The Failings of Microfinance in India: Insights from a Randomized Evaluation of Spandana

Volume 11, Number 1
January 2017, pp. 59-75

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The microfinance industry in India, on a revival path after the crisis of 2010, is increasingly showing an urban focus. Micro-lending in urban areas has its limitations, more so with the model adopted by some of the for-profit microfinance institutions. A randomized evaluation of the lending operations of Spandana in an urban slum gives valuable insights of the contradictions inherent in a model that does not put entrepreneurship as its prime objective. Most important, it breaks apart the notion that blanket lending in the name of microfinance can reduce poverty, enhance livelihood opportunities, or even cause improvement in social indicators.

Keywords: Microfinance, India, Spandana, Randomized Evaluation

1. Introduction

The Indian microfinance sector passed through a serious crisis during the period 2010-2013 (Biswas 2010). The crisis originated in Andhra Pradesh which accounted for a more than a quarter of the then INR. 20,000 crore micro-lending industry, but soon affected operations of all microfinance institutions. It was a crisis waiting to happen, but the matters came to a head with a promulgation in October 2011 by the Andhra Pradesh state government regulating the microfinance industry in the wake of distress suicides following coercive recovery practices followed by some of the Micro Finance Institutions (State Government of Andhra Pradesh 2010). The loan recovery rate plummeted rapidly and many of the leading microfinance such as Trident Microfin Pvt. Ltd, Share Microfin Ltd, Asmitha Microfin Ltd., and Spandana Sphoorty Financial Ltd. were admitted to CDR.¹ (Bandhyopadhyay and UnniKrishnan 2011)

Prior to the crisis, the micro finance industry had grown at a fairly rapid pace trying to capitalize on the expected potential of meeting the credit requirements of the populace at the bottom of the pyramid that was usually neglected by the formal banking system. In India, the financial inclusion model adopted was typically that of a frontend managed by a self-help group or a microfinance institution (MFI) with the bank providing the financing backend (Mahajan and Navin 2012). The earliest

¹ Corporate Debt Restructuring Mechanism is a mechanism is a voluntary non-statutory system based on Debtor-Creditor Agreement (DCA) and Inter-Creditor Agreement (ICA) and the principle of approvals by super-majority of 75% creditors (by value) which makes it binding on the remaining 25% to fall in line with the majority decision. For more details, refer to www.cdrindia.org

introduction of the concept of microfinance emerged in the mid-1980s' with Myrada being set up in 1986 and Pradan in 1987 (Srivastava and Basu 2004). This was followed by the RBI approved SHG-Bank linkage program (SBLP) in 1986 which resulted in around 7.46 million SHGs linked to banks in March 2011 with total bank financing of 84 billion INR. in 2011-12 (Mahajan and Navin 2012). The SHG model had moderate success but was also used by certain states like Andhra Pradesh as a means of political patronage to attract a rural vote bank thorough the medium of heavily subsidized interest rates. Meanwhile, the success of the Grameen Bank in Bangladesh success invited replication in the form of privately managed commercial MFIs. Some began as non-profit institutions, but soon transitioned to a for profit model using the legal structure of a non-banking finance company to attract equity investments from microfinance investment vehicles and private equity funds (CGAP 2010). These include SKS Spandana, SHARE and Asmitha all of which operated in Andhra Pradesh. Increasing access to equity funding led to even more pressure to make profits for some of the MFI's, a case in example of SKS decision to make a public issue (MIX Market 2010) (Chen, et al. 2010). In a bid to replicate the success of SKS, Spandana Sphoorty, too had finalized plans to go public in 2011 (Moneycontrol.com 2010).

Though the October 2011 promulgation was the immediate factor in the downslide of the industry, the practices of the industry had already invited a serious question mark on its motivations and functioning. The high emphasis on portfolio sizes, return on equity and reduction in operating costs, seemed to work against reaching out to the poorest section or providing the necessary education and disclosure about interest rates and repayment requirements. Instead of a primary objective of building entrepreneurship, it only seemed to replace the money lender in terms of lending for consumption purposes. Most important, it increased indebtedness manifold especially in the state of Andhra Pradesh.

1.1 Growth of Microfinance in India through the Prism of Andhra Pradesh

Much of the developments in the microfinance industry and subsequent regulation owe its origin to the nature of the microfinance movement in Andhra Pradesh, where growth practices were not completely facilitative of using the microfinance intervention as a social transformational tool. Andhra Pradesh was characterized by the simultaneous expansion of SHG Bank Linkage Model promoted by the State, and the MFI model by private players. Eventually the MFI industry overtook the SHG sector in loan outstanding terms, but not without increasing the average indebtedness of households in Andhra Pradesh (Srinivasan 2010). Interest rates were as high as 31-32% and there was huge competition for clients (Mader 2013). In a survey conducted by Institute of Financial Management Research, it was found that though only 11% of the borrowing was from an MFI, while 84% of the rural households had multiple loans outstanding (Johnson and Meka 2010). As per the Microfinance State of the Sector 2011 report, Andhra Pradesh had the highest concentration of microfinance operations with 17.31 million SHG members and 6.24 million MFI clients. The total loans across both SHG and Microfinance stood at INR. 1,57,692/- million with average loan outstanding per poor household at INR. 62,527/- compared to a national average of INR. 7,700/- (Ghiyazuddin and Gupta 2012). The unhealthy practices of the MFI industry in Andhra Pradesh led to regulatory intervention by the Reserve Bank of India, the regulator for the financial and banking sector in India.

The interest margin was capped within a range of 10-12%, the quantum of loans given in the first and second waves restricted as per income status, and caps fixed on proportion of loan given for consumption purposes. Limits were also placed on the total number of lending agencies from which a household can borrow from (Malegam 2011).

1.2 Recent Developments in the Microfinance Industry

Recently the industry is showing signs of revival. As per a Karvy stock broking report, the industry recorded a 55% growth in new loan disbursement and a 61% growth in gross loan portfolio in the financial year of 2014-2015 (PTI 2015). As per MFIN estimates in 2016, the microfinance industry is now dominated by the NBFC MFI with an 88% market share. Although there were approximately 56 MFI's operating in the country, 22 of them individually had a loan portfolio of greater than 5 billion INR and accounted for 90% of the gross loan portfolio of the MFI industry. The share of the urban gross loan portfolio was 40%, and 64% of the loan was given for non-agricultural purposes (Ernst and Young 2016) (MFIN 2016). While the news of the revival is to be welcomed, what is striking is the increasing urban focus of the microfinance industry. The share of rural customers has gone down to only 33% in 2015 from a high of 69% in 2012. There has been also a rise in certain completely urban focused MFIs such as Janalakshmi Financial Services Pvt. Ltd, Ujjivan Financial Services Pvt. Ltd and Satin Credit Card Network Ltd (Bandyopadhyay 2015). Given this development, it becomes important to study the impact of microfinance in a relatively urban setting. The randomized evaluation of microfinance in an urban slum of Hyderabad during the period 2005-2008 using the operations of Spandana is a good case example. Results from the evaluation clearly illustrate the limitations of using microfinance intervention to foster entrepreneurship outcomes even in urban settings. These results are broadly in line with other random evaluation studies carried out. Subsequent regulatory modifications may serve to control the excesses of the industry, but do not materially alter the outcomes of the intervention with the given microfinance models in vogue.

2. Learnings from Other Randomized Evaluation Studies

Several randomized evaluation studies in the countries of Morocco, Bosnia-Herzegovina, Mexico, Mongolia, India and Ethiopia have been conducted with widely differing results. Despite the challenges of conducting a random evaluation, studies have reported some positive impact on business activity and income composition but very mixed results on household consumption or income. Results on female empowerment and education too have been mixed (Bannerjee, et al. 2015).

In Mongolia, 1148 women across 40 villages were assigned to three different cohorts with access to group loans, individual loans or no loans respectively. Results shows that though loans were provided to finance business creation, almost half of it went for household consumption. Statistical significant results of increase in the likelihood of owning an enterprise by 9% was witnessed only amongst women who were offered group loans. Other findings for the group loan cohort included an increase in hours worked by women by 6 hours per week, positive impacts on food consumption and on business assets, but not on household assets or current income. These effects did not show up on the cohort of women accessing individual loans although repayment rates were roughly similar. However, repeat borrowing by

individual borrowers was substantially less than that of group borrowers (Orazio, et al. 2015). The randomized evaluation of the microfinance intervention carried out in the urban slums of Hyderabad at the end of 15 months showed that there was no effect of access to microcredit on average monthly expenditure per capita but impacts on durable expenditure effect were heterogeneous. There also seemed to be no significant impact on health, education or women's decision making although there was some impact on creation of new businesses and a decline in wasteful expenditure (Bannerjee, Duflo, et al. 2009).

Results on a microcredit evaluation in rural Morocco found a very low uptake of 13% for microfinance loans. Among households identified as more likely to borrow, microcredit access led to a significant rise in investment in assets used for self-employment activities, an increase in profit, and a reduction in income from casual labor. The effects were however quite heterogeneous (Crepon, et al. 2015). A similar study in Salem in Tamil Nadu reported target households registering 11.41% higher annual average income as compared to the control group but not very significant results on other parameters (Chandrakumarmangalam and Vetrivel 2012).

A study in 2003 in Bangladesh found that a 10-percent increase in female borrowing increases household per capita total expenditure by 0.2 percent, food expenditure by 0.1 percent, non-food expenditure by 0.5 percent and household non-land asset by 0.2 percent though no positive effects were seen in men (Khandker 2005). In a replication study using propensity matching, results indicated both negative as well as positive often statistically insignificant, average microcredit impacts. Women were also ruled out as having an obvious advantage over men (Duvendack and Palmer-Jones 2012). Analysis of other evaluation studies too have identified low take off rates for microfinance, and therefore low returns as well. Results for increased entrepreneurship are varied, but there may be some outcomes of increased consumption and investment in durable goods, increase in ability to withstand adverse shocks and some improvement in social indicators such as education for children (Bauchet, et al. 2011).

3. Data and Methods

The data is taken from a randomized evaluation of the effect of the canonical group-lending microcredit model initiated in 2005 that targets women who may not necessarily be entrepreneurs. It consists of two end-line surveys carried out after 15-18 months and 3.5 years respectively after initiation.² 52 out of 104 poor neighborhoods in Hyderabad were randomly selected for the opening of a *Spandana branch*. A comprehensive household survey was conducted with an average of 65 households in each neighborhood, for a total of about 6,850 households for both Endline surveys. By the end of the second survey, both Spandana and other organizations had started lending in the treatment and control groups, so the fraction of households borrowing from microcredit organizations was not dramatically different (35 percent in treatment and 33 percent in control). This second survey thus gives an opportunity to examine some of the longer-term impacts of microcredit access on households and businesses, who borrow and those who do not borrow at all. The joint lending groups were formed by women themselves and were free to

² Called Endline I and Endline II respectively and was conducted by IFMR and J-PAL

choose the best use of the loan. They were also not exposed to any entrepreneurship or financial literacy training. Though a baseline survey was conducted with 2800 observations, it was used only to identify the treatment and control groups and uptake of micro-credit and therefore no analysis in terms of the comparison between the baseline and end-line results can be taken up. As results show in Table 1, the baseline survey could ensure broad equivalence between control and treatment groups which the study achieved. However as evident from results given in Table 2, the variables of total outstanding debt in area, total number of businesses in area, area mean monthly per-capita expenditure, and area literacy rate (HH heads only) were significantly different across the groups. Consequently, these variables were used as control variables.

Table 1 Background Characteristics of Control and Treatment Group as per Baseline Survey

	Control	Treatment	Difference	(p-value)
Household size	5.04	5.13	-0.10	0.17
Adults (16 and older) in household	3.44	3.43	0.01	0.85
Children (15 and younger) in household	1.60	1.70	-0.10	0.04
Male head of household	0.91	0.89	0.01	0.31
Age of head of household	41.15	40.91	0.24	0.58
Head of household with no education	0.37	0.36	0.01	0.69
Has outstanding loan from Spandana	0.00	0.01	-0.01	0.00
Has outstanding loan from non-Spandana MFI	0.01	0.02	-0.01	0.17
Has outstanding loan from bank	0.04	0.04	-0.00	0.85
Has outstanding informal loan	0.63	0.63	-0.00	0.94
Has any outstanding loan	0.68	0.68	-0.00	0.91
Total outstanding loan amount, Spandana (INR.)	0.00	68.97	-68.97	0.02
Total outstanding loan amount, non-Spandana MFI (INR.)	201.15	371.51	-170.36	0.38
Total outstanding loan amount, banks (INR.)	7,438.17	2,018.47	5,419.70	0.28
Total outstanding loan amount, informal (INR.)	28,460.02	27,889.56	570.46	0.83
Total outstanding loan amount (INR.)	37,892.00	32,013.45	5,878.56	0.32
Number of household businesses	0.32	0.30	0.02	0.48
Number of female-run businesses	0.15	0.14	0.01	0.68
Percent of businesses managed by women	0.49	0.48	0.01	0.89
Business sales per month (INR.)	15,990.64	20,491.87	-4,501.23	0.34
Business expenses per month (INR.)	3,617.42	4,257.97	-640.55	0.73
Business investment per month (INR.)	384.71	399.19	-14.48	0.95
Employees in all businesses	0.17	0.42	-0.25	0.09
Total hours/week worked in self-employment by household members	76.32	71.73	4.59	0.35
Total expenditure per month (INR.)	4,888.43	5,158.11	-269.68	0.13
Non-durables expenditure per month (INR.)	4,734.69	4,986.50	-251.82	0.13
Durables expenditure per month (INR.)	153.75	171.61	-17.86	0.44
Household (non-business) durable good index	1.94	1.97	-0.03	0.43

Table 2 *Test of Differences between Control and Treatment Groups for Control Variables as per Baseline*

	Control (Mean)	Control (SD)	Treatment (Mean)	Treatment (SD)	Difference	p- value
No. of businesses opened 1 year or more before End-line 1	0.38	0.67	0.39	0.65	-0.01	0.65
Had business for year or more before End-line 1	0.31	0.46	0.31	0.46	-0.01	0.55
Total outstanding debt in area, baseline	36487.45	35183.95	31653.01	17061.58	4834.44	0.00
Total number of businesses in area, baseline	7.45	5.01	6.78	4.76	0.67	0.00
Area mean monthly per- capita expenditure, baseline	981.32	163.19	1002.96	184.00	-21.65	0.00
Area literacy rate (HH heads only), baseline	0.61	0.16	0.62	0.12	-0.01	0.00
Area literacy rate, baseline	0.68	0.09	0.68	0.07	0.00	0.43

Though there was some attrition across the number of people surveyed in Endline I (6863) vis-à-vis Endline II (6142), a test of differences of means with respect to background variables such as household size, adult equivalent household size, adults, children, proportion of households having male head, age of head of household, proportion of household head with no education, proportion of women in the age category of 18-45, proportion of children in age category of 13-18 showed no significant differences across both Endlines. This indicated that that attrition was roughly equal across both control and treatment groups and the selection effect was negligible in across control and treatment group. Therefore, treatment estimates could be regarded as unbiased. As per the results given in Table 3, there was a significant difference in the exposure of Spandana between control and treatment areas at 1% significance level at both Endlines. This enables the measurement of the incremental impact of Spandana in treatment areas vis-à-vis control areas. However, the incremental impact might be different for different households which is not possible to be measured in this study.

Model Construction

The primary construction of the equation would take the form of

$$Y_{ia} = \alpha + \beta \times \text{Treatment}_{ia} + X'_{a\gamma} + \varepsilon_{ia},$$

Where Y_{ia} is an outcome for household i in area a , Treatment_{ia} is an indicator for living in a treated area, and β is the intent-to-treat effect. X'_a is a vector of control variables, which measures for the baseline, variables of, had business for a year before Endline I, area outstanding debt, total number of businesses in area, area population, area mean monthly per-capita expenditure, area literacy rate (Household heads only). Standard errors are adjusted for clustering at the area level.

Certain limitations are always inherent in the conduct of any randomized study. Since the take up credit rates consisted of only 25% of households, confidence intervals of estimates are bound to be much larger. There will also be a great deal of heterogeneity in the impacts on different households. Impacts may be substantially different on the borrowers and/or communities already being served before the lenders in these studies began experimenting on the margin though the effect has been somewhat adjusted using control variables at the baseline. There is bound to be some selection effects, given borrowers would tend to self-select, and lenders may choose to eliminate riskier borrowers. The heterogeneity in loan purpose uses makes it difficult to detect separate household effects, since some households use loans to grow businesses, some for consumption smoothing and some for empowerment.

Table 3 *Test of Differences across Different Lenders for Control and Treatment Groups for Endline I & Endline II*

Variable	Control (Mean)	Treatment (Mean)	Difference	p-value	Control (Mean)	Treatment (Mean)	Difference	p-value
By Mean Proportion								
	Endline I				Endline II			
Spandana	0.05	0.21	-0.16	0.000***	0.11	0.19	-0.08	0.000***
Other MFI	0.15	0.14	0.01	0.156	0.27	0.24	0.03	0.009**
Any MFI	0.18	0.29	-0.10	0.000*	0.33	0.35	-0.02	0.114
Any Bank	0.08	0.08	0.00	0.475	0.07	0.07	0.00	0.841
Any Informal	0.76	0.71	0.05	0.000***	0.60	0.60	0.00	0.970
Any Loan	0.87	0.85	0.02	0.028**	0.90	0.91	0.00	0.785
By Amount								
Spandana	597.44	2229.97	-1632.53	0.000***	1566.64	2766.51	-1199.87	0.000**
Other MFI	1806.03	1701.31	104.72	0.442	4775.06	4699.87	75.18	0.799
Any MFI	2373.78	3960.72	-1586.94	0.000***	5544.16	6681.41	-1137.24	0.000***
Any Bank	8422.43	9058.64	-636.21	0.752	6126.52	5276.68	849.84	0.351
Any Informal	41044.62	40434.50	610.13	0.772	32355.99	32541.55	-185.56	0.928
Any Loan	59836.27	64082.52	-4246.25	0.311	88631.46	93040.28	-4408.82	0.250

4. Results

As per the baseline survey, the area selected for microfinance intervention had an extremely low presence of formal institutions although informal sources of borrowing were fairly high. Overall 68.62% of the households had some level of debt with an average amount of loan of INR 34,947/- across both areas with the non-formal sector accounting for 63.3% of the households and an average loan of INR 28,174/-. Only 24% of the households were running businesses of which 48.5 percent were managed by women. The impact of treatment on different outcomes was calculated with and without controls. The general direction of results has been the same, but using controls have affected absolute value of coefficients and significance levels. Barring the variable of had old business, all other covariates were based on area levels. Since, the objective of the study was intended to study outcomes as a result of the microfinance intervention, all estimates of results presented have used control covariates. It appears that the factor of having businesses earlier has been generally significant across most of the money metric measures that

is indebtedness, income, wages, expenditure, business profits and investment. Table 4 in fact shows that there is sizeable difference in borrowing amounts between households that had businesses earlier vis-à-vis those who did not. The rest of the control factors do not seem to have a very significant impact except education in certain select cases and hence estimates not displayed.

Table 4 Difference in Borrowing Amounts if there was an Old Business

	Endline I				Endline II			
	Had Old Business		Did not Have old business		Had Old Business		Did not Have old business	
	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Spandana	2,074	2302.84	4,614	1072.40	1,878	3060.87	4,159	1786.49
Other MFI	2,050	2578.41	4,538	1378.36	1,878	5900.93	4,159	4158.92
Any MFI	2,074	4841.71	4,614	2472.46	1,878	7976.22	4,159	5250.78
Bank Amount	2,074	14027.43	4,614	6412.86	1,878	6041.45	4,159	5551.37
Informal Loan	2,074	49709.87	4,614	36464.85	1,878	35971.45	4,159	30658.94
Any Loan	2,088	85845.64	4,650	50946.73	1,878	107210.70	4,159	83036.42

The results for all outcomes are presented from Table 5 to Table 12. Estimates of treatment in Table 5 for loan proportion from various financial institutions suggest that that treatment effect was positive for Spandana at both Endlines although by the time of the second Endline, the incremental impact had come down from 16% to 8%. It was also found that a significant 6% of the borrowers who were given a loan tended not to default at Endline I but the default percentage increased to an insignificant 1% at Endline II. The average number of loan cycles however increased to .13 at Endline II from .11 at Endline I, both estimates being significant. The entry of MFI’s had also reduced borrowing from informal loans at the first Endline but thereafter had no further decline leading to an overall constant proportion of 0.73.

Table 5 Loan Proportion

	Endline I							
	Spandana	Other MFI	Any MFI	Any Bank	Any Informal	Any Loan	Ever Late	Loan Cycles
Treatment	0.16***	-0.00	0.11***	0.00	-0.05**	-0.02	-0.06**	0.11**
Any Old Business	0.09***	0.08***	0.14***	0.04***	-0.01	0.04***	0.02	0.21***
Literacy (HH)	-0.02	-0.05	-0.09	0.06*	-0.14**	0.11***	0.30***	-0.08
Constant	0.06	0.20**	0.23**	0.03	0.97***	1.00***	0.91***	0.30*
	Endline II							
	Spandana	Other MFI	Any MFI	Any Bank	Any Informal	Any Loan	Ever Late	Loan Cycles
Treatment	0.08***	-0.03	0.02	-0.00	0.00	0.00	0.01	0.13*
Any Old Business	0.08***	0.06***	0.10***	0.02	-0.01	0.01	-0.01	0.31***
Literacy (HH)	-0.01	-0.20**	-0.19*	0.02	-0.14**	0.14***	-0.16*	-0.35
Constant	0.19**	0.46***	0.55***	0.10**	0.73***	1.02***	0.84***	0.90***

*5% level of significance; ** 1% level of significance; ***.01% level of significance

Note: All figures are in proportion

Table 6 gives estimates for indebtedness and clearly shows that the treatment effect for average loan amount borrowed from Spandana was significant at both Endline I and Endline II with incremental increase of INR. 1681/- and INR. 1232/- respectively. The impact across the other types of borrowing was not significant though the direction of the coefficients did indicate incremental borrowing for informal sources and banks had declined at the end of the first Endline, but picked up for informal sources at Endline II. The highly significant constant of INR. 75,969/- at 1% significance level at the end of Endline II may be taken as evidence of high incidence of indebtedness in both control and treatment areas. The coefficients of old business were generally significant across all forms of borrowing at both Endlines except bank borrowing at Endline II. Looking at results for both Tables, it indicates banks being edged out in favor of microfinance institutions and informal sources remaining a preferred choice in the long run in terms of total borrowing but slight reduction in average proportion. A higher education predisposes borrowing from the bank against informal sources. The high significant constant coefficients for both proportions and amounts indicate a higher level of base borrowing across both the control and treatment areas. Lower insignificant treatment coefficients for proportion of loan and absolute amount borrowed for Endline II do seem to indicate an avoidance of further borrowing in the wake of already existing high amounts of debt accumulated.

Table 6 *Loan Amount*

	Endline I					
	Spandana	Other MFI	Any MFI	Bank	Informal Loan	Any Loan
Treatment	1,681.35***	-17.45	1,720.55***	-223.77	-869.74	3,302.48
Old Business	1,197.94***	1,216.06***	2,355.41***	7,710.58***	13,141.98***	34,836.01***
Literacy (HH)	-219.88	-635.76	-390.43	10,664.30*	-8,573.75	-20.32
Constant	100.09	2,468.61**	2,168.24	-6,703.83	24,512.11**	19,046.18
	Endline II					
Treatment	1,231.73***	-38.26	1,199.86	-1,362.62	550.46	3,828.15
Old Business	1,256.64***	1,736.32***	2,702.96***	698.88	5,123.86**	24,552.85***
Literacy (HH)	66.63	-2,446.58	-1,971.32	11,027.06**	-11,964.59	416.55
Constant	2,862.20**	8,194.65***	9,688.17***	-3,034.80	27,082.39**	75,968.85***

*5% level of significance; ** 1% level of significance; ***.01% level of significance

Note: All figures are in INR

The incremental impact of microfinance intervention on business outcomes is shown in Table 7. For most of the outcomes, estimates were insignificant except Investment at Endline I and Assets at Endline II. The business investment increased by a significant INR. 366/- in treatment areas over last 12 months at Endline I but declined to an insignificant INR. -156/- at Endline II. There was however an incremental increase in stock of Business Assets by INR. 1,172/- in treatment areas at Endline II. Since the control variable of having existing businesses was extremely

significant across all outcomes, though the coefficients had declined by the end of Endline II, it indicated that the business outcomes might have been positive only for those who had existing businesses. Those not having existing business did not seem to benefit from the microfinance intervention except in terms of increase in assets.

Table 7 Business Outcomes

	Endline I					
	Assets	Investment	Revenue	Expense	Profits	Employees
Treatment	520.63	366.09*	801.32	83.63	364.54	-0.02
Old Business	6,639.77***	1,075.93***	15,442.09***	12,407.87***	3,025.25***	0.39***
Literacy (HH)	2,347.51*	-108.76	-1,099.86	-1,969.62	-1,121.26	0.05
Constant	-1,504.08	-149.62	-9,064.71**	-6,469.27**	-160.71	-0.17
	Endline II					
Treatment	1,172.08**	-155.96	151.73	-721.66	555.78	-0.03
Old Business	8,137.83***	1,338.24***	9,673.92***	8,807.34***	1,751.56***	0.26***
Literacy (HH)	205.02	-1,265.35	-2,188.87	-2,000.37	340.34	0.19
Constant	2,440.49	1,436.48*	816.28	2,035.75	-425.26	-0.01

*5% level of Significance; ** 1% Level of Significance; ***.01% Level of Significance

Note: All figures are in INR

As evident from Table 8, the entrepreneurship outcomes generally lasted only through Endline I and generally petered down by Endline II. There was only a positive increment of .02 in number of new businesses among women amongst those who did not own businesses earlier at Endline I. By Endline II, there was no increase in new business, but possibly among those who had started one, there was a .05 increase in total number of businesses. Those who had existing businesses scaled up the existing ones by Endline I but showed a decline by Endline II. There was an insignificant decline in wages which implied that entrepreneurship did not replace wages. The decline in wages was far more significant for those who had existing businesses. All in all, results suggest that there was hardly any new increment in entrepreneurial activity and even those who had existing businesses showed a decline by Endline II.

Table 8 Entrepreneurship

VARIABLES	Any Business	Total Business	New Business	Female Businesses	Female Business New	Wages Non Business
	Endline I					
Treatment	0.01	0.01	0.02**	0.01	0.02***	-510.26
Old Business	0.94***	1.41***	0.00	0.53***	0.01	-1,660.62***
Literacy (HH)	-0.01	-0.05	0.03	0.00	0.03*	1,502.73
Constant	0.04**	0.11	0.04	-0.00	0.00	2,005.79*
	Endline II					
Treatment	0.02	0.05*	0.01	-0.01	-0.00	-138.99
Old Business	0.58***	0.86***	0.07***	0.33***	0.02***	-1,944.22***
Literacy (HH)	-0.03	-0.04	-0.06	-0.00	-0.02	1,348.86*
Constant	0.34***	0.52***	0.15***	0.15**	0.07**	3,843.35***

*5% Level of Significance; ** 1% Level of Significance; ***.01% Level of Significance

Note: Except for Wages, all other Variables are Given in Number of Businesses

Table 9 shows the incremental effect of treatment on number of hours worked per week. There was a significant but low overall 2.25 additional hours per week at Endline I taking into account all family members for those who did not have an existing business. Since the hours of work for self-employment (SE) was not significant for spouse/ head of family nor for children, it may have only resulted in some extra hours for the female member but not for the spouse or head of household. This incremental impact however did not last till Endline II. The high significant coefficients for Old Business for both Endlines does indicate that female members reduced outside employment with preference for working for own business. This too seemed to show a decline by Endline II. In fact, by Endline II, the total number of hours for the entire family seemed to suggest a constant 90 hour week against 80 hours at Endline I, with some increase of 9 hours per week in case there was an existing business. Child labor may have reduced slightly in families where the head of the family was literate, more so for boys, although there was a decline of 2 hours per week work at 10% significance level for the female child only at Endline I. Overall it might have replaced hours worked outside for self-employment for the women, but impacts did not particularly percolate to the rest of the family.

Table 9 *Hours of Work over the Last 7 Days*

	For all Members of Family			For Spouse/Head of Family			Children 16-20 Years		
	Total	SE	Out	Total	SE	Out	Both	Girl	Boy
Endline I									
Treatment	0.72	2.25*	-1.61	3.24**	0.39	2.84**	-1.57	-2.04*	0.10
Old Business	15.04***	97.86***	-82.72***	12.26***	-22.31***	34.57***	1.03	-0.33	0.91
Literacy (HH)	-5.81	2.64	-8.07	-4.38	-1.47	-2.92	-2.94	-4.25	-8.72
Constant	80.03***	-7.32	87.25***	54.91***	36.64***	18.27***	26.43***	11.90***	34.20***
Endline II									
Treatment	-0.63	1.93	-2.56	1.31	-0.45	1.77	-0.06	0.63	-0.88
Old Business	8.78***	53.33***	-44.55***	7.33***	-14.20***	21.53***	0.30	-1.54*	1.27
Literacy (HH)	-8.73	-0.09	-8.64	-3.50	2.94	-6.44	-10.32**	-7.19**	-9.94*
Constant	89.11***	31.30***	57.80***	53.64***	28.25***	25.39***	26.07***	13.20***	29.55***

*5% Level of Significance; ** 1% Level of Significance; ***.01% Level of Significance

Note: All coefficients are in Hours per Last 7 Days. SE Stands for Hours Worked in Self-Employment. Out Stands for Hours Worked Outside

The social outcomes are given in Table 10, and it appears that there was no impact of increase in enrolment of either girls or boys in treatment areas. There is a slight marginal significant decline in 0.46 hours of work for boys in the age group of 5-15 at Endline II. There was a decline in women run businesses by a significant 0.04 times by Endline II. This shows very minor impact of micro-finance on promotion of women oriented businesses in the initial stages, but long run sustainability of businesses commenced is doubtful.

Table 11 and Table 12 shows the 30-day total monthly expenditure per household and 30-day per capita expenditure per household on different heads of expenditure respectively. There was a significant increase in expenditure on durable goods of INR. 96.47/- monthly and INR. 19.67/- monthly per capita, but a significant decline in expenditure on festivals of INR. 772.1/- monthly and INR. 14.04/- monthly per capita at Endline I in treatment areas. By Endline II, the incremental impact of

treatment was no more significant. The coefficients of Old Business reported high significant coefficients at Endline I that were both lower and relatively insignificant by Endline II. Literacy on the other hand was associated with high positive significant coefficients for expenditure on non-durables, health and education but negative significant coefficients for expenditure on temptation items at Endline II. By Endline II, it appeared that the households had settled down to higher average levels of expenditure almost double that at Endline I though the percentage composition on different items of expenditure may have changed.

Table 10 Social Outcomes

	School for 5-15 Years		Hours worked in the Last 7 days for Children 5-15 Years		School for 16-20 Years		Percentage of Female-Business
	Girl	Boy	1. Girl	Boy	Girl	Boy	
	Endline I						
Treatment	-0.01	-0.01	-0.02	0.63	-0.04	-0.01	-0.00
Old Business	-0.01	0.00	-0.21	0.50	0.00	-0.01	-0.08**
Literacy (HH)	0.03	0.04	-1.80***	-3.90	0.27***	0.23**	0.04
Constant	0.88***	0.85***	0.43	4.82**	-0.01	0.13	0.36***
	Endline II						
Treatment	0.02	0.01	0.13	-0.46*	0.02	-0.03	-0.04*
Old Business	0.01	-0.01	-0.04	0.34	-0.01	0.01	-0.01
Literacy (HH)	0.11***	0.09*	-0.60	-0.04	0.14**	0.24***	0.02
Constant	0.85***	0.81***	0.81	2.65***	0.12	0.23**	0.30***

*5% Level of Significance; ** 1% Level of Significance; ***.01% Level of Significance

Table 11 Total Monthly Expenditure

VARIABLES	Total	Durables	Non-Durables	Health	Education	Festival	Temptation	Food
Endline I								
Treatment	6.08	96.47*	-78.13	-8.67	0.24	-772.12*	-37.86	-68.35
Old Business	1,275.2***	399.4***	887.93***	52.14	86.97**	509.20**	74.72***	236.69***
Total Business	-52.20***	-6.37	-45.04***	-4.41	-15.25***	-119.61***	0.17	-9.44
Literacy (HH)	211.27	-100.15	274.99	-206.66	346.28*	2,519.06	-171.78**	124.21
Constant	2,872.7***	175.56	2,684.3***	192.22	-38.47	1,488.67	426.84***	1,717.6***
Endline II								
Treatment	-223.43	16.80	-222.41	-123.85	58.20	232.57	-46.09	-55.97
Old Business	837.43***	85.64**	724.92***	34.32	114.94**	805.82***	61.58**	367.46***
Total Business	-47.63**	-6.21	-40.44**	-14.65**	-5.63	-57.62***	-3.69	-3.88
Literacy (HH)	1,513.90**	64.59	1,463.67**	801.2***	477.43**	1,172.26	-350.58***	371.14
Constant	6,090.18***	520.5***	5,536.4***	511.44**	258.51	3,160.8***	748.47***	3,401.2***

Table 12 Per Capita Monthly Expenditure

VARIABLE S	Total	Durable s	Non-durables	Health	Educatio n	Festival	Temptatio n	Food
Endline I								
Treatment	7.79	19.67*	-9.14	-3.95	-1.12	-14.04*	-8.78*	-12.89
Old Business	149.5***	70.32***	81.70***	-1.24	12.34	3.43	8.88**	4.59
Literacy (HH)	101.81	-1.58	98.22	-45.23	78.91**	49.62*	-30.89*	36.93
Constant	775.9***	38.93	735.8***	64.94	5.34	32.78	105.76***	438.9***
Endline II								
Treatment	-45.25	2.21	-43.61	-22.62	9.59	6.40	-8.76	-14.68
Old Business	74.02**	16.36*	51.85	0.28	12.19	6.24	4.75	23.94
Literacy (HH)	283.49*	10.78	272.34*	164.7***	102.29*	18.24	-82.26***	60.09
Constant	1,520.2***	125.0***	1,384.5***	139.03**	74.97	61.7***	184.36***	824.4***

*5% Level of Significance; ** 1% Level of Significance; ***.01% Level of Significance

5. Conclusions

A comparison of outcomes of intervention by Spandana shows some impact in treatment groups at Endline I as compared to control groups. By the end of Endline II when Spandana started lending in control group areas, the difference across control and treatment groups more or less petered out, although total indebtedness had considerably increased. The number of total businesses might have increased, but there was no further incremental impact through microfinance interventions after Endline I. The results across most outcomes indicates that the impact of microfinance may have some significance at early stages, but in the long run, impacts appear doubtful. Further, those with existing businesses might have tended to benefit more from microfinance interventions compared to new entrants. From a policy perspective, it appears that simple rollouts of microfinance interventions may not completely substantially reduce the borrowing from informal sources, though it may tend to supplant bank financing. The low increase in entrepreneurship is also a reflection that microfinance intervention without skill training may not succeed.

Lastly, business models of microfinance may need to be tweaked to have higher positive social outcomes. The original concept of a microfinance or microcredit was intended as a social intervention tool to address poverty. It was therefore characterized by small transactions, collateral free loans for entrepreneurial activity, group lending, targeting of poor clients in underserved communities especially female clients, simple application processes and market-level interest rates (Karlan and Goldberg 2007). Though microfinance organizations were projected to be sustainable, they were never ever considered as for profit institutions. Policy makers are thus stuck in a conundrum expecting that a for-profit model would results in social transformation. The most important question therefore that needs to be answered is, can mere access of funds without an accompanying supporting infrastructure, resolve social dynamics and pull out households from the cycle of poverty and lack of opportunities. The results from the evaluation of the microfinance intervention do not support that assumption. Indeed, the failure of the Spandana model and in some ways the failure of the industry stems from the divergence of microfinance from its essential characteristics (Stiglitz and Haldar 2013). There was a breakdown of the social capital and the peer monitoring

mechanism in the wake of huge overlapping across multiple providers with no loyalty to any one provider. The providers were purely commercial institutions with no intention to invest in any kind of training and handholding of households. Secondly, the mass scaling up and rapid proliferation that was adopted by the organization may not be entirely suitable to the microfinance industry which is essentially meant to build on customized requirements of its stakeholders. It also gave no room for any kind of learning or mid-course correction to make any kind of adaptations to the social and cultural milieu of borrowers. In fact, the shift to a profit for model led to exploitative practices and a further disintegration of relationship between the client and the provider.

Changes in the regulatory framework has no doubt brought in more checks and balances within the system preventing it from employing unfair practices or exploitative mechanisms while also regulating extent of indebtedness. This has reduced operational margins forcing the industry to concentrate on urban areas where entrepreneurship avenues may not be very attractive as evident from the Spandana experience. The full impact of this transition on the fortunes of the microfinance industry in India may only be known after a gap of another 3-5 years. The social and livelihood enhancement impact on borrowers too, would also need to be rigorously evaluated to arrive at some generalizable conclusions. Nevertheless, results of this evaluation, broadly similar to evaluations done in other countries, do seem to indicate that *"microfinance is not for every household, or even most households, and it does not lead to the miraculous social transformation some proponents have claimed"* (Banerjee, Karlan and Zinman 2015).

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