Note: a. For loans and borrowings, last year refers to the year before the survey for members of active groups. For inactive groups it is the last year for which they were active. In the case of women who left groups we refer to their last year of membership.

borrowed an average of Rs. 2,298 from the group. For inactive groups, we recorded lending activities during the last year of their regular functioning. Most of these groups in Keonjhar did lend out internal funds while less than one-third of the inactive Raigarh groups were engaged in such lending during the last year in which these groups were active. In both cases, access to these loans was very uneven and less than 15 percent of members received such loans. Those who did borrow received sizable amounts of, on an average, Rs. 1,831 in Keonjhar and Rs. 1,024 in Raigarh. It is plausible that this uneven distribution of group funds may have led to the high levels of group conflict reported by members of inactive groups.

Nearly three-quarters of active groups in both areas have been linked with commercial banks. Linked SHGs have received an average of 1.7 bank loans and average total borrowings of Rs. 48,518. Over 80 percent of members in linked groups received these loans, resulting in average borrowings of a little over Rs. 4,000 per member.¹⁶ To better understand the extent of credit provided by banks per year, we compute the number of days between the first group linkage and the survey date for active groups and the days from the first linkage to the last meeting for inactive groups. Using the average duration of 685 days (across all regions and both active and currently inactive groups), members receiving bank credit get about Rs. 2,000 per year through these linkages.

Empirical Methods

General Issues

In the previous section, we have described various aspects of the composition and functioning of SHGs and discussed some of the interesting correlations in our data. We have observed, for example, that groups that survive are more involved with village activities, they have more stringent attendance and savings requirements, and they share loans more equitably. Members who remain in groups are more educated than average and have a network of family connections within the group. We now proceed to estimate the effects of some of these group and member characteristics on the duration of group and on the length of time women remain in these groups.

16. This is roughly 100 US dollars at the current exchange rate and \$ 273 using the purchasing power parity rate of 14.67 released by the International Comparison Program in December 2007.

The group and member life-spans that we are interested in have to be estimated using data that is right censored. In other words, we would like to estimate the length of time that groups and members survive using data in which most groups are still active and most women who joined these groups are still in them. This makes many standard regression techniques inappropriate for our purpose. To see why, suppose that we use a binary variable, which takes the value of one for groups (or members) that are no longer active and zero otherwise, and would like to estimate the effect of a set of co-variates on the likelihood of survival. Even if all groups had the same chances of survival, and our co-variates did not matter at all, we would observe older groups surviving at lower rates simply because they are older, and the characteristics of these groups would therefore appear to be negatively associated with the likelihood of survival. We would therefore obtain inconsistent estimates of the effects of group and member characteristics on survival rates. To take another example, suppose PRADAN started its SHG program in areas with low literacy. Even if literacy did not matter for group duration, it would appear to matter because older groups are less likely to have survived until our survey date and these groups have lower literacy rates.

If we try to avoid these types of biases by restricting our sample to inactive groups and to members who have completed their stay in a group, we lose a lot of the variability in our sample and reduce it to a fraction of its current size. What we do instead is to use methods of survival analysis, popular in the biomedical and quality control fields, which allow us to use censored observations by making use of information on the censored group or member until the time of censoring, rather than simply ignoring these observations or not accounting for the fact that they are censored. These methods are used to estimate the time until events occur in our case, the events being either the cessation of regular group activity for the group-level analysis, or the departure of a member for our study of member attrition.

We estimate the distribution of a random variable T which denotes the duration (in days) of a group, or of a member within a group. This distribution can be represented in several ways.¹⁷ The *survival function* $S_T(t)$ represents the probability of surviving beyond a time t or, in other words, the probability that the random variable $T > t$ or that the event has not occurred until time t . The *hazard rate* $h_T(t)$ is, in the language of survival analysis, the instantaneous chance of failure at time t . For our purposes, it

17. This discussion is based on Klein and Moeschberger (2003), chapters 2 and 3.

is the probability a member will leave a group at time t , conditional on her being there until that point in time. Finally, the *cumulative hazard rate* $H_T(t)$ is sum or integral of these hazard rates over $(0, t)$, depending on whether T is discrete or continuous.

These three representations of the distribution of T can be estimated using either parametric or non-parametric methods. Non-parametric estimators are a natural choice when dealing with a homogenous population because of the flexibility they offer. Our population is far from homogenous but we begin with these nonparametric estimates as descriptive tools to summarize the survival behavior of groups and members. We then estimate a parametric model that allows us to incorporate co-variables and therefore estimate the causal effects of group and member characteristics on survival rates. A variety of different non-parametric estimators and parametric models are available. For non-parametric estimates we focus on the Nelson–Aalen estimator of the cumulative hazard function, which is shown to have desirable small sample properties and on a smoothed hazard rate derived from this estimator. For parametric estimates we use the Weibull model for reasons discussed below.

The Nelson–Aalen Estimator

With right censored data, the exact lifetime is only observed if failure or exit occurs before the time of censoring, namely the date at which the group was surveyed. In the following discussion, we will usually refer to events as the exit of SHG members although the same principle applies for group failure.

Suppose that in our data, members exit groups at D distinct times $t_1 < t_2 < \dots < t_D$ and that at time t_i there are d_i departures. Time, in our case, is the number of days since the member joined the group. Let Y_i represent the number of individuals who are at risk at time t_i . In our case, this is the number of members who are still part of the group at t_i or who leave it at t_i . Members who do not leave but are observed for less than t_i days in the group are subtracted from Y_i . The ratio d_i/Y_i estimates the conditional probability that a group or a member who survives to time t_i , experiences the event at time t_i . The Nelson–Aalen estimator is then given by:

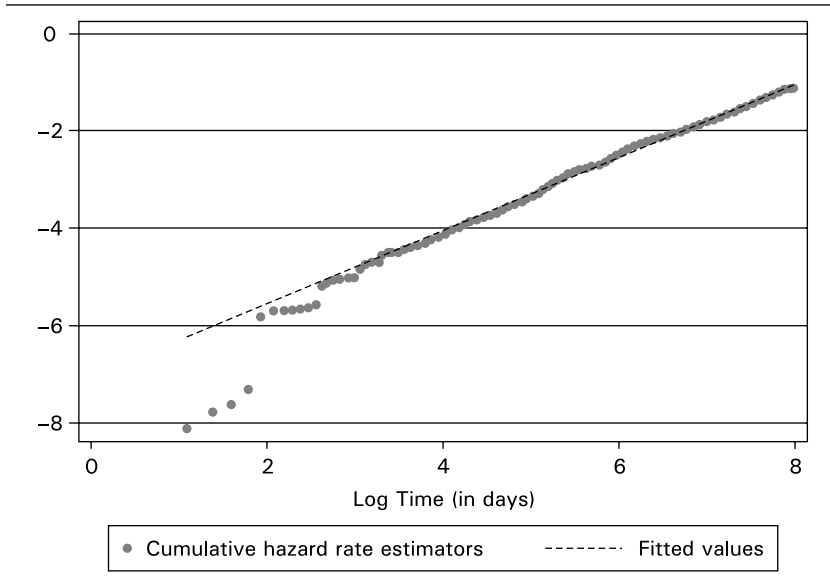
$$(1) \quad H(t) = \begin{cases} 0 & \text{if } t \leq t_1 \\ \sum_{t_i \leq t} \frac{d_i}{Y_i} & \text{if } t_1 \leq t \end{cases}$$

By smoothing the jump sizes of this estimator with a parametric kernel, we can obtain a hazard function $h(t)$.

The Weibull Model

We now impose some additional structure on the survival function to examine the importance of various group and member characteristics on survival times. We assume that both group and member duration follow a Weibull distribution. The natural log of the cumulative hazard function in the Weibull model is linear as a function of the log of member duration. Figure 5 plots these two variables for our dataset of members (using Nelson–Aalen estimates of $H(t)$). The model seems to fit the data fairly well except for members with very short durations within groups. The group-level plot looks similar.

FIGURE 5. Appropriateness of the Weibull Model



Given a vector of covariates Z and corresponding coefficients β , the Weibull hazard rate is given by

$$h(x|Z) = (\alpha\lambda x^{\alpha-1}) \exp(\beta'Z)$$

The first expression $(\alpha\lambda x^{\alpha-1})$ is referred to as the baseline hazard, h_0 and α is termed the shape parameter. All our results are presented in the form

of hazard ratios corresponding to our explanatory variables. For binary variables these tell us the factor by which the hazard function moves up or down relative to the baseline hazard. In general, it gives us the ratio of the hazard function to the baseline hazard for a unit change in the explanatory variable. If an explanatory variable has no effect on the risk of failure our estimated hazard ratio should be close to 1.

Results

We first present non-parametric estimates of hazard functions separately for each of our areas and then discuss the effects of group and member characteristics based on the Weibull model.

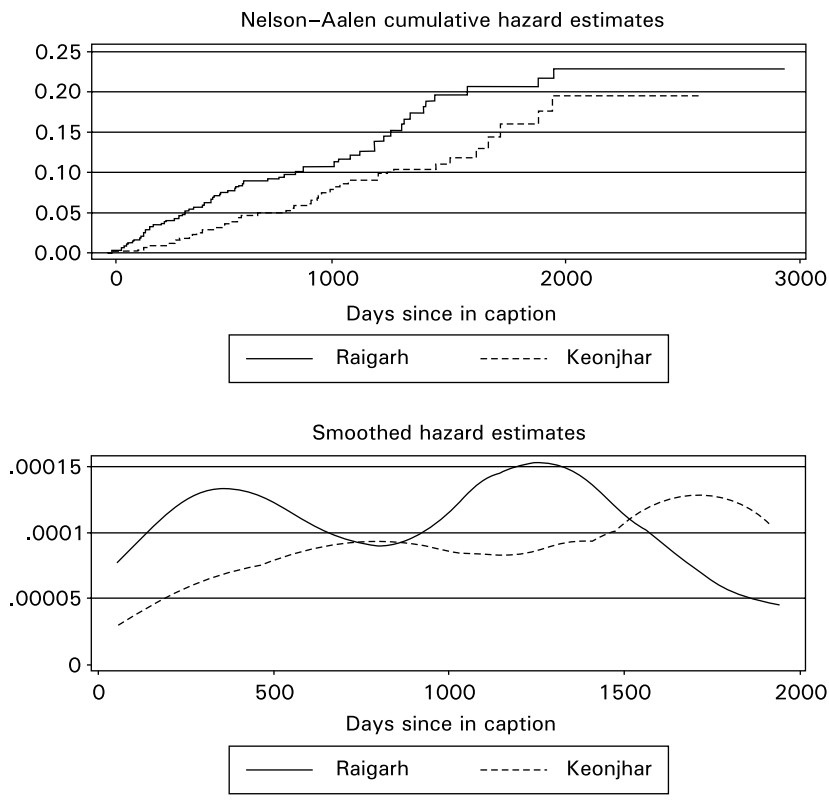
Nonparametric Estimates

The Nelson–Aalen estimates of cumulative hazard functions are shown in the upper panel of figure 6. The lower panel shows hazard rates that are obtained by a kernel smoothing of the hazard contributions provided by the Nelson–Aalen estimators. Like all estimates obtained by kernel procedures, these hazard rates are not reliable at the end points of the time-interval because our sample is thin in this region.

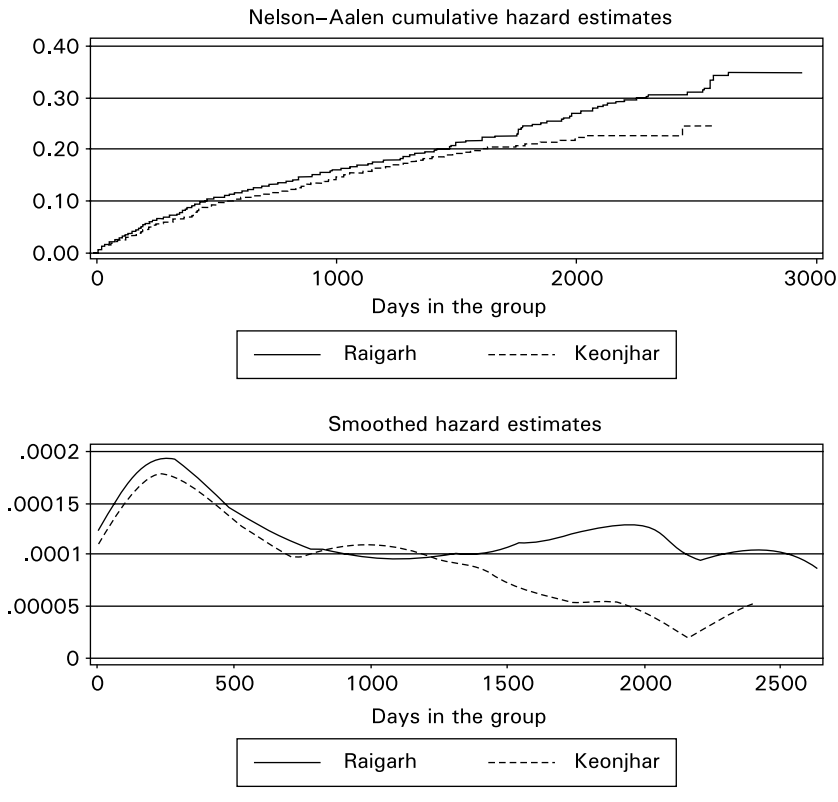
The lower survival rates for SHGs in Raigarh shown in table 3 are also reflected here.

The double-humped hazard rate for Raigarh suggests that there are two different phases in a group's life when it is especially vulnerable: about a year after inception and then again after three or four years. The hazard rates in Keonjhar vary much less over a group's lifetime. We noted that the Raigarh groups are much more socially heterogeneous than those in Keonjhar and that group conflict is often cited by members as a reason for leaving the group. One reason for the differences in estimated hazard rates across our two regions may be the higher levels of conflict in Raigarh. The first rise in hazard rates is at about the time that a group takes its first bank loan and the sharing of this loan may be a possible source of conflict in heterogeneous groups. In the absence of any direct evidence on this type of conflict, this is of course purely speculative.

Figure 7 displays hazard rates for members in the two regions. The risk of exit in the early stages of membership is very similar, but once again, we see a second hump in the Raigarh hazard function that is missing for Keonjhar. Differences in these member-level hazard rates across the two areas appear less marked than the group-level estimates of figure 6.

FIGURE 6. Nelson–Aalen Estimates of Regional Hazard Rates: SHG Level

As discussed earlier (under sub-section Descriptive Statistics), members who had left groups were asked for the principal reason for their departure. The two most frequently cited reasons were (a) difficulty in saving and repayment and (b) conflict with other group members. Figures 8 and 9 estimate hazard rates based on restricted samples of members to illustrate the importance of these two factors as a function of the length of time a member stays in the group. Figure 8 is based on a sample that includes only those members that left due to difficulty in savings or repayment. Similarly, figure 9 includes only those that stated conflict as their reason for leaving the group. The reversal of hazard rates across regions in these two figures is striking. Exit due to difficulty in saving and repayment is much more important in Keonjhar and reverses the relative position of the aggregate hazard functions seen in figure 7. As our summary statistics suggest in table 7, conflict is more important in Raigarh.

FIGURE 7. Member Level Regional Hazard Rates

Parametric Estimates

Weibull estimates using group-level data are presented in table 9. Of the various characteristics that we consider, the only ones that systematically affect group hazard rates are the number of other PRADAN-initiated SHGs in the village and the maximum level of education within the group. Both these lower the risk of group failure. In our most comprehensive specification, an additional year of education for the most educated member of the group lowers the hazard rate by 8 percent and an additional group in the same village lowers it by 18 percent. It is conceivable that the presence of an educated member facilitates interactions with banks and other officials, and ensures better book-keeping. Other groups in the village may help either through the sharing of information or by making it more likely that a PRADAN professional frequently visits the area. We have not looked at

FIGURE 8. Hazard Due to Difficulty in Saving: Member-Level Data

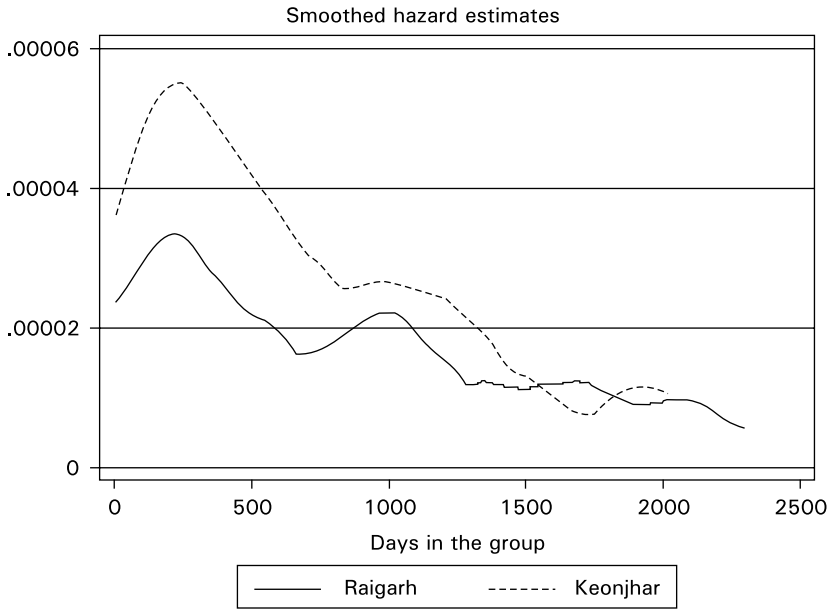


FIGURE 9. Hazard Due to Member Conflict: Member Level Data

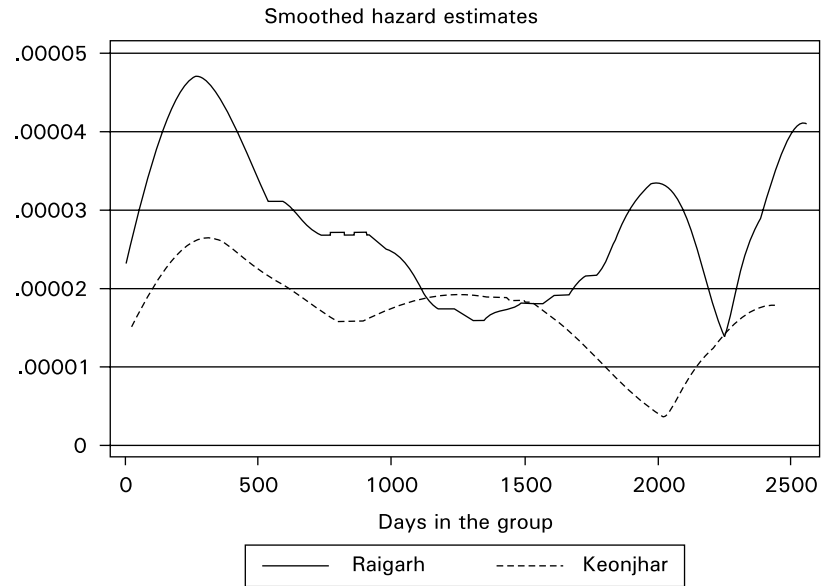


TABLE 9. Hazard Rates for SHGs, Weibull Model

	(1)	(2)	(3)
Shape parameter	1.12	1.13	1.16
Homogenous SHG, caste	1.11 (0.37)		
Homogenous SHG, ST		1.20 (0.41)	1.18 (0.41)
Homogenous SHG, SC		1.76 (1.02)	1.73 (1.02)
Homogenous SHG, OBC		0.25 (0.26)	0.26 (0.27)
Fractionalization	0.78 (0.44)	0.79 (0.44)	0.74 (0.42)
Average relations in group	0.84 (0.55)	0.79 (0.51)	0.80 (0.52)
Number of initial members	0.95 (0.03)	0.95* (0.03)	0.95 (0.03)
Maximum education in group	0.92** (0.02)	0.92** (0.02)	0.92** (0.03)
Average land (Acres)			0.97 (0.06)
Average age			0.95** (0.02)
Average total children			1.12 (0.21)
Average separated			3.9 (3.52)
Concurrent PRADAN SHGs	0.82** (0.03)	0.82** (0.03)	0.82** (0.03)
Raigarh	1.63** (0.38)	1.57* (0.36)	1.72** (0.44)
Number of observations	1064	1064	1062
Number of departures	107	107	106

Note: *significant at a 10 percent significance level. **significant at a 5 percent significance level.

these mechanisms directly and at this stage these are simply conjectures that are consistent with our data and have some anecdotal support.

Before proceeding to study the exit of members from functioning groups, it is worth noting that many of the factors that are commonly believed to affect collective action processes do not seem to matter for the group survival in our model. Group size, average landholdings, social networks or our various measures of social heterogeneity—none of these has statistically significant effects on group survival. In particular, the lower survival rates observed for tribal communities seem to result from their demographic characteristics rather than their tribal status per se. Survival is admittedly a crude signal of group success and it may be that these group characteristics do matter for the financial success of groups. We are currently in the process of collecting financial data on the SHGs in our sample and plan to explore these questions in future work.

Table 10 is based on our member-level dataset and identifies the determinants of member attrition from groups while these groups are still functioning. Member exit appears to be sensitive to both member characteristics and group composition. Women from the intermediate social category of OBCs have lower hazard rates than those from other castes. Education, children, and relatives within the group are also associated with longer life-spans. Separated women are less likely to leave their group, perhaps because they

T A B L E 10. Hazard Rates for SHG Members, Weibull model

	(1)	(2)	(3) ST	(4) SC	(5) OBC	(6) FC	(7)
Shape parameter	0.75	0.75	0.75	0.76	0.76	0.58	0.75
Caste category, SC	1.18** (0.07)	1.13* (0.07)					1.04 (0.07)
Caste category, OBC	0.91* (0.05)	0.87** (0.05)					0.84** (0.05)
Caste category, FC	1.12 (0.19)	1.00 (0.17)					1.01 (0.18)
Education (in years)	0.98** (0.01)	0.97** (0.01)	0.96** (0.01)	1.02 (0.02)	0.97** (0.01)	0.84** (0.05)	0.97** (0.01)
Land (Acres)	0.99 (0.01)	0.99 (0.01)	0.99 (0.01)	0.97 (0.03)	1.01 (0.01)	1.00 (0.04)	1.01 (0.01)
Age	1* (0.002)	0.99** (0.002)	1.00 (0.003)	1	0.99** (0.01)	0.96** (0.02)	1.00 (0.01)
Separated	0.83** (0.06)	0.81** (0.06)	0.83* (0.08)	0.68** (0.13)	0.96 (0.16)	0.45 (0.34)	0.82** (0.07)
Total children	0.89** (0.01)	0.89** (0.01)	0.90** (0.02)	0.89** (0.03)	0.88** (0.03)	0.78* (0.10)	0.89** (0.01)
Relation	0.34** (0.06)	0.08** (0.02)	0.09** (0.04)	0.06** (0.03)	0.09** (0.05)	0.001** (0.001)	0.08** (0.02)
Homogenous SHG, castes		0.91 (0.07)	0.90 (0.09)	1.26 (0.27)	0.84 (0.15)	0.26 (0.26)	0.86* (0.07)
Homogenous SHG, SC							1.18 (0.19)
Homogenous SHG, OBC							0.99 (0.15)
Fractionalization		1.36** (0.16)	1.49** (0.23)	1.74* (0.49)	1.04 (0.26)	0.53 (0.63)	1.31** (0.15)
Average relations in group		7.97** (2.35)	5.52** (2.37)	16.56** (10.74)	6.22** (3.59)	251.21** (614.50)	7.59** (2.26)
Number of initial members		1.03** (0.01)	1.04** (0.01)	1.01 (0.01)	1.04** (0.01)	1.07 (0.06)	1.04** (0.01)
Maximum education in group		1.01 (0.01)	1.01 (0.01)	1.00 (0.02)	0.98 (0.02)	1.07 (0.08)	1.01 (0.01)
Average land (Acres)							0.94** (0.01)
Average age							0.99** (0.01)
Average total children							0.99 (0.05)
Average separated							0.87 (0.22)
Concurrent pradhan SHGs		1.02** (0.01)	1.03** (0.01)	1.00 (0.01)	1.03** (0.01)	1.06 (0.05)	1.02** (0.01)
Raigarh	1.10** (0.05)	0.99 (0.05)	1.01 (0.07)	1.18 (0.16)	0.81* (0.1)	1.92 (0.92)	1.05 (0.06)
Defunct	1.35** (0.10)	1.48** (0.11)	37.40** (0.13)	2.36** (0.41)	1.13 (0.25)	0.92 (0.69)	1.46** (0.11)
Number of observations	15895	15895	8619	2421	4586	269	15895
Number of departures	2087	2087	1175	368	509	35	2087

have greater need for the social network provided by it. The average age of members in a group and higher average landholdings are also positively associated with the survival of its members.

The role played by family connections within the group seems to be particularly important. Using the combined sample of all members and controlling for a large set of member and group characteristics (the last column in table 10), we find that the hazard rate for a woman with one relative in the group is 92 percent below the hazard rate for a woman with no relatives. On the other hand, we find that the average density of family networks in the group puts members at greater risk. This suggests that the most vulnerable members are those with no relatives in groups where the other members are closely related. Finally, the existence of competing PRADAN SHGs within the same village also encourages attrition, most likely by members who choose to participate in another group. This effect of competition is statistically significant but not large.

There is a sizable literature on the role of social heterogeneity and conflict in group settings.¹⁸ Almost a fifth of the members in our survey who have left groups report personal conflicts as their main reason for leaving. We explore the role of heterogeneity in a variety of different ways. Our first approach is to construct a number of measures of social heterogeneity and use these as explanatory variables. We use our data on the *jatis* of individual members to construct a social fractionalization index that is commonly used in the literature. The value of the index is based on the shares of each caste or *jati* in the group and is obtained by subtracting the sum of squares of these shares from one. This variable therefore takes on strictly positive values whenever members of a group are of different castes even if they are all in the same official caste category. We also include a set of dummy variables for groups where all members have the same caste and for those where they are of different castes but of the same caste category. We find that group fractionalization raises hazard rates. When we estimate the model separately for each of our four official caste categories, we find this effect of fractionalization especially marked for the ST and the SC (columns 3 and 4, respectively, in table 10). To illustrate, if we estimate our duration model using only the SC women in our sample, we find that a change in the fractionalization index from zero to one (the minimum and maximum values this index can take) causes the hazard function to jump up by 74 percent. This is double the value of the corresponding coefficient in our full sample of women.

18. See Banerjee et al. (2008) for a survey.

TABLE 11. Hazard Rates for Members by Caste Categories: Weibull Model (Restricted Sample)

	<i>ST</i>	<i>SC</i>	<i>OBC</i>	<i>FC</i>
Shape parameter	0.78	0.78	0.77	1.09
Heterogenous within the same caste category	1.44** (0.16)	0.66 (0.24)	1.2 (0.33)	
Heterogenous across caste categories and member of the majority caste category	1.31** (0.11)	1.04 (0.20)	1.03 (0.17)	0.84 (2.66)
Heterogenous across caste categories and member of the minority caste category	1.23 (0.21)	1.19 (0.27)	1.68** (0.31)	1.35 (5.24)
Concurrent pradan SHGs	1.03** (0.01)	1.01 (0.02)	1.06** (0.02)	0.77 (0.32)
Number of observations	6706	1321	2962	87
Number of departures	848	182	301	7

Our second approach is to estimate the model only for those SHGs that have women from at most two official caste categories. This means, for example, that we exclude groups with a combination of SC, ST, OBC, and FC women, but include groups that are constituted from any two of these categories. Our intention here is to examine whether the chances of exit vary based on whether a member forms part of a majority or a minority (in terms of these official categories) within the SHG. These results are shown in table 7. Group heterogeneity affects ST women the most. SC women leave heterogenous and homogenous groups at similar rates and those from the OBCs are more likely to leave heterogenous groups only when they are in a minority. Somewhat surprisingly, the extent to which greater heterogeneity is associated with exit does not depend on whether the SHG is comprised entirely of tribal women or of a mixture of castes and tribes. These results point to a lack of solidarity among the ST and are consistent with other research that demonstrates that, unlike the SC, tribal communities have not succeeded in establishing a common identity.¹⁹

Caste, Education, and Family Networks

Our parametric estimates show that the attrition of women from SHG groups is selective along three major dimensions: caste, education, and the number of relatives in the group. We now examine the role of these characteristics more carefully.

19. Banerjee and Somanathan (2007) find that the ST received far fewer government-financed public goods than the SC over the period 1971–91.

Table 12 contains survival rates for women in each of the four caste categories, separately for each region and for homogenous and heterogenous groups. Average attrition is greatest among the ST. Over the first two years of membership, survival rates for homogenous groups are higher than those for heterogenous groups and higher for Keonjhar than for Raigarh, but at the end of three years about a quarter of the ST women have left their group and this rate does not vary much across region or across homogenous and heterogenous groups. Scheduled Castes remain longer in their groups in Keonjhar, but not in Raigarh and castes that comprise the OBCs survive longer in both areas.

TABLE 12. Member Survival by Caste

	<i>Keonjhar</i>		<i>Raigarh</i>	
	<i>Homogenous</i>	<i>Heterogenous</i>	<i>Homogenous</i>	<i>Heterogenous</i>
ST				
Number of members	1945	2535	453	3064
1 year	92.4	91.2	90.8	87.8
2 year	82.5	82.6	84.5	80.2
3 year	75.3	76.3	75.0	74.4
SC				
Number of members	210	530	163	1248
1 year	97.0	90.3	85.3	87.7
2 year	93.8	85.4	70.1	79.1
3 year	89.4	81.3	67.2	76.8
OBC				
Number of members	495	1429	99	2210
1 year	93.3	92.8	100.0	89.1
2 year	90.5	88.2	98.7	82.7
3 year	84.0	83.9	98.7	79.4

Source: Survey Data, 1998-2006.

Table 13 presents results from a similar exercise, stratifying this time member survival by education levels. In Keonjhar there is a marked difference in survival rates for uneducated women relative to those with some education. Over a quarter of those with no education left their groups within three years of joining them while only 10 percent of those with some primary schooling did so. An interesting pattern seen in the table is the non-monotonicity of survival rates by education levels. In Keonjhar, women with between one and five years of schooling stay longer in groups than those with some secondary schooling. Patterns in Raigarh are similar, though

TABLE 13. Member Survival by Education

	<i>Keonjhar</i>	<i>Raigarh</i>
No education		
Number of members	4512	4877
1 year	91.6	88.4
2 year	82.2	80.5
3 year	74.9	75.7
class 1–5		
Number of members	1049	1694
1 year	95.1	88.8
2 year	92.2	82.3
3 year	90.2	78.2
class 6–8		
Number of members	457	593
1 year	91.1	88.0
2 year	87.3	81.2
3 year	84.3	77.3
class 9–12		
Number of members	1230	243
1 year	91.3	87.7
2 year	87.3	82.8
3 year	82.6	77.5

Source: Survey Data, 1998–2006.

less marked. One plausible hypothesis is that uneducated members leave because they are discriminated against or because they find it difficult to meet the savings requirements of the group while the more educated ones leave because they have better prospects. This is worrying given our finding that group survival depends on the highest education level in the group.

Table 14 is based on a member's education relative to others in the group. For each group we compute quantiles corresponding to the education levels of the bottom quarter, half and three-quarters of the population. In Keonjhar, we observe the highest attrition among those below the first quantile and the lowest attrition is found in the group between the first and second quantiles. These differences in survival rates are not however large relative to those seen in table 13. No systematic pattern is seen in Raigarh.

Table 15 compares survival rates across members based on their family networks within the group. Members are classified into two groups; those with no family relationships within the group and those with at least one relative in the group. The last column in table 15 shows that the differences across these types are large: in Keonjhar, members with no relatives have a

TABLE 14. Member Survival by Relative Education

	<i>Quantile 1</i>	<i>Quantile 2</i>	<i>Quantile 3</i>	<i>Quantile 4</i>
Keonjhar				
Number of members	3902	491	1033	884
1 year	93.4	93.5	93.3	93.2
2 year	88.6	90.3	91.0	89.5
3 year	85.0	89.2	88.5	86.9
Raigarh				
Number of members	4513	371	933	1084
1 year	92.2	93.8	93.2	93.6
2 year	87.7	88.4	90.0	89.2
3 year	84.6	86.3	87.4	86.6

Source: Survey Data, 1998-2006.

TABLE 15. Member Survival by Family Networks

	<i>Present members</i>		<i>In active groups</i>		<i>All members</i>	
	<i>No relatives</i>	<i>Relatives</i>	<i>No relatives</i>	<i>Relatives</i>	<i>No relatives</i>	<i>Relatives</i>
Keonjhar						
Number of members					3661	3545
1 year	91.8	95.5	98.3	98.5	90.2	94.0
2 year	86.4	92.5	94.1	95.8	81.2	88.5
3 year	82.2	89.9	90.9	92.4	74.8	83.1
Raigarh						
Number of members					3697	3723
1 year	90.7	94.0	95.3	96.2	86.5	90.3
2 year	85.5	90.5	90.2	93.8	77.0	84.9
3 year	81.8	88.3	87.0	92.6	71.2	81.7

Source: Survey Data, 1998-2006.

survival rate of 74.8 percent while those with at least one relative have a survival rate of 83.1 percent. A similar difference can be observed for Raigarh (71.2 percent versus 81.7 percent). This differential attrition starts early and over the entire three-year period, the survival function for members with relatives lies above the one for members with no relatives in the group.

To get a better idea of how these family networks might operate, we further distinguish between the attrition caused by groups becoming inactive and the attrition that results from members leaving functioning groups. These figures are shown in the first two columns of table 15. Recall, that *present* members are defined as all those in active groups and those who remained in groups that are currently inactive and until the last group meeting. In Keonjhar, the differential attrition of connected and un-connected members

arises mainly from women with no relatives leaving functioning groups at higher rates. In Keonjhar, 8.2 percent of women with no relatives in the group had left it by the end of the first year while the corresponding figure for women with relatives is only 4.5 percent. At the end of three years, these rates are 17.8 percent and 11.1 percent, respectively. In contrast, the rates of survival in active groups are not very different for those with and without relatives. Three years after joining a group, 90.9 percent of those without relatives and 92.4 percent of those with relatives are still in active groups. In Raigarh, departures from functioning groups and group closures seem equally important causes of attrition from the SHG network. These descriptive tables are consistent with the Weibull hazard ratios presented earlier. Social status, family networks and, to a lesser extent, education, are important predictors of the duration of membership of women in a microfinance network of the type we consider.

Policy Implications

In spite of the phenomenal expansion of the Indian microfinance sector since the early 1990s, and the dominant role played by self-help groups in the sector, little is known about the composition and the internal activities of these groups or length of time for which they function effectively. This paper has attempted to fill this gap. We use survey data from SHGs formed over the period 1998–2006 in selected regions of northern Orissa and Chhattisgarh and estimate the life-spans of groups and members. We find that about one-fifth of those joining an SHG network at some point during our reference period have left it by the end of the period. This attrition is caused both by groups becoming inactive and by members leaving functioning groups.

We estimate duration models for groups and members separately and find that the maximum level of education in a group and the presence of a network of other groups in the village are both associated with longer lived groups. The life-span of a member within a group depends on her education, caste, family structure and, critically, on whether she has other family members in the group. Women with more education, intermediate (rather than low) caste status, and relatives within a group stay longer.

The aggregate attrition rates we observe are not, in themselves, large enough to undermine the effectiveness of the SHG program. In fact some attrition is probably desirable if members use the group as an introduction to the formal banking system and proceed to enter into individual lending

contracts with banks after they leave a group. Groups, with their regular meetings, rules and collective action problems are a costly way of linking rural women to the banking system and their most useful function may be as intermediary institutions which help borrowers make a transition from local moneylenders to banks. On the other hand, it is also possible that those who leave groups are excluded from them for various reasons and that their sources of credit outside these groups are very limited. Our results on the determinants of group and member duration support this latter hypothesis: groups with educated members and those in villages with other SHGs are less likely to fail and it is therefore the remote, disadvantaged communities that are most likely to be deprived of credit through these institutions. It appears unlikely that women leaving groups are moving on to better opportunities and this should make attrition a matter of concern to policy makers.

Before concluding, we would like to draw the reader's attention to several sample selection issues that make it difficult to interpret the survival rates we observe in our data as representative of the SHG system in India. First, the villages selected by PRADAN for their program are not typical of most Indian villages and PRADAN as an organization is regarded as being especially effective. The villages we surveyed have large ST populations and high rates of poverty and illiteracy. The attrition rates we observe may therefore be much higher than those for other parts of the country if, as our estimates suggest, these variables lead to shorter group and member life-spans. On the other hand, other parts of the country, most notably south India, have multiple organizations promoting SHGs in the same village or town and this denser network may lead to more competition and more attrition as members move to groups that best match their needs. Organizational effectiveness is also likely to be an important determinant of SHG success but this has been little explored because of the absence of comparable data from different SHG promoting institutions.

Another important issue relates to the non-random selection of SHG members within villages.

The survey data on which this paper is based is restricted to members of SHGs and it may be that members who choose to participate in these groups differ from other families in same village who decide not to participate. We cannot rule out biases from this type of selection but we do not believe these are large, both because the process by which PRADAN forms groups is quite inclusive (all adult women in the hamlet are initially invited to join the group) and because existing work that compares SHG members and non-members in PRADAN villages elsewhere finds that they differ

very little at the time that they enter the program.²⁰ We are in the process of collecting village-level demographic data and information on the credit and background characteristics of a random sample of non-members. We are also compiling weekly financial data for the groups in our sample. These data sets will facilitate a more careful comparison of members and non-members and will also allow us to look beyond survival to other measures of the financial success of groups and members.

20. Dewan and Somanathan (2007) study poverty targeting in the SHG program and find that while the program neglects the bottom tail of the income distribution, for the most part, participants to newly formed SHGs in Jharkhand differ very little from non-participants.

Comments and Discussion

Kenneth Kletzer: Baland, Somanathan, and Vandewalle present their first results from a survey of participants in SHGs set up in two adjoining districts in Orissa and one in Chhattisgarh by the NGO PRADAN from 1998 to 2006. This is a large survey involving approximately 1100 SHGs and 16,000 participating women that initiates a very interesting research agenda. The focus of this paper is on the dissolution of groups and member exit. The duration analysis identifies a few significant covariates for group longevity and member attachment and reveals some interesting patterns in the hazard rates. The surveyed SHGs were established in districts where a large share of the population belongs to the ST or the SC, and the authors emphasize the effects of caste composition of the SHGs on group attrition and member departures.

Group Dissolution

The first analysis is the nonparametric estimation of the hazard rates for group dissolution and participant exit. Differences between SHGs in the two study areas, Keonjhar and Raigarh, are evident in the variation of the hazard rates for group dissolution over the life of a group. The hazard rate for Raigarh is uniformly higher than for Keonjhar and is double peaked with the first peak occurring about one year from group formation. The hazard rate for Keonjhar rises over the lifetime of the group so that its peak is associated with groups formed at the beginning of the program.

One question raised by this observation applies to the parametric analysis as well. The sample period is the entire period of the program in these districts. There may be unobserved differences between SHGs started at the outset of the program and those that are formed later. The organization of later groups could be informed by experience from the earliest SHGs in these districts. Even though the time period is relatively short, the parameters in the hazard model estimation may be time varying because the program is expanding throughout the period.

The two local maxima for the hazard rates for survival of groups started in Raigarh suggest the possibility that some groups lack the characteristics

for success from the outset. As shown in table 7, groups that fail in Raigarh are much less likely to have made non-linked loans to members than groups that fail in Keonjhar (32 percent against 91 percent). In the data summarized, we cannot find out whether groups that fail quickly do so because the local population of interested participants lacks the ties, heterogeneity, and resources to realize mutual gains from collective saving and borrowing or the organization of these groups could be improved. For example, the groups dissolving early simply may not meet the threshold to obtain a linked loan or too many founding members are unable to meet savings requirements. Alternatively, these may be groups that require more guidance or are more susceptible to member conflict or discrimination against members. Why this is more pronounced in Raigarh might be a matter for policy even though it is probably not possible to explore it in a parametric estimation.

Group formation is a multi-lateral matching problem. PRADAN is setting up clubs and survival and participation depend on what the individuals bring to the group and can get out of the group. I think that it important to note that few groups fail quickly. The potential gains for members could be substantial even though the amounts borrowed seem so small. Even though the stated reasons for group failure indicate the importance of personal conflicts and leadership problems, it takes time for these to lead to group dissolution. Among the significant correlates of group survival in the parametric estimation of the hazard rate is the maximum education level of the group indicating the importance of basic skills. Another finding is that group fractionalization by caste is not associated with group failure although it raises the likelihood that a member leaves. The policy implication is that is important that some member can keep accounts.

It is hard to gain a clear picture of why groups fail without understanding the gains for the group. Most of the groups that failed did not obtain a linked loan (those that did, received a single loan), but three-quarters of the groups existing at the survey date received a linked loan and about two-thirds of those received a second linked loan (table 7). Similarly, unpaid loans and irregular savings are associated with group dissolution. Clearly, whether a group received a linked loan or dissolved are related outcomes of how well a group functions. However, the data for Keonjhar seems to show that groups that do not make it to a linked loan are able to make non-linked loans. What determines the receipt of a linked loan may be what determines the survival of the group. It could be that groups are failing to meet a threshold, so that it would be useful to understand why in the context of studying group survival. A clearer picture of group success or failure might be gained by studying the criteria for and determinants of receiving linked loans.

Individual Attrition

Turning to individual member attrition, the nonparametric estimates display an intuitive pattern. The hazard rate is largest in the first year of participation and generally declines thereafter. For example, figure 8 is consistent with the simple idea that some members cannot make the required savings from the outset and are unable to participate in a group savings program. The hazard rate for departure due to personal conflict displays a similar peak in the first year as the value of the match with the rest of the group is learned.

The estimation of the Weibull model considers how the net gains from belonging to the groups depend on individual characteristics. As emphasized by the authors, women who are separated, have children, and have relatives in the group are significantly less likely to leave the group. They are likely to have greater gains from attachment to the group and fewer conflicts in the family over financial participation in a SHG. Individual educational attainment and caste are also significant correlates with attachment to the group. The authors also note that concurrent local SHG are correlated with exit and about 20 percent of women who leave a SHG join another group.

A substantially lower percentage of members who departed groups received group loans or part of a linked loan than members who remained attached to a group (table 7). Only 14 percent of women who left groups in Keonjhar received group loans while 9 percent of those who left groups in Raigarh did. It could well be that a primary reason women leave groups is their inability to borrow from the group. The decision of the group not to lend to a particular member and her decision to leave the group are very likely related. The factors that determine whether a member receives a loan could be the same as the determinants of member exit. The proximate cause for leaving a group could be that the individual fails to receive loans she expected when she joined the group and observes other members receiving it. I expect that personal conflict, inadequate savings, or poor opportunities for using funds to be among the primary reasons for not receiving a loan. These are probably negatively correlated with education and family ties in the group. The same reasoning applies to the most frequent reason given for leaving a group, inability to reimburse a loan or difficulty in saving. The capacity to repay or save should also be correlated with education, marital status, and number of children.

My point is that member attachment is related to the outcomes for the individual woman when she is in the group. Characteristics of the individual or the match with the group (observed and unobserved) that make it less likely she will receive a loan or be able to save will also increase the likelihood that she leaves the group. In my opinion, the determinants of loan

receipt and saving by the individual in a SHG should be discussed together with the determinants of individual attachment to the group. I appreciate the authors' need to focus separate papers on different aspects of a survey collected at great effort and the reasonableness of addressing one question at a time. Even though causal links may be elusive, these outcomes are closely related so that reporting the analysis of member attrition only gives less information about member attachment and attrition than the survey appears to have to offer.

This suggestion applies to the analysis of group survival as well. It would be useful to know how important the inability to obtain a linked loan is for group dissolution and how group characteristics influence the capacity of the group to reach the threshold for receiving a linked loan. Thus, an alternative would be to study group dissolution with other group outcomes and member attachment along with the outcomes that indicate gains for individual women from being in the group.

In summary, this is a very interesting paper that investigates self-enforcing economic relationships in a highly disadvantaged population. The survey is impressive, and the econometric analysis allows a clear picture of the role of relationships, education, and caste for realizing gains from cooperation in saving and borrowing within the group and from the formal sector. I look forward to seeing the analysis of other outcomes from the survey data.

Esther Duflo: The world of microfinance in India is deeply divided. On one side, the microfinance institutions (MFIs), adhering to a "grameen style" model; on the other, self-help group (SHG), adhering to an "Indian style of microfinance." The division has deepened with the passions, growing more rancorous, far from a reasonable policy debate on the relative merits of two models of providing much needed financial services to poor women in rural areas.

Barred from collecting savings deposits by the Reserve Bank of India (RBI) regulations, the MFIs focus entirely on lending. Clients start with a loan of a few thousand rupees, to be repaid in weekly installments. Often they are supported by commercial banks, and they aim to achieve some commercial sustainability. They seek it through a combination of aggressive marketing, insistence on repayment discipline, and strong incentives for loan officers, both to find new clients and to ensure that the existing clients repay. Loan officers meet with each client group every week to collect repayments. This makes the servicing of MFI loans labor intensive and costly. Combined, these factors make for fairly high interest rates on MFI loans, presently between 12 percent and 25 percent.

The SHG rely on NGOs that organize groups of women, who start by saving together and are eventually linked to a bank. The bank then provides them with a savings account or a loan or both. After the initial handholding period, lasting up to a year or longer, the groups are left essentially alone. The group-formation costs are subsidized, by the World Bank, large NGOs such as Care and Oxfam, and by the government itself, to name a few. When a SHG is linked, one of the women is made responsible for collecting and forwarding the group's repayments to the bank. So, unlike the MFI, the linking banks do not bear the high labor costs of managing small loans. Combined with the implicit subsidy linking banks receive for lending—a benefit the MFI also receive—this makes for lower costs and lower interest rates on SHG loans.

This much is known. But with neither the MFI nor the SHG particularly transparent about their operating practices, little else is. It was perhaps because there was not much independent information to adjudicate the claims of either side that the debate began to deteriorate, both sides trading accusations. Proponents of the SHG model, among them the RBI, have argued that MFI rules are not transparent, their lending strategies are too aggressive, they do not conduct enough background checks (indeed the MFI got into major trouble last year when the RBI started enforcing the “know your customer” rules), and many of MFI borrowers end up being over-indebted. For their part, proponents of the MFI model have pointed out that the SHGs in fact lend very little, and so they cannot really be considered a substitute for providing improved access to financial services to poor women in rural areas. In early 2006, this back and forth issued in what is now called the “Andhra Pradesh crisis.” At the behest of local politicians adhering to SHG model, the local media accused MFI of hounding over-indebted clients to suicide. MFI accused the government of outright corruption. The police raided the offices of two MFI. The fray went national, then international. Many broadsides were written. But, apart from an excellent report by Prabu Ghate (cited in the reference list of this paper), there was very little dispassionate analysis of the claims on either side.

Given the importance of microfinance, the passions are not surprising. What is surprising is that both sides have gone on with so very little information. Efforts to document what is really going on either side would be invaluable. The Center for Microfinance, at IFMR, is spearheading an effort to study the MFI. And already valuable evidence on interest rates, competition practices, and the level of information of their customers has emerged from their work. But until now there was almost no complimentary work on the SHG. As one of the first studies on SHG, this paper is particularly welcome.

The paper exploits a unique dataset: the authors have conducted a survey of over 1,000 SHGs started by the NGO PRADAN in two districts in Orissa. About 10 percent of these groups are now defunct, and some of the members of the existing groups have left. The authors are primarily interested in what explains which groups survive and which members stay, but their data reveal many other interesting things about these SHGs.

Of particular interest is the data on bank linkages. This data sheds some light on whether SHG are in fact primarily lending groups. On this, my interpretation of the data presented in table 8 differs slightly from that of the authors. Viewed from the perspective of a woman considering whether or not to join an SHG, we should calculate the average loan received by a bank as the product of three quantities—the probability that the group is ever linked, the proportion of client from these groups who get a share of these loans, and the amount received in total for the groups linked group. Using the data in table 8, this calculation comes to Rs. 2,318 (68 percent* 83 percent* 4108). This is over the entire lifetime of a group, which, according to the data in table 4, is 1076 days, or almost exactly 3 years.¹ That is, Rs. 786 a year on average. Alternatively, since the average group has existed for 685 days after the linkage, we could also say that a client joining an SHG knows that she will get no loan for a year, and after that a loan of e Rs. 1,000 a year on an average is expected.

This may not be negligible, but is indeed much lower than what the MFI lend. MFI loans in rural areas are usually around Rs. 6,000 in the beginning, and the amount increases after the first loan. Strikingly, it is also much lower than the figure of Rs. 4,000 per member per year reported by Sadhan for lending by the SHG (Sadhan is the association of microfinance organizations). One possibility is that Orissa is special. The other is that Sadhan reports a number akin to the number reported by the authors in the fifth row of table 8, which is the amount lent per member per linkage, for borrowing members and for the duration of the linkage. A major virtue of the paper is that it shows very clearly that this is not the only relevant piece of information. In this data, almost half (44 percent) of the SHG members never borrow. This is important for calculating the implicit subsidies that go to the SHG sector. When we compute the cost of creating and maintaining a group, it needs to be compared with the amount of money that is actually

1. Note that both the numerators and the denominators of this expression are censored: some groups are still alive, and those groups may get more loans in the future. The ratio would still be right under the assumption that the groups that are still alive have reached some sort of steady state, in which they borrow at regular intervals. The fact that they do not borrow for an entire year when they first start suggest that the second calculation (the amount borrowed per year in expectation after the initial screening year) is more robust.

lent, including the fact that lending takes time to start, and that many people will end up never borrowing.

Given these numbers, if we take seriously the point made by the authors that microfinance is the primary reason why these SHGs exist, another striking fact of the paper is how many of the groups survive and for how long. The hazard rate estimated in the paper suggests that only 25 percent of the clients will have left after eight years. This seems to be incredibly low. The attrition rates of microfinance organizations are not well known, but in one of the dataset I had access to, the retention rate was considered particularly high, with 95 percent of clients renewing their first loan. Even if the attrition rate stayed that low in subsequent loans, it would imply that there would be 63 percent of the original clients remaining, if all the centers of this MFI stayed alive. The SHGs seem to manage at much higher rates of persistence despite, at first glance, doing much less.

The puzzle we are left with is, then, what explains these high retention rates among SHG. There are several possibilities. First, may be even an average of Rs. 1,000 a year from a bank is sufficient to justify continued membership. The authors mention that “membership” is defined as regular attendance to the group meeting but does not specify regularity. One cost of continuing participation in MFI is that clients must attend weekly meetings and must also borrow shortly after their first loan is entirely reimbursed. It is possible that SHGs meet less often and give more flexibility when a member wants to borrow, making it worthwhile for the member to stick around until the need arises. One possible sign that the possibility of borrowing does matter is that the defunct groups are much less likely to have ever been linked than those that still exist (15 percent versus 74 percent in one district, and 23 percent versus 74 percent in the other). This is not only a mechanical effect of time (they did not have the time to be linked), since the average duration of the defunct groups is still well over a year. It may of course be that dysfunctional groups are not linked and do not survive. But there is at least some indication here that members may not stick around in groups that are not linked to banks.

Second, SHG members also lend to each other. The authors calculate that they had lent on average Rs. 2,220 to each member in the last year. Given that 83 percent of the members had borrowed, and these loans come from the own funds of the groups, these must be short duration loans, or the groups must be saving large amounts. SHGs thus appear to work like rotating savings and credit associations (ROSCAs) or like an insurance pool. This role appears to be quantitatively more important than the bank linkage. It would be fascinating to know a bit more how this is working.

Third, and related, SHG may be valued by their clients because they offer a safe savings opportunity, even for small amounts. In his other works Baland has shown that ROSCAs may be used by women to protect their savings against their husbands. It may be the case here, too, or more generally, that the SHG may provide a way to save safely in environments where such opportunities are very rare. Moreover, the rules imposed by the groups may help women commit themselves or their family to a regular savings plan. Ashraf, Karlan, and Yin have shown that such commitment plans do help people save more, and that many people are willing to make such commitment as a way to help themselves reach their goals. MFIs provide a similar commitment structure for someone who wants to save to make a large purchase, except that they get to make the purchase when they first join and are then committed to save. But it comes at the cost of a high interest rate. For many people who are not in any particular hurry to obtain the item they save for, the SHGs may be a much cheaper way to save.

The current paper focuses on characterizing which groups survive and which members exit the group. This is useful. It shows that generally the member who exits is not someone who finds better opportunity elsewhere, but rather is someone who does not find an appropriate place in a group or someone whose group proves unsustainable. An exciting area of future research would be to reframe the question a little, and provide more evidence on why groups persist despite the low levels of borrowing from bank. A richer description of what these groups do for their clients would be fascinating. It would also be interesting to know whether SHG clients continue to borrow from MFI or moneylenders, or whether the SHG does address their needs for fund. This paper is a great first step in learning more about SHGs. One hopes that it will pave the way for many more in the same vein.

General Discussion

T.N. Srinivasan was concerned that the survival functions seemed to assume that survival was not affected by the sheer passage of time; to him it seemed likely that duration itself would be a determinant of survival. Anjini Kochar concurred, believing that the benefits expected by group members would be related to elapsed time, and that in this sense group membership and attrition, were endogenous to the group.

Pranab Bardhan, like Esther Duflo, was struck by the relatively low attrition rates. He speculated that this could reflect self-selection in the formation of the group. Group characteristics need not be a random reflection

of the larger population. Bardhan also referred to work that he was currently doing on predictors of success of groups involved in collective management of environmental resources such as forests and fisheries. His own attempt to capture the role of social heterogeneity had not been successful. He felt that the officially-defined sub-caste categories used in collecting the data were simply too broad, and he believed that some finer classification (perhaps based on lineage) was needed.

Drawing further on his own work, Bardhan believed that it was important to examine the size of the group as a predictor of successful collective action. Theory was ambiguous on this point, while one might assume that smaller groups would be more cohesive, larger groups could be more effective in lobbying upper social layers. Other factors that he had found important were exit opportunities (proxied, for example by urban connections) and economic inequality. Finally his work also suggested that it was very important to know who defines the rules of functioning of the group. If the rules are defined by officials outside the group then group members do not feel bound by them and may indeed take perverse pleasure in violating them. In the present case, it would be useful to know which group rules, if any, were specified by, say NABARD.

Responding to Esther Duflo's comment on relatively small loan sizes Dilip Mookherjee reported on the work that he and Bardhan had done on loans in West Bengal under the government's Integrated Rural Development Programme (IRDP). While average loan sizes were only of the order of Rs. 900, they still appeared to have a significant impact on farm productivity in later years. Turning to the paper, Mookherjee concurred with those who felt that the interesting object of the inquiry was less why people left groups and more what induced them to come together in the first place. He cited his work with Banerjee, Munshi, and Ray with respect to the composition of sugar cooperatives in Maharashtra, where the relationship between heterogeneity, fractionalization, and survival was highly non-linear, depending on the balance of power between the larger and smaller landowners in the cooperative.

Mr Narendranath provided the perspective of PRADAN, the NGO that had organized the SHGs that were the subject of the survey. He noted that the formation of these groups was very far from being spontaneous, and depended on significant and sustained outside intervention. He noted that in the Keonjarh district, for example, some of the tribals remained very forest dependent and practiced a form of farming which was close to slash and burn. Their entry into the monetary economy was still recent and tenuous; many of their transactions still took place through barter. This needed to be

taken into account in assessing the volume of credit activity. PRADAN saw its role as much wider than mere provision of credit; the issue was one of providing overall orientation and capacity building so that credit could be responsibly used. It was in this context that PRADAN organized exposure visits so that the groups could see how other, successful groups functioned. He also attributed the relatively low attrition rates to the amount of hand-holding that PRADAN was willing to provide. His hunch was that in areas of India with more settled agriculture and an established tradition of SHGs, such as the south, attrition rates would indeed be higher.

Ritu Anand noted that subsidy from NABARD was only a part of the story, and not necessarily the largest part. Her employer, the State Bank of India (SBI), was the largest provider of funds to SHGs in the country, and the bulk of the subsidy came from cross-subsidy from other activities, rather than through refinance by NABARD. She also noted that loan size was related both to level of individual saving, and to repayment record by the individual. As such, loan and savings size could be expected to grow over time.

Abhijit Banerjee thought the small size of loans was a sign that the resources were not being used for asset creation: it was difficult to buy half a cow. In his view, it was also important to know who in the SHG made the lending decisions; it could be that the tribals left the SHGs because their loan requirements were not being met. He was also struck by the importance of at least one educated member in each group to conduct the minimal accounting functions.

Willem Buiters, the session chair, warned against assuming that dissolution of the group was necessarily a sign of failure. In this regard he wanted to know both what happened to members from dissolved groups, and whether it was possible for a newcomer to join an already established group. An official of the SBI confirmed that in his experience many of the smaller loans were taken to finance consumption. In his view, the major difference between the SHG model and its many government supported predecessors was the focus on group responsibility for repayment. This had resulted in far better repayment records and therefore greater sustainability than earlier schemes.

Anushree Sinha reported on work underway at NCAER that examined the reverse issue, namely factors explaining the sustainability of SHGs. Initial findings also did not suggest that caste was a major factor in explaining longevity; such early findings suggested that it was important to get information from several members of the group, not just one or two. In her experience it was very difficult to get accurate information on groups that

had dissolved. Finally, she did believe that when individuals left groups, some at least migrated to other government credit programs.

In her response, Somanathan noted that this was the first paper from a large dataset that was still being explored, and that some of the relevant information was still being entered. As Kletzer had correctly noted, the goal of this paper was to look carefully at one phenomenon, namely survival, which could only be explored by a dataset of this kind. Accordingly, the focus of the present paper was less on the benefits derived from participation in SHGs, but rather on the interplay between the group and the individual in duration and survival.

Within this limited scope, she agreed with many of the points made by the two discussants, and by the other participants. With respect to individual attrition she accepted that, in principle, the decision to stay with or leave a group was an individual decision, and in that sense might be seen as “optimal” from the individual’s perspective. But she also believed that there were circumstances under which the composition and behavior of the group impacted on the individual decision to leave, and she was concerned that it was the weaker members of the groups that tended to exit. With respect to groups as well, she cautioned against reading too much into the average numbers. Where groups were largely composed of primitive tribes, the failure rate was much higher than the norm. Such outliers were not well caught by regression equations but were important from a social policy point of view. Equally, for less advantaged groups such as these, she did not believe that SHGs were a transition to more independent forms of financial linkage; it was more probable that people dropped out of formal finance completely.

Somanathan also clarified how the data had been collected. Information had typically been gathered from each member in the group; where members had left (for example, to get married in another village) the remaining members had been queried. In order to ensure full capture of group attrition, the areas surveyed had deliberately been selected as ones where PRADAN had begun its activities relatively recently and registers were complete. Equally in judging whether a group was “alive” a range of activities were tracked. Village level data had been gathered; when available, it could be used to judge how different groups were from the village population as a whole. The rules of the group were specified by the group itself, with some support from PRADAN. She also clarified that 20 percent of members who left a given group joined another group. So the figures for member exit covered those who had completely exited from the system.

References

- Armendariz de Aghion, Beatriz, and Jonathan Morduch. 2005. *The Economics of Microfinance*. Cambridge, MA: MIT Press.
- Banerjee, Abhijit Lakshmi Iyer, and Rohini Somanathan. 2008. "Public Action for Public Goods." In *Handbook of Development Economics*, volume IV, edited by T. Paul Schultz and John Strauss pp. 3118–54. Elsevier: UK.
- Banerjee, Abhijit, and Rohini Somanathan. 2007. "The Political Economy of Public Goods: Some Evidence from India." *Journal of Development Economics* 82 (2): 287–314.
- Basu, Priya, and Pradeep Srivastava. 2005. "Scaling up Microfinance for India's Rural Poor." *World Bank Policy Research Working Paper 3646*.
- Bell, Clive. 1990. "Interactions between Institutional and Informal Credit Agencies in Rural India." *World Bank Economic Review* 4 (3): 297–327.
- Burgess, Burgess, and Rohini Pande. 2005. "Can Rural Banks Reduce Poverty? Evidence from the Indian Social Banking Experiment." *American Economic Review* 95 (3): 780–95, June.
- Dewan, Isha, and Somanathan Rohini. 2007. "Poverty Targeting in Public Programs: A Comparison of some Non-parametric tests and their Application to Indian Microfinance." Working Paper, Delhi School of Economics.
- Ghate, Prabhu. 2007. *Indian Microfinance: The Challenges of Rapid Growth*. New Delhi: Sage.
- Harper, Malcolm. 2002. "Self-help Groups and Grameen Bank Groups: What are the Differences?" In *Beyond Micro-Credit: Putting Development Back into Micro-Finance*, edited by Thomas Fisher and M. S. Sriram, pp. 169–98. New Delhi: Vistar Publications.
- Karmarkar, K. G. 1999. *Rural Credit and Self-Help Groups: Microfinance Needs and Concepts in India*. New Delhi: Sage.
- Karlan, Dean. 2007. "Social Connections and Group Banking." *Economic Journal* 117 (517): F52–F84.
- Klein, John P., and Melvin L. Moeschberger. 2003. *Survival Analysis*. New York: Springer.
- Nair, Ajay. 2005. "Sustainability of Microfinance Self-Help Groups in India: Would Federating Help?" World Bank Policy Research Working Paper 3516.
- National Bank for Agriculture and Rural Development. 1992. *Guidelines for the Pilot Project for Linking Banks with Self Help Groups*. Circular Issued to all Commercial Banks. Mumbai. Available at www.nabard.org
- . *NABARD Annual Report, 2005–2006*. Mumbai, www.nabard.org.
- Reserve Bank of India. 1991. *Improving Access of Rural Poor to Banking-Role of Intervening Agencies-Self Help Groups*. Circular issued to all Scheduled Commercial Banks. Mumbai. Available at www.rbi.org.in.
- . 1999. *Swarnajayanti Gram Swarozgar Yojana*. Circular issued to all Scheduled Commercial Banks. Mumbai. Available at www.rbi.org.in.

Reserve Bank of India. 2005. *Internal Group to Examine Issues Relating to Rural Credit and Microfinance*. Mumbai. Available at www.rbi.org.in.

———. 2006. *Handbook of Statistics on Indian Economy*. Mumbai. Available at www.rbi.org.in

———. 2007. *Annual Policy Statement for the Year 2007–2008*. Mumbai. Available at www.rbi.org.in.