CHAPTER 4
SURVEY FOR DATA COLLECTION

The objective of the present chapter is to provide detail information about survey taken includes identification & selection of users, questionnaire design, data collection & analysis,

An exploratory survey was conducted on ten Science Departments in BAMU to study the needs of users. A cross sectional design with emphasis on norms of critical incident technique was followed. While the design of the study was prepared in June 2007, collection of data took place mainly between the year 2008 and 2009.

The investigative methodologies adopted as well as data collection tools used are complementary to each other and have been designed in such a manner so as to make inroads.

4.1 IDENTIFICATION AND SELECTION OF USERS

The term person, students, users covers the PG as well as research students of various Science Departments in BAMU. The faculty members, namely, Professor, Associate Professor & Assistant Professor in BAMU have been excluded in this study.

4.1.1 Population Sample

The study is based on the Faculty of Science in BAMU. There are 10 Science Departments in the campus of BAMU. All these departments are included in the population. The user population according to departments is given table 4.1

The sample size for user population of 1037 is 360 as per Krejcie & Morgan table (Krejcie & Morgan, 1970). Accordingly, of the total 1037 users, the questionnaire was distributed randomly to 360 i.e. 34.71% users which is shown in table 4.1. Of the 360 respondents 312 (86.66%) have returned the questionnaire duly filled in.

After analyzing responses from 312 respondents, it was found that 211 (67.63%) respondents needed training in use of E-resources. From the 211
respondents 136 were chosen sample as per Krejcie & Morgan (Krejcie & Morgan, 1970) table for training. All the 136 respondents who were present for training were given feedback questionnaire. Of the 136 respondents 50 respondents returned feedback questionnaire duly filled in giving 36.76% response. Department wise distribution of the respondents is shown in table 4.2

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Name of The Department</th>
<th>M.Sc</th>
<th>Ph.D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Biochemistry</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2 Botany</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>3 Chemistry</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>4 Chemical Technology</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>5 Computer Science &amp; IT</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6 Environmental Science</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>7 Mathematics</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>8 Physics</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>9 Statistics</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>10 Zoology</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>26</strong></td>
<td><strong>24</strong></td>
<td><strong>50</strong></td>
<td></td>
</tr>
</tbody>
</table>

### 4.2 Questionnaire Design

Questionnaire is often used in survey as primary data collection tool. It is a written instrument. A structured questionnaire was consisting of factual questions, opinion and attitude questions and standards of action questions. It was largely self-administrated, for knowing use of e-resources as well as user opinions and various dimensions for e-resources. The questionnaire for data collection was to ensure cost-efficient coverage (Chaudhary, 1991).

#### 4.2.1 Data Collection Questionnaire

The questionnaire (Appendix - A) consisted of 5 sections; in all 5 sections there are 29 questions, viz.

**Section I**  Consists of 7 questions on basic information of the user/students i.e. Name, Age, Class, and Gender etc.

**Section II**  Consists of 8 questions pertaining to Use of computer as well as Internet.
Section III  Consists of 11 questions which deal with the concept of E-resources in general i.e. Types of e-resources, purpose, availability & frequency etc.

Section IV  Consists of 2 questions i.e. General Search, Open Source journals & Problems faced by users while using e-journals etc.

Section V  Consist of 1 question which covers the satisfaction level of users as well as mostly preferred journals.

4.2.2 Feedback Questionnaire

The questionnaire (Appendix - B) consisted of 2 sections; in all 2 sections there are 9 questions, viz.

Section I  Consists of 4 questions on basic information of the user/students i.e. Name, Age, Class, and Gender etc.

Section II  Consists of 5 questions which deal with the satisfaction level about searching E-resources i.e. E-journals, E-Books, ETD, OPAC & Subject Gateways.

It was estimated that it would take about 10 to 15 minutes of user time for responding to the questionnaire.

4.3 DATA COLLECTION

After deciding the sample population researcher distributed 360 questionnaires to PG and Research scholars as per table 4.1. Of the 360 questionnaires distributed, 312 questionnaire duly filled in were returned by target audience, i.e. the response rate was 86.66%.

The main dependence on questionnaire method is to ensure maximum cost efficient coverage for questionnaire research. However, practical difficulties like user resistance, getting time / appointment with user were experienced (Das, 1986; Kasyap, 1969).

Researcher had analyzed & tabulated the 312 questionnaire filled in by respondents, in that researcher found that 211 (67.63%) respondents were unable to retrieve e-information, accessibility of e-information was poor, therefore they needed training for accessing e-information, using advance search for
retrieval of e-information. Hence researcher developed E-Information Literacy demo packages viz. Tutorial on E-journals, E-books, ETD, OPAC & Subject Gateways along with user manuals (Appendix – C) training was given to the users with the help of demo packages.

After that, Researcher designed feedback questionnaire, which included questions on the satisfaction level about demo packages on the parameters viz. General Search, Advance Search, Find Title of E-books, Book Details, Search for ETD, Full Text of Theses, and Library OPAC etc.

After analyzing responses from 312 respondents, it was found that 211 (67.63%) respondents needed training in use of E-resources. From the 211 respondents 136 were chosen sample as per Krejcie & Morgan (Krejcie & Morgan, 1970) table for training. All the 136 respondents who were present for training were given feedback questionnaire. Of the 136 respondents 50 respondents returned feedback questionnaire duly filled in giving 36.76% response.

4.4 DATA ANALYSIS

The rich & wide variety of quantitative data obtained had been checked & tabulated before processing & analysis were carried out. Data handling, validation processing & analysis have been carried out with the help of computer.

The major part of checking, tabulating & calculation for the one way analysis to measure the difference was carried out. Tables have been generated (Negi, 2005; Panda, 1997).

Collected data has been analyzed by using Statistical Software Package i.e. SPSS package and presented data in table from. For the purpose of analyzing the data collected some statistical techniques like, co-relation tools, Ti, Ti – Square, Chi – Square etc. were used for analyzing data (Zar, 1999; Gupta, 2009).

4.4.1 Co-relation

“When the relationship is of a quantitative nature, the appropriate statistical tool for discovering & measuring the relationship & expressing in brief is a co-relation” (Croxton, 1969). Thus co-relation is a statistical tool which
studies the relationship between two variables & co-relation analysis involves various methods & techniques used for studying & measuring the extent of the relationship between the two variables.

“A measure of the interdependence of two random variables. A correlation greater than 0.8 is generally described as strong, where as less then 0.5 is generally described as weak, while the correlation in negative value is called as negative correlation” (Answers Corporation, 2008).

This was used to study the relationship between individual departments, class, gender & age groups with the Information Literacy & E-Information Literacy in BAMU as well as Feedback on the tutorials designed.

4.4.2 Chi Square \([X^2]\)

The chi-square (chi, the Greek letter pronounced "kye") statistic is a nonparametric statistical technique used to determine if a distribution of observed frequencies differs from the theoretical expected frequencies. Chi-square statistics use nominal (categorical) or ordinal level data, thus instead of using means and variances, this test uses frequencies.

A test that uses the chi-square statistic to test the fit between a theoretical frequency distribution and a frequency distribution of observed data for which each observation may fall into one of several classes (Negi, 2005).

The Chi Square test measures the alignment between 2 sets of frequency measures. These must be categorical counts & not percentage or rations measures. The Chi Square is one of the most popular statistics because it is easy to calculate & interpret.

4.4.3 P-value

It indicates the probability of getting a mean difference between the groups as high as what is observed by chance. The lower the p-value, the more significant the difference between the groups.

This was used to find out the Significance Level between individual departments, class, gender & age groups with the Information Literacy & E-Information Literacy in BAMU as well as Feedback on the tutorials designed.
4.4.4 WAM (Weighted Arithmetic Mean)

WAM arithmetic mean computed by considering relative importance of each items is called weighted arithmetic mean. To give due importance to each item under consideration, we assign number called weight to each item in proportion to its relative importance. It can be calculated from following formula:

\[
\bar{X}_w = \frac{\sum wx}{\sum w}
\]

Where:
- \(\bar{X}_w\) Stands for weighted arithmetic mean.
- \(\bar{X}\) Stands for values of the items and
- \(w\) Stands for weight of the item

This technique was used to count WAM between Subject Group, Class, Gender & Age Group with feedback on the tutorials designed.

4.4.5 Ti-Square

The responses to the questions on E-Information Literacy have analyzed using a five point scale 1 – Not Satisfied, 2 – Relevant Satisfied, 3 – Occasionally Satisfied, 4 – Frequently Satisfied, 5 – Highly Satisfied. Response of each question were analyzed & presented as tables with annotations where ever & when ever necessary for the purpose of analyses code 4 & 5 in each table are added & the tables are annotated, omitting 1 code, codes 2, 3, 4, & 5 are added to find out Ti & Ti-square, which are use for further statistical analysis.

This technique was used to find out Ti & Ti-square between Subject Group, Class, Gender & Age Group with feedback on the tutorials designed.

4.5 DEMO PACKAGES

Based on training needs of respondents demo packages were developed for tutorial on E-journals, E-books, ETD, OPAC & Subject Gateways by using Windows XP, Internet Explorer (IE) & Macromedia Flash Program with the help
of English Language & Intel Pentium with 1GB RAM Platform. Each of the tutorials / demo packages have 3 parts i.e. Biological Science, Mathematical Science & Pure Sciences, each of the parts cover the strategy for General Search & Advance Search. The General Search covers Journal Homepage, Author Index, Abstract & Full Text in HTML / PDF format, while Advance Search uses Boolean Operators for Searching.

4.6 CONCLUSION

Present chapter is based on survey taken for collecting data. It has covered the identification & selection of users, population sample, questionnaire design, data collection & data analysis techniques. Collected data has been analyzed, presented and interpreted in Chapter 5.

REFERENCES