3

METHODOLOGY

“Methodology” implies simply the methods we intend to use to collect data. It is often necessary to include a consideration of the concepts and theories which underlie the methods. For instance, if we intend to test a hypothesis, we have to show that we understand the underlying concepts of the methodology. The methodology includes how we have addressed the research questions and/or hypotheses. The methods are in enough detail for the study and every stage is to be explained and justified with clear reasons for the choice of our particular methods.

There are many different ways to approach the research that fulfils the requirements of a dissertation. These may vary both within and between disciplines. It is important to consider the expectations and possibilities concerning research in our own field. Selection of a method is one of the peculiar jobs to conduct a research.

3.1 HYPOTHESES

A hypothesis is an idea or explanation that we then test through study and experimentation. Outside science, a theory or guess can also be called a hypothesis. However, people also know the hypothesis as tentative explanations for an observation, phenomenon, or scientific problem that can be tested by further investigation.

Another explanation of hypothesis is “Something taken to be true for the purpose of argument or investigation; an assumption”. Here in this study, researchers have formulated and tested following hypotheses for the employees of the State Bank of India at Indore.
3.1.1 HYPOTHESES FOR MANAGERIAL RESPONDENTS

Following Hypotheses has been formulated to test the acceptability of Job Satisfaction of different Determinants in Managerial Employees:

H₀₁: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Workload Pressure.

H₀₂: Managerial Employees of State Bank of India at Indore are not satisfied with Supervisor’s Role.

H₀₃: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Job Stress.

H₀₄: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Salary.

H₀₅: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Promotion Opportunities.

H₀₆: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Organization Policies and Strategies.

H₀₇: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Relationship with Co-workers.

H₀₈: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Professional Development.

H₀₉: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Nature of Work.

H₀₁₀: Managerial Employees of State Bank of India at Indore are not satisfied with respect to Communication.
3.1.2 HYPOTHESES FOR NON-MANAGERIAL RESPONDENTS

Following Hypotheses has been formulated to test the acceptability of Job Satisfaction of different Determinants in Non-managerial Employees:

$H_{011}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Workload Pressure.

$H_{012}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with Supervisor’s Role.

$H_{013}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Job Stress.

$H_{014}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Salary.

$H_{015}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Promotion Opportunities.

$H_{016}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Organization Policies and Strategies.

$H_{017}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Relationship with Co-workers.

$H_{018}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Professional Development.

$H_{019}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Nature of Work.

$H_{020}$: Non-managerial Employees of State Bank of India at Indore are not satisfied with respect to Communication.
3.2 RESEARCH DESIGN

To fulfil our objectives of the study first of all we have identified the determinants to be observed during this study in State Bank of India at Indore. The base for selecting the determinants was the information available in the literature, as well as different theories established by previous researchers. The determinants chosen for the study are basically covered more or less all the factors affecting the job satisfaction of any individual in an organization.

Herzberg’s two factor theory says that satisfaction and dissatisfaction are independent of each other and exists on separate continuum. When one set of conditions called motivators are present in the organization, workers feel motivated, but it’s absent did not dissatisfy them. Similarly, when other set of conditions called dissatisfies is absent in the organization, the workers feel dissatisfy but its presence does not motivate them.

According to Herzberg following factors act as Motivators:

- a. Achievement
- b. Work Itself
- c. Recognition
- d. Possibility of growth
- e. Advancement
- f. Responsibility

Factors which act as Dissatisfies are:

- a. Company policy and administration
- b. Technical supervision
- c. Inter-personal relations with supervisors, peers and subordinates
- d. Salary
e. Personal life  
f. Working conditions  
g. Status  
h. Job security  

By the help of the above factors we have selected ten determents, which were analysed after collection of primary data with the help of the framed structure Questionnaire.

3.2.1 PREPARATION OF QUESTIONNAIRE

The researcher has framed a structured questionnaire for collecting primary data. The questionnaire was finalized after a pilot study. The pilot study was conducted by interviewing a selected number of 30 employees working in different branches in the State Bank of India at Indore. These interviews helped the researcher to identify the variables to be included / excluded in the questionnaire. Accordingly the questionnaire was modified. Having identified the variables the researcher prepared the final draft questionnaire. The draft questionnaire was then revised in the light of the suggestions and criticisms made by the research supervisor. The suggestions and comments of the bank employees were also incorporated into the questionnaire and the final draft was prepared.

In this study the variables which cause job satisfaction were analysed through scaling technique. There were 10 determinants identified as influencing job satisfaction. All these variables have been observed in the study. There were 60 statements (Positive and negative) depicting the influence of the variable on job satisfaction with Likert type 5 point scale was evolved. This each statement has five alternatives from which the respondent has to choose the one which expresses his/her response.  
Following determinants were incorporated into the questionnaire to observe the determinant’s reality.
**Workload Pressure (WLP)**
Questions regarding working hours of the organization, necessary resources to perform the job well, timely completion of assignments, effect of workload on health, and general satisfaction level with respect to workload pressure were asked to find this determinant.

**Supervisor’s Role (SUR)**
Questions related to availability of a supervisor, their consideration about subordinate’s feeling, opportunity to participate in decision making, individual’s role and authority in the branch, justification with job assignment were included in this determinant.

**Job Stress (JST)**
Individual’s proficiency with the latest technologies, stress level, enjoyment with family, health effect, practicing meditation or yoga, completion of different type of assignments, monotonous work stress, counselling programme for employees were asked in this determinant.

**Salary (SAL)**
Adequacy of salary for living expenses, period between salary rise, pay scale, as well as fringe benefits provided by the organization included to find out the extent of this determinant.

**Promotion Opportunities (PRO)**
Acknowledgement of work, career path, attention to complaints and grievances, comparison among colleague were included to find out this determinant.
Organizational Policies and Practices (OPS)
Job performance, safe and healthy workplace, comfortable working condition as well as the work norms, rules and regulations included in this determinant.

Relationship with CO-workers (RCW)
Peers and subordinates support, assignment with proper staffing, team work and honest competition among the staff were the main theme for this determinant.

Professional Development (PDT)
Work culture, training, the chance to attend workshop, courses and conferences, job rotation, and sharing of idea were the main question to find out the relationship with co-workers of the respondents.

Nature of Work (NOW)
Work according to qualification, requirement of various skills, creativity and clear job goals related questions asked to find this determinant.

Communication (COM)
Timely receiving of information, availability of equipment like telephone, fax and internet, sharing of information and informal communication among the staff included under this determinant.

Demographic variables
Respondent’s Gender (M/F), Age (in Years), Education (12th/UG/PG/PG+), Marital Status (Single/Married), Family Type (Nuclear/Joint), Number of Dependents, Total Work Experience (in Years) and Monthly Salary (₹) were also asked in the questionnaire, to collect this information simultaneously.
INTERNAL CONSISTENCY OF THE QUESTIONNAIRE

Cronbach's alpha is the most common measure of internal consistency ("reliability"). It is used when we have multiple Likert questions in a survey/questionnaire that form a scale and we wish to determine if the scale is reliable. In this study, we found Cronbach’s alpha (\(\alpha\)) 0.768, which shows a Good Internal Consistency (Reliability) of the framed Questionnaire.

The ranges of Cronbach’s alpha are as follows:

<table>
<thead>
<tr>
<th>Cronbach’s alpha</th>
<th>Internal consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\alpha \geq 0.9)</td>
<td>Excellent (High-Stakes testing)</td>
</tr>
<tr>
<td>(0.7 \leq \alpha &lt; 0.9)</td>
<td>Good (Low-Stakes testing)</td>
</tr>
<tr>
<td>(0.6 \leq \alpha &lt; 0.7)</td>
<td>Acceptable</td>
</tr>
<tr>
<td>(0.5 \leq \alpha &lt; 0.6)</td>
<td>Poor</td>
</tr>
<tr>
<td>(\alpha &lt; 0.5)</td>
<td>Unacceptable</td>
</tr>
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3.3 SAMPLING PLAN

To study the determinants of Job Satisfaction in State Bank of India at Indore, we planned to take the sample from all 69 branches working in Indore area. We had collected the primary data from the employees of these branches.

3.3.1 UNIVERSE POPULATION

The total number of employees in these 69 branches was found 966, which are categorised as Managerial and Non-managerial employees for the purpose of the study. There are 201 employees in Managerial category and 765 employees in Non-
managerial category. These numbers indicated the universe population for the purpose of the present study.

### 3.3.2 SIZE OF THE SAMPLE

The size of the sampling was determined by the formula given below:

\[
Nz^2 \times 0.25 \\
--- \\
\left[ \frac{d^2 \times (N-1)}{+ [z^2 \times 0.25]} \right]
\]

Where,
- \( n \) = Sample size
- \( N \) = Total population size
- \( d \) = Precision level (0.05)
- \( z \) = No. of Standard Deviation unit of the sampling distribution (1.96)

In the case of managerial respondents the total population size was 201 and we have taken 133 as sample, whereas for non-managerial respondents the total population size was 765 and we have taken 255 as sample.

According to Krejcie and Morgan (1970), the ever increasing demand for research has created a need for an efficient method of determining the sample size needed to be representative of a given population. They provided following table (Table 3.1) for calculation of sample size, and no calculations are needed to use this table. It is applicable to any defined population.
### Table 3.1: Table for Determining Sample Size from a Given Population

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<td>136</td>
<td>1100</td>
<td>285</td>
<td>100000</td>
<td>384</td>
</tr>
</tbody>
</table>

N – Population size
S- Sample size
3.4 DATA COLLECTION

The researcher has adopted a census method for collecting data from employees of the State Bank of India at Indore. State Bank of India being a pioneer bank in banking services in India provides services in the district with 69 branches. In the study all 69 branches of the State Bank of India have been chosen for data collection.

The Random sampling technique has been adopted for selecting the sample of 133 and 255 for Managerial and Non-managerial respondents respectively. Data was collected with the help of framed structures questionnaire; the researcher himself acquired the data from each respondent. No demographic variables such as age, gender, experience etc. were considered in selecting the sample.

3.5 NUMERICAL TECHNIQUES

Statistical techniques were used to analyse the procured data and formulated the results. Correlation among the determinants, Statistical Description, t-test and Factor Analysis were applied to find out the required results.

Correlation among the Determinants

There are a number of determinants which influenced the individual’s Job Satisfaction. In the present study 10 such determinants have been identified and Correlation Analysis has been carried out in order to understand the relationship among determinants for all employees. To satisfy our purpose 10x10 Correlation Matrix was computed.
Statistical Description
The relationship between employees’ socioeconomic background and their level of Job Satisfaction was given under this in tabulated form. All the demographic variables along with each individual determinant described statistically in detail.

t-test
We use a one-sample t-test when we have one score for each subject in a single group, and we want to test the null hypothesis that a population mean is equal to some hypothetical value. In this study we want to test the null hypothesis that the population mean is equal to 3.00 (the midpoint on the scale).

The p Value
‘p’ is the probability of getting a t value at least as extreme as the one we got if the null hypothesis were true. When doing t-tests by hand, however, we typically do not figure out the exact p value. Instead, we just figure out whether or not p is lower than our criterion for deciding whether or not our t value is extreme or unusual. This is our $\alpha$ level, which is usually set to 5% (sometimes expressed as 0.05).

The Decision:
We decide to reject the null hypothesis if our sample t value is more extreme than the critical t value. This means that the probability of getting a t value at least as extreme as ours, if the null hypothesis were true, is less than 5% (or whatever $\alpha$ is). So we decide that the null hypothesis is not true. We fail to reject the null hypothesis if our sample t value is less extreme than the critical t value. This means that the probability of getting a t value at least as extreme as ours, if the null hypothesis were true, is greater than 5%. So we decide that the null hypothesis could be true.
Factor Analysis

Job satisfaction is the outcome of the influence of several variables as listed above. In identifying the factors which are really influencing job satisfaction, factor analysis has been useful. Factor analysis is a multivariate tool assisting the researcher to reduce the innumerable variables into a manageable number of factors. It has been identified that there are 10 determinants influencing job satisfaction among the employees of the State Bank of India at Indore. Factor analysis analyses the relationship between a large number of attributes or variables for many number of observations and identifies the latent structures and latent factors which are useful for further analysis. Hence factor analysis is attempted on the variables influencing job satisfaction.

Functions of Factor Analysis

The factor analysis performs the following functions:

i) Identifies the smallest number of common factors that best explain or account for the correlation among the indicators.

ii) Identifies a set of dimensions that are latent (not easily observed) in a large number of variables.

iii) Devises a method of combining or condensing a large number of variables with varying levels into a distinctly different number of groups.

iv) Identifies and creates an entirely new smaller set of variables for subsequent regression from a large number of variables.

It is especially useful in multiple regression analysis when multicollinearity is focused to exist as the number of independent variables is reduced by using factors, and thereby minimizing or avoiding multicollinearity. In fact, factors are used in lieu of the original variables in the regression equation. Hence the factor analysis is the most fitting tool to analyse the variables influencing job satisfaction.
Mathematical Framework

In factor analysis each variable is expressed as a combination of underlying factors. A factor is an underlying dimension that accounts for several observed variables. Factors loading are those values which explain how closely the variables are related to each one of the factors discovered. Rotation in the context of factor analysis is something like staining a microscope slide. As like different stains, it reveals different structures in the issues, different stains on it reveal different structures in the data.

Analytical Framework

The principal factor analysis method is mathematically suitable for the solution to a factor problem. Its major solution features is the extraction of a maximum amount of variation as each factor is calculated. Most of the analysis methods produce results in a form that is difficult or impossible to interpret. Thrust one argued that it is necessary to rotate factor matrices to interpret them adequately.

There are several methods available for factor analysis. But the principal factor method is the widely used one. Further, Varimax rotation maintains the independent factors that is, the angle between the axes is kept at 90 degrees. One of the final outcomes of factor analysis is called rotated factor matrix, a table of coefficient that expresses the ratios between the variables and the factors. The factors with factor loading of 0.50 or greater are considered as significant factors and the factors with less than 50 percent common variations with the rotated factor pattern are too weak to report. In the present study, the principal factor analysis method with orthogonal Varimax Rotation is used to identify the significant set of influencing factors.

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