CHAPTER III

OBJECTIVES AND METHODOLOGY

3.1 NEED FOR THE STUDY

The Public Distribution System in Tamilnadu is established to meet the basic needs of the community who cannot afford to depend upon the market forces alone to obtain supplies of essential commodities. It also involves a heavy outgo in the form of subsidies from the public exchequer both at the Central and State Government levels. Hence it is imperative that the system needs to work at its peak efficiency. However, there have been several complaints about the system through the mass media as well as through direct representations to the authorities concerned. Some of these complaints relate to broad policy issues like geographical coverage, population coverage, commodity coverage, extent of subsidy, etc. and many others relate to operational issues like non-availability of commodities at the shop level, under weighment, bogus cards, poor quality, etc. In the past as well as to a great extent even now, most of the decisions involving the Public Distribution System have been based on the experience and intuition of officials and the political compulsions of the Government of the day. Decisions were not taken on scientific basis partly due to the complexities involved in analysing the problem and partly due to the highly sensitive nature of the problems.
confronted by the Public Distribution System calling for quick and "acceptable" decisions.

A number of studies have been taken up in the recent past on the Public Distribution System. Since the system is dynamic in nature, there is a wide scope for many more studies. From the literature survey in Chapter II, it was found that studies relating to Tamilnadu State have been very few and most of them have become out of context. The most recent study relates to Madras city only (Submitted to Madras University by Fatima Jacob in 1995). There has not been a study carried out so far covering the entire State and getting the opinions of the policy planners, the social planners, the consumers and the staff who operate the system. The present study is an effort in this direction.

3.2 OBJECTIVES

The following are the objectives of the present study;

(i) To identify the perceptions (views, attitudes and preferences) of the consumers (from rural and urban areas and belonging to different income groups) regarding the critical elements of the Public Distribution System in Tamil Nadu.

(ii) To identify the similarities and differences in the perceptions of the consumers and salesmen in the Public Distribution System
outlets regarding the critical elements of the Public Distribution System in Tamilnadu.

(iii) To develop an index to measure the effectiveness of the present Public Distribution System according to the perceptions of the consumer.

(iv) To suggest a hierarchy of objectives of the Public Distribution System in Tamilnadu for the enhancement of the above index.

(v) To evolve certain broad policy guidelines to make the present Public Distribution System more effective so as to achieve the above objectives.

(vi) To suggest specific measures for the improvement of the operation of the present Public Distribution System so as to enhance the index of consumer satisfaction.

3.3 SIGNIFICANCE OF THE STUDY

The results of the present study will be useful to the policy planners in the State Government in their efforts to improve the working of the present system. It will be useful to the academicians and students in their study of the present system. Finally the study results may be useful for comparison with the results obtained by similar studies in other States.
3.4 RESEARCH DESIGN

The research design for the present study involved surveys, quantitative analysis, testing of hypothesis and formulation of conclusions based on the above. Both secondary and primary data were used. A short description of the methodology followed is given below:

(i) Literature Survey

Data was gathered from Government Publications (including Budgets, Economic Surveys, Plan Documents, Policy Notes, Committee Reports, etc.) Annual Reports of the Food Corporation of India and Tamil Nadu Civil Supplies Corporation, earlier studies on Public Distribution System, recent Publications and a large number of research articles in reputed journals. This study not only resulted in a good data base but also enlightened the researcher regarding the past policies, the bottlenecks, the reasons for failure, etc. The final results of the other surveys were examined in the above background.

(ii) Consumer Survey

A questionnaire on 19 key elements was prepared. These included 9 critical elements which determine the effectiveness of the system. A draft questionnaire was pre-tested in Madras City and a village in Chengai-M.G.R. district by getting the responses of a small group of people. Based on the
problems encountered some of the questions were re-phrased. Since close-ended questions elicited more clear data than open-ended questions (which give rise to complex answers which are difficult to classify), these were preferred. The questionnaire was administered to consumers in the selected Public Distribution System shops and their responses were recorded.

The questionnaire for consumer survey (Annexure I) was intended to elicit responses from the consumers on the following 19 key elements:

* Commodities purchased
* Distance of the shops
* Locational convenience
* Timely availability
* Persons who go to shop
* Time taken to complete the purchase
* Reasons for delay in service
* Convenience of working hours
* Availability of total quota
* Number of instalments preferred
* Adequacy of entitlements
* Basis for quota
* Quality of supplies
* Behaviour of staff
* Overall assessment
* Ranking of complaints
Preference for packed commodities
Preferred agency for the Public Distribution System
Suggestions

Of the above, on the basis of their intrinsic importance, their impact on the effectiveness of the system, on the role they play in influencing the other elements and the importance attached to these by consumers and salesmen, the following 9 "critical elements" were chosen for in depth analysis:

(i) Locational convenience
(ii) Timely availability
(iii) Time spent to complete the purchase
(iv) Suitability of working hours
(v) Quota availability
(vi) Adequacy of quantity
(vii) Acceptability of quality
(viii) Behaviour of staff and
(ix) Overall assessment

All these factors were taken up for more detailed analysis with reference to the responses by the consumers who were sub-divided as rural and urban as well as low, middle and high income groups. Some of these were compared and contrasted along with the responses of the salesmen also.
(iii) **Salesmen Survey**

Another questionnaire (Annexure II) consisting of 7 questions for the salesmen in the Public Distribution System outlets was prepared. This was pre-tested in the same way as the consumer survey questionnaire. This was administered to the main salesman in the same shop where the consumer survey was conducted.

The survey was intended to obtain the following information/comments from the salesmen.

- Nature of ownership of the shop
- Its monthly turnover
- Number of family cards attached to the shop
- Number of staff employed
- Whether their present salary is satisfactory or not
- Whether their present profit is adequate or not
- Whether they want to handle more commodities
- Whether they feel that they are rendering adequate service to the consumers and
- What, according to them, among the following factors, prevent their rendering better service to the consumers:
  * Inadequate profits
  * Non availability of all commodities at the proper time
  * Over crowding of the cardholders
Among the above elements, except the monthly turnover, all others were taken up for further analysis.

The following responses of the consumers have been compared and contrasted with those of the salesmen.

(i) Timely availability
(ii) Time spent for completing the purchase
(iii) Availability of quota
(iv) Behaviour of staff and
(v) Overall assessment

(iv) Delphi Survey

Since it may not be possible to arrive at various policy options in the Public Distribution System through strict quantitative analysis, it was decided to use the Delphi technique for this portion of the study. The technique may be defined as follows:
The Delphi Technique is a method for the systematic solicitation and collation of judgements on a particular topic through a set of carefully designed sequential questionnaires interspersed with summarized information and feedback of opinions derived from earlier responses.

This technique uses sequential questionnaires to obtain information or opinions from a group of experts. These experts never meet face to face since the questionnaires are usually mailed. Thus, the group members retain their anonymity throughout the process and verbal, domineering types who would influence others in an interactive meeting are absent. Further, a statistical group response can be calculated from the responses in each round. This group response represents the pooled opinions of the group of experts. Again by feeding back this group response for examination by the participants, each respondent is allowed to review and modify his response in lieu of this new evidence. Thus, through successive rounds, the group of experts tends towards a strong group consensus with regard to the assigned topic.

With a view to select issues on which data is to be collected, a pilot study was carried out. Discussions were held by the researcher with experts in Madras and Delhi on the various issues to be taken up for study. Reference was also made to various books and articles in journals where similar or related studies were reported. Discussions were also held with

1 Norma, Dalkey and his associates at the Rand Corporation (1950) - Group Techniques for Program Planning by Delbecq, Van de Ven and Gustafson.
academicians to elicit their guidance to evolve a set of relevant and valid questions or items of information to generate the data needed for an in-depth study. On the basis of this it was decided that the Deiphi Study would try to get the responses of the experts on 14 policy issues and 5 operational issues.

To cover all the above issues, a draft questionnaire with 33 questions was evolved. The questions related to policy issues, objectives, key indicators, operational issues etc. It was pre-tested among 10 respondents in Madras and 3 in Delhi. Results generally showed that the questions were relevant, valid and easy to respond. However, in the light of the responses, three questions were re-designed to be more sharp and specific. This revised questionnaire was mailed to all the respondents. A specimen copy of the questionnaire may be found in Annexure III.

A public policy is generally evolved by the State in the light of political goals, administrative expediency, past practices, level of economic development, interests of pressure groups, etc. For taking a policy decision the views of those who are to be benefitted, who are to be affected, who are to implement and who are to be held accountable are necessary. Further objective comments from academicians also will be very useful. In this background it was decided that the views of the following 7 categories of persons ("experts") will be required to evolve a new policy on Public Distribution System in Tamilnadu State:
The Delphi questionnaire was administered to these categories of experts.

(v) Other Studies

Among the commodities dealt with by the Public Distribution System, rice is the most important. The off take of rice is more than one lakh tonnes per month whereas the off take of wheat and sugar is of the order of 15,000 tonnes and 22,000 tonnes per month respectively. Further the State Government bears a massive subsidy only for rice and not for other commodities. Thirdly, the State Government is in charge of procurement of rice and not of the other commodities. Lastly, for the average card holder cost of rice represents about 70 per cent of the total cost of PDS purchase per month. Because of all these reasons a further study regarding the offtake of rice was also attempted.

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An off-take study of rice for the past 10 years was undertaken. Based on the historical data on off-take, a functional analysis was carried out to study the off-take pattern vis-a-vis different factors affecting the same. A multiple regression model was developed to identify the key factors and their relative importance.

(vi) Hypothesis Testing

The following hypotheses were formulated for validation

(i) There will not be any significant difference in the perception of the rural and urban consumers regarding the critical elements of the Public Distribution System.

(ii) There will not be any significant difference in the perception of the consumers belonging to different income groups regarding the critical elements of the Public Distribution System.

(iii) There will not be any significant difference in the perception of the consumers and salesmen regarding the critical elements of the Public Distribution System.

(iv) The present Public Distribution System is urban oriented and pro-rich
(v) The present Public Distribution System is effective in the sense that it meets the expectations of the consumers who are its beneficiaries.

(vi) Consumers prefer the Public Distribution System outlet being run in the public or cooperative sector rather than in the private sector.

These hypotheses were tested in the light of the above studies and their correctness or otherwise was established.

3.5 ANALYSIS AND INTERPRETATION

Appropriate statistical tools were used to classify and analyse the results of the surveys undertaken. The tools used in the study are inferential statistics, ANOVA, stepwise discriminant analysis and Chi square statistics. The findings from various surveys were interpreted and conclusions drawn. On the basis of these, appropriate recommendations on policy and operational issues are offered.

3.6 SAMPLE DESIGN

Consumer and Salesmen Surveys

Since there are 21,985 Public Distribution System outlets in this State a survey of the consumers and salesmen has to be necessarily done on the basis of a sample study. There is no single right answer to the question of
how large a sample should be. As the sample size increases the sampling error decreased (Kaplan, 1987), but this should not be taken to imply that a 100 per cent sample is better than a sample estimate of the population characteristic that is to be measured. Non sampling error which tends to increase with very large sample size is frequently a much more serious source of error in surveys. The sample surveyor's art lies in choosing that sample size which reduces the total error to a minimum (Speak, 1974) Social Science Research is often affected by non-sampling errors also. The following factors were taken into account in determining the sample size for the consumer and salesmen surveys.

(i) The entitlement of all the cardholders are uniform;
(ii) The shop system is run by mostly co-operative agencies;
(iii) Every village has got at least one shop;
(iv) Cost and time involved in the conduct of survey.

After consideration of the above, it was decided that a sample of about 350 to 400 shops out of the total of 21,985 will be a valid, dependable and representative sample (the population being fairly homogeneous). In order to provide for non-responses and incomplete responses it was decided to aim at a sample of 500 shops.

A circular systematic random sampling technique was adopted for selection of samples to conduct the survey. The selection of consumers was
done on the basis of two stage random sampling design. At the first stage all the shops in the State were arranged districtwise and given a number each; from that list 500 shops were selected at random without replacement through generation of random numbers. In the second stage in each shop selected the consumer who stood last in the queue at the time of survey was interviewed so as to avoid the possibility of any bias. The main salesman in each of the selected shops was interviewed for the salesman survey. This survey was conducted in 1992.

Inspite of the precautions taken and care exercised only 456 responses were received from the survey team; the other responses were presumed to be either lost in transit or not sent at all. Again out of the responses received it was found that 72 were incomplete or defective and hence had to be rejected. Thus finally only 384 responses were found to be in complete shape capable of being subjected to further analysis and interpretation. However, 448 number of responses from the salesmen were received in complete shape. Still, in order to have a congruence it was decided to choose only the 384 shops for which the consumers' responses in complete shape had been received. Thus further analysis and interpretation of only 384 salesmen responses were taken up. The sample represents 1.75 per cent of the number of shops and covers all districts and shops run by different agencies both in urban and rural areas. Profiles of the consumer respondents domicile war and income war are shown in Figures 3.1 and 3.2 respectively. A State map depicting the number of samples taken from each District may be found in Figure 3.3.
Fig. 3.1 Consumers According to Domicile

Fig. 3.2 Consumers According to Income
FIGURE 3.3 DISTRICTWISE SAMPLE SIZE
TAMILNADU STATE
Delphi Survey

It was a difficult decision to decide on the number of experts from the seven categories, to whom the questionnaire is to be mailed. After considering various factors, it was decided to select the following number of experts in the categories noted against each.

(i) Politicians  -  30
(ii) Administrators  -  30
(iii) Academicians  -  20
(iv) Farmers  -  20
(v) Traders  -  20
(vi) Lawyers  -  20
(vii) Consumers  -  20

Total  -  160

The categories of politicians and administrators were given higher representation in view of their familiarity with the subject and their crucial role in formulating and implementing a new policy.

All these experts were supplied with a questionnaire along with a covering letter requesting their cooperation in the study and a detailed background note giving all the relevant information about the Public Distribution System in Tamilnadu which will enable them to properly appreciate the context in which the questions are being asked. The first round
took a long time and many respondents were reminded in writing on 3 occasions, apart from phone calls wherever possible. After waiting for six months it was decided to complete the first round when only 80 responses had been received. These respondents were approached again with a feedback of the responses and a covering letter explaining the need for the second round and the options before them. After nearly another six months and after many reminders and personal contacts, 61 experts gave their second round response. It was found that on a large number of questions (22) congruence has been achieved in the second round. A revised third round questionnaire giving the second round feedback and asking for certain further details was mailed to all the 61 experts. In this round value scales were introduced and a close questioning of the respondents for reasons for certain replies was also attempted. During the third round it was more difficult to get the responses. After many reminders and personal contacts the researcher was able to get responses only from 51 of them. Considering the cost and time involved and in the light of the fact that congruence has been reached in most of the cases and there was little chance of congruence in other cases where the views were widely different from each other, it was decided to stop the exercise and analyse the responses. This survey was conducted in 1993 and 1994.

3.7 DEFINITIONS

For the purposes of this study the following definitions are adopted.
Public Distribution System

This is the present system run by the Government of Tamilnadu under which each family is issued a card which entitles it to receive certain specified quotas of rice, wheat, sugar and kerosene every month through authorised outlets spread all over the state.

Poverty Line

The cost of an All India Average consumption basket which can provide 2400 calories per capita per day for the rural areas and 2100 calories per capita per day for the urban areas has been adopted as the official poverty line by the Government of India. The expert group of the Planning Commission estimated the proportion of Tamil Nadu population below the poverty line as 40.7 per cent (rural 40.6 per cent and urban 40.9 per cent) for the year 1987-88. Figures for the later years have not been made available. It is generally believed that in the last 10 years the proportion would have come down and currently it may be of the order of 30 percent.

Food Subsidy

The food subsidy borne by the Government of India covers the direct cost of operation plus the indirect cost of interest subsidy given by banks to the Food Corporation of India and working capital concession given by the Government of India to the Food Corporation of India. The food subsidy borne
by the Government of Tamil Nadu relates to the difference between the issue price of rice and the cost price of rice.

**Fair Price Shop**

A fair price shop is a retail outlet under the Public Distribution System which caters to the needs of a specified number of card holders attached to it.

**Domicile Classification**

Shops located in areas coming under Town Panchayats, Townships, Municipalities and Corporations are classified as urban shops. The rest are classified as rural shops.

**Income Classification**

The following classification has been adopted with reference to the incomes declared by the respondents;

1. Income upto Rs.500/- per month - Low Income
2. Income upto Rs.501 to Rs.1000/- per month - Middle Income
3. Income above Rs.1000/- per month - High Income

No check was made to find out whether the declared income is true.
3.8 ASSUMPTIONS

In this study the following 2 major assumptions have been made:

(1) That the Government of Tamil Nadu would continue its commitment to run an effective Public Distribution System as an anti-poverty and anti-inflationary measure.

(2) That the Government of India will continue its present policy of procuring rice and wheat from the surplus States through the Food Corporation of India and distributing the same to various States to run the Public Distribution System.

3.9 LIMITATIONS

The following are the limitations of the study.

(a) Though statistically significant samples have been studied, yet the results may be much more dependable if larger number of samples have been chosen.

(b) Special problems of hilly and tribal areas in the State have not been studied. However, population in these areas constituted only 2 per cent of the total population (1991)

(c) Special problems, if any, relating to wheat, sugar and kerosene have not been studied. Rice constituted about 70 per cent of the
value of purchases made by an average cardholder. It is a commodity for which State Government bears a heavy subsidy. Hence this study concentrated on rice.

(d) Revamping the structure and operating style of the agencies of the Public Distribution System like Food Corporation of India, Tamil Nadu Civil Supplies Corporation, Civil Supplies Department, Co-operative Department etc. has not been examined in this study.

However, further studies are possible on all the above points. Since the Public Distribution System in Tamil Nadu is mainly a subsidised rice distribution system and since the views and opinions of a large number of experts from various walks of life apart from actual consumers have been analysed and interpreted, the results of the present study are likely to be valid even in the context of a larger study.