CHAPTER 3

METHODOLOGY

The investigation was to study the level of selected desirable characteristics and values of undergraduate Home Science students in the State of Gujarat.

This chapter is discussed under following sections:

3.1 Pilot study

3.2 Determination of the population

3.3 Sample of the Study

3.4 Research tools for data collection

3.5 Pre-testing of the tools

3.6 Validity of the tools

3.7 Reliability of the tools

3.8 Procedure for data collection

3.9 Scoring pattern and categorization of data

3.10 Analysis of data

3.1 Pilot Study

To know the feasibility of the investigation on characteristics and values, a pilot study was conducted under the following sections :

who were having many years of experience in teaching, research and extension activities of various reputed Home Science Institutes in India were contacted, either personally or through Home Science teachers at the time of conferences (XX Biennial Conference of Home Science Association of India at Avinashlingam Deemed University, Coimbatore in December, 1993, and 81st Indian Science Congress at Jaipur, January, 1994), or through post. Self addressed stamped envelopes were provided to return the check list.

3.1.3 FEASIBILITY OF THE TOOL

The investigator made a rating scale with three point response system. The rating scales for each characteristic and value consisted of total ten statements. Each rating scale included both positive and negative statements. Care was taken to include familiar day to day happenings, situations in the educational, familial and social interactions of the students. For creativity there was a tool prepared and tried out by Palliwala (1982). Hence the investigator did not repeat the same.

The students of Third Year, who were having lower grades in Fifth Semester of each department from the Faculty of Home Science, M.S. University, Baroda, were considered for the pilot study. The names of the students with lower grades were collected from the examination unit of Faculty

of Home Science. The assumption behind the selection of students with lower grades was that if the scale was found appropriate for the low achievers then it is bound to be appropriate for the higher achievers. The third year students of 1993-94 were selected with the intention that they would leave the Faculty in the same year, so that, the actual sample for the study from the forthcoming year will not be disturbed.

Thus, a sample of 90 students with lower grades were selected for the Pilot Study. The distribution of students selected from each department were as follows :

Distribution of Students for Pilot Study

No.	Name of Department	No.of Students Selected
1.	Clothing and Textile	16
2.	Food and Nutrition	10
3.	General Home Science	22
4.	Home Management	13
5.	Home Science Education and Extension	14
6.	Human Development and Family Studies	15
	Total....	90

The investigator herself administered the scale to the students taking prior permission from the concerned departments. The respondents were given freedom to point out the ambiguous statements or to underline the confusing statements. The investigator informally asked their suggestions also.

3.1.4 ANALYSIS AND FINDINGS OF THE PILOT STUDY

The analysis and findings of the study is as follows.

3.1.4.1 Feasibility of Sample

(Appendix 3) shows the following findings.

- There are thirty nine (39) Colleges offering Home Science programme under ten Universities in the State of Gujarat.

- The average number of students varied from 7-258 in first year and 8-240 in third year, in different colleges.

- There are 23 institutions following B.A. curriculum and 16 institutions following B.Sc. curriculum. The investigator felt that the institutions may not have given completely correct information about curriculum offered, as the information was collected mostly through mailed questionnaire. For example, whether the degree was B.A. (Hons), B.Sc. (Home) or was it just one subject at the B.A. level. So it was realised that for the final data collection of the study, more care will have to be taken to get correct information through personal visit.

- The information regarding year of establishment, location, type of residence were incomplete. The investigator will consider these aspects in her final

study and if only there will be enough number in each category then they will be considered as variables, otherwise the data will be used for describing the background of the sample.

3.1.4.2 Desired Characteristics and Values. A total number of 51 checklists (Appendix 4) were returned by March 1994 from the total of seventy five mailed checklists. The data were computed from these 51 checklists. Intensity Indices were calculated. From the computed list (Appendix 5), five characteristics and five values with highest intensity indices, indicated by senior home scientists were selected for the study.

3.1.4.3 Feasibility of the Tool. The computed tables for the tools are shown in (Appendix 6). They reveal that:

-   The time limit for rating the scales ranged from 15-20 minutes in all departments except General Home Science respondents. For them, it varied from 30-45 minutes.
-   There was a request from the General Home Science students to translate the scale into Gujarati so that they feel more comfortable and familiar.
-   The students were having highest intensity index for independence and lowest was for leadership quality among characteristics.

- Among values, gender equality had the highest intensity index and the dignity of labour had the lowest.

3.1.5 CONCLUSIONS OF THE PILOT STUDY

The findings of the Pilot Study showsed that it was possible to conduct the study as -

- there are adequate number of Home Science students to form adequate sample,

- there are some desired characteristics and values appropriate for Home Science students.

- the levels of selected characteristics and values of Home Science students can be measured.

- the investigator had already planned to translate the tool into Gujarati for the Gujarati medium Home Science college respondents. So, the same translated tool can be used for General Home Science respondents.

- direct statements were made for measuring the levels of characteristics and values, but the investigator felt the need to frame qualitative situational type of items to measure the selected characteristics and values of undergraduate Home Science students in the State of Gujarat.

3.2 Determination of the Population

The population of the study consisted of the undergraduate students of Home Science in the State of Gujarat for the year 1995-96.

In Gujarat there are ten universities (Appendix 3) offering Home Science programme at undergraduate level. Among these, nine universities belong to Gujarat and one is SNDT University of Bombay, which has three affiliated Home Science colleges at different places in Gujarat. Under these ten universities, there are thirtynine colleges offering Home Science programme.

3.3 Sample of the Study

The sample consisted of six hundred final year students of undergraduation from fifteen colleges offering Home Science programme, under ten different universities. While sampling, care was taken to represent all universities. However, as there was much variation in the number of students and programmes of study, no specific pattern could be followed for sampling. Hence, a purposive sample of six hundred students as given below was considered in relation to the variables selected for the study by survey method.

Name of University	Name of College	Place	No.of Students
1. Bhavnagar University	1. Shamaldas Arts College	Bhavnagar	35
2. Gujarat Agricultural University	2. ASPEE College of Home Science.	Dantiwada	21
3. Gujarat University	3. Tolani Arts College	Adipur,Kutch	30
	4. B.D. Arts College	Ahmedabad	30
4. Gujarat Vidyapith	5. Gujarat Vidyapith	Randheja	35
5. North Gujarat University	6. Municipal Arts and Urban Bank Commerce College	Mehsana	29
	7. Shri S.K.Shah and K.O.M. Arts College	Modasa	31
6. Sardar Patel University	8. S.M. Patel College of Home Science	Vidyanagar	60
7. Saurashtra University	9. M.V.M. Science and Home Science College	Rajkot	35
	10. C.C. Home Science College	Limbdi	30
8. SNDT University	11. Mahila Maha Vidyalaya	Baroda	12
	12. Sheth P.T. Mahila College of Arts and Home Science	Surat	52
9. South Gujarat University	13. Z.F.Wadia College	Surat	35
	14. J.P.Shroff Arts College	Bulsar	30
10. The Maharaja Sayajirao University	15. Faculty of Home Science	Vadodara	135
		Total...	600

3.4 Research Tools for Data Collection

The tools for the research consisted of a questionnaire a standardised scale, a checklist, rating scales and situational tests. The tools were used as follows: (Appendix 9).

Section	Item	Tools
Part I	**Institutional Aspects**	
	a) College	}
	b) Type of University	}
	c) Location of College	}
	d) Number of years since establishment	} Questionnaire
	e) Medium of Instruction	}
	f) Programme of study	} cum Checklist
	g) Number of teaching staff members	}
	h) Educational qualification of teaching staff members	}
	i) Experience of teaching staff members	}
Part II	**Personal and Familial Aspects**	
	a) Academic achievement	Percentage/Grade of 2nd year or 4th semester
	b) SES	Standardised Scale by Desai (1989)
	c) Mother's education	Checklist along with SES Scale
	d) Vocational aspiration	Checklist
	e) Family climate	Two-Point Rating Scale

Part III   Characteristics

a)	Independence	Three-Point
b)	Self Esteem	Rating Scales
c)	Fearlessness	and
d)	Leadership	Situational
e)	Creativity	Tests

Part IV   Values

a)	Gender equality	Three-Point
b)	Familism	Rating scales
c)	Dignity of labour	and
d)	Vocationalism	Situational
e)	Collectivism	Tests

3.4.1   DESCRIPTION OF THE TOOL

Part I : This part consisted of a questionnaire and a check list. The questionnaire was to access the institutional background, namely, College, Type of university, Location of the college, Number of years since established, Medium of instruction and Programme of Study. The check list aimed at finding out the information, regarding the number of teaching staff members, educational qualification and experience of the teaching staff members.

Part II : This part consisted of a standardised socio-economic status scale prepared by Desai (1989) to measure the socio-economic status of the respondents. All the items except the income level were considered in the same manner as in the scale. For income, the revised version by Jain (1995) according to the current Rupee value was used.

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For measuring the level of vocational aspiration, the modified check list made by Bhargava (1991) was used.

For studying the family climate, the investigator adapted a scale from family environment scale by Moose (1990).

Part III : To find out the level of characteristics, the investigator made a rating scale with three point response system. For each selected characteristic a separate scale having ten items consisting of both positive and negative items was prepared. A situational test was also prepared with three point response system for each characteristic with three situations.

Creativity being more of qualitative type, the investigator made a rating scale with five items only and the situational test consisted of ten situations.

Part IV : To find out the level of values, the investigator made rating scales and situational tests in the same manner as described for the characteristics.

All the tools were constructed in English and then translated into Gujarati with the help of a government approved translator, for Gujarati medium respondents. (Appendix 11).

3.5 Pre-Testing of the Tools

The prepared tools were pre-tested on five students from Faculty of Home Science, the Maharaja Sayajirao University, Vadodara, and Aspee College of Home Science, Gujarat Agricultural University, Dantiwada. The ambiguous items were modified. By pre-testing it was found that the tool was lengthy to administer at a stretch. Hence, it was decided to administer the tool in two sections.

Section I : Personal aspects and tools for characteristics.

Section II : Familial aspects and tools for values.

3.6 Validity of the Tools

The tools were given to experts (Appendix 7) in the field of Home Science Education and Extension, Education and Psychology. The tools were checked by the experts for the following aspects :

1. Content
2. Format
3. Direction
4. Response system
5. Language

3.7 Reliability of the Tools

The test-retest method was used for checking the reliability of the following parts of the tools :

1. Part II C ->   Rating scale for family climate.

2. Part III ->   Rating scales and situational tests to measure the level of characteristics.

3. Part IV ->   Rating scales and situational tests to measure the level of values.

The sample for the reliability testing included fifty low academic performers from S.L.U. College of Gujarat University, Ahmedabad and Faculty of Home Science, M.S. University, Baroda.

The first administration of the tools was done from 15th to 31st July, 1995. The second administration was done from 15th to 31st August, 1995, keeping a gap of a month in between.

The coefficient of co-relation between the two sets of scores was computed using the following formula.

$$r = \frac{\Sigma XY}{\sqrt{\Sigma x^2 . \Sigma y^2}}$$

Where r =   Coefficient of correlation
      x =   Score of first test
      y =   Score of second test

(Garret 1981, Formula no.28, p.139)

The Reliability Coefficient for various tools were computed.

The calculated values of reliability co-efficient of the tools are as shown below.

Reliability Co-efficient for Various Tools

N = 50

Part	Tools	Reliability Co-efficient
IIc	Family climate scale	0.85
III	Rating scale and Situational Tests for :	
	a) Overall characteristics	0.82
	b) Independence	0.84
	c) Self Esteem	0.75
	d) Fearlessness	0.85
	e) Leadership	0.79
	f) Creativity	0.89
IV	Rating scale and Situational Tests for :	
	a) Overall values	0.88
	b) Gender equality	0.94
	c) Familism	0.84
	d) Dignity of labour	0.96
	e) Vocationalism	0.90
	f) Collectivism	0.84

3.8 Procedure for Data Collection

Through the Pilot Study, the investigator had the list of Home Science colleges in Gujarat. The investigator approached the principal/Head of each institution personally or through contact person (Appendix 8) and fixed up the dates for data collection. The data were collected between November 1995 and January 1996.

Wherever the number of students in the college was less, almost all students were included in the sample. Wherever the number of students in the college were large, the selection was done according to the variables selected. Thus, a sample of 600 students were taken from fifteen colleges under ten different universities in Gujarat.

The investigator personally administered the tool in all the colleges except in J.P. Shroff Arts College, Bulsar, where an experienced teacher had done the data collection. The information regarding the institutional aspects were also collected personally with the help of the head or senior person in the department.

3.9 Scoring Pattern and Categorization of the Data

3.9.1 Part I : The First Part of the tool contained questions regarding background information of the institution. No scoring was necessary for the following aspects of the background information as it was in the nominal scale.

Institutional Variables	Categories for Background Information	Categories for significant differences according to variables
College#	- Department under Faculty of Arts	Arts
	- Department under Faculty of Home Science, Science and Home Science Colleges } } } }	} Home Science
Type of University	- Affiliated - Residential @- Agricultural	Affiliated Residential
Number of years since establishment	5-15 Years } 16 - 25 Years }	5-25 Years
	26 - 35 Years } Above 35 years }	Above 25 years
Medium of Instruction	Gujarati English } Both }	Gujarati English
Location	Village } Town } City	Town City
Programme of Study	General Specialisation	General Specialisation

#Hereafter, Colleges refer to Home Science departments under Faculty of Arts, Science and Home Science and Home Science colleges.

@ Gujarat Agricultural University, which is having a different status is not considered for analysis.

Institutional Variables	Basis	Categories for background information and significant differences according to variables
Number of teaching staff members	– College with more than 10 teaching staff members	More
	– College with 10 or less than 10 teaching staff members.	Less
Educational qualification of teaching staff members	– Colleges with more than 50% of the teaching staff members having M.Phil./ Ph.D. qualification.	Highly qualified
	– Colleges with more than 50% of teaching staff members having postgraduation only.	Less qualified
Experience of the teaching staff members	– Colleges with more than 50% of their teaching staff members having experiences above 10 years.	More
	– Colleges with more than 50% of their teaching staff members having experiences of 10 years and below.	Less

3.9.2   Part II : This part of the tool was to get information about the personal and familial aspects of the respondents. The scoring and categorization of the personal and familial aspects were as follows :

3.9.2.1   Academic Achievement. The respondents had reported their academic achievements of previous year or 4th semester either in grades or in percentages. As most of the universities were following the percentage system, the

grades of the students from the two universities were also converted into percentages. But the grading system in the two universities namely the Maharaja Sayajirao University and SNDT university differed on ten points. (Prospectus of M.S. University, Baroda and S.P.T. Mahila College of Arts and Home Science, Surat). Hence, the grades were classified as follows according to their corresponding percentages:

Grades		Percentages
M.S.University	S.N.D.T. University	
B,A,O	A, O	60 and above
C	B	50 - 59
D,E,F	C,D,E,F	49 and below

Thus, the final categorisation was made as follows :

Categories for Background Information		Categories for significant differences according to variables	
Basis	Category	Basis	Category
49% and below	Low	Upto 59%	Low
50 - 59 %	Moderate	60% and	
60% and above	High	above	High

3.9.2.2   **Mother's Education.**   The scoring and categorization of Mothers' education was as follows :

Basis	Category	Categories for significant differences according to variables Basis	Category
Nominal	Illiterate Can read/write/ 4th Std. Upto 7th Std. H.S.C.	} } } } }	Low
	Diploma Holders Graduate Post Graduate Ph.D./ Professional	} } } } }	High

The first header spans: Categories for Background Information (Basis, Category) and Categories for significant differences according to variables (Basis, Category)

3.9.2.3   **Socio-Economic Status (SES).**   This part of the tool consisted of Desai's (1989) standardised SES scale. The scoring was done according to the scoring pattern specified in the scale (Appendix 10). The possible minimum score was 4 and the possible maximum score was 35.

The categorization of the variable was as follows:

Categories for Background Information As categorised by Desai (1989)			Categories for significant differences according to variables
Score	Category	Basis	Category
4-10	Low		
11-15	Lower Middle	Median(22.0) and	
16-20	Middle	below	Low
21-25	Middle High	Above median	High
26-35	High		

3.9.2.4   ocational Aspiration. This part of the tool consisted of a checklist, adopted from Bhargava (1991). The items were assigned values ranging from 0-3 depending upon the value of a particular response.   The possible score ranged from 6-28. Scoring pattern is given in (Appendix 9) The respondents were categorised as follows :

Categories for Background Information			Categories for significant differences according to variables
Score	Category	Basis	Category
6 - 10	Low	Median(16.0) and	
11 - 20	Moderate	below	Low
Above 20	High	Above median	High

3.9.2.5 <u>Family Climate</u>. This part of the tool consisted of an adopted scale from Moose (1990). Among the 20 items listed on the scale, an item listed as True (T) was scored 1 point, if marked 'A' by the respondents and an item listed as False (F) was scored 1 point if marked 'NA'. (Appendix 9). The total score of an individual respondent was the number of items answered in the scored direction. The total score ranged from 0 - 20.

The categorisation was done as follows:

		Categories for significant differences according to variables	
Categories for Background Information			
Score	Category	Basis	Category
0 - 10	Low	Median(14.0) and below	Low
1 - 15	Moderate	Above median	High
Above 15	High		

3.9.2.6 Part III : This part of the tool consisted of rating scales and situational tests to measure the level of each selected characteristics. For rating scale, the scores of positive and negative items were given as follows:

Items	Most of the time	Sometimes	Very few times/ not at all
Positive Items	3	2	1
Negative Items	1	2	3

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For the situational tests, the scoring was done as given in (Appendix 9). The total score of each characteristic was the sum total of the items scored in the rating scale and situational tests. The possible score ranged from 15-45.

Intensity Index (I.I.) was found out for each characteristic and the categorization was made as follows :

Basis for Categorization	Categories
I.I	
2.60 - 3.00	High
1.60 - 2.59	Moderate
1.00 - 1.59	Low

3.9.2.7 Part IV : This part of the tool consisted of rating scales and situational tests to measure the level of each selected value. The scoring and categorization was done in the same way as in Part III.

3.10 Analysis of Data

The plan for analysis of data was made in consultation with Dr. N.S. Pathak, Retired Professor, and Dr. Mario Xavier, Reader, Faculty of Education and Psychology, M.S. University, Baroda.

The data analysis was done with the help of Computer, SPSS-PC+ programme. Different statistical measures for

various purposes were used as follows :

Purpose	Statistical Measures
1. Background Information	Percentages
2. Overall and universitywise levels of characteristics and values.	Intensity Indices
3. Differences in the level of characteristics and values	ANOVA (F-test) followed by lsd test
4. Differences in the level of characteristics and values according to institutional variables.	t-test
5. Differences in the level of characteristics and values according to personal and familial variables.	t-test
6.#Effect of interaction between universities and personal and familial variables on the level of characteristics and values	Multiple ANOVA
7. Inter-relationship among and between the characteristics and values	Product Moment Correlation

Effect of interaction was found between the universities and personal and familial variables only because there was not much variation between the institutional variables.