CHAPTER 3

RESEARCH METHODOLOGY
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CHAPTER 3
RESEARCH METHODOLOGY

3.1 INTRODUCTION:

This chapter consists of research design adopted for the study. It describes the problem statement, objectives, hypothesis, research approach & sampling design in detail. It describes the data collection procedure and tools used for the data collection. Statistical tools and techniques applied to measure the variables and their relationships are also given in brief.

3.2 STATEMENT OF THE PROBLEM:

A study of human Resource Development with reference to Faculty Development Programmes in Higher Education Institutions of Gujarat.

HRD is the term which is mostly used in context of business, industries and corporate sector. It is referred as the development of human resource working or associated with the particular business or industry. Looking to the history of the HRD it was formally introduced by Lionard Nedler in 1969 in a conference organized by the American Society for Training and Development (Rao, P. S., 2012). Gradually it’s importance was recognized by management experts in all fields and originations.

Human Resource Management and development is as essential as management of other essential resources, used in a business or industry for its development. Because ultimately it is human resource who is utilizing the other resources, whether it is money or material, in an efficient manner. If human resource in an organization is developed then he /she can utilize the limited resources at its optimum level. This significance of human resource has been accepted and proper planning of HRD, in terms of recruitment, training, skill development, performance appraisal, career
advancement, intellectual development, emotional development and social development etc., is thought of in organizations. A separate HRD cell is being established in organizations, which is taking care of HRD practices.

While much systematic work is being done in the direction of HRD in fields of industry and business, educational organizations dealing mostly with human resources have unfortunately neglected the subject. (Rajini, K. M., 2009) Higher Education creates an intellectual repository of human capital to meet the country’s needs and shapes its future (Planning Commission, Government of India, 2013). It is essential to develop the human resource in higher education, which is dealt by, dealt of and dealt for human resource.

Higher Education is dealing with mainly students, teachers (faculties) and non teaching staff. Among all three, faculty is most-important as the development of students and quality of higher education rests in the hands of faculty itself. Hence the journey towards quality and excellence in higher education starts with the skilled, knowledgeable, updated and highly motivated faculties, working in colleges and universities.

The present study is about the HRD practices with reference to Faculty Development Programmes in Higher Education Institutions of Gujarat.

3.3 OBJECTIVES OF THE STUDY:

1. To study the Human Resources Development practices with reference to Faculty Development Programme being followed in the Universities of Gujarat.

2. To study the Human Resources Development practices with reference to Faculty Development Programme in Government, Grant-in-Aid & Self Finance Institutions.
3. To study the differences in perception of faculties belonging to different demographic profile towards the Human Resources Development practices with reference to Faculty Development Programmes.

4. To suggest the remedial measures for the Human Resources Development practices with reference to Faculty Development Programmes in Higher Education.

3.4 OPERATIONAL DEFINITIONS OF THE TERM: In present study HRD and FDP are considered as follows:

Human Resource Development (HRD) refers to College Environment, Performance Management, Training for Professional Development and College Supportive System in terms of Funds and Leave facility and Infrastructure Facility.

Faculty Development Programmes refer to In-service training Programmes, Orientation Programmes, Refresher Courses, Workshops, Seminars, Conferences and Research Activities.

1. **College Environment:**

Work Environment leads to positive or negative output. A favourable college environment supports the faculty to develop new skills and knowledge. A conducive colleges environment includes positive attitude of management towards faculty, participatory work style of management, and opportunities & freedom given to faculty in decision making about academic matters. Freedom of decision making in academic related matters like course designing, lesson planning, evaluation method etc., encourage faculty to be more loyal and responsible for his / her profession. Management’s less interference in academic matters and more trust in faculty converts into conducive environment. Ultimately faculty feels more empowered and works hard for positive output (Nagendra, B.S. & Datta, G. L. 2011).
2. **Performance Management:**

Performance Appraisal is a method of evaluating the behaviour of employees in the workstation, normally including both the quantitative and qualitative aspects of job performance. It indicates how well an individual is fulfilling the job demands. It is always measured in terms of results and not efforts. (Rao, P. S. 2012).

In colleges, as per UGC’s policy performance appraisal is done in order to implement career advancement scheme. UGC’s career advancement scheme facilitates the faculty to develop his/her career and get promotions in higher education.

Existence of Performance Appraisal system prevents the grievance and helps to decide reward and promotion issues. Existence of overall performance management system motivates faculty.

3. **Faculty Development:**

Positive HRD policies of the college always facilitate faculty development. To satisfy the faculty’s psychological needs and to strengthen the emotional and social quotient ‘quality circle’ meets, cultural and social meet are essential. ‘Quality Circle’ is a small group of employees in the same work area of doing similar type of work who voluntarily meet regularly to identify, analyze and resolve work related problems not only to improve quality, productivity and the total performance of the organization, but also to enrich the quality of work life of employees. (Rao, P. S. 2012).

In college this concept may be visualized in form of a regular meet of HOD’s of different subjects and a frequent meet of faculties of same subject. They can discuss their subject related, teaching related and other concerned matters and solve them with mutual understandings and ideas. Apart from this, celebrations of different events and days get together on some occasions help faculty to strengthen their social quotient.
4. College Supportive System – in terms of Funds & Leave Facility:

Professional growth in the field of teaching is an indispensable factor in our colleges and universities. To keep the members of the teaching community informed about new techniques and ideas, to ensure that innovations are institutionalized through training, to coordinate demands with faculties, and needs with abilities, require all time vigilance in the field of education. Enhancement of pedagogic skills has an important part in faculty development. (Waghmare, P. P. 2012)

Faculty Development Programmes not only enhance the knowledge and skills of faculty but also provide the platform to meet with peer groups and exchange the ideas. FDPs also facilitate faculty to get an exposure of knowledge of experts and intellectuals in the field from different geographical areas.

To attend such FDPs positive attitude of college authorities is important. A strong college supportive system, which includes provision of leaves to participate such FDPs and provision of funds to meet financial requirements of FDPs, encourage faculty to attend and to participate in such programmes.

5. College Supportive System-in terms of Infrastructure Facility:

Research and innovation are key words in knowledge era. It helps in generation and application of knowledge. It improves the quality. It also gives an edge over others in the field (Ujjawala, D. S., & Bhusari, C. V. 2013).

The basic need for research and innovation is infrastructure facility. Infrastructure facilities like Laptop, Computer with Internet Browsing, well equipped Library with e-resources, Multimedia Projector for effective presentation etc. are essential now days. Provision of such facilities, boost the morale of faculty, to get involved in research activities and to bring maximum innovations in teaching learning process.
6. **Research and Training practices:**

Faculty Development Programmes (FDPs) refer to in-service training programmes, orientation programme (OP), Refresher Course, Workshops, Seminars, conferences and Research Activities. In present study these are clubbed in one dimension Research and Training practices.

- In service training programmes are conducted on different topics and subjects for capacity building of faculty. Generally these programmes are conducted to train and to make faculty aware of different aspects of teaching learning process and research activities. These programmes are conducted to update the subject knowledge as well as to train faculty for other aspects of teaching learning process like communication skills, use of technology in teaching and research etc.

- **Orientation Programme (OP):**
  Academic Staff Colleges of UGC put the effort to orient new faculty to the field of higher education. Orientation Programme (OP) is conducted by ASCs for the new entrants in the field of higher education. This Programme is of four week. During the service period faculty has to attend once OP of ASC.

- **Refresher Course:**
  Refresher Course is one kind of training programme to refresh the faculty in his/her subject. The three week refresher course is organized by ASC to update the faculty with new teaching techniques, methodologies and new knowledge. For career advancement refresher courses are to be attended compulsorily by faculty during his/her service period.

- **Research Activities – workshops, Seminar, Conference:**
  Workshops on different aspects of research and teaching are conducted to give hands on experience to the faculty. Faculty learns techniques and uses it in further research to enrich his/her work.
Seminars/Conferences are organized to provide platform to faculty to present his/her research paper in front of peer group. Here faculty gets chance to present his/her own innovations and research as well as gets experience of his/her peer groups work in the same field. This experience enhances faculty’s knowledge and skills in the field of research which leads to professional development. Research and extension activities contribute in generation of new knowledge for the society.
3.5 HYPOTHESIS:

Following Hypothesis Were Formulated:

**Hypothesis 1:**

There is no significant difference in HRD practices with reference to Faculty Development Programmes in Government, Grant-in-Aid and Self Finance colleges.

The following sub hypothesis were formulated to measure the difference in various dimensions-College Environment, Performance Management, Faculty Development, Funds and Leave facility, Infrastructure facility and Research and Training practices of HRD practices with reference to Faculty Development in different type of colleges.

- **H1.1:** There is no significant difference in College Environment belonging to different types of colleges.
- **H1.2:** There is no significant difference in Performance Management belonging to different type of colleges.
- **H1.3:** There is no significant difference in Faculty Development belonging to different type of colleges.
- **H1.4:** There is no significant difference in Funds and Leave facility belonging to different type of colleges.
- **H1.5:** There is no significant difference in Infrastructure facility belonging to different type of colleges.
- **H1.6:** There is no significant difference in objective of attending OP/Refresher Courses and recommendations of research for HRD in Higher Education of faculty belonging to different type of colleges.
- **H1.7:** There is no significant difference in difficulties in attending ASCs training of faculty belonging to different type of colleges.
- **H1.8:** There is no significant difference in objectives of research work and overall FDP and HRD practices in Higher Education of faculty belonging to different type of colleges.
- **H1.9:** There is no significant difference in content quality of FDP of faculty belonging to different type of colleges.
Hypothesis 2:

There is no significant difference in the perception of faculty belonging to different demographic profile towards HRD Practices and Faculty Development Programmes.

The following sub hypothesis were formulated to measure the difference in individual perception of Faculty who possess various demographic traits like Gender, Qualification, Type of College, Faculty-Stream, Designation towards various dimensions of HRD Practices and Faculty Development Programmes.

H$_{2.1}$: There is no significant difference in perception for College Environment of faculty belonging to different demographic profile.
H$_{2.2}$: There is no significant difference in perception for Performance Management of faculty belonging to different demographic profile.
H$_{2.3}$: There is no significant difference in perception for Faculty Development of faculty belonging to different demographic profile.
H$_{2.4}$: There is no significant difference in perception for Funds and Leave facility of faculty belonging to different demographic profile.
H$_{2.5}$: There is no significant difference in perception for Infrastructure Facility of faculty belonging to different demographic profile.
H$_{2.6}$: There is no significant difference in perception for objective of attending OP/Refresher Courses and recommendations of research for HRD in Higher Education of faculty belonging to different demographic profile.
H$_{2.7}$: There is no significant difference in perception for difficulties in attending ASCs training of faculty belonging to different demographic profile.
H$_{2.8}$: There is no significant difference in perception for objectives of research work and overall FDP and HRD practices in Higher Education of faculty belonging to different demographic profile.
H$_{2.9}$: There is no significant difference in perception for content quality of FDP of faculty belonging to different demographic profile.
Hypothesis 3:

There is no association between perception of faculty belonging to different demographic profile and awareness of academic staff colleges training programmes and research practices.

Following sub hypothesis were formulated to measure the relationship between Awareness of Academic Staff Colleges among Faculties belonging to different demographic profile (Gender, Educational Qualification, College Type, Faculty Stream and Designation)

H₃.₁: There is no association between the Gender and Awareness of Academic Staff Colleges.
H₃.₂: There is no association between the Educational Qualification and Awareness of Academic Staff Colleges.
H₃.₃: There is no association between the College Type and Awareness of Academic Staff Colleges.
H₃.₄: There is no association between the Faculty Stream and Awareness of Academic Staff Colleges.
H₃.₅: There is no association between the Faculty Designation and Awareness of Academic Staff Colleges.
Hypothesis 4:

There is no association between perception of faculty belonging to different demographic profile and attended (participated) Orientation Programme / Refresher courses.

Following sub hypotheses were formulated to measure the relationship between Attended (participated) Orientation Programme / Refresher courses among Faculties belonging to different demographic profile (Gender, Educational Qualification, College Type, Faculty Stream and Designation).

H₄.₁: There is no association between the Gender and Attended (participation) O P/Refresher courses.
H₄.₂: There is no association between the Educational Qualification and Attended (participation) O P/Refresher courses.
H₄.₃: There is no association between the College Type and Attended (participation) O P/Refresher courses.
H₄.₄: There is no association between the Faculty Stream and Attended (participation) O P/Refresher courses.
H₄.₅: There is no association between the Faculty Designation and Attended (participation) O P/Refresher courses.
Hypothesis 5:

There is no association between perception of faculty belonging to different demographic profile and Regularity of Research Work for Professional Development.

Following sub hypothesis were formulated to measure the relationship between Regularity of Research Work for Professional Development among Faculties belonging to different demographic profile (Gender, Educational Qualification, College Type, Faculty Stream and Designation).

$H_{5.1}$: There is no association between the Gender and Regularity of Research Work for Professional Development.

$H_{5.2}$: There is no association between the Educational Qualification and Regularity of Research Work for Professional Development.

$H_{5.3}$: There is no association between the College Type and Regularity of Research Work for Professional Development.

$H_{5.4}$: There is no association between the Faculty Stream and Regularity of Research Work for Professional Development.

$H_{5.5}$: There is no association between the Faculty Designation and Regularity of Research Work for Professional Development.
Hypothesis 6:

There is no association between perception of faculty belonging to different demographic profile and Presentation of Research papers in Seminars.

Following sub hypothesis were formulated to measure the relationship between Presentation of Research Papers in Seminars among Faculties belonging to different demographic profile (Gender, Educational Qualification, College Type, Faculty Stream and Designation).

H$_{6.1}$: There is no association between the Gender and Presentation of Research Papers in Seminars
H$_{6.2}$: There is no association between the Educational Qualification and Presentation of Research Papers in Seminars
H$_{6.3}$: There is no association between the College Type and Presentation of Research Papers in Seminars.
H$_{6.4}$: There is no association between the Faculty Stream and Presentation of Research Papers in Seminars.
H$_{6.5}$: There is no association between the Faculty Designation and Presentation of Research Papers in Seminars.
3.6 DELIMITATIONS:

1. This study is delimited to the faculties of colleges of state universities of Gujarat.
2. This study is confined to state universities which are providing under graduation programmes of B.Com, B.A and B.Sc.
3. Result and Findings of the study are based on the respondents’ responses which may be biased.
4. The purpose of the study is not the generalization.

3.7 RESEARCH DESIGN:

Research design is providing a framework, within which the whole research is conducted. Path of research is designed which describes the way of collecting and analyzing the data towards ultimate conclusion and answers to research problems.

- Research Approach: Research approach of study was qualitative and quantitative both.
- Type of Research Design: The purpose of the study was to know the existing status of HRD with reference to FDP in Higher Education Institutions of Gujarat as well as to measure the perception of faculty for HRD/FDP. This study was descriptive in nature, which followed Survey Method.

3.8 SAMPLING DESIGN:

- Extent of Research: In Higher Education of Gujarat 44 universities are there to impart education in different streams, offering various courses. Researcher has delimited the study to those state universities which are offering Under Graduate Programmes i.e., B.Com, B.A. and B.Sc.
Sample Selection: Sample comprises of faculties working in the different affiliated Arts, Commerce and Science colleges of selected universities. Sample consists of 360 faculties and 25 principals as respondents. Sample selection and distribution was as follows:

**Figure 15: Stages of Sample Selection**

Above figure shows the multi stage sampling for the study. Population comprised of 44 Universities of Gujarat Higher Education out of which 8 ‘State’ Universities were selected as sampling unit. Out of these State Universities 4 State Universities were randomly selected as sample. Arts, Commerce and Science Colleges of these State Universities are divided in three Clusters – Government Colleges, Grant-in-Aid Colleges and Self Finance Colleges. Total 50 Colleges were selected from three Clusters of selected four State Universities. Out of these Colleges total 360 Faculties and 25 Principals were selected as sample for the study.

Thus sample comprises of 360 Faculties and 25 Principals as Respondents.
Following is the tabular bifurcation:

**Table 23: Population & Sampling Unit**

<table>
<thead>
<tr>
<th>Organization</th>
<th>Population (No.)</th>
<th>Sampling Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universities of Higher Education of Gujarat</td>
<td>44</td>
<td>State Universities of Gujarat</td>
</tr>
<tr>
<td>Size</td>
<td>08</td>
<td></td>
</tr>
</tbody>
</table>

Table 23 shows the population and sampling unit for the study in stage 1 i.e., All 44 Universities of Gujarat as Population and 8 State Universities as Sampling Unit.

**Table 24: Sample Selection (Universities)**

<table>
<thead>
<tr>
<th>Type of University</th>
<th>Population (No.)</th>
<th>Sample Size (No.)</th>
<th>Sample size (% within sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Universities</td>
<td>08</td>
<td>04</td>
<td>50</td>
</tr>
</tbody>
</table>

Table 24 describes the selection of 4 State Universities out of total 8 Universities of Higher Education of Gujarat.

**Table 25: Sample Selection (Cluster wise Arts, Commerce & Science Colleges)**

<table>
<thead>
<tr>
<th>Cluster/ Type of College</th>
<th>Population (No. of Colleges)</th>
<th>Sample Size (No. of Colleges)</th>
<th>Sample Size (% within Sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>33</td>
<td>13</td>
<td>39.39</td>
</tr>
<tr>
<td>Grant-in-Aid</td>
<td>188</td>
<td>19</td>
<td>10.10</td>
</tr>
<tr>
<td>Self-Finance</td>
<td>55</td>
<td>18</td>
<td>32.72</td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td>50</td>
<td>18.11</td>
</tr>
</tbody>
</table>

Above Table 25 shows the selection of Arts, Commerce and Science Colleges as Sample from three Clusters / Types- Government, Grant-in-Aid and Self Finance of four State Universities of Gujarat.
Table 26: Sample Selection (Faculty from Arts, Commerce and Science colleges)

<table>
<thead>
<tr>
<th>Cluster/ Type of Colleges</th>
<th>Population (No. of Colleges)</th>
<th>Sample (No. of Faculty)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government</td>
<td>13</td>
<td>61</td>
</tr>
<tr>
<td>Grant-in-Aid</td>
<td>19</td>
<td>211</td>
</tr>
<tr>
<td>Self-Finance</td>
<td>18</td>
<td>88</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>360</td>
</tr>
</tbody>
</table>

Table 26 shows the population of the sample colleges and the sample size of respondents obtained from the population. Thus sample was selected in multi stages. The researcher distributed the survey instrument questionnaire to 360 Respondents Faculties and 25 Respondents Principals.

Method for selection of sample was Random Sampling Method. Selected sample universities were:

1. Gujarat University Ahmedabad
2. Sardar Patel University Vallabh Vidhya Nagar
3. Saurashtra University Rajkot
4. KSKV Kachchh University Bhuj, Kachchh

These universities are having affiliated Arts, Commerce and Science colleges. From management point of view theses affiliated colleges are divided in three clusters:

1. Government
2. Grant-in-Aid
3. Self Finance

Finally 360 faculties & 25 Principals of Arts, Commerce and Science Colleges were selected from these three clusters. Due care was taken while selecting respondents as sample that they represent all the selected universities and colleges of different areas.
3.9 COLLECTION OF DATA:

- Type of Data: To make the study more reliable Primary and Secondary both kinds of data were used for the present study.
- Tools for data collection:

Primary Data: Primary Data was collected through a close ended structured questionnaire from the respondents (faculties) of the colleges affiliated to Gujarat University - Ahmedabad, Sardar Patel University - Vallabh Vidhya Nagar, Saurashtra University - Rajkot and KSKV Kachchh University - Bhuj.

Simultaneously primary data was collected through open ended questionnaire, formal and informal talks with respondents (Principals) of Colleges.


3.9.1 Tool Construction:

(A) Survey of Faculty (Teaching Staff)
- Questionnaire Design: The survey questionnaire was divided in three sections consisting 48 questions and 7 pages, based on independent and dependent variables. Reliability test and Pilot test were applied to standardize the questionnaire before conducting survey. The questionnaire was properly administered to gather the data from the respondents. A covering letter was attached with the questionnaire describing the title and purpose of the study. Following table shows the design of questionnaire.
<table>
<thead>
<tr>
<th>Instrument Sections</th>
<th>Design Type</th>
<th>Purpose/Measures</th>
<th>No. of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Questionnaire Section 1</td>
<td>Demographic Profile of the respondents</td>
<td>To obtain the demographic information of the respondents of the study</td>
<td>09</td>
</tr>
<tr>
<td>Survey Questionnaire Section 2</td>
<td>Dimensions Measurement – Likert Type Scale: 1 to 5</td>
<td>To analyze &amp; measure the HRD being followed in colleges</td>
<td>12</td>
</tr>
<tr>
<td>Survey Questionnaire Section 3.1</td>
<td>Dimensions Measurement – Likert Type Scale: 1 to 5</td>
<td>To analyze &amp; measure the HRD/FDP being followed in colleges</td>
<td>09</td>
</tr>
<tr>
<td>Survey Questionnaire Section 3.2</td>
<td>Dimensions Measurement – dichotomous questions (Yes/No) &amp; Likert Type Scale: 1 to 5</td>
<td>To analyze the individual perception of respondents towards HRD/FDP for the professional development in Higher Education</td>
<td>18</td>
</tr>
</tbody>
</table>

After reviewing literature on HRD practices the questionnaire was developed. While reviewing the literature, different HRD practices were examined suitable to study and accordingly questionnaire was divided in three sections as shown in above table.
Section 1: Demographic Information

Section 2 & Section 3.1: To measure the HRD with reference to FDP being followed in colleges

Section 3.2: To measure the individual perception for HRD/FDP for the professional development.

HRD with reference to FDP was measured on following major dimensions:

1. College Environment
2. Performance Management
3. Faculty Development
4. College Supportive System in terms of Funds & Leave Facility
5. College Supportive System in terms of Infrastructure Facility

The representation of item numbers of the questionnaire is as follows:

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Item No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>College Environment</td>
<td>1, 2, 3, 4 (Section 2)</td>
</tr>
<tr>
<td>Performance Management</td>
<td>5, 6, 7, 8 (Section 2)</td>
</tr>
<tr>
<td>Faculty Development</td>
<td>9,10,11,12 (Section 2)</td>
</tr>
<tr>
<td>College Supportive System-Funds &amp; Leave Facility</td>
<td>1,2,3,4 (Section 3.1)</td>
</tr>
<tr>
<td>College Supportive System-Infrastructure Facility</td>
<td>5,6,7,8,9 (Section 3.1)</td>
</tr>
<tr>
<td>Research and Training Practices</td>
<td>1 to 18 (Section 3.2)</td>
</tr>
</tbody>
</table>

Section 1 Demographic Profile:

Section 1 of the questionnaire consisted 9 items to gather the demographic information of respondents which are as follows: Name, Gender, Age, Qualification,
Name of College, Type of College, Name of University, Faculty (Stream), and Academic Status (Designation) of respondents.

Section 2 and 3 of questionnaire was divided in to six dimensions consisting 39 items. 35 variables asked in section two were measured on 5 point Likert – type scales. 4 variables asked in section 3 were dichotomous (yes/no) type of questions.

Dimension wise scales used in the questionnaire are mentioned as under:

Section 2: Measures of HRD/FDP:

1) College Environment (4 items): Questions were framed to know the satisfaction level of faculties with College Environment for developing new skills and knowledge. To know whether college provides opportunities to faculty in decision making regarding college activities or not and to know the managements attitude, work style and belief for faculties. Few items were drawn from Questionnaire of Patre, S. and Gupta, R. (2011).

Variables measured on 5 point Likert – type scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree)

2) Performance Management (4 items): A four items scale was prepared. To measure the perception of faculties for the existence of Performance Appraisal System and Grievance Mechanism System. Questions were asked regarding implementation of career advancement scheme & recognition by rewards for excellent performance.

Variables measured on 5 point Likert – type scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree)

3) Faculty Development (4 items): Faculties’ opinion for the HRD policies of college regarding FDPs, ‘Quality circle’ involvement, social or cultural meet was asked. Few items were drawn from Questionnaire of Patre, S. and Gupta, R. (2011).

Variables measured on 5 point Likert – type scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree)
Section 3.1: Measures of HRD/FDP:

4) College Supportive System in terms of Funds & Leave Facility (4 items): This four items scale was developed to measure the satisfaction level of faculties for the provision of leaves & financial support given by college for FDPs.
Variables measured on 5 point Likert – type scales (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Mostly, 5 = Always)

5) College Supportive System in terms of Infrastructure Facility (4 items): A four items scale was prepared to measure the perception of faculties for the provision of Infrastructure Facilities by college.
Variables measured on 5 point Likert – type scales (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Mostly, 5 = Always)

Section 3.2: Measures of HRD/FDP:

6) Research & Training Practices (18 items):
First four items scale was consisting yes/no type of question to measure the faculty’s perception for awareness of Academic Staff Colleges and their training programme as well as to know the regularity of research work for professional development.
Objectives of attending O.P./Refresher Courses and Recommendation of Research for HRD in Higher Education ( 5 items): This 5 items scale was suitably modified drawn from questionnaire of Rajini, K. M. (2009) to know the objective of faculties behind attending training programmes of ASCs and their recommendations for Research practices.
Variables measured on 5 point Likert – type scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree)
Difficulties in attending ASCs training (3 items): This 3 items scale was drawn from questionnaire of Rajini, K. M. (2009) and suitably modified to know the type of difficulties in attending ASCs training programmes.

Variables measured on 5 point Likert – type scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree)

Objectives of Research Work and Overall FDP & HRD practices in Higher Education (4 items): This 4 items scale was developed to measure the satisfaction level & belief of faculties for overall FDPs & HRD practices.

Variables measured on 5 point Likert – type scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree)

Content Quality of FDP (2 items): This two items scale was suitably modified drawn from questionnaire of Rajini, K. M. (2009). This scale was developed to measure the faculties’ satisfaction level for content and Quality of ASCs training programmes.

Variables measured on 5 point Likert – type scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree)

After a rigor literature review, survey instrument was developed. Few items drawn from the studies previously undertaken were properly modified and made them relevant to present study. References of authors were also given.

The main objective of the study was to study the HRD practices with reference to FDPs being followed in colleges of Gujarat as well as to know the perception of faculties towards HRD/FDPs.

Specimen of the survey instrument ‘Questionnaire’ has been given in appendix -1.

### 3.9.2 Pre-test of the Questionnaire:

Questionnaire is the instrument which provides the necessary data for the study. On the basis of this data inference of study is made out. Reliability of inference depends upon the reliable tool for data collection. Hence its
reliability testing is inevitable. Pre testing of questionnaire proves the suitability and the relevance of question to the study.

A pilot test was conducted on questionnaire used in this study. Before conducting pilot test, questionnaire was examined by 4 to 5 research experts. Their suggestions were duly incorporated and a pilot test over 20 faculties was conducted.

The reliability of questionnaire was verified through the Reliability test with the calculation of Cronbach’s alpha coefficient. It was 0.91, which was more than minimum requirement.

Table 28: Reliability measure of the instrument

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Particular of Dimensions</th>
<th>No. of Items</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>College Environment</td>
<td>4</td>
<td>0.832</td>
</tr>
<tr>
<td>2</td>
<td>Performance Management</td>
<td>4</td>
<td>0.816</td>
</tr>
<tr>
<td>3</td>
<td>Faculty Development</td>
<td>4</td>
<td>0.768</td>
</tr>
<tr>
<td>4</td>
<td>College Supportive System – Funds and Leave Facility</td>
<td>4</td>
<td>0.790</td>
</tr>
<tr>
<td>5</td>
<td>College Supportive System – Infrastructure Facility</td>
<td>5</td>
<td>0.880</td>
</tr>
</tbody>
</table>
| 6       | - Research & Training Practices  
- Objective of attending OP / Refresher courses and recommendations of research for HRD  
- Difficulties in attending ASCs training  
- Objectives of Research Work and overall FDP and HRD practices  
- Content Quality of FDP | 18 | 0.724 |

7) Survey of Principals:

- Questionnaire Design:

Head of the Institute plays a major role to set the policies for institute. In this manner Principal for the college is as important as Captain for a ship or a Pilot for a plane. The questionnaire was developed to gather the information from
respondents (Principals) of Arts, Commerce and Science colleges of all clusters i.e. Government, Grant-in-Aid, and Self Finance Colleges. A covering letter was attached with the questionnaire explaining the title and purpose of the study. It was divided into two sections:

Section 1 – contained demographic profile of respondents.
Section 2 – contained 10 open ended questions to know the opinion of respondents.

**Section 1:** Demographic profile consisted of 9 items which are – Name, Gender, Age, Qualification, Name of College, Type of College, Name of University, Faculty (Stream), Academic status (designation) of respondents.

**Section 2:** 10 open ended questions were designed to measure the Principals role in faculty development, policies & frequency of FDP at college, evaluation of performance of faculty and impact of FDP. Principals’ opinion for Faculty Development Programme was one of the deciding factors to measure the Human Resource Development with reference to Faculty Development Programme in different type of colleges.

### 3.9.3 Data collection Procedure:

Survey was conducted and data was collected from 360 respondents (faculties) and 25 respondents (principals) of Arts, Commerce and Science colleges (covering all clusters - Government, Grant-in-Aid, and Self Finance Colleges) of Higher Education of Gujarat.

Data collection started with the distribution of survey instrument among respondents. The researcher took due care to administer the questionnaire. Respondents were assured that their response would be kept confidential and information would be used only for academic purpose. Principals of selected colleges were approached for gathering the data from faculties of their respective colleges. Their opinion was also marked. Necessary directive statements and guidelines were mentioned in the survey instruments to avoid the ambiguity and to get the accurate response from the respondents. Questionnaires for Principals Survey were administered by conducting personal interview wherever it was possible and telephonic talks also.
It was assumed that respondents from the field of higher education would take due care while giving their response. They would give the response without any bias or prejudice.

3.10 VARIABLES AND MEASURES USED IN THE STUDY:

This study was conducted to measure the HRD with reference to FDPs in Higher Education Institutes of Gujarat with following major objectives:

1. To measure the HRD practices with reference to FDPs being followed in Higher Education Institutions of Gujarat.
2. To measure the perception of faculties of Higher Education Institutions for HRD/FDP for their professional development.

Various dependent and independent variables for the study were identified as follows:

3.10.1 To measure the HRD practices with reference to FDPs, variables were as follows:

Figure 16: Dependent and Independent variables-To measure the HRD/FDP practices
1) **College Environment:**
A conducive work environment is necessary for the desirable results. A positive organizational climate helps employees to develop new skills and knowledge. Positive attitude of employer towards employees creates confidence among employees. If employees are given opportunities to participate in decision making process for the activities of their organization, they do it more enthusiastically. It helps in individual development as well as organizational development. Participation develops in workers a sense of achievement and pride in work (Rao, P. S., 2012).

2) **Performance Management:**
A planned evaluation system for the performance of employees includes performance appraisal, recognition for excellent performance through rewards and career advancement schemes. Employees’ potential for job is identified and morale is boosted through existence of Performance Management. Prompt settlements of employees grievances lead to job satisfaction and satisfied employees are encouraged to enrich their resources with a view to enhance their contributions to the organization (Rao, P. S., 2012). Employees share their problems and difficulties and become more comfortable and satisfied.

3) **Faculty Development:**
Intelligence Quotient of employees is to be developed for the development of an organization. For this training and skill development programmes are inevitable. Visualization of need of training and simultaneously opportunities given for training both are important. The other aspect of employees’ development is to develop emotional quotient which is possible by strengthening the social relations. Existence of ‘Quality Circle Meet, Social Meet and Cultural Meet’ fulfils the same objective.

4) **College Supportive System – Funds and Leave Facility** –One of the supportive aspects of HRD policies is training and development programmes. Training and development programmes may be conducted in
house and employees may be sent to outside agencies also. In both cases ultimate aim is development of employees. In academic institutes faculty development programmes, seminars and workshops are conducted to develop the faculties’ skills and update their knowledge in their respective fields. To attend such programmes funds and leaves both are essential.

5) **Infrastructure Facility**: Apart from funds and leave for research work basic infrastructure facilities like e-resources, computer and library etc., facilities are needed. Such facilities, if are provided by colleges, it brings the high morale among faculties. The willingness to attend such FDPs increases due to strong college supportive system and it results into job satisfaction.

6) **Research and Training practices**: Faculties’ awareness for Academic Staff Colleges’ O.P & Refresher Courses, their regularity and recommendations for research work, their difficulties in attending ASCs training, their objectives of research work and overall FDP and their perception for content and quality of FDPs are considered as Research and Training practices. These are considered as dependent variables in the present study.

**3.10.2 Type of College – Independent Variable**

For the present study Arts, Commerce and Science colleges are selected from three clusters/types i.e. Government, Grant-in-Aid and Self Finance Colleges. Type of college is considered as independent variable. HRD with reference to FDPs depends upon the type of college. Policies for HRD with reference to FDPs may differ as per type of college.
3.10.3 To measure the Perception of Faculties for the HRD/FDP for their Professional Development:

Following are the dependent and independent variables for the present study:

**Figure 17: Dependent and Independent variables to measure the perception of faculty for HRD/FDP**

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Independent Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) College Environment</td>
<td>Demographic profile of Faculty (Gender, Age, Qualification, Type of College, Faculty – Stream, Designation)</td>
</tr>
<tr>
<td>2) Performance Management</td>
<td></td>
</tr>
<tr>
<td>3) Faculty Development</td>
<td></td>
</tr>
<tr>
<td>4) Funds and Leave Facility</td>
<td></td>
</tr>
<tr>
<td>5) Infrastructure Facility</td>
<td></td>
</tr>
<tr>
<td>6) Research and Training Practices</td>
<td></td>
</tr>
</tbody>
</table>

Dependent variables are explained in the section 3.5.1. Demographic Profile of faculties - gender, age, qualification, type of college, they belong to faculty stream and designation is considered as Independent Variable.

3.11 DATA ANALYSIS:

Quantitative Data was analyzed using statistical tools. Computer Software EXCEL-2007 and Statistical Package for Social Sciences (SPSS) – 19.0 were used for applying statistical tools.

Pre-requisition of using software was fulfilled and further process was carried as per following stages:

3.11.1 Stages of Data Analysis:

- After collection of data all the questionnaire were verified thoroughly. Data was entered into computer.
- All the variables were given codes as per the requirements of software.
• Confirmation was done for absence of missing values.
• Statistical tools were applied.

Figure 18: Steps of Data Analysis

The researcher attended one week Faculty Development Programme, organized by Tolani Institute of Management Studies, Adipur (Kachchh) during August 2014. During this FDP the researcher learnt various aspects of statistical tools used for data analysis and how to use the SPSS software to carry the data analysis procedure efficiently.

3.11.2 Statistical Tools for Data Analysis:

Following statistical tools were used to analyze the data in present study:
1. Preliminary analysis including Reliability test and Normality test.
2. KMO and Bartlett’s test and Factor Analysis.
3. Descriptive Analysis.
4. One Way ANOVA.
5. Independent - Sample t-test.
6. Correlation Analysis
7. Chi-square test.

1) Reliability Test:
The reliability of survey questionnaire was tested by conducting reliability test. The Cronbach’s Alpha was statistically reliable for all the measures used in the study, which is presented in previous section 3.4.2. Dimension wise Cronbach’s Alpha has been presented in table 28.

2) KMO Bartlett’s test:
Kaiser – Meyer – Olkin (KMO) and Bartlett’s test was applied to measure the adequacy of sampling.

Factor Analysis:
Factor Analysis is a technique which is used for the summarization and reduction of data. Factor analysis indentified the underlying variables or factors which explain the pattern of correlation within a set of observed variables. Large numbers of variables are clubbed in a small number of factors by using this technique so that further analysis becomes easier.

In the present study factor analysis was used and 14 variables were clubbed in four main factors and further analysis was conducted.

3) Descriptive Analysis:
The basic objective behind descriptive analysis was to observe the mean scores and the standard deviation scores of the variables.

4) One - way ANOVA
One way Analysis of Variance (ANOVA) is used when there is independent variable having two or more than two categories and a normally distributed interval or ratio dependent variable. The objective of conducting this test is to test for differences in the means of the dependent variable broken down by the
levels of the independent variable. One way ANOVA examines the differences between more than two independent samples.
In the present study this test was used to test the hypothesis.

- Independent variable was type of college having more than two categories i.e. Govt. College, G.I.A. College and S.F. College and Dependent variable was HRD/FDP practices, normally distributed interval variables.
- Independent variable was Demographic Profile of faculties’ with more than two categories i.e. Qualification, Type of College, Faculty stream and Designation. Where as a normally distributed interval variables - perception of faculty for HRD/FDP as dependent variable.

5) **Independent Sample t-Test:**

Independent Sample t-test can be used to study the gender differences. This test is used when dependent variable is normally distributed and measured at ratio or interval scale.

In present study Independent sample t-test was used to test the hypothesis.

- Independent variable was gender (male / female faculty) and dependent variable was perception of faculty for HRD/FDP, a normally distributed and measured at interval scale.

6) **Correlation Analysis:**

Correlation Analysis is used to measure the extent to which two variables vary together. Correlation measures how variables are interrelated Pearson’s correlation co-efficient is used when bivariate data is measured on ratio or interval scale and variables are normally distributed. In the present study Pearson’s correlation co-efficient was used to measure the relation between age of faculties and perception for HRD / FDP practices.

7) **Chi- Square test:**

Chi Square test is used to examine the association or statistical independence between the row and column variable in two - way table. It is normally used to test the statistical significance of results reported in bivariate tables. In the present study Chi Square test is used to examine the association between
perception of faculties for FDP (Training and Research Practices) and Demographic profile of faculties.

3.12 CONCLUSION:

Reliability of results depends upon the accuracy of framework or structure under which the procedure of research is undertaken. This chapter was the base for further steps of research. It described the structure of research methodology within which the further study was evaluated. Population and sample of the study, measures and tools used for the study, detail of dependent and independent variables, in short the whole sampling design and data collection procedure was explained in this chapter. At the end statistical tools and techniques used for analyzing the data were also described in this chapter.
References

