CHAPTER III

RESEARCH METHODOLOGY

3 1   ISSUES

Research originates from the questions and curiosities in the mind of the researcher about certain phenomenon/ phenomena. This the researcher seeks to explore with the help of systematic procedures. The kind of methodological and analytical tools that a researcher uses for investigating a particular domain of inquiry will depend, primarily, on the goals and the broader framework within which a particular problem is embedded.

The issue of persisting gender inequalities, its genesis, structure and objective measurement, are no more marginal in the development debate. UNDP's Human Development Reports for the years 1995 onwards have stirred up wide spread interest, particularly, among those preoccupied with disparities. The major contribution of the reports is ranking nations not only by Human Development Index (HDI) but also by Gender Related Development Index (GDI) and Gender Empowerment Measure (GEM).

Status of women and measurement thereof is a complex, multidimensional and multi-disciplinary area drawing resources from the disciplines of Anthropology, Sociology as also Economics. The concept of women's status at a theoretical level, incorporates several key dimensions such as women's access to valued resources like land and employment, access to power both within the household and the society and control over important household & community decisions. Hitherto, researchers have concentrated on four major areas for assessing gender inequalities, these being education, health (mortality, fertility, morbidity etc.), work participation and political participation. However, access of women to financial institutions, which is an

important means for individuals and groups to acquire and mobilise productive resources for raising income and welfare at individual/ family level, has received scant attention. The hindrances have been largely related to availability of data. While the mainstream data systems have facilitated gender-segregated analysis with regard to literacy, health, work participation (notwithstanding the methodological differences in measurement thereof), political participation etc., analysis with regard to access to financial institutions have suffered due to lack of data base.

The issues that need to be explored in the analysis of gender in banking are :

1. What is the extent of gender differential in major banking parameters ? Before advocating measures for instituting gender centred development in general and gender centred banking in particular, the quantification of the differential is a sin-qua-non.

2 What are the barriers, at policy level as also organisational, that impede female participation in the arena of banking ?

3. What are the factors that influence and promote female participation in banking ?

4. Having identified the measures that promote female participation in banking, what special facilities are advocated, policy wise as also structural, to improve the access of females to the banking sector ?

3.2 **HYPOTHESES**

From the issues as stated above as also the objectives delineated in Chapter I, the following set of hypotheses have been generated :-

1. Female participation in the banking sector is growing.
2. There is significant gender differential in bank deposits.
3. Gender differential in case of credit is more than that of deposits.
4. When women are focussed through special schemes & programmes, female participation rate in banking is higher.
5. Female borrowers have lower default rates than male borrowers.
6. Female literacy and female workforce participation are factors having positive influence on female participation in banking.

3 3 **DATA SOURCES**

This study is based on both primary and secondary data. The secondary data is taken from the Census Report 1991 and Basic Statistical Return (BSR 1-A & 1-B and BSR 2) of Bank 'X'. The BSR data of Bank has been obtained for all states/ union territories where the Bank has its branches. The Bank has branches in all states barring the states of Arunachal Pradesh & Mizorum and the union territories of Andaman & Nicobar Islands, Dadra & Nagar Haveli and Lakshadweep.

Data in respect of literacy and female workforce participation in the various states of India and within the state of Gujarat, for various districts has been obtained from the Census Report 1991. Data for all states barring Jammu & Kashmir has been obtained, as the 1991 census was not conducted in the state of Jammu & Kashmir.

The data in Basic Statistical Return (BSR 1-A & 1-B and BSR 2) of Bank 'X' was obtained for two financial years 1995-96 and 1996-97. For the purpose of the study,

the average of the two years was taken for all the parameters so as to even out the fluctuations in any one given year. In regard to advances, from the return BSR-1A (credit limit of over Rs.25000/-) for the years 1995-96 & 1996-97, data was obtained for all the states/union territories (numbering 27 where Bank 'X' has branches) in respect of the following items : (1) total number of accounts and outstanding amount, (2) number of accounts and outstanding amount under individual category, (3) bifurcation of individual accounts and outstanding amount into male and female, (4) total number of accounts classified as non-performing advances (i.e., sub-standard, doubtful and loss) and the outstanding amount thereunder, (5) NPA account and amount outstanding under individual category classified as NPAs, and (6) bifurcation of individual NPA accounts and outstanding amount into male and female. The data in respect of all the above six items for the -19- districts of Gujarat state was obtained with further bifurcation into (1) metro/ urban centres and (3) semi-urban/ rural centres (centre classification as per Census 1991).

The state-wise data as also the data for the districts of Gujarat obtained from the return BSR-1B (credit limit of Rs.25000/- and less) were (1) total number of accounts and outstanding amount and (2) number of accounts and outstanding amount to male and female. The data for districts in Gujarat was further classified into metro/ urban and semi-urban/ rural areas.

The data obtained from BSR-2 Part I in regard to deposits was as follows :
(1) total number of accounts and the outstanding deposits under the categories current, savings and term,
(2) total number of accounts and the outstanding deposits received from individuals under the categories current, savings and term, and
(3) female accounts of (2) above under current, savings and time.

For the purpose of assessing change in female participation in banking over a period of time, data for five years 1993 to 1997 was collected from -67- sample branches with the help of a structured schedule.

3 4 THE VARIABLES

Based on the hypotheses generated, the specific variables considered for the present study were :-

(I)   INDEPENDENT VARIABLES :

The independent variables in the study consist of workforce participation and literacy levels. Each of these has been defined specifically as follows :

(a) WORKFORCE PARTICIPATION : In the 1991 census, the whole population was divided into -3- categories, viz., main workers, marginal workers and non-workers. The term 'main worker' is defined as a person whose main activity was participation in any economically productive work by his/her physical or mental activity and who has worked for 183 days or more, wherein work involves not only actual work but also supervision or direction of work. 'Marginal work' was defined as participation in any economically productive work by physical or mental activity for less than 183 days. Total workforce participation rate is the combined percentage of the population engaged as main workers as also marginal workers.

(b) LITERACY : The figures taken are the effective literacy rates by residence as per the Census of India, 1991. Definition of a literate person as per the 1991 census was "a person who can both read and write with understanding in any language. A person who can merely read but not write is not literate. It is not necessary that a person who is literate should have received any formal education or should have passed any

minimum educational standard." The literacy rates are based on the population aged 7 years and above

The definitions of both workforce participation and literacy are as per the records of Registrar General and Census Commissioner of India, New Delhi.

(II)   DEPENDENT VARIABLES :

The dependent variables in the study are :

(a) Male accounts in deposits;

(b) Male outstanding amount in deposits;

(c) Female accounts in deposits;

(d) Female outstanding amount in deposits,

(e) Male accounts in advances;

(f) Male outstanding amount in advances;

(g) Female accounts in advances;

(h) Female outstanding amount in advances.

(i) Non-performing advances account of males;

(j) Non-performing advances amount of males;

(k) Non-performing advances account of females;

(l) Non-performing advances amount of females;

The definition of the above variables is based on the "Handbook of Instructions - Basic Statistical Returns 1 and 2" - Reserve Bank of India - March 1996.

The return BSR-1 relates to credit and is in two parts. Part A of the return (BSR 1-A) relates to accounts with individual credit limits of over Rs.25000/- and Part B (BSR 1-B) relates to accounts with individual credit limits of Rs.25000/- and less. The cut-off of Rs.25000/- for each individual accounts is with respect to *credit limit in force*

as on the date of the return and not the *amount outstanding* in the account. Further, the reporting is account-wise and not party-wise, i.e., if one party has three different accounts, it is taken as three accounts and not one.
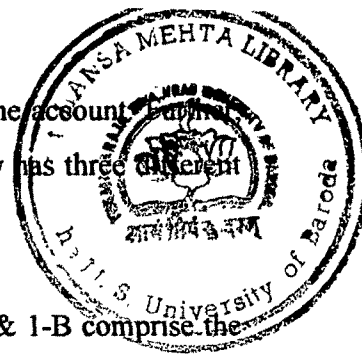
The bank credit required to be reported in the returns BSR 1-A & 1-B comprise the items : (1) loans, cash credits and overdrafts, (2) inland bills purchased and discounted and (3) foreign bills purchased and discounted. While the aforesaid is inclusive of (i) dues from banks which represent loans and advances granted to banks (including participations without risk sharing), (ii) bills rediscounted with the Reserve Bank of India, Industrial Development Bank of India and other financial institutions, (iii) participations with risk taking and (iv) bad debts not written off & protested bills; money at call and short notice is not included.

In Part A of the return (i.e., BSR-1A), the particulars of the account, viz., name of the party, account identification number, district and population group code of the place of utilisation of credit, type of account (i.e., cash credit, overdraft, term loan etc.), *type of organisation*, occupation, nature of the borrowal account, *asset classification*, rate of interest, credit limit and amount outstanding are recorded separately for each account with credit limit of over Rs.25000/-.

Under the heading '*type of organisation*', broad classification is as follows : (a) public sector, (b) co-operative sector, (c) private sector, (d) *individuals* (singly or jointly), (e) joint sector and (f) foreign government & foreign banks. Barring the *individual* accounts, all other organisational classification are deemed gender neutral. The classification of *individual* borrowal accounts is based on the gender of the individual in the single accounts and in case of joint accounts, the gender of the first account holder is taken as the deciding factor for classifying the accounts.

The '*asset classification*' provides the classification of accounts into (a) standard, (b) sub-standard, (c) doubtful and (d) loss assets.

Part B (BSR-1B) does not provide account-wise information but has consolidated information on the occupation-wise totals of accounts with individual credit limit of Rs.25000/- or less. However, gender classification of borrowal accounts with credit limit of Rs.25000/- and less is available in the summary table at the end of BSR-1B. In case of joint accounts the gender of the first account holder becomes the deciding factor for classifying the accounts.

The return BSR-2 pertaining to deposits is in -3- parts. Part - I has classification of deposits according to type, Part - II has classification of term deposits according to maturity and Part - III has classification of term deposits according to interest rate range. The data in part -I alone is relevant for this study.

The deposit accounts and the outstanding amount in Part - I of BSR-2 are broadly classified on the basis of (a) type and (b) ownership. The classification of deposits on the basis of type is into (1) current, (2) savings and (3) term deposits. The classification of deposits on the basis of ownership is as follows : (1) *Individual*, (2) Banks and (3) Others. The outstanding account and amount under the category 'Banks' and 'others' are taken for the purpose of this study as gender neutral. In the *individual* category, separate classification for females is available both for accounts as also amount. As in case of advances, in deposits also, the classification of single accounts is based on the gender of the individual and in case of joint accounts, the gender of the first account holder has been taken as the deciding factor for classifying the accounts.

3.5   SAMPLE DESIGN

Owing to the limitations of the availability of secondary data as also being a single handed study, this study has been limited to only one nationalised commercial bank. Selection of the commercial bank 'X' out of all the nationalised banks, was done on

the basis of balance sheet size, branch network, volume of business and profit position. Among the nationalised banks, the sample bank topped the list in terms of volume of business, average working funds and gross profit. Considering the branch network and net profit, it ranked third.

For the purpose of assessing the change in gender participation over a time span and capturing its various complexities, a survey was conducted and data collected through interview cum questionnaire method from sample branches covering a span of -5-years. To study the problem, two stage sampling technique was used.

(1) Stage I . Selection of Districts

Two districts were selected from each of the three administrative divisions of the sample Bank in the state of Gujarat, viz., North Gujarat, Central Gujarat and South Gujarat areas, covering 10, 3 and 6 districts, respectively. From each region, districts having the highest and lowest business volume (deposits + advances) were selected for sampling. Accordingly, the six districts identified were (1) Ahmedabad & (2) Surendranagar in North Gujarat, (3) Baroda & (4) Panchmahals in Central Gujarat, and (5) Surat & (6) Dangs districts in South Gujarat.

(2) Stage II : Selection of branches

The identification of branches in the six districts was done by stratified random sampling method. As at end March 1994, the identified Bank had 654 branches in the state of Gujarat. For the purpose of the study, 10% of the universe i.e., 65 branches were selected at random from the six identified districts. However, two more branches from Bulsar district were added to the sample list on account of their being identified at the national level for the implementation of the female focussed "Swavlambi Gramin Nari scheme". This scheme was introduced in the financial year 1994-95. The scheme was devised to assist rural women to become self-sufficient

through pursuing self employment activities, particularly in cattle rearing. The number of sample branches, thus stood at 67, spread over in seven districts of Gujarat.

Out of the total banking business, metro/urban areas and semi-urban areas had 53 and 47 per cent share respectively. With a view to obtain areawise representation of branches from six districts, out of the 65 sample branches, 34 and 31 branches respectively, were selected randomly from the metro/urban and semi-urban/rural areas. The two branches later added to the list were both rural branches, taking the number of sample branches from the semi-urban/ rural centres to 33.

3.6   STATISTICAL METHODS

Every project work/ research work needs certain tools and tests for analysing the data. The statistical methods/ tools employed to test the aforesaid hypotheses were as under :

I. **Average and percentage method** : To test hypothesis 1 (i.e., the growing gender participation in banking), hypothesis 2 (there is significant gender differential in bank deposits), hypothesis 3 (gender differential in case of credit is more than that of deposits), hypothesis 4 (when women are focussed through special schemes & programmes, female participation rate in banking is better) as also hypothesis 5 (female borrowers have lower default rates than male borrowers) average and percentage method has been used.

II. **Quartile Range** : For comparison of female participation in deposits/ advances across states (as also districts within the state of Gujarat), female accounts/ amount as percentage to individual was taken so as to have size neutrality. However, with a view to simultaneously also have an assessment of the volume of deposits / advances, the states/ districts were placed in descending order in terms of the share of females in

54

the individual outstanding deposits/ advances. The states/ districts were then grouped into quartiles and the share of the sum total of the outstanding female deposits of states/ districts falling in the quartile range to the total female deposits/ advances was then worked out. The share of the quartiles in the total female deposits/ advances also gives an idea about inter-quartile variations and the degree of skewness in data range.

III.**Standard Deviation & Standard Error (SE)** : Standard deviation was worked out to measure the absolute dispersion (or variability of a distribution). The greater the amount of variability in the distribution, greater will be the standard deviation and greater the magnitude of the deviation of the values from their mean. Standard deviation has been used to judge the representativeness of the mean.

Standard Error (SE) has been used as an instrument in testing a given hypothesis. The hypotheses have been tested at 5% level of significance.

IV. **Rank correlation coefficient**: The technique of Rank correlation coefficient (R) has been used to test the hypothesis No.6, i.e., female literacy and female workforce participation are factors having positive influence on female participation in banking. 'R' has been used to establish the relationship of deposits/ advances accounts & outstanding amount with workforce participation and literacy levels.

Charles Edward Spearman (1904) method of finding out covariability has been used. The Spearman rank correlation coefficient is based on the following formula :-

$$R = 1 - \frac{6\Sigma D^2}{N(N^2 - 1)} \quad \text{or} \quad 1 - \frac{6\Sigma D^2}{N^3 - N}$$

V. **Regression Analysis** : To further reinforce the results of Rank correlation coefficient in testing the hypothesis no. 6, i.e., impact of female literacy and female

workforce participation on female participation in banking, multiple regression has been used.

Regression Equation is as under:

1) Regression equation of x on y; $x - \bar{x} = r \dfrac{\sigma x}{\sigma y} (y - y)$

2) Regression equation of y on x; $y - \bar{y} = r \dfrac{\sigma y}{\sigma x} (x - x)$

$r * \sigma y / \sigma x$ is the regression coefficient of y on x. It is denoted by 'x'. It measures the change in y corresponding to a unit change in x. When deviations are taken from the actual mean, the regression coefficient of y on x has been obtained as follows :

$$r \dfrac{\sigma y}{\sigma y} = \dfrac{\Sigma x y}{\Sigma x^2}$$

Further, the under-root of the product of the two regression coefficient gives the value of the correlation coefficient.

Symbolically, $r = \sqrt{b x y * b y x}$

Proof . $b x y = r \dfrac{\sigma x}{\sigma y}$ and $b y x = r \dfrac{\sigma y}{\sigma x}$

$$b \, x \, y * b \, y \, x = r \, \frac{\sigma x}{\sigma y} * r \, \frac{\sigma y}{\sigma x} = r^2$$

Therefore, $r = \sqrt{b \, x \, y * b \, y \, x}$

VI. 't' test :

't' test was applied to know the significance of difference between means of the two variables, i.e., female/ male accounts & amount and female/ male workforce participation & literacy levels.

VII. X^2 test :
For testing hypotheses 2 and 3 (gender participation in deposits and advances) X^2 test (Karl Pearson - 1990) has been administered which describes the magnitude of discrepancy between theory and observation. It is defined as :-

$$X^2 = \frac{(O - E)^2}{E}$$

where 'O' refers to the observed frequencies and 'E' refers to the expected frequencies.

Steps :-

1) Expected frequencies have been calculated from the following equation :

$$E = \frac{RT * CT}{N}$$

where E = expected frequency,

R = row total of the row containing the cell,

CT = column total of the column containing the cell,

N = total number of observations.

2) Difference between the observed and expected frequencies was taken and the square of these differences, i.e., value of $(O - E)^2$ was obtained.

3) The value of $(O-E)^2$ was divided by the respective expected frequency and the total $[(O - E)^2 / E]$ arrived at. This gives the value of X^2, which can range from zero to infinity. If X^2 is zero, it means that the observed and expected frequencies completely coincide. The greater the discrepancy between the observed and the expected frequencies, the greater shall be the value of X^2.

3.7   LIMITATIONS OF THE STUDY

1. Financial intermediation in India, whether at the urban centres or rural, has a multi-agency character. To capture the intricacies and dynamics of gender participation in banking, would require an in-depth look into the multi-dimensional avenues through which savings and credit flows take place, more particularly in case of women, who rely extensively on the informal financial sector for their banking needs.

2. This study being a single handed one, had to be restricted to only one nationalised bank mainly because of difficulties in collecting primary data from widely spread bank branches.

3. Study is confined to only business data (deposits & advances) of individuals. Remittances and the range of other services provided by the banks have been excluded from the study.

4. Though all states/ union territories in India have been covered in the study, a few states/ union territories have been excluded. The bank does not have branches in the states of Arunachal Pradesh & Mizorum and the union territories of Andaman & Nicobar Islands, Dadra & Nagar Haveli and Lakshadweep. Further, in the analysis using the statistical techniques of rank correlation coefficient, regression, 't' test etc., for establishing the relationship between gender

participation in banking with workforce participation and literacy levels and X^2 test for measuring the magnitude of discrepancy between the observed and expected values in respect of the outstanding deposits/ advances amount, the state of Jammu & Kashmir was excluded as the census data for 1991 for this state was not available.

5. Only two factors, viz., workforce participation and literacy levels have been considered out of the many factors for the study. While submitting this limitation, it may be added that both these variables have been made the base for studying gender differential in several studies and have been acknowledged as significant variables. The linkage between educational levels attained by different population groups and their potentialities for progress have been amply substantiated by numerous studies across the world, often with special reference to women as compared to men. Access to educational opportunities and education attainment levels are important to women as they are a means to enhance income generating capacity and also ease their entry into the public domain. Women's educational attainments, therefore, become important indicators as also instruments of gender equity. Both the gender-related development index (GDI) and capability poverty measure (CPM), as developed by the UNDP, have female literacy as a key component due to the multiplier effect of women's education on the overall well-being of the family and on society's general level of human development (UNDP 1996).

Likewise, work participation levels and attributes are accepted indicators of socio-economic change and hence are also essential inputs for policy planning. Inter-sectoral movement of the work-force over time with changing concentration of male and female workers in primary/ manufacturing/ tertiary sector provide evidence of structural changes occurring in the economy. The present study has been based on the above two variables, in view of the overwhelming importance of these two variables in developing gender-related development index.

References

Reserve Bank of India 1996. *Handbook of Instructions : Basis Statistical Returns 1 and 2.* Banking Statistics Division, RBI, Mumbai.

Government of India. 1991. *Census 1991.* Registrar General and Census Commissioner of India, New Delhi