Chapter - 3

Research Methodology

Research lays the foundation for decision making in business. Easier said than done, the process of research is not easy. The guidelines for conducting research are very specific; it encompasses a comprehensive procedure starting from formulation of research problem, followed by extensive literature review, preparation of the research design, determination of the sample design, collection of primary data, and analysis of the collected data, data interpretations and preparation of the report or presentation of the results.

Most common forms of research include empirical and conceptual research. Conceptual research relies more on theoretical concepts, whereas empirical research is based on observation and experimentation and gives less importance theoretical framework. Empirical research is also known as experimental research. Empirical research is based on data which is collected on primary basis and it comes up with findings which can be verified. Experimental research is better when the researcher has got variables which are dependent as well as independent.

Micro finance refers to the provision of financial services for both credit and deposits that are provided to the people who are living with the poverty. Micro finance provides finance generally to such formal and informal arrangements for offering financial services to the poor. Throughout the globe, poor people are excluded from formal financial system like banking, insurance and so on. Difficulty to avail such formal banking service, the poor has adopted a wide variety of informal financial arrangements to meet their financial needs. At
present, this difficulty is removed with the establishment of micro finance institutions. Microfinance programmes has witnessed noteworthy growth in India during the first decade of 21st century. Various evidences found that these activities are assisting the poor in many ways such as credit saving. During the last three years, growth of micro loans, active borrowers and their size of borrowing were significantly increased. Hence this study makes an attempt to evaluate the recent trends in micro finance programmes in India.

In this chapter, the methodology adopted for the study of collective action for the evaluation of microfinance programmes in India is presented.

3.1 Research Objectives:

Before going for data collection method, the objectives were framed which covered the subject matter of research. For formulation of objectives there are two basic steps: understanding the problem comprehensively and rephrasing it in meaningful manner. The objectives should be objective and achievable. As this has been an empirical study, some objectives were framed by the researcher. The major objectives of research study were as follows:

1. To study the growth of Microfinance Institutions in India.
2. To study the contribution of microfinance programmed in poverty reduction in socially vulnerable people.
3. To study the role of microfinance programmes in capacity building.
4. To study the impact of microfinance programmes on incomes through income generating activities.
5. To study the role of microfinance programmes in women empowerment.

3.2 Research design: -
The study conducted is Ex-post facto research. The present study had been divided in two sections. The first part contains evaluation of Microfinance programmes run through microfinance institutions in India and for the present study, the data collected on MFIs is from financial year 2009 to 2013. Various indicators used in this research were grouped into five categories: outreach, infrastructure, profitability, efficiency, productivity and self-sufficiency. All indicators were represented through pie charts and bar diagrams. To measure the various indicators, ratio analysis has been used.

To find out the impact of microfinance programmes, a group of borrowers (completed 3 cycles of borrowings) were selected. The tool used in second part had been RCT, in which Microfinance borrowers (Treatment group) were compared with the non borrowers (control group) in urban areas were analysed. The urban poors were selected for this research because urban microfinance had been neglected and resulted into urban poverty.

3.3 Sample Size

A specific population must be correctly defined in terms of its elements, sampling units and time. A universe or population is the sum total of all the elements having some specified features, which the researcher wishes to study and define before selection of the sample. An element is the unit about which the information needs to be collected. It provides the standard for analysis as per the well-defined process. The study was carried out in two phases. First phase consist of evaluation of MFIs while the second phase comprises the evaluation of microfinance borrowers. For the purpose of first phase, to evaluate the growth of MFIs, 48 active and large MFIs where chosen spread across the country.
The study of borrowers was carried out by selecting 10000 households out of which 5000 were Microfinance borrowers and 5000 non-microfinance borrowers. The primary data collected through questionnaires, distributed to 10,000 household out of which 7050 responded. Therefore, in the present study, the sample size taken was 7050 households. Out of 7050 responded household, 3516 were Microfinance borrowers (Treatment group) and 3534 households were Non Microfinance borrowers (control group). In the treatment group, households chosen completed three loan cycles of MFIs. In control group, were included households selected, borrowed loans from local moneylenders and/ or related sources, on high interest rates. On the basis of completed questionnaire, 3500 households were selected from treatment group and 3500 households from control group. Secondary data were collected from various sources like- Internet, books, newspapers, periodicals, brochures, journals, magazines, corporate directories etc.

3.4 Tools of data collection –

The basic design of the survey instrument consists of structured questionnaires. The questionnaire was designed on the basis of literature review done. The questionnaire was sent to various academicians and researchers for review and correction. After finalizing the questionnaire, cronbach alpha test was carried out for reliability and validity check and it was found 8.8.

3.5 Data Source –

The source of data was primary and secondary data. Primary data had been collected from microfinance borrowers and non borrowers through questionnaire, to study the individual growth of client.
For evaluation of growth of Microfinance institutions in India, the data were collected from micrometer and microscape report of Micro Finance Institutions Network (MFIN). Microfinance Institutions Network (MFIN) was established in October 2009 as the primary representative body of NBFCs engaged in the business of Microfinance. The data had been collected from the source because it is the premier industry networking association for the microfinance industry in India and its current membership consists of 48 leading Non-banking Finance Companies and Microfinance Institutions (NBFC MFIs) in the country. The aggregate business of MFIN members constitutes over 90% of the Indian microfinance industry (excluding SHGs). MFIN seeks to work closely with regulators and other key stakeholders to achieve larger financial inclusion goals through microfinance. Since its establishment, MFIN, as the Self-Regulatory Organization for the industry, had been promoting the key objectives of Microfinance in India. MFIs have been working to establish guidelines for the companies which are responsible for lending and client protection.

MFIN had collaborated with, on strategic initiatives, a diverse set of stakeholders, ranging from International Development Agencies, to Global Microfinance Networks and Technical Service Providers.
3.6 Tools of Data Analysis:

The process of data analysis involves using the reasoning to understand and interpret the primary data collected by the researcher. The choice of analytical techniques for analysis of the primary data depends on the characteristics of research design and nature of the collected data. The collected data from 7050 respondents were valuable and significant because it contained all the relevant information needed to fulfill the objectives of research work. Before applying statistical techniques for data analysis, the data collected was tabulated to facilitate interpretation process. The data analysis had been carried out through tools which as were:

3.6.1 Ratio Analysis:

A sustainable business and mission requires effective planning and financial management. Ratio analysis is a useful management tool that will improve understanding of financial results and trends over time, and provide key indicators of organizational performance. Managers used ratio analysis to pinpoint strengths and weaknesses from which strategies and initiatives can be formed. Funders may use ratio analysis to measure your results against other organizations or make judgments concerning management effectiveness and mission impact. For ratios to be useful and meaningful, they must be:

- Calculated using reliable, accurate financial information (does your financial information reflect your true cost picture?)
- Calculated consistently from period to period
- Used in comparison to internal benchmarks and goals
- Used in comparison to other companies in your industry
Viewed both at a single point in time and as an indication of broad trends and issues over time.

Financial ratios, which compare one piece of financial information with another, have an important place in financial analysis. Ratios are used to monitor business trends and point out problems. Ratios can be used for:

- Comparative analysis between financial periods within the same organization
- Comparative analysis between different organizations within the same industry (in industries that share common accounting standards)

Because most Microfinance Organizations do not currently employ common accounting practices, comparing financial ratios between Microfinance Organizations may be problematic. The most useful financial ratio analysis for Microfinance Organizations compares ratio levels between periods within the same organization.

Many microfinance organizations receive subsidies in different forms like donors may provide grants, in-kind donations (technical assistance, rent subsidies, etc.), and subsidized funds. Typically, when examining an MFO’s balance sheet, such subsidies may not be readily apparent. In order to perform meaningful financial analysis, it is necessary to adjust financial indicators so that what is being considered is the real, unsubsidized profit or loss of an institution. Standard adjustments include:

- In-kind donation adjustments: financial statements are adjusted to eliminate the subsidy. This typically has the effect of lowering operating profits
• Inflation adjustments: the value of fixed assets is adjusted upwards and the value of equity is adjusted downwards.

In the present study, some of the financial ratios were discussed normally used to measure Efficiency, Productivity, and Profitability of Microfinance Organizations as follows:

3.6.1.1. Return on Assets (RoA).

Ratio is a percentage (%), which measures the net income earned on the assets of a Microfinance Institution (MFI). Simply put, it measures how well the institution uses all its assets. The formula to calculate RoA is:

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\text{Return on Assets} = \frac{\text{Net income (Excluding donation)}}{\text{Average Total Assets}}
\]

RoA is an overall measure of profitability that reflects both the profit margin and the efficiency of the institution. For calculating this Ratio, average total assets are used, rather than performing Assets. This is because, the entire organisation is being measured on its total financial performance, including decisions made to purchase fixed assets or invest in land and buildings (in other words, using funds that could be used for other revenue-generating investments), or invest in securities. Analysis of this Ratio, improving the ability of an MFI to determine the revenue impact of policy changes, improved delinquency management, or the addition of products.
### 3.6.1.2. Return on Equity Ratio

The return on Equity (Roe) Ratio provides information on how much net income was earned on the equity of Microfinance Institution (MFI). In other words, Roe reflects how much the MFI has earned on the funds invested by the shareholders/donors.

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\text{Return on equity} = \frac{\text{Net Income (Excluding Donations)}}{\text{Average Equity}}
\]

Return on equity or return on capital is the ratio of net income of a business during a year to its stockholders' equity during that year. It is a measure of profitability of stockholders' investments. It shows net income as percentage of shareholder equity. It is obviously of interest to present or prospective shareholders (and donors), and is also of concern to management, because this measure is viewed as an important indicator of shareholder value creation.

This Ratio provides management and investors with the rate of return earned on the invested equity. If the return on equity is less than the inflation rate, then the equity of the MFI is reduced each year by the difference (net of the non-monetary assets owned by the MFI). It can also be said that Roe indicates the profitability of the institution. This is particularly relevant for a private, 'for-profit' MFI, as it indicates the return on their investment in the institution. However, given that most MFIs are 'not-for-profit' organizations, the Return on equity measure is most often used as a proxy for commercial viability. The return on equity ratio also allows
donors and investors to determine how their investment in a particular MFI compares against alternative investments. This becomes a crucial indicator when the MFI is seeking private investors.

This Ratio will also vary greatly depending on the capital structure of the MFI. Those MFIs that fund their assets primarily with equity will show a lower return, than those that fund their assets primarily with liabilities. In other words, as shown in the discussion on the debt-equity ratio, leverage has a significant impact on equity. The ROE ratio would increase if the profit of the MFI increases and/or its leverage (debt) increases.

3.6.1.3. Cost per loan:
CPL is a currency number, which highlights the Microfinance Institution's (MFI's) cost in disbursing (making) one (unit of) loan.

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\text{Cost per loan} = \frac{\text{Operating cost during the period}}{\text{Total Number of loan Disbursed during the Period}}
\]

The CPL Ratio provides an indication of the cost of providing credit (or rather one loan), based on the number of loans made. This Ratio also needs to be looked at over a period of time, in order to determine whether operating costs are increasing or decreasing as more loans are made. As an organisation matures, this Ratio should decrease. The economies of scale factor is also implicitly captured by this Ratio in that, above a certain minimum scale of loan disbursements, efficiency will automatically come into the lending process of an MFI. Analysis of the Cost per Loan provides insight into how operating costs has changed and how
efficiently the organisation is operating. When trends are looked at, one can ascertain whether or not the organisation has really slid down the learning or experience curve, in terms of costs.

3.6.1.4. The debt-to-equity ratio

It indicates the relationship of debt to equity financing. This Ratio expresses the relationship between capital contributed by creditors and that contributed by owners. It expresses the degree of protection provided by the owners for the creditors.

The higher the Ratio, the greater the risk being assumed by creditors. A lower Ratio generally indicates greater long-term financial safety. Creditors generally prefer a low DER, since this provides a large cushion of protection. Also, a Microfinance Institution with a low DER usually has greater flexibility to borrow in the future. A more highly leveraged MFI has a more limited debt capacity.

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\text{Debt Equity Ratio} = \frac{\text{Total Liabilities}}{\text{Total Equity}}
\]

DER is the simplest and best known measure of capital adequacy as it measures the overall leverage of the institution. This Ratio is of particular interest to lenders because it indicates how much of a safety cushion (in the form of equity) there is in the institution to absorb losses. Traditionally, MFIs have had low debt to equity ratios, because as NGOs their ability to borrow from commercial lenders was limited. As MFIs reconstitute themselves as regulated intermediaries, however, DER will perhaps rise rapidly. Risk and volatility (whether the MFI is likely to be exposed to strong shifts in the business environment), determine how much debt
can be carried for a given amount of equity. Even the most highly leveraged MFIs carry less debt than conventional banks would, because their loan portfolios are backed by less collateral and their risk profiles are still not as well understood as those of conventional banks.

However, highly leveraged MFIs (those with heavy debt in relation to equity), are more vulnerable to business downturns than those with lower debt to equity positions. Most of the large cooperative MFIs in India have tapped clientele capital to a very significant extent and hence, they would have debt-equity ratios attractive from a creditor's.

3.6.1.5. Operating Cost Ratio or Operating expenses Ratio:

It is calculate in percentage (%) and is perhaps the best indicator of the overall efficiency of a lending institution. For this reason, the Ratio is also commonly referred to as the efficiency Ratio. It measures the institutional cost of delivering loan services. The lower the Operating Cost Ratio, the higher the efficiency of an institution. It is affected by increasing or decreasing operational costs relative to the average loan portfolio outstanding.

\[
\text{Operating expenses Ratio} = \frac{\text{Operating cost during period}}{\text{Average outstanding loan portfolio}}
\]

This Ratio shows how much the institution must spend on all operating costs (salaries, rent, office, vehicles etc), to keep a unit of money loaned out for one year's time. If an institution selects an efficient methodology and employs a highly productive staff, the OCR will drop, resulting in a more sustainable institution. In
an organization, a downward trend in this Ratio highlights the increasing efficiency.

### 3.6.1.6. Operating self-sufficiency:

It is calculated in percentage (%), which indicates whether or not enough revenue has been earned to cover the microfinance institution’s total costs-operational expenses, loan loss provision and financial costs. It is an important measure of sustainability of lending operation. If an MFI does not reach operational self sufficiency, eventually its equity will be reduced by losses (unless additional grants can be raised to cover operating shortfalls). This means that there will be a smaller amount of funds to loan to borrowers (which could lead to closing the MFI once the funds run out).

\[
\text{Operating self-sufficiency} = \frac{\text{Operating income (loan+Investment)}}{\text{Operating cost+Loan loss provisions+Financing costs}}
\]

It is an important measure of sustainability of the lending operations. It indicates whether or not enough revenue has been earned to cover the MFI's direct costs, excluding the (adjusted) cost of capital, but including any actual financing costs incurred. If an MFI does not reach operational self-sufficiency, eventually its equity (loan fund capital) will be reduced by losses (unless additional grants can be raised to cover operating shortfalls). This means that there will be a smaller amount of funds to loan to borrowers (which could lead to closing the MFI once the funds run out).

### 3.6.2 Randomised control technique:
Experimental research, also known as a randomized control trial (RCT), examines the effects of an intervention on a specific group. An RCT first identifies two groups of people in such a way that the groups are apparently identical in every aspect. The researchers then randomly assign the intervention to one group (the treatment) but do not assign any intervention to the other group (the control). These two groups are assessed at two points of time: before and after the treatment is applied. Therefore, an RCT can measure the causal effect of the treatment by comparing members of the treatment and control groups.

The terms "RCT" and randomized trial are often used synonymously, but some authors distinguish between "RCTs" which compare treatment groups with control groups not receiving treatment and "randomized trials" which can compare...
multiple treatment groups with each other. RCTs are sometimes known as randomized control trials. RCTs are also called randomized clinical trials or randomized controlled clinical trials when they concern clinical research; however, RCTs are also employed in other research areas, including many of the social sciences, where their relevance and the advantages claimed for them have been contested in the literature.

3.6.2.1 Objectives of conducting an RCT

The primary goal of conducting an RCT is to test whether an intervention works by comparing it to a control condition, usually either no intervention or an alternative intervention. Secondary goals may include:

- identify factors that influence the effects of the intervention (i.e., moderators)
- understand the processes through which an intervention influences change (i.e., mediators or change mechanisms that bring about the intervention effect)

3.6.2.2 The Use of Randomized Evaluations in Microfinance

RCTs are used in impact evaluations to pinpoint causality. The first studies that emerged directly addressed the question of the impact of microfinance by examining possible outcomes such as an increase in income or food consumption levels, improved children’s school attendance, and better health outcomes. But increasingly RCTs are being used to examine product design and test if the product features address the needs of clients. Studies that experiment with different repayment periods, the use of commitment devices for savings, or the elasticity of interest rates are some examples of how RCTs are used to show how services can be improved (Gine 2006 and Ashraf, Karlan, and Yin 2006). It is in the refinement
of products and in the testing of the right mix of services that some researchers believe RCTs can be most valuable for microfinance. While many MFIs primarily rely on qualitative research for product design and testing, for MFIs with sufficient internal data systems, RCTs can be a cost-effective alternative.

As the microfinance industry continues to expand, and innovations in lending methods and financial product offerings continue to emerge, the need for sophisticated program evaluation tools has become increasingly apparent. To this end, researchers have started utilizing randomized control trials – a methodology developed for use in the medical field – to better examine what is and what isn’t working in the fight against global poverty. The evaluations seek to create real world laboratories by selecting certain groups of people – the treatment group – to receive a particular financial product, and maintaining a second group – the control group – with which to compare results. (Randomized controlled trials are one method under the impact evaluation umbrella, which describes efforts to evaluate program interventions and their impact.)

One of the reasons that randomized trials are so popular is because many of the traditional methods of impact evaluation have been criticized for being subject to self-selection bias. That is, the evaluations were arguably unable to isolate whether a given result was due to the impact of the financial instrument being studied, or something inherent in those individuals who successfully became recipients of those instruments. With randomized control trials, however, such bias is far more controlled because the groups being compared are randomly assigned. Thus, for example, instead of asking how recipients of microloans differ from the rest of the population after the fact, they manufacture two similar groups, provide one of them with access to microloans (but not the other), and then observe what happens.
Several microfinance programs and products have been evaluated for their impact, in both beneficial and adverse terms, caused by such programs. Researchers have evaluated microcredit, savings and microinsurance among other initiatives. Under the umbrella of Innovation for Poverty Action (IPA), leading researchers in development economics from Harvard, Yale, MIT, and LSE have been measuring microfinance program impacts in 40 countries. One study, for example, focused on savings by the poor. Their research has shown that while the poor participate in informal savings groups, they underutilize formal savings (banks) and tend to spend savings compulsively. The solution centered on developing a ‘commitment’ savings product that help savers set voluntary savings amount and timelines while removing savings from the household and providing security.

David Roodman, Research Fellow at the Centre for Global Development, notes that the use of randomized controlled trials offers “more credible data than microfinance has had before” in terms of evaluating its impact. His recent review of “Randomized Test of Microcredit in Mongolia” provides an interesting take on the ‘method of randomization’ used in the studies that entailed group-based loans versus individual microloans.