CHAPTER III

METHODOLOGY

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This chapter contains informations on the various aspects of the plan of investigation. The problem, the research design and tool for data collection are briefly stated. The variables of the study and the model showing the hypothesised relation among the variables in the study of commitment to energy related goals are explained. Operational definitions and the procedure followed for the development of the instrument for gathering relevant data are presented. The procedure for the collection of data and the plans for statistical analyses are also described.

The purpose of the study was to gain insight into the energy related goals held by families and to measure the differential levels of commitment of families to the realisation of those goals. Research questions were mainly concerned with relationships between the selected dependent and independent variables. Descriptive survey method was thought to be the best that would serve the purpose of the study. Of the various techniques for data collection, interview method was employed to gather relevant data in this investigation. The main reasons for adopting this technique were to establish rapport with the respondents so as to gain their confidence and full cooperation and to ensure completely filled in authentic data sheets. In addition it has

the advantages as pointed out by Gorden[47]:

(1) It enables the investigator to obtain desired information quickly.

(2) It permits the investigator to be sure that respondents interpret questions properly.

(3) It allows greater flexibility in the process of questioning.

(4) Much more control can be exercised over the context within which questions are asked and answers given.

(5) Information can be more readily checked for its validity on the basis of non-verbal cues by the respondents.

1. Variables

The interview schedule was developed to solicit information relative to the twelve variables under study in relation to (i) level of living oriented energy goals (Type I) and (ii) conservation oriented energy goals (Type II). In the following discussions the dependent variables and the rationale for selecting the eleven independent variables are highlighted.

1.1 Dependent Variables

Extent of commitment of families to their Type I and Type II energy related goals were the dependent variables of the study.

1.1.1 Commitment to Energy Related Goals

The formal use of commitment as a research variable was discussed earlier. Commitment defined in relation to feelings of willingness and determination to attain energy related goals was explored in the present investigation. Sheldon[102] stated that " . . . behaviour that is the result of commitment is behaviour that persists over a period of time and that implies rejection of other alternatives" (p.143). Johnson[58] conceptualised behavioral commitment as that which puts a constraint on the individual so that he must continue the line of action. Cost is involved here as there are side-bets. If one does not show commitment, then one forgoes the side-bets. Becker[9], Kanter[59], Abramson et al.[1], Kiesler and Sakumura[63] and many others have conceptualised commitment. The underlying idea in all the various conceptualisations is that it is a psychological channelising of behaviour to follow a consistent line of action.

In relation to energy related goal attainment it was hypothesised that one of the contributory factors of persistent behaviour could be commitment.

1.2 Independent Variables

The impact of eleven independent variables on family goal commitment in relation to Type I and Type II goals were explored. These variables are presented under three heads

viz., (1) situational, (2) personal and (3) family variables.

1.2.1 Situational Variables comprised of levels of past and future goal attainments with reference to Type I and Type II energy related goals.

1.2.1.1 Level of past and future goal attainment: Very often the level of aspiration was defined as the absolute level of goal pursued in performing a given task. Heckhausen[50] pointed out that the level of aspiration should be understood as a "relatively defined goal, as a variation in the goal related to attained performance level". This variation is referred to as 'goal discrepancy' (p.85).

This variation is relatively constant within individuals but varies among individuals. Therefore it furnishes the conditions of a 'characteristic of stable motivational differences among individuals. According to Heckhausen it is also characterised by some intraindividual variance resulting from situational factors (p.87). He has identified some of these factors as (1) the importance of the task or the goal setting, (2) the level of reality of the task or the goal setting, (3) the distance away in time of the task to be performed or of the attainment of the goal, and (4) the conflict between achievement related standard of excellence of various types. He found that if goal setting is done at a more unreal level, then the level of aspiration tends to rise slightly. That is, the more realistic goals are the

ones the family expects to attain but not the ones the family desires to attain. Therefore, the concepts of expected and desired goals were utilized in the present investigation. The concept of desired goals was used to serve as the upper limit on the ladder utilized by the respondent to identify the family's present, past and future positions of goal attainments and from which levels of goal attainments were computed for both Type I and Type II goals. Expected goals were utilized for the commitment situations.

Levels of past and future goal attainments in relation to each type of goals under study might have a relationship with extent of family commitment to the attainment of the corresponding type of goal.

1.2.2 Personal Variables

Personal variables of the study included ecoconsciousness of husbands and homemakers, their age and education level.

1.2.2.1 Ecoconsciousness of Husbands and Homemakers

Ecoconsciousness refers to the attitude of an individual to energy situation and family's social responsibilities in the context of the current energy situation. Attitude is an organised predisposition to feel, think, perceive and behave toward a referent or a cognitive object. It is an enduring

structure of beliefs that predisposes an individual to behave selectively toward attitude referents.[61] Thurstone[109] has defined attitude as the degree of positive or negative affect associated with some psychological object. Fishbein[33] states that with any psychological object an individual has a positive, negative or neutral attitude. Edwards[31] states:

> Psychological object refers to symbol, phrase, slogan, institution, ideal or idea toward which people can differ with respect to positive or negative affect . . . . An individual with positive affect of feeling to an object has a favourable attitude and vice versa (p.2).

Measurement by scaling method is the most widely used method of quantifying the intangible concepts like attitude. In the present investigation, Likert's method of Summated Rating was used to ascertain the ecoconsciousness of husbands and homemakers.

The attitude of both husbands and homemakers in relation to the "strength or intensity of their desire for economic improvement" was studied separately[30] (p.30). Morrison[75] found that the belief in the reality of the energy problem did not diminish household energy consumption. Hungerford[56] and Hogan[54] found that ecoconsciousness of family, and husbands and wives respectively were linked with family energy conservation practices.

Though in few studies belief in the reality of the energy problem and ecoconsciousness were investigated in

relation to household energy consumption, the relationship between ecoconsciousness and family goal commitment behaviour with reference to energy related goals was not explored much.

1.2.2.2 Age of Husbands and Homemakers

A few basic motivational directives develop early in life, but intents or goals are established only gradually. It was also pointed out that, ". . . goals of younger people are usually cloudy and vague while those of older people are more explicit" (p.344).[19] Roy[99] found that high aspirants were consistently of the younger age group. This inverse relationship between aspirations and age was also observed by Fliegel[35] and Boyd and Morgan.[16] Zimmerman[116] in his study on household energy consumption reported that age had a direct negative effect on daily travel by adults. Difference in the levels of aspirations of younger and older men was reported by Reissman.[95] Paynter[90] in her study of commitment to family housing goals found interrelationships between commitment of families and age of the husbands. Bland[13] reported that occupational commitment is related to age. Fitzsimmons et al.[34] revealed that goals themselves and priorities as set by individuals and the family differ due to age disparities and the involvement of family members in other systems. The net effects of ageing related factors was a statistically significant predictor of

current energy use behaviour as reported by Merkley.[73] Ayatollahi's[7] investigation showed that those who conserved energy more were among the older age group.

Though husbands' age was observed to be associated with commitment to family housing goal and energy use behaviour of families in a few studies, impact of husbands' or homemakers' age on family goal related behaviour was not investigated much. Therefore it was thought appropriate to explore for relationship between age and family goal commitment behaviour.

1.2.2.3 Education of Husbands and Homemakers

A few studies have shown that education level influence the energy consumption of families[7,77] and housing consumption[37], Paynter[90] observed that family commitment to housing related goals was related to the level of formal education of the family.

Since education was associated with energy related and goal related behaviour of families, it seemed logical that education would affect family commitment to energy related goals.

1.2.3 Family Variables

Family variables of the study comprised of family income, family size and years of married life.

1.2.3.1 Family Income

Family income per month comprised of money income

earned from various sources by all the earning members of the family. Fitzsimmons et al.[34] found that one of the factors that influenced the number of goals identified at each stage of life cycle was current income of the family. Agrawal[3] reported that the extent of goal attainment was influenced by the income level of the family. Paynter[90] observed that family commitment to housing goals was associated with per capita income. Few researchers[42,77,83,115] revealed that as family income increased there was an increase in the amount of the various sources of energy availed of. Yao[115] and Gladhart[42] reported that family income is the best predictor of residential energy consumption. Morrison et al.[77] observed that family income affected energy conservation. Ayatollahi[7] reported that those who conserved energy more were among the higher income families.

Thus it was seen that family income is an important variable in relation to goal-oriented and energy consumption related behaviour of families. However the relationship between family goal commitment and family income was not seen to be explored much.

1.2.3.2 Years of Married Life

Fitzsimmons et al.[34] found that the first five years of married life revealed a high incidence of goal formation

and the existence of goal patterns seemed to be related to years of marriage. However interrelationship between family goal commitment and years of married life was not explored much. Therefore years of married life was included as a variable.

1.2.3.3 Family Size

Nelson and Simpkins[81] observed family size to be associated with aspiration of adolescents. Family size was also reported to be related partly to the rate of goal attainment by Paynter.[90] The influence of family size in achievement motivation varied with social class.[98] Large size of family appeared to have an unfavourable effect in almost all social classes. Family size was observed to be associated with energy consumption too.[77]

The literature survey showed that the interrelationship between family size and family commitment to goals needs to be explored.

On the basis of these observations it was thought appropriate to include situational variables like levels of past and future goal attainments in relation to Type I and Type II goals; personal variables like ecoconsciousness, age and education level of husbands and homemakers; and family variables like family income, family size, and years of married life as independent variables and commitment of

families to Type I and Type II goals as dependent variables of the study. The relationships between the independent and dependent variables in relation to Type I and Type II energy related goals were explored separately.

2. A Model Showing Hypothesised Relation Among Variables in the Study of Commitment to Energy Related Goals

Family goal commitment was identified as the binding or pledging of family members to the realisation of a goal or a goal complex. In other words, it means the willingness and determination to attain particular goals. Commitment was defined for this study as the perceived degree or strength of willingness and determination of the family members to seek goals through consistent lines of action. Line of action refers to behaviours which are organised around the attainment of a goal. By following certain lines of action families would be able to attain their goals expeditiously. It might put constraints on family resource use for attaining other goals. Since commitment manifests in behaviour, indicators of commitment are behaviours directed to what an actor is committed. The study was based on the premise that the extent of commitment can be ascertained from the family's resource allocation behaviour. Resource allocation behaviour is influenced by situational, personal and family variables like levels of goal attainments, age, education, attitude, family size, family income and years

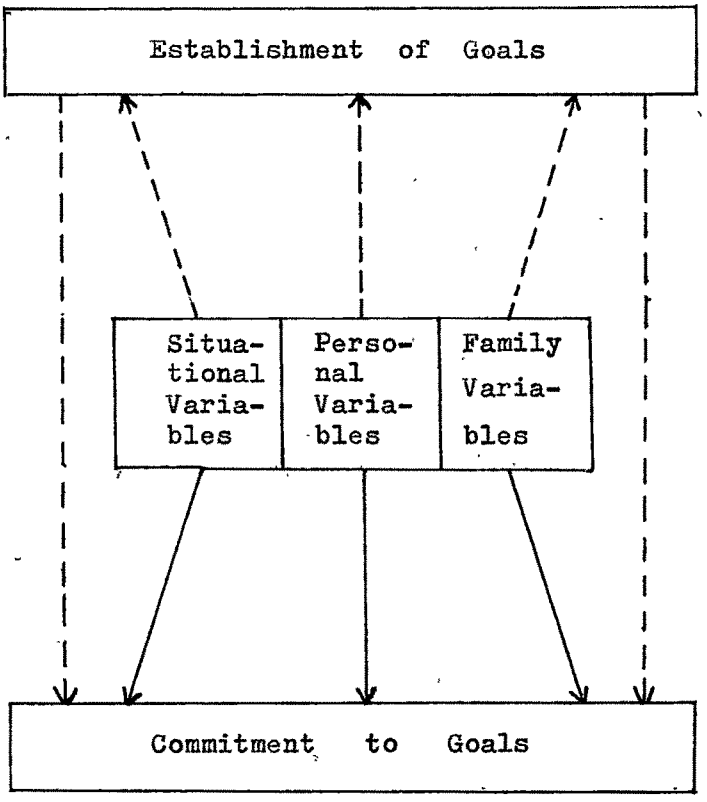

Fig. 1 Model showing the hypothesised relation among the variables in the study of family commitment to Energy Related Goals

----- Assumed Relationships

——— Hypothesised Relationships

of married life. Once the family establishes its goals, it proceeds with the allocation of its resources in ways that would aid in attaining those goals in relation to its commitment to the goal or goal complex (Figure 1).

3. Operational Definitions

Certain terms were defined for the successful conduct of the study. The operational definitions, thus made are given below:

3.1 Energy refers to all non-human power utilised by families in the course of its daily living.

3.2 Energy Related Goals refer to the objectives of the family in relation to energy consumption in family living.

Two major categories were identified under this:

(i) Type I energy related goals include all objectives pertaining to the acquisition of such material goods in the quest for higher level of living which when attained lead to an increase in energy consumption.

(ii) Type II energy related goals cover objectives aimed at conservation of energy resource.

3.3 Expected Family Goals include those conditions or objects sought by the family to satisfy their needs or wants

and which are perceived as attainable in five years' time.

3.4 Desired Family Goals are those conditions or objects for which the family longs, hopes or desires and all of these may or may not be realistic.

3.5 Level of Goal Attainment (LOGA): LOGA is that level of achievement a family has set for itself in the past and which it hopes to attain in the future in relation to accomplishment of energy goals. This is measured by the amount of difference between the past and the present, and the present and the expected or future perception of position, five years hence, with reference to goal attainments, on a Cantril-type ladder.[21] The former would yield the level of past goal attainment or accomplished level of goal attainment (LOPGA) and the latter would reflect the level of future goal attainment or anticipated level of goal attainment (LOFGA). These two were measured in relation to both Type I and Type II energy related goals. LOPGA I and LOFGA I refer to level of past and future goal attainments respectively with reference to Type I energy related goals. LOPGA II and LOFGA II refer to level of past and future goal attainments respectively with reference to Type II energy related goals. Level was the term used to represent the perception of the extent of goal achievement of the family for the past five years and five years hence.

3.6 Extent of Commitment (EOC) refers to the degree of

strength of willingness and determination on the part of the family to attain goals through consistent lines of action. Extent of Commitment I (EOC I) refers to the extent of family commitment to Type I goals and Extent of Commitment II (EOC II) refers to the extent of family commitment to Type II goals. EOC I and EOC II were measured using Commitment Scale I (CS I) and Commitment Scale II (CS II) respectively. CS I and CS II comprised of a number of statements each depicting resource allocation behaviour specifically aimed at fulfilling Type I and Type II goals respectively. These behaviours lead to sacrifices or giving up of certain resource allocation behaviours pertaining to various aspects of living.

3.6.1 EOC I was measured in terms of resource allocations aimed at fulfilling Type I goals. These lead to sacrifices in leisure, social life, welfare and security, and level of living.

(i) Sacrifices in Leisure refer to forgoing leisure time and leisure pursuits to follow certain lines of action whereby the family can attain its Type I goals.

(ii) Sacrifices in Social Life imply giving up interactions with people and location of residence for the purpose of attaining Type I energy related goals.

(iii) Sacrifices in Welfare and Security concern behaviours that reflect sacrifices leading to a reduction in

financial security, mental and physical well being for attaining Type I goals.

(iv) Sacrifices in Level of Living refer to behaviours that result in sacrifices in the consumption of goods and services, to attain Type I goals.

3.6.2 EOC II was measured in terms of resource allocations aimed at fulfilling Type II goals. These lead to sacrifices in abundant living, level of living and traditional life style.

(i) Sacrifices in Abundant Living refer to giving up behaviours based on the abundance of energy resources, wherein lies an inherent wastage of energy, to attain Type II goals.

(ii) Sacrifices in Level of Living concern actions depicting sacrifices in the level of consumption for attaining Type II goals.

(iii) Sacrifices in Traditional Life Style include sacrifices in relation to certain behaviours reflecting pattern of living handed down through generations, to attain Type II goals.

3.6 Ecoconsciousness: The term ecoconsciousness was used to refer to a person's attitude to energy situation and family's social responsibility in the context of the current energy situation.

4. Interview Schedule

The objectives drawn for the study guided the development of an appropriate interview schedule. The first section of the schedule comprised of questions to gather background information of the sample while the second section dealt with details to be gathered in relation to sources of energy availed of by families, monthly outlay on the same, the most satisfying and dissatisfying characteristic of each and so on. In addition, questions to collect data on the desired and expected energy related goals, perceived goal attainments, mode of goal attainment, fears, constraints and the like were included in the second section. The third section of the schedule consisted of CS I and CS II for the measurement of family commitment to Type I and Type II goals respectively. The last part of the schedule contained the attitude scale to measure ecoconsciousness of the respondents and their husbands separately.

4.1 Development of Instruments to Measure Commitment

The objective of assessing the extent of commitment of families to their energy related goals required standardised commitment scales to measure quantitatively the same. Reissman's Level of Aspiration Index[95] and Paynter Commitment Scale[90] were valuable aids in developing the Commitment Scales used in the present study. Reissman utilised the

opportunity for occupational advancement to measure commitment. Paynter adopted the opportunity for the improvement of the family housing, to measure family goal commitment. In the present study, opportunity to improve level of living and an opportunity to conserve energy resources were utilised as specific situations to determine the extent of commitment of families to their Type I and Type II goals respectively.

4.1.1 Item Collection

The content of the scales comprised of statements called items. The most important factor considered in collecting information and framing the items was that it should represent a resource use option, following which would result in expeditious accomplishment of energy related goals. Items were developed on the basis of the literature survey, the suggestions of professional colleagues and the original ideas of the investigator. These were then edited. Commitment Scale I (CS I) had fifty items while Commitment Scale II (CS II) had forty-two items initially.

4.1.2 Content Validity of the Scales

The carefully edited items were then submitted to a panel of ten judges who were experts from the Faculty of Home Science, M.S. University of Baroda. The judges were requested to indicate the clarity of each statement. Moreover, they were asked to check each item in the listed

statements under CS I and place it in one of the following categories where it fitted the best (1) sacrifices in leisure (2) sacrifices in social life, (3) sacrifices in welfare and security and (4) sacrifices in level of living. The operational definition of each of these was also furnished to the judges.

Similarly the judges were requested to scrutinize the items in CS II as well and place each in one of the following categories where it fitted the best: (1) sacrifices in abundant living, (2) sacrifices in level of living and (3) sacrifices in traditional life style. The judges' responses were coded and tabulated. The screening of the items was done on the basis of the following criteria:

(i) Any item reported as clear by all was to be included in the commitment scales.

(ii) Those items on which seventy per cent or more of the judges showed agreement as regards the category where it fitted the best were to be included in the commitment scale.

Thus out of the original set of fifty items of CS I and forty-two items of CS II, forty-four and thirty-six items respectively satisfied both the criteria and were included in the scales to be used in the pilot study (Appendix I.1).

4.2 Development of Instrument to Measure Ecoconsciousness

For the present investigation Likert's Method of Summated Rating was used to develop the attitude scale. It was observed through literature survey that this method gives results comparable to those obtained by other more time consuming and laborious methods such as Thurstone Equal Appearing Interval Scale[33].

4.2.1 Item Collection

At the outset the attitude variable was defined. Then statements pertaining to the variable under investigation were gathered. The following criteria were borne in mind while editing the statements:

(1) The statements should be brief, clear and straight forward.

(2) The statements should be as simple as possible.

(3) The statements should be such that persons with different views so far as the particular attitude is concerned, can endorse or reject it in accordance with their agreement or disagreement with the attitude.

(4) The statements should be expressions of desired behaviour rather than expressions of facts.

(5) No statement should have double negatives or other confusing expressions.

(6) Double barrelled statements should be avoided.

(7) The statements should be worded such that the modal reaction to some is more toward one end of the scale and to others more in the middle or toward the other end.

The attitude scale thus prepared initially had thirty-four statements in all.

4.2.2 Content Validity of the Scale

The carefully edited statements were submitted to a panel of ten judges consisting of experts from the Faculty of Home Science, M.S. University of Baroda. The judges were specifically requested to indicate the direction of the attitude as expressed by each statement (a statement that favoured energy conservation was positive and vice versa). In addition they were also required to indicate the clarity of the statements. The judges' responses were coded and tabulated. The following criteria served as a basis for the selection of statements:

(1) Any statement reported as clear by all was to be accepted for inclusion in the scale.

(2) Those statements where seventy per cent or more of the judges agreed on the direction of the attitude were to be included in the scale.

(3) Any statement reported as ambiguous by three or less number of judges was to be modified and resubmitted to a minimum of five judges for scrutiny and if found clear to all, then it was to be accepted for inclusion

in the attitude scale.

All the criteria were applied simultaneously. Thirty-two statements were chosen for inclusion in the attitude scale to be used in the pilot study.

5. Pilot Study

The investigator conducted a training programme for the interviewers. Each of the two interviewers were given an opportunity to administer as well as respond to the interview schedule. Then they were ready to start the data collection. The interviewers were equipped with letters of introduction to the respondents. Pilot study was conducted on a sample of forty families chosen through purposive sampling method from Fatehgunj residential area. The homemakers furnished data on base line characteristics, energy resource use, energy related goals and commitment of families to those goals. Attitude scale was administered to husband and homemakers separately. Minor changes were made in the interview schedule on the basis of the pilot study.

The data pertinent to commitment scales and attitude scales were scored, coded and subjected to statistical verification for establishing the reliability of the instruments and for constructing the final instruments.

5.1 Reliability of the Instruments: To ascertain the reliability of the instruments the following procedure was adopted.

5.1.1 Scoring the Responses on the Instruments

The response on each of the items of all the scales was quantified by ascribing scores. In relation to commitment scales, scores five through to one were assigned to the responses 'definitely would follow', 'would follow', 'undecided', 'would not follow', and 'definitely would not follow' respectively. With reference to attitude scale, score five through to one were assigned to the responses 'strongly agree', 'agree', 'undecided', 'disagree', and 'strongly disagree' respectively for statements depicting a positive attitude, and the scoring was reversed for those depicting a negative attitude.

5.1.2 Split-half Technique

The whole scale was divided into two halves, using odd numbered items for one half and even numbered items for the other half. Each of the two sets of items of each instrument was treated as separate scales. The respondents who scored high on odd items should score high on even items as well, if empirical errors have been kept to a minimum and the same applies in the case of low scores as well. The coefficients of correlation computed using Pearson product moment formula served as a measure of reliability. From

the self correlation of the half tests, the reliability of the whole test was estimated using Spearman Brown Prophecy formula which states

$$r_{rel} = \frac{2.r}{1 + r}$$

where r_{rel} is the reliability coefficient and r is the correlation coefficient.

5.1.3 Reliability of Commitment Scales

The correlation coefficient of the forty-four items of CS I using Pearson Product Moment formula was .63; the reliability coefficient computed by Spearman Brown Prophecy formula was .77. The correlation coefficient of the thirty six items on CS II was .61; the estimated reliability coefficient was .75.

Item analysis was then carried out to see whether the items were differentiating and the scores were properly assigned. All the correlation coefficients were positive. Based on the reliability data from item analysis thirty items were selected from CS I and twenty-four items from CS II for inclusion in the final CS I and CS II respectively (Appendix I.2).

5.1.4 Reliability of the Attitude Scale

The attitude scale of thirty-two statements was

administered to the forty homemakers and husbands of the sample in the pilot study. The split-half technique was employed in estimating the reliability of instruments utilized to ascertain the attitude of homemakers and their husbands. The correlation coefficients worked out to be .59 and .64 in the case of scales administered to homemakers and their husbands respectively. The reliability coefficients computed by Spearman Brown Prophecy formula were .74 and .78 respectively.

6. Data Collection Procedure and Scoring of the Instruments

On the basis of the pilot study, it was decided to include in the final sample only those intact families who held at least one energy related goal in each type. Thus data were collected from a purposive sample of 220 families of which eighty were from Fatehgunj, seventy each from Karelibaug and Pratapnagar residential areas of Baroda city. These areas were purposively chosen since the interviewers were familiar with these areas and these were easily accessible as well. The homemaker was the respondent in the present investigation. The ecoconsciousness scale was administered to both the homemakers and their husbands separately.

The interviewers made appointments with the respondents prior to conducting the interview. They intimated the

respondents the purpose of the study, importance of their whole-hearted cooperation for the successful completion of the study and requested them to extend the same and also to bear with them throughout the interview.

The interviewers returned the completed schedules every other day and reported the progress of the work.

6.1 Soliciting Data Pertinent to Energy Related Goals

First of all detailed information regarding base line data, sources of energy availed of, main source of energy used by purpose, the cost incurred on energy consumption per month and the most satisfying and dissatisfying characteristic in relation to each source of energy availed of by the families were gathered. The respondents were briefed as to what was meant by Type I and Type II energy related goals so as to enable them to reflect upon their families' energy related goals. In order to ascertain the perception of the relative positions of past, present and future goal attainments a modified version of Cantril's Self Anchoring Striving Scale'[21] was utilized in the present study. The respondents were asked to describe their families' energy related goals and their fears in relation to these goals. Then they were required to state their families' goal position in relation to past, present and future goal attainments on a ladder with ten rungs. The top rung represented the attainment of all the desired goals while

the bottom of the ladder represented the fact that none of the energy related goals had been realised. The respondents were requested to bear this concept in mind and then to indicate their families' position on the ladder with reference to Type I and Type II energy related goals individually. The level of goal attainments as used in the present study represented the difference in the perceived positions of aspirations or goal attainments in relation to past (five years ago) and present (current), and present (current) and future (five years henceforth). They were then requested to report on the energy related goals their families' expected to attain in the near future i.e. in five years' time and also the constraints in realizing their goals.

After this, information related to other major goals held by the families and the mode of attaining goals were sought. The respondents were then asked to express their families' rank ordering of Type I and Type II goals in relation to other major family goals. The response categories given were 'most important', 'in between' and 'least important' in relation to other goals and score of 3, 2, and 1 were assigned to each response category respectively to compute the rank order assigned by families to the two types of goals.

6.2 Extent of Commitment of Families in Relation to Type I and Type II Energy Related Goals

After the section pertaining to desired and expected energy related goals, the interview schedule comprised of CS I and CS II, designed to measure the differential levels of family commitment to Type I and Type II goals respectively. The commitment situation was assessed using the concept of expected goals. The lists of thirty and twenty-four items suggesting behaviours depicting resource allocations to attain Type I and Type II goals respectively were read out to each subject to express her family's strength of willingness and determination to follow the same. She was told that following those actions could result in a higher degree of attainment of energy related goals than what the family enjoyed presently. The statements represented limits and constraints on family resources through specific actions which when followed would lead to the attainment of energy goals sooner than otherwise. She could make one of the five responses: 'would definitely follow', 'would follow', 'undecided', 'would not follow' and 'would definitely not follow'. These degrees of commitment were weighted from five through to one respectively. Thus the range of score possible on CS I was 30 to 150 and CS II was 24 to 120. These scores were interpreted such that the higher the score, the higher the commitment of families to their energy related goals and vice versa.

6.3 Ecoconsciousness of Husbands and Homemakers

The term econconsciousness was used to refer to the attitude of respondents to the energy situation and to family's social responsibility in the context of the current energy situation.

After exploring the commitment of families to their energy related goals the attitude scale was administered to homemakers and husbands separately. The respondents could make their responses in one of the five categories on the scale against each statement. The five response categories were: 'strongly agree', 'agree', 'undecided', 'disagree' and 'strongly disagree'. The responses were quantified by assigning scores from one through to five to 'strongly disagree' through to 'strongly agree' on the five point continuum on a statement reflecting positive attitude and the scores were reversed if the statement depicted a negative attitude. From the scores assigned to each statement the total attitude score for each respondent was computed. The range of scores possible was 32 to 160 on the entire scale.

7. Analysis of the Data

7.1 Categorisation of the Sample for the Purpose of Analysis

(A) The following variables of the study were categorised arbitrarily as under for the purpose of analysis and tabulation.

(1) Family size	i. Small	-	One to three members
	ii. Medium	-	Four to five members
	iii. Large	-	Six members or more
(2) Family Income per month	i. Low Income	-	Rs.400 to Rs.1250
	ii. Middle Income		Rs.1251 to Rs.2500
	iii. High Income	-	Rs.2501 or more
(3) Years of Married Life	i. Early Years	-	10 years or less
	ii. Middle Years	-	11 to 20 years
	iii. Later Years	-	21 years or more
(4) Age of Husbands and Homemakers	i. Young	-	34 years or less
	ii. Middle age	-	35 to 49 years
	iii. Old	-	50 years or more
(5) Education Level of Husbands and Homemakers	i. Low	-	Less than S.S.C.
	ii. Medium	-	S.S.C., some College or Under-graduate diploma
	iii. High	-	Graduate or more
(6) Levels of Goal Attainment in Relation to Type I and Type II Goals	i. Low	-	Zero score
	ii. Fair	-	One to two scores
	iii. Moderate	-	Three to four scores
	iv. High	-	Five scores or more

(B) The commitment and ecoconsciousness variables were categorised as follows:

From the scores ascribed to each response of CS I, CS II

and attitude scale, the total scores on family commitment to Type I and Type II goals and ecoconsciousness of husbands and homemakers were computed for each family. The mean score of the entire sample with reference to each scale and the respective standard deviations were taken into consideration for categorising the sample by their extent of commitment and ecoconsciousness. Thus mean plus standard deviation or more ($\bar{X} + \sigma$ or more) formed the group - High, mean minus standard deviation or less ($\bar{X} - \sigma$ or less) formed the group - Low and mean minus standard deviation to mean plus standard deviation ($\bar{X} - \sigma$ to $\bar{X} + \sigma$) formed the group Moderate as the case might be.

1. Extent of Commitment in Relation to Type I and Type II goals	i.	High	$\bar{X} + \sigma$ or more
	ii.	Moderate	$\bar{X} + \sigma$ to $\bar{X} + \sigma$
	iii.	Low	$\bar{X} - \sigma$ or less
2. Level of Ecoconsciousness of Husbands and Homemakers	i.	High	$\bar{X} + \sigma$ or more
	ii.	Moderate	$\bar{X} - \sigma$ to $\bar{X} + \sigma$
	iii.	Low	$\bar{X} - \sigma$ or less

The same procedure was followed for categorisation of families by their willingness and determination to make sacrifices in each of the four and three areas of CS I and CS II respectively.

7.2 Statistical Analysis of the Data

Frequencies, percentages and means were computed in

relation to base-line data viz. age, education level, family size, family income and years of married life; in relation to sources of energy used by, purpose, cost incurred and so on; and also in relation to energy related goals, level of goal attainments, extent of commitment and ecoconsciousness. Mean family characteristics of high and low scorers on CS I and CS II were used to develop the profiles of the two groups in each. Product moment correlations were computed using data from all the respondents for the twelve variables under study. Analyses of variance were computed for the various areas of sacrifices on both the scales and for overall EOC I and EOC II and each of the variables under study. When significant F values were found 't' tests were carried out. Stepwise regression analyses[2] were performed for assessing the order in the influence of the selected variables on goal commitment of families.

The level of significance required for judging the association between the variables under study was.05 level of probability.