USE PATTERN OF ELECTRONIC INFORMATION RESOURCES IN THE COLLEGE LIBRARIES IN KERALA: AN ANALYTICAL STUDY

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CHAPTER III

METHODOLOGY

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CHAPTER – III

METHODOLOGY

The present study is focused on to identify the Use Pattern of Electronic Information Resources in the College Libraries in Kerala. The study is focused on the general information of the college library and their use of electronic information resources among the students of that college.

The methodology adapted for the study is described under the following subheadings; sample used for the study, sources of data; research instruments; data collection procedure and statistical methods used.

3.1 Sample Used for the Study

There are seven universities in Kerala established by the Acts of legislative assembly. Out of the seven universities, three-Kerala Agriculture University and Cochin University of Science and Technology and Sreesankaracharya University are special and technical Universities and these Universities has no affiliated colleges under these universities. Hence, it was decided to concentrate on the remaining four universities, which have affiliated arts and science, unaided, and Government colleges. It was hoped that from the data collected it would be possible for analyzing the use pattern of electronic information resources in the college libraries in Kerala.

Therefore, this study was based on the data collected from the colleges in Kerala that are working under the jurisdictions of the four universities that are
1) University of Kerala (UK)
2) University of Calicut (CU)
3) Mahatama Gandhi University (MGU)
4) Kannur University (KU)

The data was collected during the period of 2004-2006. For the purpose of getting required information final year UG and PG students are selected because they are acquired more skills for using electronic information than that of the first and second year students. The details of final year UG and PG students are collected from the Directorate of Collegiate Education, Vikas Bhavan, Thiruvananthapuram and their statistical Department given the following details of the students’ enrolled during the period 2004-2006

2005-2006 Final Year BA 68622
  ” Bsc 65905
  ” Bcom 24209
  **158736- UG**

2005-2006 Final Year PG Students

  MA 6128
  MSc 8212
  Mcom 2663
  **17003- PG**

The number of arts and Science colleges in Kerala are:

  150- Private Aided Colleges
  167- Private Un Aided Colleges
  **39-** Government Colleges
  **356**
So: - 158736
17003
175739

So the population size is 175739

According to the Survey system (www.surveysystem.com/sscate.html)


Random sample size number 650 is selected

\[
\begin{align*}
\text{ie., UG} & = \frac{158736 \times 650}{175739} = 587.1 \\
\text{PG} & = \frac{17003 \times 650}{175739} = 62.8
\end{align*}
\]

\[
\because \sqrt{n} = \frac{1.96 \times \sigma}{0.5}
\]

\[
\sigma = \text{Standard deviation} \\
n = \text{Sample size} \\
\sqrt{} = \text{Square root}
\]

\[
\because \sqrt{n} = \frac{1.96 \times 6.5}{0.5}
\]

\[
n = \left[ \frac{1.96 \times 6.5}{0.5} \right]^2
\]

\[
n = \left[ \frac{12.74}{0.5} \right]^2
\]

\[
n = [25.48]^2 = 650 \quad (\text{Completely filled 600 questions selected for analysis})
\]
3.2 Categorized distribution of Sample Size

Fig:4

Table 1
Sample Population

<table>
<thead>
<tr>
<th>Category</th>
<th>Respondent</th>
<th>Questionnaire Distributed</th>
<th>Questionnaire Returned</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>600</td>
<td>800</td>
<td>678</td>
<td>84.75</td>
</tr>
</tbody>
</table>

Table 1 shows that out of 800 questionnaires distributed and 678 questionnaires were returned but 78 were found to be invalid; they were incomplete and thus rejected from the ultimate sample. A completely filled 600 questionnaires were formed the sample for the study.
3.4 Source of Data

Both primary and secondary data were collected for the presented study. Primary data were collected through questionnaire administered to students of the colleges under the four universities and structured interview with the college librarians of the concerned colleges. Besides this, for personal observation, the investigator visited college libraries and discussion were made with the librarian, students and teachers of the colleges under the four universities.

The Secondary data’s were collected from the college brochures, college calendars, college websites, and periodicals, published and unpublished research reports.

3.5 Research Instruments

Two research instruments were used in this study

1) Interview schedule

2) Questionnaire

An interview schedule is a written list of questions, open-ended or closed-ended, prepared for use by an interviewer in a person-to-person interaction (Kumar 2005). The interview schedule used in this study can be found Appendix-II

A questionnaire is a written list of questions, the answers to which are recorded by respondents (Kumar 2005), Questionnaire are extremely flexible and can be used to gather information on almost any topic from large or small number of people (Moore 15) The questionnaire used in this study can be found in Appendix-I.

3.6 Data Collection Procedure
For the purpose of the interview, a prior permission was sought from the college librarians. All librarians’ agreed and later personal contact was made to arrange the appropriate data and time, when the interview could take place. The researcher made notes during the interview that were later complied.

For final data collection, the questionnaires were hand delivered to 800 respondents selected for the study. Necessary discussions were made with them and some of them asked more time to fill the questionnaires and self-addressed stamped envelopes were given for them. Some respondents sent back the questionnaires in time. The investigator could collect only 84.75 percent of the distributed questionnaires.

3.7 Statistical Methods used for the Study

For each and every type of research the investigator will have certain methods and instruments to gather necessary information. The selection of suitable techniques and tools is of a vital importance for successful research. For the present study, the investigator with the guidance and advice from the supervising teacher developed the questionnaire on the “use pattern of electronic information resources in college libraries in Kerala”. Experts in research methodology and experienced persons in the field of electronic information resources were also consulted. Similar questionnaire and literature were consulted.

The data collected using the tools selected for the study was analyzed using SPSS (Statistical Package for Social Science). Tables and diagrams with frequencies and percentages and Chi-square test were employed as and when required for analysis and interpretations of data.

3.8 Variable used for the study
A concept which can take on different quantitative values is called a variable. The variables used in the study can be grouped into two that is classificatory variables and study variables.

1. Classificatory Variables
   a. Final Year UG and PG students

2. Study Variables
   a. Type of management, location, financial nature of the college and accreditation.
   b. Time spent for using of electronic information resources
   c. Availability of electronic information resources
   d. Most used search engines
   e. Rating of internet informations
   f. Satisfaction of use and preferred source of information
   g. Service provided by the college library
   h. Use pattern of electronic information resources
   i. Most used electronic information resources

3.9 Chi-Square Test

The chi square test ($\chi^2$) test is one of the simplest and most widely used non-parametric test in statistical analysis. Chi-square is a measure of actual divergence of the observed and expected frequencies (or values). If there is no difference between actual and observed frequencies, the value of the chi-square is zero. The greater the discrepancy between observed and expected frequencies, the greater is the value of $\chi^2$. If the calculated value of chi-square is less than the table value, it indicates that the difference between actual
observed frequencies may have arisen due to chance of fluctuation and can be ignored. The quantity $\chi^2$ is defined as

$$\chi^2 = \sum (O-E)^2/E$$

where O referees to the observed frequencies and E referrers to the expected frequencies. Steps to determine the value of $\chi^2$ are

I. Calculate the expected frequencies

II. Take the difference between observed and expected frequencies and obtain the square of these difference ie, obtain the value of $(O-E)^2$.

III. Divide the quantity $(O-E)^2$ obtained in step (ii) by the expected frequency and obtain the sum over all cells $\sum (O-E)^2/E$.

This gives the value of $\chi^2$ and is compared with the table value of $\chi^2$ for given degree of freedom at certain specified level of significance. If the calculated value $\chi^2$ is more than table value of $\chi^2$ the difference between the theory and observation is considered to be significant; ie, it could not have arisen due to fluctuations of simple sampling. If, on the other hand, the calculated value of $\chi^2$ is less than the table value, the difference between theory and observation is not considered as significant ie, it is regard as due to fluctuations of simple sampling and hence ignored. For the present study Chi square test was employed to test the association between two categories whenever necessary. For this, two way tables to observed frequencies for the two categories were obtained first and then chi square value corresponding to each cell of the two way table were computed and some of these chi square values were calculated. If the computed value is greater than table value it indicates that there is an association (dependence) between two categories. Otherwise the two categories were independent.
3.10 Analysis of Variance (ANOVA)

Analysis of variance (Abbreviated as ANOVA) is an extremely useful technique concerning researches in the field of Economics, Biology, Education, Psychology, Sociology, and Business/Industry and in research in several other disciplines. This technique is used when multiple sample cases are involved. Professor R.A. Fisher was the first man to use the term ‘variance’ and, in fact, it was he who developed a very elaborate theory concerning ANOVA, explaining its usefulness in practical field. The basic principle of ANOVA is test for differences among the means of the populations by examining the amount of variation within each of these samples, relative to the amount of variation between the samples. In short there is two estimates of population variance viz, one based on between samples variance and the other based on within samples variance. Then the said two estimates of population variance are compared within F-test, where in work out.

\[
F = \frac{\text{Estimate of population variance based on between samples variance}}{\text{Estimate of population variance based on within samples variance}}
\]

3.11 SPSS (Statistical Package for Social Science)

SPSS is designed especially for the analysis of Social Sciences data. SPSS is a package of programmes covering a wide range of analysis. These programmes include frequency distribution, univariate and multivariate analysis, regression analysis, correlation analysis, factor analysis, cluster analysis, reliability analysis, long linear models etc. The sub commands direct precisely what analysis had to be performed. The Groups sub-command specifies which groups are to be discriminated between and the VARIABLES. Sub command specifies which variables are to be in operation.
The mainframe, PC and windows versions of SPSS are available internet. Discussion Group of SPSS Users has been formed to share and interact with each other’s experiences. The special characteristics of SPSS package in data analysis are:

- SPSS package has the provision to generate the summary of statistics including mean, median, mode, standard error, standard deviation, variance, range, skewness, kurtosis, minimum and maximum;

- SPSS package allows univariate distributions as well as bivariate distributions. The association between two variables can be done by bivariate analysis. The three major functions of multivariate analysis i.e. regression and subprograms. The bivariate tables and statistics for nominal and ordinal measures can be done with CROSSTABS procedure. The CORRELATIONS subprogram’s provides interval measures;

- From the data analysis any type of graphic representation can be derived from the graphic portion of the package. The Windows version provides a wide range of choice in graphic modules. The information on the sub programmes and their uses are provided by SPSS Users Guide. SPSS Windows Ver.6 is a well integrated Windows program that adheres to many typical windows conversions and commands. The typical windows commands File, Edit, Help, New, Open, Save, Exit, etc are used in the package.