Chapter - III
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METHODOLOGY

The validity of a research mainly depends on the proper method of data collection and suitable technique of analysis. Any estimate in a study is generalised only when the design of the study is properly executed. In this chapter, method of collection of data and tools of analysis used in the present study is described.

COLLECTION OF DATA

Primary data as well as secondary data were collected for the study.

I. Collection of Secondary Data

(a) The following time series data were collected to examine the price behaviour of cotton in Coimbatore district. Five important regulated markets namely, Coimbatore, Sevur, Annur, Avanashi and Tirupur in Coimbatore district handling cotton kapas were selected. These markets were selected purposively on the basis of arrivals of cotton
kapas. In Coimbatore district, there are 18 regulated markets and 5 sub regulated markets which recorded a total arrival of 69,998 tonnes valued at 191.58 lakh rupees. The arrival of cotton kapas in the selected regulated markets together constitute 90 per cent of the total arrival of the regulated markets functioning under Coimbatore District Market committee. From these selected markets, the information related to prices and arrivals of cotton kapas were collected. The collected data were corresponding to the period, January 1981 to December 1993.

(b) In order to visualise the Indian cotton economy, state-wise and district-wise area under and production of cotton were selected from the publications of South Indian Mills Association (SIMA), Coimbatore and South Indian Textile Research Association (SITRA), Coimbatore and from Economic Appraisal of Tamilnadu.

(c) To investigate the magnitude or level of intervention of Cotton Corporation of India in cotton marketing in the study area, the data regarding the purchase and sale of cotton by CCI were collected from the records.
available with the branch office of Cotton Corporation of India, Coimbatore.

(d) To facilitate proper understanding of the district chosen for the study, it is appropriate to present the profile of the study area. Hence, the data regarding the location, climatic conditions, pattern of land utilisation, cropping pattern of Coimbatore district and the selected blocks (Avanashi, Pollachi, Udumalpet and Gudimangalam) were gathered from the official records available from the office of the district collector, respective village and block offices and the district statistics department, Coimbatore.

II. Collection of primary data

Two sets of primary data were collected from the cotton growers and the traders involved in marketing of cotton as detailed below.

(a) The first set of data were collected exclusively from the selected cotton growers with the help of pretested schedule in order to identify the problems encountered by them as indicated below.
(i) **Block selection**: There are 26 blocks in Coimbatore district for revenue administration. From these blocks, four blocks namely Avanashi, Pollachi, Gudimangalam and Udumalpet were chosen purposively based on the predominance of cotton cultivation.

(ii) **Village selection**: On the basis of area under cotton cultivation 2 villages from each block were chosen purposively. The following are the villages selected from each block.

<table>
<thead>
<tr>
<th>BLOCK</th>
<th>VILLAGES SELECTED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avanashi</td>
<td>Sevur, Thekkalur.</td>
</tr>
<tr>
<td>Pollachi</td>
<td>Puravipalayam, Servakaranpalayam.</td>
</tr>
<tr>
<td>Udumalpet</td>
<td>Ravanapuram, Pungamuthur.</td>
</tr>
<tr>
<td>Gudimangalam</td>
<td>Anikadavu, Virukalpattu.</td>
</tr>
</tbody>
</table>

(iii) **Farmer selection**: To give proper representation, 20 farmers from each village were selected. In all 160 cotton growers were chosen randomly. The primary data from the growers were collected during January 1993 and were related to the period 1991-92.
(b) The another set of information was collected from the cotton growers and traders in another pre-tested schedule in order to estimate the cost and margins involved in marketing of cotton in different channels as indicated below.

(i) Selection of Farmers: The data regarding the cost incurred in marketing of cotton by the growers were collected from another group of 80 farmers who visited the four selected markets on a particular week. These data were collected separately because costs and margins could be computed on comparable basis using the technique of concurrent margin (which is discussed in detail in the tools of analysis).

(ii) Selection Of Traders: By and large, the important intermediaries operating in the notified areas of Tirupur, Avanashi, Sevur, and Coimbatore were commission agents, village traders and wholesale traders. From each category of market intermediaries 40 were selected at random in the selected markets.
The cross sectional data to estimate the marketing costs and margin were collected from the growers and traders during March 1995 (after lifting the ban on ceiling on cotton stocks in ginning and pressing factories by Government of India).

The selected respondents were contacted in person and interviewed. To instill confidence and to ensure their cooperation in getting reliable information, the purpose of the study was explained to the respondents and also they were assured that the information provided by them would be kept confidential in all respects.

Majority of the farmers never maintain any record and the data provided by them were subjected to recall bias. Hence, care has been taken to minimise the recall bias through cross checks in the structured schedule.

**TOOLS OF ANALYSIS**

The following Tools were employed to analyse the data with reference to selected objectives of the study.
(a) Conventional Analysis

Simple tabular statements were prepared for working out the average values and percentages.

(b) Estimation of Price Trends

The price trends were analysed for the selected markets of Annur, Avanashi, Coimbatore, Tirupur and Sevur for cotton. The following linear equation was fitted to measure the trend by taking price as dependent variable and time as independent variable.

\[ Y = a + bt \]

Where

- \( Y \) = Weighted annual average Price of cotton per quintal in respective markets (Rs.)
- \( t \) = Time
- \( b \) = Co-efficient of Time

(c) Estimation of Arrival trends

The arrival trends were computed for the selected markets of cotton. The following linear equation was fitted
to measure the trend by taking arrival as dependent variable and time as independent variable.

\[ Y = a + bt \]

where,

\[ Y = \text{arrival of cotton kapas in respective markets (quintals)} \]
\[ t = \text{time} \]
\[ b = \text{Co-efficient of time.} \]

(d) **Relationship between arrivals and prices**

To examine the relationship between the arrivals and prices of cotton in the selected markets, correlation coefficient 'r' was calculated using the arrivals and price data as follows,

\[
r = \frac{\sum XY - \frac{(\sum X)(\sum Y)}{n}}{\sqrt{\left(\frac{\sum X^2}{n} - \left(\frac{\sum X}{n}\right)^2\right) \left(\frac{\sum Y^2}{n} - \left(\frac{\sum Y}{n}\right)^2\right)}}
\]

\[ X = \text{Monthly average prices (Rs.)} \]
\[ Y = \text{Monthly arrivals of cotton kapas (Quintals)} \]
(e) **Time Series analysis**

To measure the seasonal fluctuations in prices and arrivals, seasonal indices were calculated with the help of centered twelve months ratio to moving average method. All the components comprising the time series were considered as multiplicative form as:

\[ O = T.C.S.I. \]

Where,

- **O** = Original data of prices / arrivals
- **T** = Trend component
- **C** = Cyclical component
- **S** = Seasonal component
- **I** = Random component

(f) **Garette's Ranking Technique**

This technique was used to rank out the problems faced in marketing of the produce. The respondents were asked to rank the given problems. The order of merit thus given by the respondents were converted into ranks by using the following formula

\[ \text{Per cent position} = \frac{100 \ (R_{ij} - 0.5)}{N_j} \]
Where,

\[ R_{ij} = \text{rank given for } i^{th} \text{ factor by } j^{th} \text{ individual} \]

\[ N_j = \text{number of factors ranked by } j^{th} \text{ individual} \]

The per cent position of each rank thus obtained is converted into scores by referring to table given by Garette\(^1\). Then for each factor, the scores of individual (farmers) respondents are added together and divided by the total number of respondents for whom scores were added. These mean scores for all the factors are arranged in descending order, ranks are given and the most important problem is identified.

(g) **Estimation of Marketing Costs and Margins**

There are three methods generally employed in calculation of marketing costs and margins which are

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provided in chapter VII in order to facilitate proper understanding of the subject. In this study method of concurrent margin was used. The other two methods involve considerable work in examining the records of accounts maintained by the intermediaries throughout the successive stages of marketing. The traders may not be willing to show their account books. The third method is possible only if comparable series of prices for the same quality at different levels of marketing are available for scrutiny.

Marketing margins as worked out under the third method may be concurrent margins or lagged margins. 'Concurrent margins' refer to the differences between the price of farm produce obtainable at a particular stage of marketing and the price paid at the preceding stage of marketing during an earlier period. The length of the time between the two dates being the average period for which the marketing agency holds the produce. In this study, under concurrent margin method producers' net price was determined after deducting the marketing costs incurred by them.
The data were collected from the different categories of intermediaries involved in the marketing of cotton at Avanashi, Coimbatore, Annur, Sevur and Tirupur markets.

The cotton merchants in the district were not confined to a particular regulated market, but their transactions extended to other regulated markets also. Hence the costs and margins of intermediaries did not vary significantly from one market to another. Therefore, the analysis was carried out pooling the data collected from different markets together.