

	Annexure I: Que	estionnaire for MFI brai	nch office				
Dear Respondent I am a research scholar in the Department of Business Administration, School of Management Sciences, Tezpur University (Assam), doing my research on the topic "Cost Structure of Microfinance Institutions: A Study on Select MFIs in Assam". Your response will be kept confidential and used only for academic purpose. Your co-operation is highly solicited. Thank you. Yours` Sincerely Pinky Dutta (Research Scholar) Deptt. of Business Administration, Tezpur University, Tezpur.							
1. Profile of t	he micro-finance provider						
(a)Name of	micro-finance provider:						
(b) Address	:						
(c) Legal St	atus: ociety	NBFC					
	establishment of the branch:						
	vered by the branch:						
(f) Number	of villages covered by the branc	<u>h:</u>					
2. What is the Individua	e lending model of your organismus. Ils JLG	ation? (Tick the appropria SHG	ate answer) Multiple				
3. What is the	e minimum and maximum numb	per of members in the follo	owing-				
	SHG	JLG					
Minimum							
Maximum							
	e minimum and maximum loan a	amount for the following	?				
,, 1144 15 (11	1 st Cycle	2 nd cycle	Subsequent cycle				

SHG

Individual

JLG

SHG

JLG

Individual

SHG

JLG

Minimum

Maximum

Not exactly specified

Individual

5. Basic information of the MFI Branch for the period of six months **Key Indicators** 5 6 Number of Groups Total number of Clients Total number of Active Clients (loanee) Total clients in First cycle of loan Total clients in subsequent cycle of loan Total Women clients: Total Loan disbursed: Total Loan outstanding (Rs. In Lakhs) Repayment Rate Portfolio at Risk (> 30 days, >60 Days) 7. Manpower of the Organization **Designation** Number Branch Manager Accountant Field Staff Multi purpose staff 8. Daily Schedule of the staff Time Activity 1. Attendance 2. Field visit 3. Bank visit 4. Back to office 5. Lunch break 6. Loan disbursement 6. Office work 7. Filling and checking of loan applications 8. Filling log book or reporting 9. Planning for next day 8. How many groups are daily visited by a field officer? (Tick the appropriate answer) (c) 10-14 (a) 0-4(b) 5-9 (d) 15-20 9. Maximum area covered by the MFI staff for client acquisition (a) 0-4 kms (b) 5-9 kms (c) 10-14 kms (d) 15-20kms 10. What are the targets given to the credit officer and the branch manager? Branch manager Credit officer Targets Number of active borrowers Amount of loan disburse

The rate of repayment

11.(Select answers from the options given

 (a). How the organisation acquired new clients? i. Area survey ii. Information from existing members iii. Arranging awareness camps iv. Clients join by themselves v. Visiting existing groups 	(b). What is the total time required in acquisition of new clients?(i) 0-5 days(ii) 6-10 days(iii) more than 10 days
 (c). What is the criterion for selection of clients? i. Women within an age group of 18-55 years ii. Married women iii. Income source iv. Previous credit history 	(d). Whether the group is formed by the MFI or - by the members
(e). How many group meetings are conducted for the formation of new group? i. 0-5 meetings iii. More than 10 ii. 6-10 meetings iii. More than 10	(f). who conducted the group meetings? i. Credit officer ii. Branch manager iii.both
(g). what are the points discussed in group meetings? i. Information about the MFI ii. Handling of finance iii. Information about SHGs/JLGs vii. loan application process	iv. About products v. Facilities provided by the MFI vi. How to conduct meetings viii. Loan repayment schedule
 (h). What are the activities involved in group formation? i. Selection of members ii. Information about the reliability of members iii. Selection of president iv. Selection of secretory v. Opening of bank account vi. Arrangement of stationaries vii. Selection of group name viii.Selection of site to conduct meetings 	(i). What is the time required for formation of one new group? i. 0-5 days iii. 10-20 days days v. more than one month
j). What are the documents required for loan application? i. KYC ii. Passport Photographs iii. Income certificate iv. Bank account details v. Address proof vi.Others (please specify)	(k). Is the credit officer assisting the borrowers in filling the loan application? i. Yes ii. no
(l). What is the interest rate charged by the MFI on loans?	 (m). What are the charges involved other than interest on capital? i. Processing fees ii. Fees for pass book iii. Admission fees iv. Insurance v. Stationery fees vi. Other (please specify)

(n). How the processing fee is collected from the clients?	(o). Please mention the percentage of processing fee collected from the clients.
 Collected before the loan disbursal Collected along with the loan disbursal Others 	
(p). Specification of insurance service Type	(q). Please mention the insurance charges collected from the clients.
(r). What is the average time required to disburse a loan? i. 7 days ii. 14 days iii. 1 month iv. More than one month	(s). The sanctioned loan amount is handed over to the client at i. The client's place ii. At the MFI iii. At the common meeting centre iv. Clients deposit in bank
(t). Does the gurantor need to be present with the client at the time of taking the loan? i. Yes or ii. no	 (u). Where the MFI officials collect the loan repayment? i. At client's place ii. At the MFI iii. At the common meeting point
 (v). How frequently the MFI officials visit the borrowers to monitor the utilization of loan amount? (i) One week after sanction of loan (ii) Two weeks after sanction of loan (iii) More than two weeks 	(w). Do you charge any penalty for non repayment of loan amount?i. Yesii. No
(x). what are the documents carried by the field offic i. Cash book ii. Proceedings register	er at the time of collection? iii. Receipt book

12. Description of activities conducted by the organization

Name of the activity	Duration	Cost	Comment
Social and community related activities			
Training activities			
Other Income generating activities			
Financial literacy programme			

13. Cost components of the MFI branch office

		Ope	erationa	l cost			
Designation	Comp	onents of	Total				
Total							
		Indirec	t transa	ction cost	t		
	Month	ly costs (for 6 mo	nths)			Average
	1	2	3	4	5	6	
Office Rent							
Staff house rent							
Joining and transfer allowance							
Electricity							
Office materials and supplies							
Repairs and maintenance							
Transportation							
Interest on overdrafts							
Telephone and postage/mobile cost							
Training and workshop							
Total							
	I		Revenu	e		<u> </u>	l
Interest rate							
Processing fees							
Other							
Total							

Annexure II: Interview Schedule for MFI borrowers Date of interview: 1. Client details i. Name of Respondent: ii. Gender: Male Female [iii. Age: 18- 30yrs [] 31-45 yrs[] 46 and above iv. Educational Qualification: : illiterate 1 Read upto primary level[read upto class VII [] matriculate [] undergraduate [post-graduate[] iv. Source of income/occupation: Agricultural Worker Fishery [] Goatery [] Pigger y Poultry[Weaving [Pan Shops [] Rickshaw pulling [Vegetable shop [Daily wage earner [] Tailoring shop[others [v. Address of Respondent: 1. District: Block: 2. City/ Town/ Village/ Ward: 3. Distance form: Bank: Up to 2 Km 2 Km-5 Km [Above 5 Km [Post Office: Up to 2 Km 2 Km-5 Km [Above 5 Km [Up to 2 Km Above 5 Km [FI: 2 Km-5 Km [2. Monthly household income (tick appropriate answer): Below Rs. 1000 [Rs. 2000-3000[Rs. 4000-5000[Rs. 1000-2000[Rs. 3000-4000[Above Rs. 5000[3. Do you have Bank Account? Yes No i) If no, specify the reasons: Income too low [Savings too Low [] **Inconvenient Location** No knowledge of banking [] No I-D proof [] No address proof [Distance of Bank branches [Lack of confidence on bank [] Inconvenient openings hours [No intiative by banks [] Cash more convenient [] 4. How long you have been associated with the MFI? (tick appropriate answer) 0-2 years 3-5 years more than 5 years 5. Do the MFI provide assistance in filling up the application form? Yes/No..... 6. Group Details: (a) Are you a member of any SHG/ JLG? Yes/No (b) If yes, answer the following: i. Name of your Group ii. Address Vill. Dev. Block

iii. Date of formation of group

iv. number of members	
v. Members in your group	Male:
	Females:
vi. Source of information*	Media/advertisement [] NGO / MF [] Govt. official [] Bank officials [] Friends/relatives [] Others (specify) []
vii. Initiator of group formation*	Members themselves [] NGO / MFI [] Block Development Officer [] Bank officials [] Others (specify)
viii. Registration of the group (Y/N)	
ix. Selection process of group members	
x. Main activities performed by the	
group	
xi. Group meetings*	Weekly/ Fortnightly/Monthly/Half Yearly

(c) Financial details of the group

_ (1)	T						
i. Account in Bank/ MFI:							
ii. Address of the bank/MFI							
iii. Type of account:							
iv. Mobilization of savings among the group members	Yes:	No:					
v. Frequency of mobilization	Daily	Weekly	Fortnightly	Monthly	Quarterly		
vi. Amount of savings							
vii. Spending of the amount	Lend to the needy members [] Lend to other villagers []						
collected*	Deposit in the bank] Keep v	with the committe	ee []			
	Invest in group activi	ty (specify)	[]				
	Any other						
viii. Purpose of loan/credit *	Start a new business	[]	Agriculture/fa	arming []			
	Buy household durab	le []	Marriage	[]			
	House repair/renovat	ion/construc	tion [] Fune	ral []			
	Acquire new assets(s	pecify)[]	To buy livesto	ock []			
	To expand existing b	usiness []	Repay old de	ebt []		
	Medical treatment	[]	Household co	onsumption []		
	Child Education	[]	Others (speci	fy)			

7. Credit details and process:-

(a) Details of loan procedure:

Documents require avail loan	e to	Time required for loan processing	Collateral requirements	Pre-sanction inspection

^{*} Please tick the appropriate answer/ multiple options can be selected

^{*} Please tick the appropriate answer/ multiple options can be selected

(b) Details of credits availed:-

<u> </u>								
Amount	Amount	Year of	Rate of	Repay	Cycle of	Amount of	Amount	Credit
applied	Received	Receipt	Interest	ment	paying	installment	repaid	/Loan
for			(% p.a.)	Period	installment			Outstandi
101								ng
	1			I				

(c) Credit utilization details: -

(1) 011011	(v) create annual actuals.								
Amount	Source of	Amount of	Amount deployed	Amount	Activity where loan				
disbursed	Credit	subsidy	in selected activity	Diverted to other	is diverted (If any)				
		-		activity					

4. Awareness level of the client (write yes /no)

	Loan product/ purpose	Date	Loan amount disbursed by MFI to the client	Term of loan	Interest rate	Documents required	Loan processing g fee	Security deposit	Repayment schedule	Any other charges
Yes										
No										
Com										
ment										

5. Transaction cost for availing the loans

Documents required	Number	Cost (in Rs)
Photographs		
Cost of duplication of address proof		
Cost of stamp paper		
Cost of Register		
Cost of stamp pad		
Cost of stationary		
cost of group photograph		
Cost of photograph of president and secretary		
A. Total		
Transportation cost		
Incidental cost		
B. Total		
A+B		

	Yes	No	Comment
Loan amount not to exceed Rs35,000 in the first cycle and Rs50,000 in subsequent cycles			
Total indebtedness of the borrower not to exceed Rs 50,000			
Loan to be extended without collateral			
Repayable by weekly, fortnightly or monthly installments			
Interest rate cap of 26 per cent			

7. Developmental activities conducted by the Wirts	
	Tick the appropriate one
Health awareness programs eye camps, women and childcare, community health	
Skill - building programs	
Scholarships / grants to students	

8. How the MFI manage default clients?

of the wife in a manage default enems.							
Have you ever	How many times?	Reason	How	What steps are taken by the MFI			
defaulted			you				
? (Y/N)			repay				
			the				
			loan?				
	1						

9. Are you satisfied with the s	services provided by the M	FI? (tick appropriate answer)
Yes	no	

10. Do you want you some extra facilities or support from the MFI?

Annexure III: Brief profile of eight MFIs selected for study

Name of the MFIs	Year of incorpora tion	Year of commence ment of microfinanc e operations	Legal Status	Operating in No. of State(s)	No. of Branch(e s)	Products & Services Offered
Rashtriya Gramin Vikas Nidhi (Northeast) Microfinance Limit	1990	1995	NBFC	6	131	SHG Loan, JLG Loan, Entrepreneurship Development loan (individual loan), Micro Enterprise loan
ASOMI Finance Private Limited	1995	2009	NBFC	1	38	Pragati loan, Water and Sanitary loan
UNACCO Financial Services Pvt. Ltd. (UFSPL)	2008	2008	NBFC	5	25	Income Generation Loan
Nightingle Charitable Society (NCS)	1997	2004	NBFC (Present status)	1	10	Microcredit loan, Capacity Building & Training, Micro Insurance
Prochesta Thrift and Credit Cooperative society Asom Ltd.	1998	2007	Coopera tve	1	7	Microcredit loan, Thrift & Microsaving, Micro Insurance
Social Action for Appropriate Transformation and Advancement in Rural Areas (SATRA)	2002	2002	Society	1	4	Microcredit loan, Micro Insurance, Capacity Building & Training
Ajagar Social Circle (ASC)	1998	2007	Society	1	4	Microcredit loan
Morigaon Zila Gramya Puthibharal Santha	1995	2007	Society	1	1	Microcredit loan, Bank linkage Vocational Trainings

Annexure IV: Debt funding of the MFIs (in Rs millions)

	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
Banks	123.6	355.0	606.7	492.7	354.2
Financial institutions	61.3	584.2	812.7	712.0	879.1
Unsecured loans	63.2	122.2	100	50	202.8
Total	248.2	1061.4	1519.5	1254.7	1436.1
Growth rate		33 %	43 %	-17 %	14 %

Annexure V: Average loan outstanding per borrower of the MFIs

Name of the MFIs	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
RGVN (NE)MFL	5924	7229	7555	7268	7442
AFPL	5174	3740	6602	7522	7495
UFSPL	3114	3978	4292	5868	6856
Prochesta	8013	6226	5247	4072	7219
NCS	6321	6943	8170	7074	7233
MJGPS*	2855	2790	2824	4090	
SATRA	2696	2818	3723	4780	4638
ASC	6427	6126	8321	14236	9602

Annexure VI: Staff distribution of the MFIs

Name of						
the MFI	Category	FY 09-10	FY10-11	FY 11-12	FY 12-13	FY 13-14
RGVN	Total staff	414	495	496	547	560
(NE)MFL	Managerial staff	178	229	222	273	269
	Operational staff	236	266	274	274	291
AFPL	Total staff	175	224	242	223	194
	Managerial staff	69	106	94	82	77
	Operational staff	106	118	148	141	117
UFSPL	Total staff	150	201	193	180	173
01212	Managerial staff	10	11	10	10	10
	Operational staff	140	190	183	170	163
NCS	Total staff	35	40	42	52	57
1105	Managerial staff	8	12	9	17	17
	Operational staff	27	28	33	35	40
Prochesta	Total staff	40	40	68	73	31
	Managerial staff	15	15	6	6	6
	Operational staff	25	25	62	67	25
SATRA	Total staff	14	15	16	17	20
	Managerial staff	4	5	5	5	7
	Operational staff	10	10	11	12	13
ASC	Total staff	23	25	28	31	29
1100	Managerial staff	5	5	5	7	8
	Operational staff	18	20	23	24	21
MZGPS	Total staff	15	17	20	23	
	Managerial staff	5	6	8	10	
	Operational staff	10	11	12	13	

Annexure VII: Total assets of the MFIs across five FYs (in Rs millions)

Name of the MFIs	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
RGVN (NE)MFL	652.0	887.8	1235.8	1488.2	1452
UFSPL	104.7	204.	311.2	332.5	369
AFPL	265.4	428.8	407.4	442	437
NCS	50	109.8	139.0	218	189
Prochesta	20	28.8	32	55	42.4
SATRA	17.6	25.6	33	66	67.3
ASC	27.6	39.6	52	95	87.5
MZGPS	14.5	14.7	14	16	
All MFIS	1152	1739.5	2224.3	2711.9	2644.3

Annexure VIII: Total expense of the MFIs (in Rs millions)

Name of the MFIs	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
Operating expense	141.3	155.3	231.2	237.0	212.4
Financing expense	64	92	156	218.1	228.4
Loan loss provision expense	1.7	5.3	8.5	8.3	4.3
Total expenses	207	253.1	395.6	463.6	445.2

Annexure IX: MFIs wise expense (all figures are in percentage)

Name of the MFIs	Evmongo Doting	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
	Expense Ratios					
RGVN (NE)	Operating expense	43	47	48	42	43
MFL	Financing expense	57	52	50	55	57
	loan loss provision	0	1	2	2	0
	Operating expense	83	49	55	51	52
ASFL	Financing expense	17	47	41	49	45
7101 L	loan loss provision	0	3	4	0	3
LICEDI	Operating expense	95	87	75	64	66
USFPL	Financing expense	2	11	23	33	34
	loan loss provision	2	2	2	2	0
ASC	Operating expense	64	57	50	46	33
ASC	Financing expense	26	37	48	53	61
	loan loss provision	10	6	2	1	6
.v.aa	Operating expense	38	40	37	42	41
NCS	Financing expense	55	53	59	55	55
	loan loss provision	7	7	3	3	2
		7.6	47	47	71	7.1
Prochesta	Operating expense	56	47	47	51	51
	Financing expense	32	40	43	48	49
	loan loss provision	12	14	10	0	0

SATRA	Operating expense	40	57	47	42	33
	Financing expense	60	43	53	58	61
	loan loss provision	0	0	0	0	5
MZGPS	Operating expense	43	47	44	38	
142012	Financing expense	57	53	56	62	
	loan loss provision	0	0	0	0	

Annexure X: Operating expense ratio of the MFIs

Name of the MFIs	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
RGVN (NE) MFL	7.83	5.48	9.24	9.02	9.53
AFSPL	27.70	13.12	14.01	13.47	13.56
UFSPL	34.25	24.02	17.92	14.16	13.84
NCS	8.65	8.40	7.78	8.76	9.80
ASC	13.28	13.94	14.59	7.34	7.95
Prochesta	9.54	6.93	9.28	5.74	6.00
MZGPS	6.25	6.79	7.70	6.48	
SATRA	6.52	14.28	10.35	9.40	6.11
Median value of MFIs in Assam	9.10	10.76	9.82	8.89	9.53
Median value of Indian MFIs	11.63	12.85	13.37	11.11	10.56

Annexure XI: Data used for Regression Analysis II

		Year of	Number of active	Average loan size	Portfolio at Risk greater than 30	Direct cost (in	Indirect	Operating expense (in	Borrowers per loan
Name of the MFI	Location	operation	borrowers	(in Rs)	days	Rs)	cost (in Rs)	Rs)	officer
DCVN (NE) MEI	Urban	6	4536	4853.87	0.04	48600	23184	71784	756
RGVN (NE) MFL	Urban	7	852	8653.97	0.07	35700 43800	13541	49241	213 323
	Urban	/	1615 703	8002.38 8900.6	0.24	23900	21298	65098	
	Urban	1 2			0		11537	35437	234.33
	Urban Urban	3	1530 1105	790.85 9513.08	0.08	32000 36200	17550 14866	49550 51066	382.5 276.25
	Urban	2	1500	9513.08 8701	0.08	36500	16652	53152	300
	Urban	5	2123	10706.59	0.10	37300	20257	57557	424.6
	Urban	5	2481	7535.38	0.04	51200	16993	68193	424.6
	Urban	4	2100	4790.48	0.04	45000	8400	53400	420
	Urban	7	1658	2252.11	0.59	50211	11406	61617	331.6
	Urban	4	2253	6380.53	0.59	40304	15350	55654	375.5
	Urban	8	1192	6736.83	0	43013	10362	53375	298
	Urban	16	1175	6362.61	0.03	39004	9133	48137	391.67
	Rural	8	1996	9090.93	0	53055	9000	62055	399.2
	Rural	3	1810	7101.09	0	51804	6495	58299	362
	Rural	4	2432	2842.52	0	43756	6436	50192	608
	Rural	7	2417	4205.05	0	37036	7238	44274	483.4
	Rural	4	1353	7014.07	0.04	32726	5415	38141	270.6
	Rural	4	2301	6302.44	0	56357	6500	62857	383.5
	Rural	4	2674	710.55	0	46101	6852	52953	534.8
	Rural	4	1361	6024.33	0	37484	10088	47572	340.25
	Rural	7	917	6739.37	4.03	38835	11319	50154	229.25
AFPL	Urban	4	1515	6722.89	0	36000	16398	52398	303
	Urban	4	1506	7642.62	0	34500	8500	43000	301.2
	Urban	6	2031	5130.67	0	32500	6000	38500	338.5
	Rural	4	1477	6008.82	0	38622	6000	44622	295.4
	Rural	4	1546	10349.29	0	42000	12000	54000	309.2

	Rural	3	916	7558.09	0	21900	6647	28547	229
	Rural	5	1253	5666.61	0	37200	5740	42940	313.25
	Rural	4	1122	6804.3	0	22000	9000	31000	280.5
	Rural	4	1507	5912.66	0	33000	5500	38500	301.4
	Rural	5	1350	5149.71	0	33460	7148	40608	337.5
	Rural	3	889	6428.59	0	30460	5657	36117	296.33
	Rural	6	1068	6341	0	40541	7027	47568	500
	Rural	6	1073	6343	0	40541	7027	47568	357.78
	Rural	6	1070	6340	0	40541	7027	47568	357.78
	Rural	6	1078	6343	0	40541	7027	47568	357.78
	Rural	6	1065	6340	0	40541	7027	47568	268.33
	Rural	6	1080	6340.93	0	40541	7027	47568	268.33
UFSPL	Urban	4	1224	4304.13	0.02	59566	9800	69366	244.8
	Urban	4	1402	6024.19	0	48600	10000	58600	280.4
	Urban	4	1400	6159.42	0	45158	7500	52658	280
	Urban	4	2096	6274.71	0	38785	9940	48725	419.2
	Urban	4	2225	4584.27	0	39550	7904	47454	445
	Rural	2	1410	5876.114	0.09	49400	8000	57400	352.5
NCS	Urban	5	2635	11385.2	0	28885	8518	37403	527
	Urban	11	3965	10088.27	0	53085	15240	68325	396.5
	Urban	4	2015	9882.28	0	25285	12843	38128	503.75
	Urban	4	1765	10501.54	0	23385	6893	30278	441.25
	Rural	2	1970	7483.52	0	27059	9314	36373	492.5
PROCHESTA	Urban	6	2000	934.1	0	29900	10000	39900	500
	Urban	5	1800	6185.48	0	20200	4400	24600	257.14
	Rural	4	1625	2170.55	0	11200	1270	12470	812.5
SATRA	Rural	8	1840	5481.06	0	27255	3166.667	30421.67	460
	Rural	4	2865	3968.92	0	23350	3466.667	26816.67	716.25
	Rural	4	1930	5292.48	0	29400	3266.667	32666.67	482.5
	Rural	1	1225	4466.51	0	8500	2666.667	11166.67	612.5
ASC	Rural	6	1887	9978.47	0.39	45455	8527	53982	314.5
	Rural	6	2418	9300.7	0.27	58108	4171	62279	302.25
	Rural	6	1967	9599.95	0.24	43615	3893	47508	327.83

Annexure XII: Return on assets of the MFIs

Name of the MFIs	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
RGVN					
(NE)MFL	3.25	1.18	3.35	3.22	3.34
AFPL	-1.67	1.75	-1.53	0.60	0.92
UFPL	11.10	11.85	6.40	3.11	4.19
NCS	2.86	3.63	3.31	2.63	
ASC	3.48	2.76	1.86	0.84	0.65
Prochesta	0.93	-1.47	0.33	0.04	0.83
SATRA	0.56	-4.78	-1.12	-1.53	0.61
MZGPS	-0.73	-0.73	-2.34	-1.43	
Median	1.9	1.5	1.1	0.7	0.9

Annexure XIII: Return on equity of the MFIs

Name of the MFIs	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
RGVN (NE)MFL	9.94	19.84	28.36	22.63	16.20
AFPL	-3.00	5.52	-5.57	2.11	3.20
UFPL	17.25	29.32	22.37	12.04	17.47
NCS	96.95	68.17	42.51	29.41	
ASC	25.53	37.00	42.31	21.02	20.24
Prochesta	2.58	-4.03	0.84	0.12	2.97
SATRA	0.55	-4.75	-1.11	-1.51	0.61
MZGPS	-1.44	-1.44	-4.35	-2.86	
Median	5.2	12.7	10.6	7.1	9.7

Annexure XIV: OSS of the MFIs

Name of the MFIs	FY 09-10	FY 10-11	FY 11-12	FY 12-13	FY 13-14
RGVN (NE)MFL	121	118	126	129	126
AFPL	94	114	97	104	108
UFPL	125	139	142	126	137
NCS	115	121	119	114	115
ASC	120	110	101	98	100
Prochesta	108	89	102	100	106
MZGPS	93	94	84	90	
SATRA	104	77	93	90	111

Annexure XV: Methodology for TOPSIS

Let \mathbf{x}_{ij} denote the data on jth criterion for ith MFI, i=1,2,...,8 and j=1,2,...,8

In the context of our problem, the procedure of TOPSIS can be expressed in a series of steps, mentioned below.

(1) We normalize the
$$\mathbf{x}_{ij}$$
 values, i.e. we define
$$\mathbf{y}_{ij} = \mathbf{x}_{ij} / \sqrt{\sum_{i=1}^{n} \mathbf{x}_{ij}^{2}}, \quad \text{i=1,2,...,8 and j=1,2,....8}.$$

(2) Calculate the weighted normalized value $\boldsymbol{v}_{ij}\boldsymbol{s},$ as follows

$$\begin{split} &v_{ij}=w_j\,y_{ij},\ \ i{=}1,\!2,\!..,\!8 \text{ and } j{=}1,\!2,\!...8.\\ &w_j \text{ weight assigned to the jth criterion, } j{=}1,\!2,\!...8,\ \ \text{and} \quad \sum_{j=1}^n w_j=1. \end{split}$$

(3) The ideal solution $\{v_1^+, \dots, v_g^+\}$ and the negative ideal solution $\{v_1^-, \dots, v_g^-\}$ are obtained as follows

$$v_j^+ = \max\{v_{1j}, ..., v_{8j}\}, j=1,2,...,8$$

 $v_j^- = \min\{v_{1j}, ..., v_{8j}\}, j=1,2,...,8.$

(4) For each MFI, we calculate the separation measures, using the n-dimensional Euclidean distance. The separation of each MFI from the ideal solution is given as

$$d_i^+ = \{\sum_{j=1}^{8} (v_{ij} - v_j^+)^2\}^{\frac{1}{2}}, i=1,2,...,8.$$

 $\begin{aligned} \mathbf{d_i^+} &= \{ \sum_{j=1}^g (\mathbf{v_{ij}} \cdot \mathbf{v_j^+})^2 \}^{\frac{1}{2}}, \ i=1,2,\dots,8. \\ \text{Similarly, the separation from the negative ideal solution is given as} \\ \mathbf{d_i^-} &= \{ \sum_{j=1}^g (\mathbf{v_{ij}} \cdot \mathbf{v_j^-})^2 \}^{\frac{1}{2}}, \ i=1,2,\dots,8. \end{aligned}$

$$d_i^- = \{\sum_{j=1}^{g} (v_{ij} - v_j^-)^2\}^{\frac{1}{2}}, i=1,2,...,8$$

(5) We calculate the relative closeness to the ideal solution. The relative closeness of the ith MFI is defined as

$$R_i = d_i^-/(d_i^- + d_i^+), i=1,2,...,8.$$

(6) Finally we rank the ten MFIs using their relative closeness scores (i.e. using $R_1, \dots R_g$) in decreasing order. That is, rank 1 is assigned to the MFI with relative closeness equal to $\max\{R_1, \dots, R_g\}$.

Remarks: It is important to note that in the 1st step of the TOPSIS method, the data is normalized i.e. made unit free. Consequently, the TOPSIS ranking are not effected by the unit or scale in which the different criteria are measured.