Chapter –4: Design and Procedure

4.1 Methodology of the Study

4.2 Variables Involved in the Study

4.3 Tools Used

4.4 Sampling

4.5 Procedure

4.5.1 Administration of the Test
4.5.2 Administration of the Test for Determining Reliability (Test-Retest)
4.5.3 Collection of Data

4.5.3.1 Quantitative Data Collection
4.5.3.2 Qualitative Data Collection

4.6 Statistical Treatment Used in the Study

4.6.1 Descriptive Statistics
4.6.2 Inferential Statistics
4.6.3 Level of Significance
CHAPTER – 4

DESIGN AND PROCEDURE

4.1: Methodology of the Study:

The prime objective of the study was to observe Environmental Awareness among women and their participation in Sustainable Development, along with the relationship (if any) between Environmental Awareness and participation in Sustainable Development. It also aimed to find out the differences, if any, of Environmental Awareness and participation in sustainability scores of women belonging different level of educational qualification and residing at different vulnerable zone of the study area. Besides that, an important objective of the study was to enlist the anthropogenic environmental hazards frequently occurring in the study region.

According to the above mentioned objectives the researcher considered the methodology of the study as ‘Mixed’ research method. Here the researcher tried to find out the answers by applying qualitative and quantitative approaches. According to Cohen, Manion & Morrison (2013,)

‘quasi-mixed designs’ in which both quantitative and qualitative data are gathered but which are not integrated in answering a particular research question, i.e. quantitative data might answer one research question and qualitative data another research question, even though both research questions are included in the same piece of research.

So, the researcher finally takes up the design of this research as Quasi-mixed design.
4.2: Variables involved in the study:

In the present study, the following variables have been considered:

4.2.1 Main Variables:

- Environmental Awareness
- Participation in Sustainable Development

4.2.2 Attribute Variables:

- Vulnerable zone (Low, Moderate and High)
- Profession (Self-help group, Non-self-help group)
- Academic Qualification (Below primary, Class VI-X, Secondary, Higher Secondary and Under-graduate or post-graduate)

4.3: Tools used:

In the present study, the researcher reviewed a good number of tools both developed in India and abroad that could be used in the present sample for measuring Environmental Awareness and participation in Sustainable Development. But after thorough analysis it was found that tests developed outside India were not suitable to use in Indian environment. Some Indian tools for measuring Environmental Awareness and environmental behaviour were found more suitable to use in the present study. Finally, it was decided to adapt the following tools for the purpose of data collection in the present study:

- Vulnerability Assessment Scale
- Environmental Awareness Scale
- Environmental Behaviour Scale

The development of the above mentioned tools were described in detail in the Chapter – 5.
4.4: Sampling:

The population of the study included women of the Sunderban delta, West Bengal, India. The sample for the present study was chosen on the basis of judgment sampling. The researcher purposively has chosen the Sagar assembly constituency of south 24 parganas district in coastal eco-zone of West Bengal, India as the study area which consisted with four islands (Sagar, Ghoramara, Mousuni and Namkhana) of two blocks namely Sagar and Namkhana (Figure – 4.1).
Initially, the selected sample was of 584 women from 51 villages of low, moderate and high vulnerable zone of the study area, but after exclusion of incomplete responses from the study it became a sample of 561 women, out of these, 160 women were from low vulnerable zone, 217 women were from moderate vulnerable zone and 184 women were from high vulnerable zone. The distributions of sample are given below:
Table – 4.1: Distribution of Sample:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Sample size</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulnerable zone</td>
<td></td>
<td>561</td>
</tr>
<tr>
<td>Low</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>217</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>184</td>
<td></td>
</tr>
<tr>
<td>Profession</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Help Group</td>
<td>240</td>
<td></td>
</tr>
<tr>
<td>Non-Self-Help Group</td>
<td>321</td>
<td></td>
</tr>
<tr>
<td>Qualification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below primary</td>
<td>124</td>
<td></td>
</tr>
<tr>
<td>Class VI-X</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>Higher Secondary</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>UG/PG</td>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

4.5: Procedure:

The present study has been carried out with the following particular heads:

4.5.1: Administration of the Test:

As women were the busiest part of a family and it was practically a hard task to administer a test on them, especially on illiterate or semi-literate women who felt difficulties to read and write. After developing the scales the researcher compiled the three scales i.e., Vulnerability Assessment Scale, Environmental Awareness scale and Environmental Behaviour Scale into a compatible questionnaire. The questionnaire contains three segments: Group A (general information along with
Vulnerability Assessment Scale), Group B (Environmental Awareness Scale) and Group C (Environmental Behaviour Scale). The questionnaire also committed to use the data only for the research purpose and value the privacy of it. Besides that the researcher also used focus group discussion method to collect qualitative data.

The test was administered on selected samples of women form 51 villages of the study area. Both qualitative and quantitative data were collected during the period of December 2014 to February 2015.

Each segment includes its own clear and specific instructions that the researcher insisted every woman to read, and also clearly explained it to them. Here, ‘Group-A’ segment of the questionnaire with the vulnerability assessment scale was a 3-point Likert type scale and ‘Group-B’ segment with the Environmental Awareness scale was a combination of both multiple choice and true-false type questions, on the other hand ‘Group-C’ with the environmental behaviour scale was prepared with yes-no type items; so it necessitated further explanation to the women for administration which the researcher carried out herself in each case.

4.5.2: Administration of the Test for Determining Reliability (Test-Retest):

The reliability value of the tests were calculated with Test-retest technique, to calculate the Test-retest values for the constructed tests the researcher again administered the questionnaire containing all the three tests on approximately 1/ 3\textsuperscript{rd} of the total sample after a gap of 15 days of administering the test for the first time in each case.

4.5.3: Collection of Data:

The researcher collected both quantitative and qualitative data for the study, as stated in the followings:
4.5.3.1: Quantitative Data Collection:

The researcher collected quantitative data with all the answer sheets of the said questionnaire from the women and scored with the help of respective scoring keys.

4.5.3.2: Qualitative Data Collection:

The researcher collected qualitative data from NGO-experts, Self-help groups; people involved in local government, women of different vulnerable zone and research personals by using semi-structured and open-ended interviews, focus group discussions, fieldnotes, photography etc. as per the requirements of the study. Document analysis also used to collect qualitative data according to the research questions.

4.6: Statistical Treatment used in the Study:

After having scored the answer sheets for the questionnaire employed in the present study, the researcher used different statistical measures to analyze and interpret the data. The researcher adopted below mentioned descriptive and inferential statistics for the same.

4.6.1: Descriptive Statistics:

Three types of scores were analysed in the study, which were Vulnerability Assessment Scores, Environmental Awareness Scores and Environmental Behaviour Scores. As the researcher considered parametric tests for inferential statistics it was pertinent to test the normality of distribution of each score. For this purpose, the researcher used certain descriptive statistics, viz., Mean, Median, Mode, Standard Deviation (SD), Skewness (Sk), Kurtosis (Ku), Standard Error of Mean (SEM), Standard Error of Skewness (SEsk), Standard Error of Kurtosis (SEku). Along with the use of these descriptive statistics the researcher also used Histogram with Normal Probability Curve (NPC) for the said purpose.
4.6.2: Inferential Statistics:

The researcher considered two types of inferential statistics for the purpose of the present study, i.e., ‘t’-test and Pearson’s Product Moment Correlation.

The researcher applied ‘t’-test for the purpose of verify the significant differences in mean scores of each main variables; Environmental Awareness and participation in sustainability for different attribute variables, like vulnerability, profession and qualification.

For the purpose to verify the significant relationship between two main variables – Environmental Awareness and participation in Sustainable Development, the researcher used Pearson’s Product Moment Correlation.

4.6.3: Level of Significance:

The acceptance or rejection of null hypothesis was based on some level of significance (alpha level) as a criterion. In psychological and educational circles, the 5% (.05) alpha (α) level of significance was often used as a standard for rejection, with 1 percent (.01) α level being a more rigorous test of significance (Best & Kahn, 2006). In the present study the researcher chose to use both of the 1% and 5% α level of significance as the standard for acceptance or rejection.