



*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

*No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.*

## Performance of women dairy self-help groups in Rajasthan: a multistage principal component analysis approach

Ritu Rathore<sup>1\*</sup>, Ravinder Malhotra<sup>1</sup>, Anil Kumar Chauhan<sup>1</sup>, and Rajendra Jangid<sup>2</sup>

<sup>1</sup>DES&M, ICAR-National Dairy Research Institute, Karnal 132 001, Haryana

<sup>2</sup>Swami Keshwanand Rajasthan Agricultural University, Bikaner 334 006, Rajasthan

\*Corresponding author: riturathore1012@gmail.com

**Abstract** This study evaluates the performance of 80 dairy self-help groups (SHG) run by women in the Baran and Jhalawar districts Rajasthan based on secondary data since inception to 2018. We use as indicators their institutional, savings, loaning, repayment, and income-generating performance. We used multistage principal component analysis to construct an index for each of the indicators and then a composite performance index. The performance of most SHGs was average. The empirical evidence suggests that training programmes should be organized at the village and the channelization of money by group members should be monitored continually.

**Keywords** Dairy, performance, self-help group (SHG), composite performance index (CPI)

**JEL codes** G22, G23

In India, 21.2% of the population lives on less than USD 1.90 a day (World Bank 2016). Poverty has several factors, and the most obvious is insufficient household income (Khawari 2004). Since independence, the Government of India (GoI) has made several efforts to solve the problem of poverty in rural areas, but the result has not been as desired. The 17 Sustainable Development Goals (SDGs) of the United Nations (UN) set poverty alleviation as the prime goal, and the GoI is focusing on achieving the SDGs in the next few years and doubling farmer income. To meet these goals, the GoI can create assets or more opportunities for wage labour. As a strategy, asset creation is more sustainable than wage labour, although credit is a limiting factor; 'the poor stay poor not because they are lazy but because they have no access to capital' (Paramashivaiah 2015).

In this light, the idea of microfinance using self-help groups (SHG) was developed; this credit-plus approach gives the poor easy and continued access to credit and develops the saving habit among them (LOGOTRI 2006), and the success of microfinance depends largely

on the successful functioning of SHGs. Microcredit through SHGs had a modest beginning in India; now, however, it has become 'macro' in approach (Bharamappanavara 2013; Hassan 2002), and the National Bank for Agriculture and Rural Development (NABARD) considers the SHG-bank linkage model a core strategy for rural development.

Women are an integral part of the economy, but their labour force participation rate (LFPR, 20.1%) is less than 33% of that of males (76%). Women remain the poorest of the poor; they cannot break the glass ceiling because they lack knowledge, finance, power, and opportunities. In India, SHGs provide women these, empowering them and making them financially stable. Members take loans from SHGs primarily to set up dairy enterprises because these provide a regular, year-round income.

The National Family Health Survey 4, 2015–16 (NFHS) ranks Rajasthan 31<sup>st</sup> out of 35 states and union territories on women empowerment. Rajasthan has 83,054 SHGs, but 13,136 (15.8%) are defunct, and the coverage is low in 23 of the 33 districts (Centre for

Microfinance 2013–14). This paper attempts to study the performance of women dairy SHGs in Rajasthan.

## Materials and methods

We selected the Baran and Jhalawar districts of Rajasthan for this study because these 2 districts have the highest number of dairy SHGs in the state. We randomly selected 2 blocks from each district and 20 SHGs from each block, 80 SHGs in all.

To assess their performance, we collected secondary data on their structure and function from their records since inception until 2018, and we analysed the data using five performance indicators: savings performance; loaning performance; repayment performance; income-generating activities performance; and institutional performance. We evaluated institutional performance using six sub-indicators: book-keeping; trainings attended out of total trainings conducted; SHGs with bank linkage; share of dropouts in total members; meetings conducted out of total meetings scheduled; and attendance percentage in meetings.

We measured saving performance by actual savings per year (cash holdings and bank balance adjusted for intra-group loans, non-repaid outside loans, and profits from income-generating activities) over planned savings per year (depending on the amount and frequency of saving amount decided earlier by the group members; therefore, it was calculated by multiplying the saving contribution, monthly frequency, number of members, and number of months since inception).

We measured the loaning performance of a group by calculating its internal and external loaning indicators. We measured the intra-group lending performance by the percentage of members who have received the internal loan in a year. We captured the performance of external credit by calculating the ratio of external credit per year to the actual group savings per year; the performance of external credit indicates the access to outside credit and its order of magnitude.

To measure repayment performance, we calculated the internal repayment rate per annum (between the credit group and its members) and the external repayment rate per annum (between the credit group and its lenders) using the formula suggested by Nirmala (2006):

$$\text{Repayment rate (per annum)} = \left[ \frac{\text{Amount repaid}}{(\text{Credit} + \text{Interest})} \right] \dots(1)$$

To measure the performance of income-generating activities, we constructed an income diversity index using the inverse Herfindahl index, also called the Herfindahl–Hirschman index (HHI), using the formula

$$\text{HHI} = 1 - \text{HI} = 1 - \sum_{i=1}^n P^2 \dots(2)$$

where, P is the ratio of each income source to total income.

## Composite performance index

We constructed the overall composite performance index (CPI) to understand and compare the performance of the SHGs; we used the multistage principal component analysis (PCA) method to construct an index for each of the five performance indicators. Savings performance and income-generating activity comprise a single indicator; therefore, we treat their normalized values as their indices.

We used the cumulative square root frequency method to group the SHGs into poor, average, and good (Dalenius and Hodges 1957). We ranked the SHGs by their CPI value. To construct the CPI, we first eliminated the scale bias in indicators and then assigned weights. The units differ across indicators; to avoid scale bias in the results, we converted these into a standard unit by normalizing each indicator using the formula

$$\text{Normalized value of variable} = \frac{\text{Actual value} - \text{Minimum value}}{\text{Range}} \dots(3)$$

We used the PCA to assign weights to individual indicators. To obtain the factor loadings and eigenvalues, we ran the PCA using Eviews. We identified the initial eigenvalues above one. According to the number of eigenvalues above 1, the same numbers of components were extracted for each variable. Now considering only absolute values, the extracted component matrix was multiplied by the eigenvalues, that is, the first eigenvalue was multiplied with the first extracted component column, the second eigenvalue with the second extracted component

column, and so on. To get the weight for each indicator, we added the values obtained for that particular indicator; similarly, we obtained the weights for the other indicators. We obtained the grand total weight by adding the weights. We multiplied the normalized value of each indicator with its respective weight. Then we divided the sum of each multiplication by the grand total weight to obtain the index. Hence, the formula used to determine the index was

$$I = \frac{\sum_{i=1}^n X_i \left[ \sum_{j=1}^n |L_{ij}| E_j \right]}{\sum_{i=1}^n \left[ \sum_{j=1}^n |L_{ij}| E_j \right]} \quad (\text{NEUPA 2009}) \quad \dots(4)$$

where,

$I$  is index,

$X_i$  is the normalized value of the  $i^{\text{th}}$  indicator,

$L_{ij}$  is the factor loading value of the  $i^{\text{th}}$  variable on the  $j^{\text{th}}$  factor, and

$E_j$  is the eigenvalue of the  $j^{\text{th}}$  factor.

We ranked each SHG based on the index assigned. We compared the index of an SHG with the maximum value of 1 and minimum value of 0.

By following these steps, we obtained an index for each set of indicators: institutional index (II), savings index (SI), lending index (LI), repayment index (RI), and income-generating activity index (IGI). We ran the PCA on these five indices treating each index as one variable. We repeated the steps to get the overall CPI.

## Results and discussion

### Institutional performance

Table 1 presents the sub-indicators used to evaluate institutional performance. In Rajasthan SHGs maintain registers for meetings, attendance, savings, loans,

repayments, monthly reports, and a simple member diary, and the SHGs in the study area maintained almost all the registers regularly. We measured book-keeping by the share of registers an SHG maintained; they maintained 95.54% of the registers regularly.

Not all the members had the skills necessary to run an SHG; therefore, Rajasthan Grameen Aajeevika Vikas Parishad (RAJEEVIKA) conducts training programmes—on animal maintenance, dairy product making, *samuh sakhi* (literally ‘group friend’), *pashu sakhi* (literally ‘animal friend’), stitching, register maintenance, beauty parlor, and for opening small businesses—for all the SHG members. But they enrolled for and completed only 43.33% of the programmes in a year on average, because, the members report, most of the trainings were conducted at the district level, and most married women found it difficult to attend.

The results reveal that 77.5% of the SHG accounts were linked with a bank for outside financial assistance. The data in Table 1 shows, further, that 5.43% of the members left a group on average. The dropouts cited health issues, family problems, migration due to marriage, inability to attend meetings, and inability to meet the savings requirements as reasons. The low dropout rate shows that members consider the group important.

The SHGs arrange regular group meetings to discuss and decide aspects like monthly savings, income, credit requirement, and group management. The groups in the study area met once to four times a month and, on average, 91.74% of the meetings scheduled in a year were conducted. We measured attendance by the percentage of scheduled meetings attended by the members; they attended 98.01% of the meetings on average. The members reported that attendance was

**Table 1 Institutional performance of self-help groups**

	Variables	Average
1	Book keeping	95.54%
2	Trainings attended out of total trainings conducted	43.33%
3	SHGs with bank linkage	77.50%
4	Share of dropouts in total members	5.43%
5	Meetings conducted out of total meetings scheduled	91.74%
6	Attendance in meetings	98.01%

Source Estimated by authors

regular and high because the meetings were held in the evening, when members were relatively free of household chores.

### Savings performance

Savings is a mandatory feature and an important function of SHGs. By inducing a habit of thrift, SHGs inculcate financial discipline. When an SHG is formed, its members decide their contribution and the frequency of saving per month. The amount of savings contribution depends on the age and saving capacity of group members and on the group size. The saving frequency of SHGs in the study area varied from once to four times a month.

The scenario on initial planned savings and the change in planned savings is presented in Table 2. At the time of formation, the saving planned per member per month varied from INR 40 (lowest) to INR 200 (highest): 9 of the 80 SHGs (11.25%) planned to save INR 40; 57 (71.25%) INR 80; and the rest 14 (17.5%) SHGs INR 100. But after 12 months all the SHGs raised the contribution: About 57 SHGs (71.25%) which had planned to save INR 80 raised the contribution to INR 200; 7 of the 9 SHGs (8.75% of 80) which had planned to save INR 40 raised it to INR 100 and 2 SHGs (2.5% of 80) to INR 200; 13 of 14 SHGs (16.25% of 80) which initially saved INR 100 doubled the contribution

**Table 2 Distribution of self-help groups according to their planned savings**

	Savings amount (INR/member/month)	Number of groups
A	Initial planned savings	
1	40	9 (11.25%)
2	80	57 (71.25%)
3	100	14 (17.50%)
	<b>Total</b>	<b>80 (100.00%)</b>
B.	Change in planned savings	
1	INR 40 to INR 100	7 (8.75)
2	INR 40 to INR 200	2 (2.50)
3	INR 80 to INR 200	57 (71.25)
4	INR 100 to INR 150	1 (1.25)
5	INR 100 to INR 200	13 (16.25)
	<b>Total</b>	<b>80 (100.00)</b>

Source Estimated by authors

(Figures in parentheses indicate percentage of 80 (total))

to INR 200 and 1 SHG (1.25% of 80) increased its saving to INR 150. This increase shows that over a year, group members realized that they needed to save to improve their economic situation and that SHGs are flexible. Mallikarjuna (2004) reports a similar increase among SHGs in Tamil Nadu.

We worked out the actual savings of SHGs per year over planned savings per year to judge their savings performance (Table 3). The annual planned saving of an SHG in the study area averaged INR 23,708, but the actual saving was only INR 21,330; a member saved INR 1,885 per year on average. The ratio of actual savings to planned savings was 0.90, which implies that the SHGs were able to save only 90% of their committed savings; Datta and Raman (2001) report that deferred savings, and the inability to deposit monthly savings, led to the leakage. In our study area, too, we observed that the savings meant for the SHG was used to pay for family functions and medical emergencies.

**Table 3 Saving performance of self-help groups**

Variables	Average
1 Actual saving per member per year	INR 1,885
2 Actual saving per SHG per year	INR 21,330
3 Total planned saving per SHG per year	INR 23,708
4 Actual saving over planned saving (ratio)	0.90

Source Estimated by authors

The savings performance of an SHG changes if the size of an SHG changes or the average age of its members changes. To observe these changes, we distributed the ratio of actual saving to planned savings across SHG age and size (Table 4). Larger and older groups performed better, because the peer pressure and support is high, and the group members deposit their contribution on time. Older groups are more consistent because their members understand the importance of savings. Also, older groups were more experienced; their productivity increased with time and helped them to save regularly.

### Loaning performance

We analysed the data on internal and external loaning (Table 5). An SHG in the study area disbursed INR 109,527 of internal loans a year on average, 79.96%



**Table 4** Ratio of actual savings to planned savings across size and age of self-help groups

	SHG size (number)	Average value	SHG age (years)	Average value
1	Small (8–9)	0.81	Small (<5)	0.85
2	Medium (10–12)	0.86	Medium (5–6)	0.90
3	Large (13–16)	0.93	Large (>6)	0.95
	<b>Overall</b>	<b>0.87</b>	<b>Overall</b>	<b>0.90</b>

Source Estimated by authors

**Table 5** Loaning performance of self-help groups

	Particulars	Average value
A	Internal loan	
1	Internal loan amount per SHG per year	INR 109,527
	a. Income generating loan	79.96%
	b. Non-income generating loan	20.04%
2	Internal loan amount per member per year	INR 10,645
3	% of members received internal loan per SHG	90.44%
B.	External loan	
1.	External loan amount per SHG per year	INR 145,139
2.	External loan over group savings (ratio)	1.26

Source Estimated by authors

income-generating loans and 20.04% non-income-generating.

Income-generating loans were taken for dairy farming; agriculture and horticulture; making achar, papad, and pattal-duna; kirana store; beauty parlor; and packaging products. Non-income-generating loans were taken for consumption (debt repayment, education, expenditure on medical emergencies and on marriages and other social functions).

About 90.44% of the SHG members received internal loans from their respective SHGs, which implies that the loans were well distributed among the group members—the loan outreach was good. This result is in line with the results of Feroze and Chauhan (2010) but much higher than in Verhelle and Berlage (2003), which report that internal loans had an outreach of only 42%.

An SHG received loans of INR 145,139 per year on average from the banks (Table 5). The ratio of external loan to group savings was 1.26:1, substantially different from the NABARD recommendation (4:1). Some researchers reported the credit to group saving ratio of

as low as 2:1 (Madheswaran and Dharmadhikary 2001; Mallikarjuna 2004) to as high as 6:1 (Verhelle and Berlage 2003).

### Repayment performance

The members reported that the repayment schedule was 1 year for internal loans and 2–3 years for external loans, depending on the size of the loan. After taking a loan the SHGs generally paid the first installment in the first month but, based on mutual understanding, the banks provided a gestation period of 2–3 months. We calculated the internal and external repayment rates (Table 6). The internal loans disbursed averaged INR 109,527 per annum and the members repaid INR 88,196 per annum. The external loans totalled INR 142,415 per annum and the members repaid INR 132,038 per annum. The repayment rate of internal loans averaged 79.14%, substantially lower than for external loans (90.33%) (Table 6), and several researchers report the same results (Datta and Raman 2001; Borbora and Mahanta 2001; Madheswaran and Dharmadhikary 2001; Nedumaran et al. 2001; Puhazhendi and Badatya 2002; Mishra 2002; Feroze

**Table 6 Repayment performance of self-help groups**

	Variable	Average
	Internal repayment performance	
1	Internal group loan disbursed per annum	INR 109,527
2	Internal loan repaid per annum	INR 88,196
3	Internal repayment rate (%)	79.14%
	<b>External repayment performance</b>	
4	External group loan disbursed per annum	INR 142,415
5	External loan repaid per annum	INR 132,038
6	External repayment rate (%)	90.33%

Source Estimated by authors

and Chauhan 2010). The external repayment rate is high probably because banks penalize defaulters heavily. In the case of internal loans, however, the group members consider the reasons for default and agree or disagree to levy a small penalty.

#### Income-generating activities

We constructed an income diversity index to evaluate the income-generating performance of the sampled SHGs in the study area; they generated about INR 56,124 per year, and the income diversification index of an SHG averaged 0.11.

#### Composite performance index

We constructed a CPI to judge the overall performance of the sampled SHGs in the study area. We ranked the 80 SHGs on all the performance indicators based on the indices (Annexure A1): 28 SHGs (35%) performed poorly and 15 (18.75%) performed well; 37 SHGs (46.25%) were average performers (Table 7). A study by Nedumaran et al. (2001) in Tamil Nadu reported that 47% of the SHGs were high performers, and Feroze

and Chauhan (2010) found that about 46.67% of the SHGs in Haryana were average performers.

#### Suggestions and conclusions

The paper examined the institutional performance of dairy SHGs run by women in Rajasthan and it finds that their performance was good. RAJEEVIKA organized many training programmes, but the SHG members attended only a few, on average, because the trainings were organized at the district level; if these programmes are held at the village level, more housewives can participate.

The saving contribution by SHG members was satisfactory, but their actual savings were less than the planned savings. Placing a check on the channelization of money by group members is necessary. The outreach of internal loan was good. The external loans received by SHGs was substantially different from the NABARD guideline.

The repayment performance of SHGs for internal and external loans was satisfactory; each SHG financed about two income-generating activities. On the basis of the overall CPI, the performance of most SHGs was average. Simple corrective measures like capacity building and other sensitization programmes are needed to improve their performance; the SHGs performing well need timely monitoring, so that they do not falter; and RAJEEVIKA should pay special attention to the SHGs performing poorly.

#### Acknowledgements

This paper is part of the study conducted by the author towards partial fulfillment of the PhD degree

**Table 7 Distribution of self-help groups according to composite performance index**

Performance Category	Overall
Poor (<0.53)	28 (35.00)
Average (0.53–0.62)	37 (46.25)
Good (>0.62)	15 (18.75)
<b>Total</b>	<b>80 (100.00)</b>

Source Estimated by authors

(Figures in parenthesis indicate percentage to their respective total)

programme in agricultural economics at ICAR-National Dairy Research Institute, Karnal, Haryana. The dissertation is titled 'Performance of women dairy self-help groups and its impact on socio-economic status of members in Rajasthan'. The author is grateful to the institute for financial help during the degree programme.

## References

- Bharamappanavara, S C. 2013. Growth and outreach of self-help groups microcredit models in India: a literature insight. *International Journal of Social and Economic Research* 3 (1): 1–14. doi:10.5958/j.2249-6270.3.1.001
- Borbora, S, and R Mahanta. 2001. Micro finance through self-help groups and its impact: a case of RGVN-CSP in Assam. *Indian Journal of Agricultural Economics* 56 (3): 449.
- Dalenius, T, and J L Hodges. 1957. The choice of stratification points. *Scandinavian Actuarial Journal* 3 (4): 198–203. <https://doi.org/10.1080/03461238.1957.10405970>
- Datta, S K, and M Raman. 2001. Can heterogeneity and social cohesion coexist in self-help groups: an evidence from group lending in Andhra Pradesh. *Indian Journal of Agricultural Economics* 56 (3): 387–400. <https://doi.org/10.22004/ag.econ.297827>
- Feroze, S M, and A K Chauhan. 2010. Performance of dairy self-help groups (SHGs) in India: Principal component analysis (PCA) approach. *Indian Journal of Agricultural Economics* 65 (2): 308–19. <http://ageconsearch.umn.edu/record/204684/files/08-Sheik%20Mohammad%20Feroze.pdf>
- Hassan, M Kabir. 2002. The microfinance revolution and the Grameen bank experience in Bangladesh. *Financial Markets, Institutions & Instruments* 3 (1): 205–265. <https://doi.org/10.1111/1468-0416.00051>
- Jagannath, P, and S Singh. 2014. *The transformational change: by the community, with the community, for the community. Annual report 2013-14*. Jaipur: Centre for Microfinance. <http://cmfraj.org/AnnualReport2013-2014.pdf>
- Khawari, A. 2004. *Microfinance: does it hold its promises?* HWWA Discussion Paper 276. Germany: Hamburg Institute of International Economics. <https://www.econstor.eu/obitstream/10419/19248/1/276.pdf>
- LOGOTRI. 2006. *Building sustainable finance system: a catalyst for the poor, LOGOTRI Research Study*. Society for Development Studies.
- Madheswaran, S, and A Dharmadhikary. 2001. Empowering women through Self-Help Groups: Lessons from Maharashtra rural credit project. *Indian Journal of Agricultural Economics* 56 (3): 427–43. <https://dx.doi.org/10.22004/ag.econ.297831>
- Mallikarjuna, I. 2004. Effectiveness of women self-help groups in micro enterprise development in Rajasthan and Tamil Nadu. Swadesh Jagaran Foundation. New Delhi: National Commission for Women. <http://ncw.nic.in/sites/default/files/Effectiveness%20of%20Women%20Self%20Help%20Groups%20in%20Micro%20Enterprise%20Development%20in%20Rajasthan%20and%20Tamil%20Nadu.pdf>
- Ministry of Health and Family Welfare, Government of India. 2015. National Family Health Survey, New Delhi. <http://rchiips.org/nfhs/pdf/NFHS4/India.pdf>
- Mishra, R K. 2002. Self-help groups and micro-credit movements in Orissa: Issues and options. *Indian Cooperative Review* 34 (3): 347.
- National University of Educational Planning and Administration (NEUPA). 2009. Educational development index (EDI): A suggestive framework for computation. Department of Educational Management Information System. [http://dise.in/Downloads/suggestive-framework-for\\_EDI-computation%202009.pdf](http://dise.in/Downloads/suggestive-framework-for_EDI-computation%202009.pdf)
- Nedumaran, S, K Palanisami, and L P Swaminathan. 2001. Performance and impact of self-help groups in Tamil Nadu. *Indian Journal of Agricultural Economics* 56 (3): 471–72. <https://ageconsearch.umn.edu/record/204684/files/08-Sheik%20Mohammad%20Feroze.pdf>
- Nirmala, V. 2006. The role of self-help groups in income generation and poverty alleviation in rural India: a case study. International Conference on New Approaches to the Design of Development Policies. The Arab Planning Institute. Beirut, Lebanon.
- Paramashivaiah, P. 2015. Inadequacies of micro-finance system: a study in the context of Tumkur district in Karnataka. Research Project Report. Department of Studies and Research in Commerce, Tumkur University, Tumkur. [http://tumkuruniversity.ac.in/wp-content/uploads/2015/12/EXECUTIVE\\_SUMMAR\\_MRP-REPORT.pdf](http://tumkuruniversity.ac.in/wp-content/uploads/2015/12/EXECUTIVE_SUMMAR_MRP-REPORT.pdf)
- Puhazhendi, V, and K C Badatya. 2002. *SHG-bank linkage programme for rural poor—an impact assessment*. Mumbai: Microcredit Innovations Department, National Bank for Agriculture and Rural Development (NABARD).



- Verhelle, C. and L Berlage. 2003. Determinants of microfinance group performance: an empirical analysis of self-help groups in India, Department of Economics, Katholieke Universiteit Leuven, Belgium. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.201.4032&rep=rep1&type=pdf>
- World Bank. 2016. Taking on inequality. Poverty and Shared Prosperity 2016. Washington, DC. <https://openknowledge.worldbank.org/bitstream/handle/10986/25078/9781464809583.pdf>
- World Bank. nd. Labor force participation rate, male (% of male population ages 15+ (modled ILO estimate). International Labour Organization, ILOSTAT database. Data retrieved on 29 January 2021. <https://data.worldbank.org/indicator/SL.TLF.CACT.MA.ZS>
- World Bank. nd. Labor force, female (% of total labor force). Derived using data from International Labour Organization, ILOSTAT database. Data retrieved on 29 January 2021. <https://data.worldbank.org/indicator/SL.TLF.TOTL.FE.ZS>

---

Received: December 2018   Accepted: October 2019

## Annexure

A1: Rank for all performance indicators based on their indices

	Institutional performance		Saving performance		Loaning performance		Repayment performance		Income generating activities		Composite performance	
	II	Rank	SI	Rank	LI	Rank	RI	Rank	IGAI	Rank	CPI	Rank
1	0.742	19	0.358	74	0.351	70	0.479	59	0.871	4	0.742	19
2	0.701	29	0.254	77	0.639	17	0.419	69	0.104	56	0.701	29
3	0.558	63	0.005	79	0.689	11	0.296	76	0.102	57	0.558	63
4	0.846	1	0.654	51	0.428	58	0.745	12	0.136	47	0.846	1
5	0.709	23	0.838	33	0.419	60	0.245	79	0.181	36	0.709	23
6	0.628	49	0.470	70	0.654	14	0.324	74	0.526	5	0.628	49
7	0.788	9	0.614	54	0.430	56	0.322	75	0.342	6	0.788	9
8	0.414	79	0.994	3	0.577	26	0.666	24	0.088	61	0.414	79
9	0.521	69	0.452	71	0.301	74	0.347	73	0.142	46	0.521	69
10	0.701	27	0.519	65	0.257	78	0.440	67	0.041	70	0.701	27
11	0.814	7	0.857	30	0.353	69	0.515	53	0.980	2	0.814	7
12	0.774	14	1.000	1	0.430	57	0.462	62	0.322	8	0.774	14
13	0.642	48	0.541	63	0.468	49	0.463	61	0.083	62	0.642	48
14	0.471	75	0.637	53	0.442	55	0.452	66	0.241	18	0.471	75
15	0.776	12	0.592	59	0.408	61	0.414	70	0.258	15	0.776	12
16	0.652	46	0.450	72	0.308	73	0.278	77	0.330	7	0.652	46
17	0.514	70	0.881	24	0.201	79	0.404	72	0.134	50	0.514	70
18	0.701	28	0.857	31	0.421	59	0.518	52	0.276	12	0.701	28
19	0.681	41	0.918	21	0.462	52	0.504	57	0.171	39	0.681	41
20	0.538	64	0.755	47	0.523	38	0.582	40	0.199	28	0.538	64
21	0.666	44	0.317	75	0.653	15	0.804	5	0.263	14	0.666	44
22	0.433	78	0.834	35	0.540	34	0.823	3	0.159	42	0.433	78
23	0.647	47	0.861	29	0.572	29	0.525	50	0.274	13	0.647	47
24	0.751	17	0.899	22	0.564	30	0.512	54	0.191	30	0.751	17
25	0.343	80	0.674	50	0.468	50	0.483	58	0.000	71	0.343	80
26	0.472	73	0.267	76	0.273	76	0.530	49	0.187	31	0.472	73
27	0.708	24	0.945	13	0.574	27	0.561	44	0.100	58	0.708	24
28	0.623	51	0.604	57	0.401	63	0.661	26	0.180	37	0.623	51
29	0.832	4	0.984	6	0.561	31	0.704	17	0.279	10	0.832	4
30	0.460	76	0.605	56	0.274	75	0.538	48	0.195	29	0.460	76
31	0.688	36	0.762	46	0.473	47	0.637	31	0.233	19	0.688	36
32	0.471	74	0.515	66	0.364	67	0.608	34	0.220	23	0.471	74
33	0.677	42	0.372	73	0.585	22	0.566	43	0.200	26	0.677	42
34	0.707	25	0.944	14	0.720	6	0.607	35	0.183	35	0.707	25
35	0.696	33	0.817	40	0.268	77	0.412	71	0.171	40	0.696	33
36	0.476	72	0.875	26	0.504	39	0.518	51	0.184	34	0.476	72
37	0.565	61	0.564	61	0.546	33	0.805	4	0.292	9	0.565	61
38	0.536	65	0.874	27	0.634	18	0.612	33	0.079	66	0.536	65
39	0.781	11	0.965	8	0.406	62	0.593	37	0.149	45	0.781	11

Contd...

40	0.624	50	0.928	19	0.321	71	0.240	80	0.080	63	0.624	50
41	0.845	2	0.831	36	0.723	5	0.561	45	0.077	68	0.845	2
42	0.525	67	0.678	49	0.476	46	0.700	18	0.168	41	0.525	67
43	0.590	57	0.962	10	0.701	9	0.643	29	0.206	25	0.590	57
44	0.728	20	0.600	58	0.483	42	0.705	16	0.219	24	0.728	20
45	0.454	77	0.878	25	0.503	40	0.643	28	0.079	67	0.454	77
46	0.696	34	0.796	43	0.787	3	0.583	39	0.067	69	0.696	34
47	0.687	37	0.816	41	0.792	2	0.553	46	0.000	71	0.687	37
48	0.705	26	0.922	20	0.188	80	0.457	64	0.136	48	0.705	26
49	0.499	71	0.649	52	0.540	35	0.693	20	0.089	60	0.499	71
50	0.842	3	0.862	28	0.608	20	0.683	22	0.107	55	0.842	3
51	0.606	55	0.488	68	0.479	44	0.729	14	0.000	71	0.606	55
52	0.666	43	0.736	48	0.466	51	0.832	2	0.172	38	0.666	43
53	0.685	40	0.938	16	0.317	72	0.647	27	0.278	11	0.685	40
54	0.623	52	0.988	4	0.480	43	0.457	65	0.159	43	0.623	52
55	0.522	68	0.511	67	0.456	54	0.663	25	1.000	1	0.522	68
56	0.568	60	0.835	34	0.539	36	0.670	23	0.255	16	0.568	60
57	0.798	8	0.976	7	0.582	24	0.596	36	0.119	54	0.798	8
58	0.565	62	0.830	37	0.536	37	0.691	21	0.156	44	0.565	62
59	0.588	58	0.214	78	0.707	7	0.796	7	0.000	71	0.588	58
60	0.719	21	0.000	80	1.000	1	0.771	9	0.000	71	0.719	21
61	0.610	54	0.985	5	0.646	16	0.478	60	0.875	3	0.610	54
62	0.770	15	0.820	39	0.459	53	0.437	68	0.200	27	0.770	15
63	0.712	22	0.777	45	0.366	66	0.573	42	0.000	71	0.712	22
64	0.822	5	0.800	42	0.628	19	0.765	10	0.000	71	0.822	5
65	0.661	45	0.843	32	0.478	45	0.590	38	0.227	21	0.661	45
66	0.785	10	0.931	17	0.701	10	0.778	8	0.000	71	0.785	10
67	0.762	16	0.943	15	0.387	64	0.506	56	0.080	65	0.762	16
68	0.585	59	0.964	9	0.573	28	0.745	13	0.080	64	0.585	59
69	0.687	38	0.999	2	0.354	68	0.613	32	0.223	22	0.687	38
70	0.686	39	0.829	38	0.472	48	0.638	30	0.000	71	0.686	39
71	0.598	56	0.789	44	0.705	8	0.754	11	0.129	51	0.598	56
72	0.615	53	0.605	55	0.661	13	0.879	1	0.126	53	0.615	53
73	0.695	35	0.586	60	0.486	41	0.716	15	0.247	17	0.695	35
74	0.743	18	0.955	11	0.677	12	0.507	55	0.135	49	0.743	18
75	0.532	66	0.546	62	0.579	25	0.461	63	0.000	71	0.532	66
76	0.815	6	0.928	18	0.385	65	0.538	47	0.230	20	0.815	6
77	0.697	32	0.528	64	0.598	21	0.576	41	0.093	59	0.697	32
78	0.699	31	0.888	23	0.554	32	0.262	78	0.186	32	0.699	31
79	0.776	13	0.948	12	0.582	23	0.696	19	0.184	33	0.776	13
80	0.700	30	0.485	69	0.728	4	0.799	6	0.128	52	0.700	30

Source Estimated by authors