CHAPTER VI
RESEARCH METHODOLOGY

6.1 Research Design

Research is a systematic and methodical process of enquiry and investigation with a view to increasing knowledge. It is undertaken to explore, test and establish relationships between variables of a selected and identified scope of study.

Research design outlines and highlights the methodological rigor and appropriateness of the intellectual design for conducting research. It helps in drawing a careful, detailed and exacting approach to conducting a research. It throws light on the basic research questions and problems addressed in the scope of the study. A research design is a framework that guides how research should be conducted, based on certain philosophies, principles and assumptions.

In this study co-operative, nationalized and private sector banks were studied to understand the impact of organizational culture and communication on employee engagement. This study undertook the design of descriptive, analytical and predictive research. Once the theoretical framework was developed, the data collection procedure was planned and executed as per research design.
6.2 Preliminary Exploratory Research

An exploratory pilot study for a sample size of hundred respondents drawn from the banking sector was undertaken. This was used to test the reliability and validity of the scales used in the study. Some items with lower factor loadings and cross loadings were deleted after pre-testing. The pre-testing also asserted that there were no issues on comprehensibility of the statements used in the questionnaire. It helped in estimating that 10-15 minutes time was taken by the respondents to answer the same.

6.3 Questionnaire and Scale Validation

Dearth of literature on employee engagement in banking sector, called for the need to have in-depth interviews with few senior bank executives at the outset to understand their perspective on employee engagement, organizational culture and communication.

As suggested by Churchill (1979), Cronbach Alpha and exploratory factor analysis was undertaken to check the reliability and validity of the data. The reliability and validity tests confirmed and were similar to those in literature.

The scales for measuring the three constructs of organizational culture, organizational communication and employee engagement were finally adapted and drawn for the study. The dimensions and variables used in the three sales have been discussed in the previous chapter on “Theoretical Framework”.
6.4 Final Questionnaire Design

The questionnaire had three different sections, along with a preface. The preface addressed the respondent and provided a brief on the study and scale used by the researcher. The first section was aimed at collecting demographic data of the respondents. The second section of the questionnaire consisted of statements aimed at ascertaining and measuring organizational culture and organizational communication. A 5 point Likert scale was used. Statements were measured on a scale of “strongly agree” to “strongly disagree” where the former had a score of 5 and the latter, a score of 1. The third section of the questionnaire was aimed at measuring employee engagement. A 5 point Likert scale was used. Statements were measured on a scale of “always” to “never” where the former had a score of 5 and the latter, a score of 1.

6.5 Measuring Instruments and Dimensions

6.5.1 Organizational Culture Scale

The dimensions and variables which measure organizational culture have been discussed in the chapter on “Theoretical Framework”. Scale for measurement of organizational culture was adapted from literature. (Widerom and Vandernberg, 2004)

The scale consisted of five dimensions of Autonomy, External Orientation, Interdepartmental Co-operation, Human Resource Orientation and Improvement Orientation. The bank employees were asked to rate their organizational culture on a scale of 1 to 5, where 5 had a score of strongly agree and 1 had a score of strongly disagree.
6.5.1.1 Autonomy

It reflects the extent of freedom and empowerment provided to employees in the organization. It plays a significant role in making the employees feel involved and valued.

It is captured through the following statements:

1. Freedom for employees to depart from rules
2. Freedom for employees to influence work decisions
3. Freedom for employees to plan their work
4. Opportunity for employees to bring forward ideas before decision making
5. Freedom for employees to impart decisions according to their views

6.5.1.2 External Orientation

It signifies the extent and promptness with which an organization responds to changes in external environment. Employees perceive this as an important dimension which reflects organization’s proactiveness, foresight and agility.

It is captured through the following statements:

1. Organization shows quick reactions to market developments
2. Organization investigates wishes and needs of customers
3. Organization resorts to active canvassing of new customers
4. Organization has an edge over local competitors
6.5.1.3 Interdepartmental Cooperation

It refers to the extent to which different departments in the organization aid and assist each other in the smooth conduct of business. It gives employees a sense of security and enhances belongingness with the organization. It is captured through the following statements:

1. Cooperation between departments
2. Exchange of useful information between departments
3. Departments support each other in resolution of problems
4. Mutual communication between heads of departments

6.5.1.4 Human Resource Orientation

It includes the various human resource policies that exist in the organization. These reflect the philosophy of the organization with regard to treating human resources. It defines the trust and respect they have for employees. It is captured through the following statements:

1. Performance appraisals are taken seriously
2. Employees obtain useful information about their functioning
3. Careful selection of personnel
6.5.1.5 Improvement Orientation

It includes the extent to which an organization strives to improve and innovate by giving employees flexibility and empowerment to think out of the ordinary. Employees flourish in organizations where they are allowed to make mistakes, learn and continuously improve upon. It is captured through the following statements:

1. Employees closely monitor their working
2. Employees' search for possibilities to improve the organization
3. Employees take initiatives to improve the work processes

6.5.2 Organizational Communication Scale

Organizational Communication was measured through the scale developed by Clampitt and Downs. (1977, 1992). It was modified and adapted by the researcher in the Indian context. It is operationalized through variables like personal feedback, organizational integration, supervisory communication, horizontal and informal communication, subordinate communication, media quality and corporate information. The bank employees were asked to rate their organizational communication on a scale of 1 to 5, where 5 had a score of strongly agree and 1 had a score of strongly disagree.
6.5.2.1 Organizational Integration

It refers to the extent to which employees are able to identify themselves as an integral part of the organization and consider themselves as being involved in its processes. It is captured through the following statements:

1. Information about employees progress in job is recognized and shared
2. Personnel news is shared
3. Information about departmental policies and goals is shared
4. Information about job requirements is shared
5. Information about benefits and pay is shared

6.5.2.2 Supervisory Communication

It includes the way in which supervisors reach out and communicate with employees. The employees perceive the style and nature of supervisory communication as being important. It is captured through the following statements:

1. Supervisor listens and pays attention to employees
2. Supervisor offers guidance for problem solving
3. Supervisor trusts employees
4. Supervisor is open to ideas
5. Supervision given is right
6.5.2.3 Personal Feedback

It implies the extent to which employees are informed about their progress and performance gaps and career plans. It is captured through the following statements:

1. Information about how an employee’s job compares with others is shared
2. Information on the way an employee is being judged by others is shared
3. Feedback about recognition of efforts is shared
4. Reports provided on the way problems in jobs are handled
5. Superiors know and understand problems faced by subordinates

6.5.2.4 Corporate Information

This includes the extent to which employees are adequately and transparently communicated about the organization’s policies, strategies and standing. It is captured through the following statements:

1. Information about company policies and goals is shared
2. Information about government action affecting the company is shared
3. Information about organization’s financial standing is shared
4. Information about changes affecting the organization is shared
5. Information about organization’s success and failure is shared
6.5.2.5 Communication Climate

It implies the informal networks and channels of communication which evolve through interactions with members in the organization. It instills a sense of belonging to the in-group of their members. It is captured through the following statements:

1. Organization's communication motivates and stimulates enthusiasm for goal realization

2. People in organization has great ability as communicators

3. Organization's communication enables employees to identify and feel as a vital part of it

4. Conflicts are handled appropriately through proper channels

5. Receive timely information needed for the job

6.5.2.6 Co-worker Communication

It implies the informal networks and channels of communication which evolve through interactions with members in the organization. It instills a sense of belonging to the in-group in their members. It is captured through the following statements:

1. Grapevine is active in the organization

2. Horizontal communication is accurate and free flowing

3. Communication practices are adaptable to emergencies

4. Work group is compatible

5. Informal communication is active and accurate
6.5.2.7 Media Quality

It refers to the quality of information shared with employees. It also addresses the channels and mediums which are chosen for the purpose of communication to improve the speed, accuracy and content of communication. It is captured through the following statements:

1. Written directives and reports are clear and concise
2. The attitudes toward communication in the organization are basically healthy
3. The amount of communication in the organization is about right

6.5.2.8 Subordinate Communication

It includes the communication directed by subordinates towards their supervisors. It refers to the support and trust directed by the subordinates for their supervisors. It is captured through the following statements:

1. Subordinates are responsive to downward directive communication
2. Subordinates anticipate needs for information
3. Communication overload
4. Subordinates are receptive to evaluation, suggestions and criticisms
5. Subordinates feel responsible for inciting accurate upward communication
6.5.3 Employee Engagement Scale

Employee Engagement is defined as the level of commitment, involvement and passion as a positive, fulfilling work related state of mind that is characterized by vigor, dedication and absorption' Schaufeli, Salanova, Gonzalez-Roma and Bakker (2002). The scale of these researchers was modified and adapted in the Indian context in the current study. Bank employees were asked to give their responses on a scale of “always” to “never” where the former had a score of 5 and the latter, a score of 1.

6.5.3.1 Vigor

It refers to high levels of energy and mental resilience while working, and the willingness to invest effort in one’s work. It was operationalized as follows:

1. Enthusiastic about job
2. Feel strong and vigorous
3. Feel like going to work on getting up in the morning
4. Bursting with energy

6.5.3.2 Dedication

It refers to deriving a sense of significance from one’s work, by feeling enthusiastic and proud
about one’s job, and by feeling inspired and challenged by it. It was operationalized as follows:

1. Find work full of meaning and purpose
2. Job inspires
3. Proud of the work done
4. Job is challenging
5. At work always persevere, even when things do not go well

**6.5.3.3 Absorption**

It is characterized by being totally and happily immersed in one’s work and having difficulty detaching oneself from it. It is captured through the following statements:

1. Time flies when working
2. Feel happy when working intensely
3. Am immersed in work
4. Can continue working for very long periods at a time
5. Get carried away when working
6. It is difficult to detach from job

**6.6 Sampling Plan for Data Collection**

A population is defined as body of people or objects under consideration for statistical purposes. A sample is a subset of the population it is related to the population under consideration. As the
scope of the study needed respondents drawn from co-operative, nationalized and private sector banks, bank employees in the executive category from these sectors were selected.

In the co-operative sector bank, employees from Abhyudaya Bank, Saraswat Bank, Maharashtra Co-operative Bank amongst others were chosen. Among the nationalized banks, employees from State Bank of India, Bank of India, Andhra Bank and Oriental Bank of Commerce amongst others were chosen. In the private banks category, employees from ICICI Bank, HDFC Bank, Kotak Mahindra Bank, Axis Bank amongst others were chosen.

The Kaiser – Meyer Olkin test of Sphericity was used for measuring sampling adequacy (KMO). After selecting “Analyse ” from the SPSS menu bar, “Dimension” and “Factor Reduction ” and then Factor was carried out. After clicking on “ Descriptives ”, in the statistics box initial solution was checked. In the correlation matrix, KMO and Bartletts test of Sphericity was checked and reproduced. The KMO statistic varies between 0 and 1. A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors. (Malhotra & Dash, 2009)

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</td>
<td>0.943</td>
</tr>
</tbody>
</table>
**Inference:**

The KMO statistic for sample is 0.943, is considered to be ‘good’ and adequate and one can construe that it is appropriate to conduct factor analysis on the sample, which will yield distinct and reliable factors. Since the KMO measure was 0.943, it indicated that our sample size was adequate, while the Bartlett’s test indicated that the variables being considered had a significant correlation between themselves and hence could be grouped (p value was 0.00 which was less than level of significance 0.05)

Hence, a total of 600 questionnaires were sent out to bank employees in the three categories. Data of 544 responses were collected. The response rate was 90.6%. The sample size was considered robust by Nunnellly (1978) as cited by Hinkin (1985). The sample consisted of employees from all age groups. They were drawn from different educational backgrounds i.e. graduates, post-graduates etc. The respondents were drawn from junior and middle management levels.

**Table 2: Distribution of Sample**

<table>
<thead>
<tr>
<th>Bank Category</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-operative banks</td>
<td>102</td>
<td>18.5</td>
</tr>
<tr>
<td>Nationalized banks</td>
<td>195</td>
<td>35.8</td>
</tr>
<tr>
<td>Private banks</td>
<td>247</td>
<td>45.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>544</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

As shown in Table 2 the sample was distributed from the three categories of banks – co-operative, nationalized and private.
6.7 Statistical Analysis Techniques

Suitable statistical analysis tools were used to analyze the data. Appropriate univariate, bivariate and multivariate analyses were used depending on the nature of variables and objectives of the study.

6.7.1 Univariate Analysis

Univariate analysis refers to the analysis in which there is a single variable. In this study, univariate analysis was used for identifying the descriptive characteristics of the data. The gender, age, highest level of education, categories of banks and work experience of respondents were identified by using univariate analyses on data.

6.7.2 Bivariate Analysis

Bivariate analysis includes the simultaneous analysis of two variables, it is undertaken to establish relationship between two variables. Correlation and ANOVA (Analysis of Variance) are the bivariate techniques used in this study. Correlation aims at ascertaining whether or not two variables are varying together.

6.7.2.1 Analysis of Variance (ANOVA)

ANOVA is used to uncover the main and interaction effects of categorical independent variables (called "factors") on an interval dependent variable. A "main effect" is the direct effect of an
independent variable on the dependent variable. An "interaction effect" is the joint effect of two or more independent variables on the dependent variable. The key statistic in ANOVA is the F-test of difference of group means, testing if the means of the groups formed by values of the independent variable (or combinations of values for multiple independent variables) are different enough not to have occurred by chance. If the group means do not differ significantly then it is inferred that the independent variable(s) did not have an effect on the dependent variable. If the F test shows that overall the independent variable(s) is (are) related to the dependent variable, then *multiple comparison tests* of significance are used to explore just which values of the independent(s) have the most to do with the relationship.

If the data involve repeated measures of the same variable, as in before-after or matched pairs tests, the F-test is computed differently from the usual between-groups design, but the inference logic is the same. There are also a large variety of other ANOVA designs for special purposes, all with the same general logic.

Note that analysis of variance tests the null hypotheses that group means do not differ. It is not a test of differences in variances, but rather assumes relative homogeneity of variances. Thus a key ANOVA assumption is that the groups formed by the independent variable(s) have similar variances on the dependent variable ("homogeneity of variances"). Levene's test is standard for testing homogeneity of variances. Like regression, ANOVA is a parametric procedure which assumes multivariate normality (the dependent has a normal distribution for each value category of the independent(s)). Source: (http://faculty.chass.ncsu.edu accessed on December 4th, 2011)

In this study it was used to test H3, H4, H5, H6 and H7 using ANOVA.
H3-There is significant difference in employees engagement levels across different category of
banks
H4-There is significant difference across different age categories in predicting the overall
employee engagement levels of bank employees.
H5-There is significant difference across different educational qualification categories in
predicting the overall employee engagement levels of bank employees
H6- There is significant difference across employees with different years of work experience in
the current organization in predicting the overall employee engagement level of bank employees
and H7 -There is significant difference between gender in predicting the overall employee
engagement level of bank employees.

These hypotheses tested whether employee engagement was similar or different across bank
types, gender, age, education and organizational tenure of respondents.

6.7.2.2 Correlation

Correlation is a bivariate measure of association (strength) of the relationship between two
variables. It aims at ascertaining whether or not two variables are varying together It varies from
0 (random relationship) to 1 (perfect linear relationship) or -1 (perfect negative linear
relationship). It is usually reported in terms of its square ($r^2$), interpreted as percent of variance
explained. For instance, if $r^2$ is .25, then the independent variable is said to explain 25% of the variance in the dependent variable.

Coefficient of determination, $r^2$: The coefficient of determination is the square of the Pearsonian correlation coefficient. It represents the percent of the variance in the dependent variable explained by the independent. Of course, since correlation is bidirectional, $r^2$ is also the percent of the independent accounted for by the dependent. That is, the researcher must posit the direction of causation, if any, based on considerations external to correlation, which, in itself, cannot demonstrate causality. Source: (http://faculty.chass.ncsu.edu accessed on December 4th, 2011)

In this study, correlation was used to test the sub hypotheses of H1 and H2 were tested.

H1: Organizational Culture has significant impact in predicting employee engagement comprising of vigor, dedication and absorption of employees.

H2: Organizational Communication has significant impact in predicting employee engagement comprising of vigor, dedication and absorption of employees

The positive association between independent and dependent variable were tested.

6.7.3 Multivariate Analysis

Multivariate analyses are used when there are more than one independent or dependent variables. In this study, the multivariate analyses used were factor analysis and multiple regressions.
6.7.3.1 Factor Analysis

*Factor analysis* is used to uncover the latent structure (dimensions) of a set of variables. It reduces attribute space from a larger number of variables to a smaller number of factors and as such is a "non-dependent" procedure (that is, it does not assume a dependent variable is specified). Factor analysis could be used for any of the following purposes:

1. To establish that multiple tests measure the same factor, thereby giving justification for administering fewer tests. Factor analysis originated a century ago with Charles Spearman's attempts to show that a wide variety of mental tests could be explained by a single underlying intelligence factor (a notion now rejected, by the way).

2. To reduce a large number of variables to a smaller number of factors for modeling purposes, where the large number of variables precludes modeling all the measures individually. As such, factor analysis is integrated in structural equation modeling (SEM), helping confirm the latent variables modeled by SEM. However, factor analysis can be and is often used on a stand-alone basis for similar purposes.

3. To validate a scale or index by demonstrating that its constituent items load on the same factor, and to drop proposed scale items which cross-load on more than one factor.

4. To select a subset of variables from a larger set, based on which original variables have the highest correlations with the principal component factors.

5. To create a set of factors to be treated as uncorrelated variables as one approach to handling multicollinearity in such procedures as multiple regression.

6. To identify clusters of cases and/or outliers.
Factor analysis is part of the general linear model (GLM) family of procedures and makes many of the same assumptions as multiple regression: linear relationships, interval or near-interval data, untruncated variables, proper specification (relevant variables included, extraneous ones excluded), lack of high multicollinearity, and multivariate normality for purposes of significance testing. Factor analysis generates a table in which the rows are the observed raw indicator variables and the columns are the factors or latent variables which explain as much of the variance in these variables as possible. The cells in this table are factor loadings, and the meaning of the factors must be induced from seeing which variables are most heavily loaded on which factors. This inferential labeling process can be fraught with subjectivity as diverse researchers impute different labels.

There are several different types of factor analysis, with the most common being principal components analysis (PCA), which is preferred for purposes of data reduction. However, common factor analysis is preferred for purposes of causal analysis and for confirmatory factor analysis in structural equation modeling, among other settings.

Source: (http://faculty.chass.ncsu.edu accessed on December 4\textsuperscript{th}, 2011)

In this study factor analysis was used to test the validity of the three scales used for measuring organizational culture, organizational communication and employee engagement in the study.
6.7.3.2 Multiple Regressions

Multiple regression, a time-honored technique going back to Pearson's 1908 use of it, is employed to account for (predict) the variance in an interval dependent, based on linear combinations of interval, dichotomous, or dummy independent variables. Multiple regression can establish that a set of independent variables explains a proportion of the variance in a dependent variable at a significant level (through a significance test of $R^2$), and can establish the relative predictive importance of the independent variables (by comparing beta weights). Power terms can be added as independent variables to explore curvilinear effects. Cross-product terms can be added as independent variables to explore interaction effects. One can test the significance of difference of two $R^2$'s to determine if adding an independent variable to the model helps significantly. Using hierarchical regression, one can see how most variance in the dependent can be explained by one or a set of new independent variables, over and above that explained by an earlier set. Of course, the estimates (b coefficients and constant) can be used to construct a prediction equation and generate predicted scores on a variable for further analysis.

The multiple regression equation takes the form $y = b_1x_1 + b_2x_2 + ... + b_nx_n + c$. The b's are the regression coefficients, representing the amount the dependent variable y changes when the corresponding independent changes 1 unit. The c is the constant, where the regression line intercepts the y axis, representing the amount the dependent y will be when all the independent variables are 0. The standardized version of the b coefficients are the beta weights, and the ratio of the beta coefficients is the ratio of the relative predictive power of the independent variables.
Associated with multiple regression is $R^2$, multiple correlation, which is the percent of variance in the dependent variable explained collectively by all of the independent variables.

Multiple regression shares all the assumptions of correlation: linearity of relationships, the same level of relationship throughout the range of the independent variable ("homoscedasticity"), interval or near-interval data, absence of outliers, and data whose range is not truncated. In addition, it is important that the model being tested is correctly specified. The exclusion of important causal variables or the inclusion of extraneous variables can change markedly the beta weights and hence the interpretation of the importance of the independent variables.

Source: (http://faculty.chass.ncsu.edu accessed on December 4th, 2011)

In this study, hypotheses the broad hypothesis of H1 and H2 were tested using multiple regressions.

H1: Organizational Culture has significant impact in predicting employee engagement comprising of vigor, dedication and absorption of employees.

H2: Organizational Communication has significant impact in predicting employee engagement comprising of vigor, dedication and absorption of employees.

It also helped in validating the theoretical framework and conceptual model of the study. It also helped in making comparisons of the theoretical model in the three types of banks.
6.8 Ethical Consideration

Ethical consideration implies involving issues of harm, consent, deception, privacy and the confidentiality of data. Voluntary participation principle was followed while collecting data from the respondents. No amount of coercion was used to solicit responses. No material or financial rewards were used to induce people to take part in order to avoid biased results.

While collecting data from the respondents, they were briefed on the academic objective of the study. They were given information about how much time it would entail to fill the form incase they consented. In some cases even consent was delayed because the potential participants had to seek permission from their official authorities. In case any potential participant declined filling the questionnaires they were not exposed to harm of any kind.

No respondent was forced to answer questions which he was not comfortable answering. In principle anonymity and confidentiality was offered to all the participants of the research. Giving participants the opportunity to remain anonymous assured them that they will not be identified with any of the opinions expressed, this certainly contributed to higher response rate and honesty of responses.

Confidentiality provides protection to participants by ensuring that sensitive information is not disclosed and the research data cannot be traced to the individual or organization providing it. (Collis and Hussey, 2009). They were requested to share their visiting cards but in case they wished to remain anonymous they were not pressurized.
In keeping with the ethical guidelines, the participants’ individual names, addresses and specific name of the bank employed were not used in the study.

The researcher took care to ensure anonymity, confidentiality, informed consent and dignity of the respondents who participated in the survey with an aim to uphold high standards of ethical considerations.