CHAPTER – IV

METHODOLOGY
4.1 INTRODUCTION
4.2 TITLE OF THE STUDY
4.3 OPERATIONALIZATION OF VARIABLES
4.4 ASSUMPTIONS OF THE STUDY
4.5 OBJECTIVES OF THE STUDY
4.6 HYPOTHESES OF THE STUDY
4.7 RESEARCH STRATEGY
4.8 RESEARCH APPROACH
4.9 RESEARCH METHOD
4.10 RESEARCH TOOLS
  4.10.1 Development of Human Resource Management Scale
  4.10.2 Stages involved in the development of HRM Scale
    4.10.2.1 Pre-pilot Stage
    4.10.2.2 Pilot Stage
    4.10.2.3 Final Stage
  4.10.3 SCORING PROCEDURE
  4.10.4 VALIDATION OF RESEARCH TOOL
    4.10.4.1 Reliability
    4.10.4.2 Validity
4.11 SAMPLE OF THE STUDY
4.12 DATA COLLECTION PROCEDURES
  4.12.1 Controlling response errors in data collection environment
  4.12.2 Threats to internal validity and their control
  4.12.3 Threats to objectivity and control measures
4.13 DATA ANALYSIS
4.14 DELIMITATIONS OF THE STUDY
4.15 CONCLUSION
CHAPTER – IV
METHODOLOGY

4.1 INTRODUCTION

Research is a systemic process of collecting and analyzing information to increase an individual’s understanding of the phenomenon under study. It is the function of the researcher to contribute to the understanding of the phenomenon and to communicate that understanding to others. According to Best and Kahn (1992), “Research involves formal, systematic and intensive process of carrying out a problem through scientific methods”.

Research is a logical and objective process of gathering information for the purpose of initiating, modifying, or terminating a particular investigation or group of investigations. The validity of the problem chosen largely depends upon the systematic methodological procedures. The application of survey method requires systematic procedures for studying a problem. The heart of the survey research lies in careful designing of methodological procedures and administration of tools to obtain objective data from the respondents. The methodological procedures followed in the present study within the limits of survey are outlined in this chapter.

4.2 TITLE OF THE STUDY

The title of the present research study is precisely stated below:

“A STUDY OF HUMAN RESOURCE MANAGEMENT AT HIGHER EDUCATION LEVEL”

4.3 OPERATIONALIZATION OF VARIABLES

The definitions of important terms used in the study are given below:

Higher Education

The colleges affiliated to Bharathiar University, offering UG and PG courses in general stream.
**College Teachers**

The teachers working at Government, Government-Aided and Un-aided colleges affiliated to Bharathiar University who are the full-time employees of the colleges.

**Human Resource Management**

Human resource management is an integral but distinctive part of management. It is concerned with the people and their work, total knowledge, skills, creative abilities, talents and aptitudes of the workforce of an organization as well as the values, attitudes, approaches and beliefs of the individuals involved in the affairs of the organization. As a process, it consists of activities such as i) Environmental Interaction ii) ICT Support iii) Planning and Forecasting iv) Goal Setting v) Staff Support, Interaction and Communication Development vi) Information Dissemination and vii) Faculty Development.

**4.4 ASSUMPTIONS OF THE STUDY**

The following are the basic assumptions of the study:

1. Every organization carries out human resource management practices.
2. Human resource management practices are vital for the successful functioning of the organization.
3. The success of an educational enterprise largely depends upon its human resource management strategies.
4. The human resource management practices may be identified and measured.
5. Human resource management functions differ from institution to institution.

**4.5 OBJECTIVES OF THE STUDY**

The present study has both general and specific objectives.

**General Objective**

The general objective of the study is to find out the human resource management strategies followed by the colleges in developing teacher potentialities.

**Specific Objectives**

The following are the specific objectives of the study:
ix) To find out the extent to which the management successfully interacts with its environment.

x) To find out the extent to which the management provides modern information and communication technology (ICT) for the benefit of teachers.

xi) To find out the extent to which the management plans its future steps.

xii) To find out the extent to which the management engages in explicit goal setting.

xiii) To find out the level of skills with which the management deals with its members in terms of giving support, interaction and enthusiasm.

xiv) To find out the extent to which the management disseminates information and carries out communication among teachers.

xv) To find out the extent to which the management takes efforts in staff development programmes.

xvi) To find whether the human resource management functions differ on the basis of certain teacher and institutional related variables.

4.6 HYPOTHESES OF THE STUDY

The present study has both major and specific hypotheses.

Major hypothesis

The major hypothesis of the study is presented below:

The higher educational institutions carry out Human Resource Management Practices to a greater extent to attain their goals and objectives.

Specific Hypotheses

The following are the specific hypotheses of the study:

1. The higher educational institutions interact with its environment to a greater extent possible.

2. The management of the colleges, to a greater extent, provides modern information and communication technology for the benefit of the teachers.

3. The management of the college plans its future steps to a greater extent.
4. The college management engages in explicit goal setting to a greater extent in order to accomplish the stated goals and objectives.

5. The management of the college provides support, interaction and enthusiasm to its members to a greater extent in order to enhance their skills.

6. The management of the college, to a greater extent, disseminates information and carries out communication among its members.

7. The management of the college, to a greater extent, takes efforts in staff development programmes.

8. The human resources management functions in colleges differ on the basis of certain teacher related and institutional related variables.

4.7 RESEARCH STRATEGY

The following research strategy is planned in the present study:

Stage 1: Problem Clarity

At this stage, literature scanning is done to conceptualize the variables involved in this study and their relationships.

Stage 2: Selection of Research Method

In the second stage, an appropriate research method is selected for the present problem on the basis of literature review and expert opinion.

Stage 3: Developing Research Tool

In this stage, relevant questionnaire is developed and validated to collect data from the college teachers.

Stage 4: Selection of the Colleges

Certain Arts and Science colleges affiliated to Bharathiar University region have been identified and selected for studying the human resource management at higher education level.

Stage 5: Fixing the Sample

In this stage, the target population is identified; then the size of the sample is fixed.
Stage 6: Administration of Tools and Collection of Data

This stage involves the administration of validated tools and collection of relevant data from the college teachers. The possible response errors are identified and appropriate measures are taken to control them. Further, the threats that affect the internal validity of the study are identified and appropriate measures are taken to control them.

Stage 7: Data Analysis

The classified and tabulated data are analyzed using appropriate statistical techniques.

Stage 8: Presentation of Results

The analyzed data are presented in terms of findings.

4.8 RESEARCH APPROACH

There are several research paradigms for discovering ‘truth’ and understanding (Egan Guba, 1981). Among these paradigms, ‘Rationalistic’ and ‘Naturalistic’ paradigms are the two dominant paradigms used for studying the educational problems, practices, and programmes.

The rationalistic approach is more widely accepted in educational research. The rationalistic approach has a number of research techniques and is essentially associated with deductive thinking and logical positivistic views of ‘knowing’ and ‘understanding’ the social and organizational phenomena. It stands clearly as the dominant approach in education (Owens, 1987).

The rationalistic approach incorporates both controlled experimental methods and non-experimental research methods. It uses formal instruments for categorizing as the primary basis for collecting data. Then it transforms the data into quantitative expression of one kind or another and attempts to generalize the findings in a formal way to some universe beyond that bounded by the enquiry. The next step is to convert the problem into dependent and independent variables. Having done this, the researcher proceeds to develop strategies and instruments, attempting to control uncovered relationship between
the naturally occurring variables through the design. The researcher finally returns to the theory to interpret the results.

In this enquiry, the researcher aims at knowing the real world which is comprehensive enough to be generalisable (Carlson, 1979). Therefore, in studying the design of such a study, one looks for representativeness of the sample (Owens, 1987). If the response rate is adequate, then it is possible to generalize the results to a large population which the sample represents. This is commonly referred to as ‘external validity’. Certainly, a preordinate research is essential in rationalistic enquiry. It should specify in advance the initiating study each step that will be taken to collect and analyze the data in order to test the hypothesis or answer to research questions (Owens, 1987). Taking all these facts in mind, the investigator has employed rationalistic approach to study the present problem.

4.9 RESEARCH METHOD

Research method is a systematic procedure through which the desired outcomes are achieved by setting up of situations in such a form that the investigator gathers information and draws conclusions on the basis of the collected data (Carter Good, 1945).

In this study, survey method is considered as the appropriate method. The main purpose of selecting survey method is to study the human resource management practices followed by the colleges affiliated to Bharathiar University, Coimbatore.

4.10 RESEARCH TOOLS

The general type of data gathering instrument used in survey research is called ‘Questionnaire’ through which respondents respond to statements given in the questionnaire. It is used to collect factual information from the target population. Investigators consider the following four basic standards of survey questionnaire:

i) Common items for all individual respondents
ii) Mode of presentation of items in the questionnaire
iii) Ability to respond the items by the respondents, and

iv) Willingness to respond the items in the questionnaire (Floyd Fowler, 1989).

In the survey research, the type of the question and mode of responding the items are important to obtain appropriate response. In the present study, close ended type of questionnaire is used as it is easy to use, score, and code for analysis on a computer.

In the present study, the following research tools were used for data collection:

1. **Human Resource Management Scale (HRMS)** constructed and validated by the researcher.

2. **Personal Data Sheet**

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### 4.10.1 DEVELOPMENT OF HUMAN RESOURCE MANAGEMENT SCALE

This sub-section deals with the process involved in the development of the Human Resource Management Scale.

**Reasons for Selecting Questionnaire**

In the present study, questionnaire is selected due to the following reasons:

1. **Uniformity**

   Questionnaire largely helps the researcher in obtaining uniform response through standardized sequence of items and standardized instruction.

2. **Economical**

   The use of a questionnaire in survey helps in saving money, time, and energy by covering a large number of respondents at a given time.

3. **Chance to reveal the purpose**

   It is an opportunity for the investigator to explain the purpose of the study so that the respondents could respond promptly and objectively.
4. Comprehensive Nature

Sometimes, the respondents may not be in a position to understand the meaning of the items given in the questionnaire. At that time, the investigator may explain the real meaning of the items so as to help the respondents to get clarity about the concept.

5. Anonymity

Normally, the respondents do not like to indicate their names and do not feel free to express their views and opinions. Questionnaire helps the researchers to collect data in a confidential way and even the researcher does not know from whom he has collected a particular set of response. The anonymity ensures frank response and leads to objective collection of data from the respondents.

6. Pressure on the part of the respondents

The questionnaire reduces the burden of the respondents and permits to get immediate and proper response.

7. Flexibility

Questionnaires are the most flexible tools which possess unique advantages over other kind of tools in collecting both qualitative and quantitative data.

8. Easiness

The data obtained from the questionnaire could easily be scored, tabulated, and analyzed.

9. Establishing Rapport

In survey method, the investigator may directly meet the respondents and has an opportunity to establish a rapport with them. This kind of rapport motivates the respondents to respond all the items in the questionnaire in an enthusiastic way.
Fig 4.1: STEPS INVOLVED IN THE DEVELOPMENT OF HRM SCALE

Start

- Literature Scanning on Human Resource Management at Higher Education Level

- Identifying the different aspects of Human Resource Management at Higher Educational Level

- Pooling of items

- Item Selection

- Pilot Study

- Selection of Reliable and Valid Items

- Establishing Reliability and Validity Measures

- Readiness of Questionnaire for Administration

Stop
4.10.2 STAGES INVOLVED IN THE DEVELOPMENT OF HRM SCALE

The following three stages are involved in the development of Human Resource Management Scale: i) Pre-Pilot Stage, ii) Pilot Stage, and iii) Final Stage. Fig 4.1 illustrates the steps followed in the development of HRM Scale.

4.10.2.1 PRE-PILOT STAGE

The pre-pilot stage is primarily concerned with three important activities. They are i) Locating the sources for identifying the aspects of the variable taken for the study, ii) Identifying the appropriate aspect of the variable chosen, and iii) Pooling of items under each aspect.

Location of Sources

Books, journals and periodicals, encyclopedias, survey reports, research reports, technical reports, reports of committees and commissions, websites, ERIC, PROQUEST, dissertation abstracts, and monographs published by experts and institutions in the field of human resource management and education were the sources located for the identification of the aspects of the selected variables.

Pooling of Items

The next step in the pre-pilot stage is to pool the items under each aspect of human resource management at higher education level which are identified for the research. The following sources were consulted in pooling the items.

i) Available literature on human resource management and education
ii) Consultation with experts in human resource management
iii) Consultation with experts from education management
iv) Consultation with various university faculty in the Department of Education

Criteria for selection of items

The aims of the study must be kept in mind by the researcher while selecting the items for the questionnaire. Then only appropriate questions can be
posed to the respondents. It is the task of the investigator to depend on certain aspects such as use of language, care in phrasing the items to have clarity, precision in the nature of items, and framing the items to fulfill the objectives of the study. While pooling the items for designing the questionnaire, the following precautionary measures were taken:

- Interpreting the technical terms in right sense and avoiding misinterpretation
- Avoiding double negatives
- Avoiding inadequate alternatives
- Avoiding ambiguous and vague statements
- Avoiding double barreled items
- Avoiding unwarranted assumptions
- Phrasing the items appropriately to make suitable to all respondents
- Making the respondents to give complete response to the items
- Avoiding the items which indicated the past
- Selecting interesting items
- Avoiding complex sentences

Thus items were pooled under each aspect of human resource management in education. Then it was decided to go to the next stage namely, pilot stage.

4.10.2.2 PILOT STAGE

Pilot study is a preliminary study conducted before the main research in order to check the feasibility or to improve the design of the research. Pilot stage is concerned with refining items collected during the pre-pilot stage. The refinement of the items is done on the basis of judgment analysis. It implies eliciting the opinion of the experts in the area of the study regarding the suitability and objectivity of the items collected. For this purpose, a jury council consisting of two faculty members belonging to Business Schools and two university faculty members belonging to the Department of Education was
constituted. The items collected during the pilot stage were submitted to jury council and on the basis of jury council’s judgment, some items were modified, restructured, and some were eliminated. The following table shows the number of items retained at the end of the pilot stage:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Components</th>
<th>No. of Items Pooled</th>
<th>No. of Items Discarded</th>
<th>No. of Items Retained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Environmental Interaction</td>
<td>24</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>ICT Support</td>
<td>21</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Planning and Forecasting</td>
<td>28</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>Goal Setting</td>
<td>19</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>5</td>
<td>Staff Interaction and Communication Development</td>
<td>23</td>
<td>5</td>
<td>18</td>
</tr>
<tr>
<td>6</td>
<td>Information Dissemination</td>
<td>20</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>7</td>
<td>Staff Development</td>
<td>22</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>157</td>
<td>38</td>
<td>119</td>
</tr>
</tbody>
</table>

From the above table, it is known that 157 items were pooled for Human Resource Management Scale during the pre-pilot stage and 38 items were eliminated during the pilot stage. Finally, 119 items were retained for the inclusion in the questionnaire.
4.10.2.3 FINAL STAGE

This stage involves the random distribution of final items in the tool. The collected items under each aspect were randomly distributed. All copies of final tools are presented in the appendix section.

4.10.3 SCORING PROCEDURE

The following scoring procedure is employed for the study:

Human Resource Management Scale is a rating type of tool. It consists of 119 items and each item has five alternatives. All the items are given in positive terms. The following scoring procedure is adopted for this tool:

A score of 5 is assigned to ‘To a very greater extent’ response.
A score of 4 is assigned to ‘To a greater extent’ response.
A score of 3 is assigned to ‘To some extent’ response.
A score of 2 is assigned to ‘To a lesser extent’ response and
A score of 1 is assigned to ‘Not at all’ response.

Format of Tool

The format of the tool is presented below:

Table 4.2: Format of Human Resource Management Scale (HRMS)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Statement</th>
<th>To a very greater extent</th>
<th>To a greater extent</th>
<th>To some extent</th>
<th>To a lesser extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>119</td>
<td>The institution is responsive to community needs and conducts relevant extension programmes. The management encourages seminars for the self improvement of the staff members’ skills and competencies.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PERSONAL DATA SHEET

A personal data sheet was employed to collect certain teacher and institutional related data. The sheet aims at collecting the following information from the college teachers:

1. Gender : 
2. Age : 
3. Qualification : 
4. Total years of teaching experience : 
5. Have you undergone Orientation/Refresher courses? : Yes / no
6. Location of the college : Urban / Rural
7. College status : Affiliated / Autonomous
8. Management of the institution : Govt /Aided / Self-Financed

4.10.4 VALIDATION OF RESEARCH TOOL

In any research, the quality of the instrument is very important to draw valid information from the respondents. In the process of validation, the investigator uses appropriate statistical techniques in order to determine or to improve the degree of the validity and reliability of the measuring tools. The detailed reliability and validity measures of the present tool are discussed below:

4.10.4.1 RELIABILITY

Reliability refers to the consistency of scores from one administration of a tool to another and from one set of item to another (Jack and Norman, 1993). It deals with the degree to which a test measures accurately what it intends to measure (Ebel, 1972).

Reliability of Human Resource Management Scale (HRMS)

In the present study, the rational equivalence method was used to calculate reliability. This is otherwise known as ‘internal consistency reliability’
(KR 20 formula). This formula is applied by the researchers to the tools comprising items which could elicit more than two categories of response. The formula suggested by Ferguson (1976) was used to calculate the internal consistency co-efficient. For this purpose, 50 subjects were randomly selected. Then the following formula was applied to calculate the coefficient.

\[
 r_{tt} = \left( \frac{n}{n-1} \right) \times \left( \frac{\sigma_t^2 - \sum s^2}{\sigma_t^2} \right)
\]

where,

\( r_{tt} \) = reliability co-efficient of the test
\( n \) = number of items in the tool
\( \sigma \) = standard deviation of the total score
\( \sum s^2 \) = total sum of variance of individual items

The correlation coefficient was computed to be 0.812. The calculated value 0.812 shows the high reliability of the Human Resource Management Scale.

**Further Reliability of Human Resource Management Scale**

In the present study, an attempt was made to apply factor analysis technique to the scale. By employing factor analysis technique, a reliability co-efficient known as ‘theta’ was calculated. Theta is a maximized alpha co-efficient (Green and Carmines, 1979). The reliability co-efficient was calculated by using the following theta formula:

\[
 \theta = \left( \frac{N}{N-1} \right) \times \left( 1 - \frac{1}{\lambda_1} \right)
\]

where,

\( \theta \) = Reliability co-efficient
\( N \) = Number of Items
\( \lambda_1 \) = Largest (i.e. the first) Eigen Value
\( \theta = 0.945 \)

It is known that the Human Resource Management Scale proves to be a highly reliable tool.
4.10.4.2 VALIDITY

Validity is a measure in which the quality of being applicable to a given situation and acceptable to logical reasoning and good judgment. It is an extent to which a test measures what it purports to measure (Cartor Good, 1945). It refers to appropriateness, meaningfulness, and usefulness of the inferences that a researcher makes (Jack and Norman, 1993). In the present study, face validity, content validity, and intrinsic validity were employed to ensure the validity of the tool.

Face Validity

Face validity is restricted to the fact that a test ‘looks’ valid. In the present study, the research tool developed by the investigator aimed at measuring what she thought in her mind. The investigator thought that the items in the questionnaire measured what she intended to study namely Human Resource Management at Higher Education Level. Therefore, it was construed that the tool developed for the study possessed face validity.

Content Validity

Content Validity is a type of examination of the equal and valid distribution of units in the content. Nunnally (1978) maintains that it is more meaningful that one should ensure the validity of tools by the plan and procedure of test construction rather than establishing the validity of measures after their construction. According to him, there are two standards for ensuring content validity. They are;

i) A representative collection of items and

ii) A sensible method of test construction

In developing the questionnaire for the present study, the above guidelines were followed. The procedures employed in the development of the tool were adequately outlined in this chapter under the caption “Development of Human Resource Management Scale”. In the light of the procedures followed in developing the tools, it is confidently said that the tool has sufficient content validity.
Intrinsic Validity

The degree of which a test measures what it measures may be called its intrinsic validity. It is indicated by the square root of the reliability coefficient.

The validity of Human Resource Management Scale (HRMS) is indicated by the square root of the reliability co-efficient. The intrinsic validity measure calculated for Human Resource Management Scale was found to be 0.901. This shows the validity of the tool.

Hence, it is inferred that the tool used for the present study is highly valid and true instrument.

4.11 SAMPLE OF THE STUDY

In the present study, 24 Arts and Science colleges affiliated to Bharathiar University, Coimbatore were selected by means of stratified random sampling technique. The stratification was done on the basis of sex, type of college and geographical location of the college. The data were collected from the teachers working in these Arts and Science colleges. Thus 695 teachers from 24 Arts and Science colleges affiliated to Bharathiar University formed the sample of the study. The college wise distribution of the sample is given below:
Table 4.3: College wise Distribution of Sample

<table>
<thead>
<tr>
<th>S. No</th>
<th>Name of the College</th>
<th>No. of Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bharathiar University Arts and Science College, Gudalur</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>Government Arts College, Udhagamandalam</td>
<td>20</td>
</tr>
<tr>
<td>3</td>
<td>Government Arts College, Coimbatore</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>CMS College of Science &amp; Commerce, Coimbatore</td>
<td>29</td>
</tr>
<tr>
<td>5</td>
<td>Erode Arts &amp; Science College, Erode</td>
<td>38</td>
</tr>
<tr>
<td>6</td>
<td>Gobi Arts &amp; Science College, Gobichettipalayam, Erode(Dt.)</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td>Nirmala College for Women, Coimbatore</td>
<td>33</td>
</tr>
<tr>
<td>8</td>
<td>PSG College of Arts and Science, Coimbatore</td>
<td>44</td>
</tr>
<tr>
<td>9</td>
<td>S.N.R. Sons College, Coimbatore</td>
<td>24</td>
</tr>
<tr>
<td>10</td>
<td>Emerald Heights College for Women, Udhagamandalam</td>
<td>31</td>
</tr>
<tr>
<td>11</td>
<td>Providence College for Women, Coonoor</td>
<td>25</td>
</tr>
<tr>
<td>12</td>
<td>Sri Ramakrishna College of Arts and Science for Women, Coimbatore</td>
<td>34</td>
</tr>
<tr>
<td>13</td>
<td>Texcity Arts &amp; Science College, Coimbatore</td>
<td>11</td>
</tr>
<tr>
<td>14</td>
<td>Saratha Arts &amp; Science College, Gobichettipalayam, Erode(Dt.)</td>
<td>21</td>
</tr>
<tr>
<td>15</td>
<td>Sri Jayendra Saraswathy Maha Vidyalaya College of Arts &amp; Science, Coimbatore</td>
<td>31</td>
</tr>
<tr>
<td>16</td>
<td>Nehru College of Arts &amp; Science, Coimbatore</td>
<td>27</td>
</tr>
<tr>
<td>17</td>
<td>Sasurie College of Arts &amp; Science, Vijayamangalam, Tirupur (Dt.)</td>
<td>33</td>
</tr>
</tbody>
</table>
4.12 DATA COLLECTION PROCEDURES

In the present study, direct questionnaire administration approach was employed in order to ensure objective collection of data from the respondents. This approach is preferred by the researchers because it ensures a high response rate from the subjects and it gives an opportunity to the researcher to clarify the doubts raised by the respondents.

In the process of data collection, necessary permission was obtained from the Principals of the Arts and Science colleges. Then, on the particular day permitted by the management, the validated questionnaires were administered to the college teachers. Prior to the tool administration, proper instructions were given by the researcher for responding the questionnaire properly. The respondents were assured that the data collected would be kept confidential and would be used for the research purpose only. The respondents were asked to respond all the items in the questionnaire. A congenial environment was maintained in the campus in order to get objective and valid
data from the respondents. Thus all possible attempts were made to collect objective data from the target group.

4.12.1 CONTROLLING RESPONSE ERRORS IN DATA COLLECTION ENVIRONMENT

Hansion et al. (1953) observe that the paucity of dependable data and response errors are unquestionably the greatest obstacles to survey design. For each subject covered by the survey, there is an Individual True Value (ITV). This is the value quite independent of the survey of the way the items in the questionnaire are responded. It is noted that many are not so simple and for instance, with opinion questions, it would often be difficult to define the Individual True Value. It is pointed here that there is an Individual True Value for each subject. This is the concern of the researchers. In only few cases, the researchers may succeed and the success depends on the nature of the items stated in the questionnaire, the way it is put and by whom and how much precaution is rendered to minimize the chance error. In any case, the difference between an ITV and the value recorded in the questionnaire is the Individual Response Error (IRE).

The response errors are otherwise termed as ‘Measurement Errors’. In the present study, the possible response errors were identified and attempts were made to control them through the following ways:

**Characteristic of Data Collectors**

The personal characteristic of a researcher such as gender, position, and experience may influence the response of the subjects. Some types of temperament and personality characteristics of the investigator may lead to errors. Hence in the present study, the researcher herself had administered the questionnaire to the respondents with good temperament. A good rapport was established with the respondents. The researcher had moved with the respondents in a free and friendly manner for getting the objective response from them.
Errors Arising from Respondents

i) Interest in the Survey

The accuracy of response probably depends on the respondents’ interest on the subject matter of the survey. In this case, the willingness on the part of the teachers in responding the tool clearly revealed the interest shown by them to the present study.

ii) Supply of Background Variables

When the questionnaire aims at seeking background data of the respondents, they may hesitate to do so; particularly they do not want to reveal their names. In the present study, the respondents were informed about the study and their names were not asked. Thus attempts were made to keep the confidentiality of the respondents.

iii) Fear Psychosis of the Respondents

It is common that the collection of confidential data may lead to response errors. In order to save themselves from the embarrassment, the respondents prefer neutrality rather than manifesting true value because of fear psychosis. This situation is very common in rating the behavior of heads by students and faculty. But in this case, the variables selected were not controversial and did not create any embarrassment to the respondents.

iv) Lack of Knowledge

The error may arise when the respondents do not have adequate knowledge in the content. In this study, the concepts are well known to the subjects and necessary explanations were offered to the respondents in order to overcome this error.

v) Data Collection by Third Person

There is a possibility of error, if the data are collected by other than the researcher. In this study, the data were collected by the researcher herself and nobody was entrusted with the responsibility of collecting the data from the respondents.
Errors Arising from the Tools

i) Order of Items

Orderly arranged questions may lead the respondents to make careful and correct responses. In the present study, items in the questionnaire were in uniform structure and thus safeguard was made against response errors.

ii) Item Content

Items involving prestige, social gain, and personal circumstances may lead to respondents consciously or otherwise to give inaccurate data. In this study, the items in the questionnaire never indicated elements of prestige, social gain etc.

iii) Item Structure

Items involving sub-items may lead to more response errors, because the respondents may avoid responding in a way which leads to supplementary items. Open ended questionnaires have more scope for response errors than closed questionnaires. In the present study, the questionnaire was made up of closed in form and thus this threat was avoided. No sub-items were used in the questionnaire.

iv) Item Wording

The use of words of technical or uncommon terms, ambiguous, or vague words, and phrases may lead to error. In this case, perfection of item wording was ensured through judgment analysis. The jury council procedures conducted in the present study, to a greater extent, have minimized the response errors.

v) Time

Researchers maintain that the time in responding the questionnaires may have an influence upon response errors. Requesting the respondents to give data when they are pre-occupied with their work may lead to inaccuracy of response. Inaccuracy may arise when the respondents feel tired and fatigue. Hence, responses might be obtained in a free time. In this study, the respondents were given a free hand in responding the items. The teachers were
given adequate time to respond the items in the colleges. Adequate caution was taken to collect data when the teachers were relaxed and not pre-occupied with their normal teaching work. The teachers were approached when they were free from tired and fatigue.

**vi) Length of the Questionnaire**

Respondents may tend to be less attentive when the questionnaire is lengthy. To overcome this error, very short and precise statements were used and the respondents were given adequate time to respond according to their convenience.

**vii) Presence of Third Person**

The presence of a third person during the data collection process may lead to bias in the response, particularly, the research problems related to sexual and alcoholic behavior of individuals may create problems. The researcher may not expect true responses related to the above issues, because of either the presence of third person or failure to keep the data confidential. To minimize this error, in the present study, the data were collected in the absence of a third person. Particularly, the heads of the institutions were avoided during data collection process. Further no third person was appointed to collect data from the respondents. The data were collected by the investigator herself by establishing a close rapport with the teachers. The respondents were given a brief account of the present investigation and they were assured that the data given by them would be kept in utmost confidential and would not be revealed to any one in any circumstances.

**viii) Designated Respondents**

The accuracy of information may depend on the persons from whom it is collected. Less accuracy comes into surface when a piece of information is obtained from respondents having less education. In this study, data were obtained only from the teachers who had sound qualification in their disciplines.
ix) Place of Questionnaire Administration

The physical location of the questionnaire administration may influence the respondents’ behavior. To overcome this error, all the questionnaires of the present study were administered among the teachers working in colleges in their campuses having good physical environment.

x) Direction

Less clarity of instruction to respond the items leads to more proneness to error. In the present study, clear cut directions regarding the mode of responding the items in the questionnaire were given to the respondents.

4.12.2 THREATS TO INTERNAL VALIDITY AND THEIR CONTROL

There are many threats to internal validity of the survey method. Efforts were made to locate and control such threats. This sub-section deals with such threats and measures taken to control them.

i) Mortality

Mortality threat mainly occurs due to loss of subjects during the course of the study. Mortality is also perhaps the most difficult of all the threats to internal validity to control. In this study, no one has left in the middle of the study. Hence, there was no necessity to replace the lost subjects.

ii) History Threat

No unanticipated or unplanned events occurred during the course of study. Therefore, the threat had not affected the result of the study.

iii) Subject Characteristic or Selection Bias

It is said that imperfect selection of subjects may affect the study. In the present study, the teachers working in colleges were designated as subjects. The selection bias did not arise since the teachers were selected as per relevant sampling technique.

iv) Location

Data collection in an unknown place to the subjects may affect the internal validity of the survey. In the present study, data collection was done in the respective colleges. Moreover, the location was familiar to them.
v) Attitude of Subjects

The way in which the subjects view a study and their participation in it can affect internal validity. This is known as ‘Hawthorne Effect’. No special attention was given to any teachers. While administering the tool, utmost care was taken to prevent the novelty of the questionnaire administration.

vi) Instrumentation

The way in which instruments are used may constitute a threat to the study. The instrumentation effects include unstable instrumentation, instrument decay and data collector characteristics and data collector bias.

a) Implementation

There exists a threat when two or more persons of different abilities and personalities are involved in the data collection process. In the present study, this did not pose any problem to the internal validity as the investigator herself administered the tools and collected data from the respondents.

b) Characteristics of Data Collector

A difference in terms of personality skills among the data collectors may affect the study. This threat was controlled in the present study as the investigator herself collected and scored the responses of the subjects.

c) Data Collector Bias

In certain cases, the data collector may unconsciously distort the data due to lack of training and ignorance. In the present study, this problem did not arise as the investigator herself collected the data from the respondents. The investigator has an adequate training in research methodology and well versed in data collection procedures.

d) Unstable Instrumentation

It is shown that unstable instrumentation may pose threats to the internal validity of the investigation. In the present study, the stability of the instruments was established in a systematic way. The tool was developed in a
rigorous way. The reliability and validity measures of the tool were established in perfect terms.

e) Instrumentation Decay

Instrumentation decay occurs, if the scoring procedure is changed in some way or other. In the present study, a uniformity of procedure was followed for responding the items and scoring the items. The questionnaire was structured in such a way to facilitate easy interpretation of results. No fatigue was experienced by the investigator while scoring the items in the questionnaire as the investigator had frequent breaks for the refreshment of mind.

vii) Maturation Threat

The maturation of subjects affects the results of the study, if the study covers more number of years. In this study, the question of maturation did not pose a threat as the present study was survey in nature and the data were collected from the respondents on one time basis within a shorter duration of time.

4.12.3 THREATS TO OBJECTIVITY AND CONTROL MEASURES

Objectivity is the quality of dependence on impersonal, factual evidence, and established universal truth rather than judgment, personal opinion, especially as manifested in research or in test or any other measuring instrument (Cartor Good, 1945). In this study, attempts were made to avoid subjectivity. The following threats to objectivity were identified and controlled:

1. Personal Motives
2. Personal Emotions
3. Self-Interest
4. Complexity of the subject matter
5. Customs and Superstitions
6. Lack of Uniformity
7. Qualitative nature of subject matter
8. Ethnocentrism
9. Lack of knowledge by misunderstanding the concepts
10. External pressure and ignorance

Further, the following measures suggested by Manheim (1981) were followed to increase objectivity.

1) Use of Mechanical Devices

The collected data were analyzed with the help of computer (mechanical device) which could reduce the chance of subjectivity. In this study, the SPSS Package was used to analyze the data through computer.

2) Use of Standardized Terms and Concepts

In this study, the terms or concepts were clearly defined and used. Moreover, confused concepts were avoided in order to reduce personal bias.

3) Group Research

An attempt was made to review the previous pertinent studies in order to obtain clarity of the concept, method, and tools.

4) Use of Inter-disciplinary Approach

It is pointed out that the inter-disciplinary approach to the problem may increase objectivity. The term ‘Human Resource Management’ is inter-disciplinary concept and is widely discussed and explored by experts of all disciplines.

5) Use of Quantitative Method

Different statistical techniques were used in this study. All these statistical techniques were free from subjective bias.

6) Use of Empirical Method

In the present study, survey method was employed. Clear hypotheses were set forth; standardized procedures were employed and the data were collected through relevant tools.
4.13 DATA ANALYSIS

Data analysis is a process in which the statistical techniques are applied for compilation, presentation, discussion, and interpretation of numerical data (Carter Good, 1945). After collecting the data through reliable and valid tools, it was decided to conduct editing (checking the accuracy, utility, and completeness of data), classifying (classifying the data into various categories), and tabulating the data of the classified material in accurate mathematical terms to ensure perfect interpretation of the data. The entire collected data were analyzed and interpreted with the help of a computer by using SPSS package. The perfection of data was maintained through the following terms:

i) Homogeneity of Data

In the present study, homogeneity of the data was maintained based on standardized procedures, uniformity in responding, and standardized scoring of items.

ii) Accuracy

A better analysis of data largely depends upon the extent to which maximum accuracy is ensured in the data collection process. In this study, attempts were made to ensure internal and external validity of the study. The possible response errors were identified and controlled during the data collection process. The situational errors were also identified and controlled. Thus accuracy of data was ensured at all stages of the study.

iii) Sufficiency of Data

Researchers point out that adequate collection of data may lead to better analysis and interpretation of data. In the present study, adequate and sufficient data were collected from the teachers to facilitate better analysis and interpretation of data.

iv) Proper Method of Classification and Tabulation

In this study, a systematic classification of data was done. The data collected were analyzed at three levels – descriptive, differential, multivariate and factorial.
v) Possibility of Statistical Treatment

In the present study, relevant statistical techniques were selected for analysis of data in consultation with statistical experts. In the process of analyzing and interpreting the data, the following statistical techniques were applied to arrive at valid conclusions after consultation with statisticians and experts in computing:

a) Mean and Standard Deviation scores
b) ‘t’ test
c) ‘F’ test
d) Discriminant Function Analysis
e) Profile Analysis (Stanine Scores)
f) Principal Component Analysis

4.14 DELIMITATIONS OF THE STUDY

The following are the delimitations of the study:

1. The study is confined to Bharathiar University area.
2. The colleges offering general courses of study that are affiliated to Bharathiar University alone are included.
3. The teachers who are appointed on a full time basis alone are considered.
4. The other categories of teachers such as guest lecturers, teaching assistants, who have temporary services, are not included within the purview of the study.
5. Although the principals of the colleges belong to teaching community, they are not included within the purview of the study for analysis.
6. In the present, study human resource management is conceptualized having seven functions being carryout by the management of the colleges and the tool construction was carried out based on the seven practices of human resource management such as, interaction with its environment, provides modern information and communication technology (ICT) for the benefit of teachers, plans its future steps, goal setting, gives support, interaction and
enthusiasm to teachers, disseminates information and takes efforts in faculty development programmes.

7. The data are collected only from the teachers working in Arts and Science colleges.

8. Data are collected only from the teachers working at Government, Government- Aided and Self-financing colleges which are recognized by the Government of Tamilnadu and the authorities of Bharathiar University, Coimbatore.

4.15 CONCLUSION

The detailed methodology adopted for studying the present problem is presented in this chapter. In order to put the study in right perspective, appropriate hypotheses are formulated. The research strategy planned for the study is also presented. The selection of tools and their construction, their validation, sampling techniques and data collection procedures are explained in this chapter. The next chapter deals with the analysis and interpretation of the data collected from the college teachers.