CHAPTER III

METHODOLOGY AND PROCEDURE OF THE STUDY

Introduction

The previous chapter presented a brief review of literature pertaining to development of entrepreneurship thought and an overview of the progress of research on agricultural entrepreneurship. This chapter rationalizes the methodology and elaborates the procedure adopted for the conduct of the present study on ‘understanding’ agricultural entrepreneurship through a ‘case study approach’.

Why Qualitative Methodology

Entrepreneurship has been theorized and extensively researched in the context of commerce and industry. It was not so in the other arena. As was revealed by a review of literature presented in the previous chapter, the studies on agricultural entrepreneurship were very much sparse and wanting in a sound conceptualization. They were mostly empirical studies adopting quantitative methodology, replicating/ extending the findings in the studies on
industrial entrepreneurship. They were method-bound and their findings were instrument-specific. This was because they were machinistic trying to get answers to questions (through structured interviews/questionnaires) to prove or disprove certain hypothesis (formulated on the basis of the findings of previous entrepreneurship studies). Hence, they could not dig deep into the problems peculiar in a non-business, rural and agrarian context. In the light of the above, the researcher believed strongly that studies adopting qualitative research methodology should be welcome, so that a conceptual framework to understand the problems and perspectives of agricultural entrepreneurship could emerge in due course.

Where not much theorizing has happened and where complex behavioural issues are involved, qualitative methodology should predominate development of research\(^1\). The peculiar characteristics of agriculture and the socio-psychological milieu of the rural sector distinct from its urban counterpart, particularly in a country like India, call for more exploratory studies adopting qualitative methodology. The current research by the scholar is borne out of this contention.

\(^1\)Basker S. Aiyer. \textit{loc.cit}
Influenced by this line of thought, pursuit of qualitative methodology of research was considered most appropriate for a better understanding of the phenomenon of behaviour of agricultural entrepreneurship, hitherto receiving less attention. In accordance with this methodology, no standard method (as in the case of positivistic/quantitative research) based on theorizing, problem identification, hypothesis formulation, sampling, analysis of data and stating of the conclusions were needed here for this study. That is, it was not necessary to adhere to a format of rigid research steps; flexibility and intuition would play a large role. Regarding data collection methods unstructured in-depth interviews and subjective sources such as referent others' opinion were to be used. These permeate into the procedure for the conduct of the study as detailed hereinafter. The ultimate goal is to enhance our knowledge of the behaviour of agricultural entrepreneurs.

**Why a Case Study Approach**

There are actually a number of approaches to conduct a

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qualitative research like the grounded theory, action research, case study, field study, historic study, participant observation and phenomenology.

For the study on hand, the grounded theory or action research approach is the best to opt for. For the student researcher time, cost and ability constraints forbid their choice. The next best alternative is the case study approach. It is the most common approach in the domain of qualitative research studies. So, the researcher considers it to be very appropriate approach for this study.

Collective Case Study

Case study may be of three types: (1) ‘intrinsic’ case study, and (2) ‘instrumental’ case study. The former is a study of a single case for the sake of a holistic understanding the particularly chosen case itself. The latter is a study which examines a particular case to gain deeper insight into an issue or to refine a theory rather than to study the chosen case. The focus is on the issue/theory, rather than

1Ibid

on the case. (3) An offshoot of this type is ‘collective’ case study which extends the ‘instrumentality’ to a number of cases. Such a study, it is believed, is warranted in situations where exploratory research is scanty. And, such studies may provide deeper understanding of an issue or a group or a community of people. There are instances of such collective case studies in India, too. Ramaswami² made a case study of 30 tanners (innovators, imitators and laggards) in his study on entrepreneurship and modernization in industry. In yet another case study, Govindarajalu³ had examined 105 cases of bank customers in a study on sources of and responses to dis/satisfaction with bank services. And, the present one is a case study on 160 typical and 160 atypical agricultural entrepreneurs.

The strategies a case study involves are: (1) selection of the most ‘typical’ and ‘atypical’ cases and (2) ‘intensive involvement’ of the researcher with the case-participants/respondents.


These would provide what Stake\(^1\) calls the "opportunity to learn" for a holistic understanding of the cases selected in a comparative perspective as between the typical and atypical cases of agricultural entrepreneurs.

**Pilot Study**

Before the main study to gather data to answer the research questions was taken up, a pilot study was conducted. It was in the scholar's own place and four other neighbouring villages. And, it took a little over one year (October 1998 to November 1999). The purpose of the pilot study was to mainly gain confidence about the feasibility of the study and to follow the legacy of social scientists like Atherton \& Klemmack\(^2\).

R.E. Stake. *op.cit.* p. 244

Denzin & Lincoln\textsuperscript{1}, Kerlinger\textsuperscript{2} and Rubin & Babbie\textsuperscript{3}.

During the course of the pilot study, the researcher developed close rapport with the village community in general and with the prominent agriculturists, in particular. He had discussions with them and they centered around the whole gamut of their life focussing on their main occupation, namely, agriculture. Also, he had useful deliberations with the officials in the concerned Block Development Office and in the Department of Agriculture at the Block and District level. These officials are the key change agents through whom the government propagates and executes new developmental scheme, technologies and distributes farm inputs. Also, they impart agricultural extension services through training.


and demonstration. Thus, the period of pilot study helped the researcher to familiarize himself with the socio-economic environment of the study area. Also, he could have a feel of the components of entrepreneurial behaviour of the farmers that could possibly contribute to their entrepreneurial success. The pilot study, thus, ensured the confidence of the feasibility of the study. The main study that followed the pilot study had three stages. A description of these follows.

The Main Study

Stage I

The first stage of the study involved delineating the study area and the selection of case-respondents, personal variables and the entrepreneurial development services, which define the scope of the study.
The Broad Area

The broad area of the study was Tirupattur Taluk in Vellore District, Tamil Nadu. It is considered as one of the most potential areas for exploring rural entrepreneurship. Surrounded by Javvadhu hills on the East and Palar river in close North (with rare and scanty flow) and South Penniar in the distant South, the area is dependant on rainfall and groundwater resource for cultivation. The temperature is moderate and the area is not prone to natural calamities like cyclone and heavy floods. The soil is quite fertile and fit for both wet and dry crops of sorts like food grains, millets, pulses, oilseeds and sugarcane. Aside this, hectic horticulture sericulture, floriculture, dairy, poultry, fish and mushroom farming, herbal farming and the like are becoming popular. The scope of diversification depended on the degree of risk-taking and innovative character of the farmers. Naturally, these conditions offer the most conducive environment for entrepreneurship development in this area. In contrast, in places like Tanjavur, Tiruchirapalli and Karur
Districts with adequate rainfall and perannial (till recently) water through river Cauvery, the people could go in only for routine wet crops like paddy, banana and little sugar cane and nothing else could be ventured, even if one wishes to. They could therefore be safe, secure and rich landlords, but only easy going, poor and uninspiring agro-entrepreneurs!

Two Panchayat Unions (Block Development areas), namely, Jolarpet and Tirupattur, out of the four in the Tirupattur Taluk limit were chosen for the conduct of this study. Twenty villages (including the five where the pilot study was undertaken) were selected (out of the 89 villages in the two Unions/Blocks) for the study. This was done after a consultative meeting with the two Block Development Officers, the Revenue Development Officer at Tirupattur and the District Agricultural Officer at Vellore, who are the best fit for the advice sought for. The maps showing the chosen villages in the two Panchayat Unions (Block Development areas) are shown in the following two pages.
Selection of Case-Respondents

In the backdrop of the knowledge of the characteristics of the progressive/successful entrepreneurs identified from the earlier studies and of the personal grasp by the researcher of the socio-economic environment of the study area, the next step was to draw apt sample cases for this study. The criteria for the inclusion of a case in the sample were: (1) long-time residency in the area; (2) should not be a tenant-farmer; (3) should not be an absentee landlord; (4) the family should have been owning 3 to 5 hectares of land in any combination of wet and dry land during the past 10 years. The case-respondent was the one who was considered as the chief decision maker in all occupation-related activities, though he may not be the actual head of the family. However, the information from the respondent was corroborated from the views of referent others in the family, whenever necessary. The Village Administrative Officers of the respective villages were helpful in identifying such case-respondents. From among them, 180 active participants in the various agricultural extension education, training and development programmes were selected. Similarly, a matching
number of agriculturists who showed little response to extension education programmes were also selected. The former was labeled as ‘typical’ and the latter as ‘atypical’ agriculturists in this study. In this selection process the concerned Agricultural Extension Officer’s counsel was sought. It was ensured that the two groups were homogeneous except for the personal and family characteristics of the case respondents. However, the final sample was 160 in each category, as 20 cases who could not be comprehensively studied were eliminated.

The Variables

Understanding the entrepreneurial behaviour of select typical and atypical agriculturists being the core aim of the study, it becomes the dependent variable. And the independent variables to be examined in relation to the entrepreneurial behaviour were the following personal and family characteristics:

(1) Age
(2) Caste
(3) Type of family
(4) Size of family
(5) Education and
(6) Value Orientation
The above variables were categorized for the purpose of this study as shown below:

(1) **Age of Respondents**

<table>
<thead>
<tr>
<th>Age Category</th>
<th>No. of completed years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>Upto 30 years</td>
</tr>
<tr>
<td>Middle</td>
<td>Above 30 years but</td>
</tr>
<tr>
<td></td>
<td>below 40 Years</td>
</tr>
<tr>
<td>Old</td>
<td>40 years and above</td>
</tr>
</tbody>
</table>

(2) **Caste of the Respondents**

<table>
<thead>
<tr>
<th>Caste category</th>
<th>Caste’s Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scheduled Caste,</td>
<td>Adi Dravidar, Arundhadiyar</td>
</tr>
<tr>
<td>Scheduled Tribes and</td>
<td>Irular, Puthirai Vannar</td>
</tr>
<tr>
<td>Most Backward Castes and</td>
<td>Vanniyar</td>
</tr>
<tr>
<td>and Backward Castes</td>
<td>Vannar, Eedigar</td>
</tr>
<tr>
<td>Forward Castes</td>
<td>Brahmin, Iyer, Iyengar, Vysiar,</td>
</tr>
<tr>
<td></td>
<td>Madhura Brahmin</td>
</tr>
</tbody>
</table>

(3) **Nature of Family**

<table>
<thead>
<tr>
<th>Extended family</th>
<th>Joint Hindu families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nucleus family</td>
<td>Brothers live separately, since 1993</td>
</tr>
</tbody>
</table>
(4) **Size of Family**

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Upto 4 members</td>
</tr>
<tr>
<td>Medium</td>
<td>5 to 7 members</td>
</tr>
<tr>
<td>Large</td>
<td>More than 7 members</td>
</tr>
</tbody>
</table>

(5) **Education**

- No formal education
- Primary education
- Higher Secondary education and
- Collegiate education

(6) **Value-orientation**

- Conservative
- Liberal
- Progressive

**The Study Period**

The study was conducted by the researcher's personal observation, participation and unstructured in-depth discussion with the case-respondents and referent others. The period of the
study was December 1999 to December 2001, a litter over two years.

Though the study investigated into the case-respondents’ background, the data for research pertained to experiences of the respondents during the five years preceding the commencement of the study in 1999.

**Entrepreneurial Activities**

**Scope of the Entrepreneurial Activities Covered**

In the background of the field design described above, the focus of the study was to examine the entrepreneurial behaviour of the case-respondents in relation to 10 activities falling under any of the following Extension Education, Training and Service programmes offered by the Government of Tamil Nadu since the five years preceding the commencement of this study in 1999, through the Agricultural Extension Officers at the Block level.

(1) **Land development programmes:** This covered schemes for soil conservation, terracing, land levelling and bounding, and constructing farm yard sheds.
(2) Crop husbandry: This included schemes for supply of hybrid seeds/seedlings, intensive cultivation, new crops, multiple cropping, new farming practices and use of improved fertilizers, weedicides and pesticides and the like.

(3) Diversification of agricultural activities: This included propagation of allied new activities such as horticulture, sericulture, floriculture, mushroom cultivation, nursery farms and social forestry.

(4) Animal husbandry: It covered schemes for dairy development, poultry, piggery, fishculture and goat and sheep rearing.

(5) Mechanization of farming: This included schemes for supply of power tillers, sprayers, tractors, trailers, and harvesting machines, drip irrigation, sprinkle irrigation, pipe line irrigation, wind mill, and bio-gas plants.
(6) **Extension services:** This refers to the personal contact programmes related to extension, training and demonstration programmes organised by the Agricultural Extension Office at the Block level, supported by Department of Fisheries, Animal Husbandry, Co-operative Societies, the Commercial banks, Agricultural Universities and corporate organizations manufacturing agricultural inputs and machineries.

The next step at this stage was to develop an entrepreneurial behaviour scale for use in the field study.

**Development of Entrepreneurial Behaviour Scale**

Taking cue from a review of literature relating to entrepreneurial behaviour and the researcher’s personal knowledge in this regard gained through the pilot study, 12 most prominent items were selected as the would-be components of the
entrepreneurial behaviour scale to be developed for this Study. A 150-member panel of judges was formed to elicit the opinion about the relevance or otherwise of these twelve components for a study on agricultural entrepreneurship. Eighty members responded to this. Of the 12 items, 10 items were held relevant for the measure of entrepreneurial behaviour of agriculturists by at least two-thirds of the panel members. These were retained for inclusion in the entrepreneurial behaviour scale.

Following this initial validation, another 50-member panel of judges independents (comprising 10 project officers in Non-Government Organisations engaged in rural welfare, 10 Professors from two Agricultural Universities in Tamil Nadu, 10 Professors of Rural Sociology, 10 Professors of Psychology, 10 Professors in Commerce and Management studies) was constituted. The panel members were requested to rank the 10 components of entrepreneurial behaviour scale in the order of their
relative importance in developing agricultural entrepreneurship\textsuperscript{1}.

Based on the ranks assigned by the 50 judges, the scale value for each of the 10 components of the entrepreneurial behaviour scale was calculated using Guilford's\textsuperscript{2} Normalized Ranking Method. This method is considered by social scientists as the most appropriate one where the scale components are heterogeneous in character and where the study involves relating large numbers of independent variables.

Having developed a framework of components of entrepreneurial behaviour scale and having ascribed the scale value for each of the behaviour component, using Guilford’s normalized

\textsuperscript{1} Please see Appendix C. pp. 236-241.

ranking method, the next step was to delineate the subcomponents of each scale. This was done by defining the various issues/situations relevant to the component. The earlier studies and the deliberations during the pilot study as well as during the scale development process were very much helpful in this regard.  

**Stage II**

This stage involved the process of field work to gather a mass of information and sift therefrom the critical data relevant to each of the behavioural components. The details of this process follow.

**The Field Work**

Agriculture not being an ‘industry’ as such, but a way of life or an occupation, the problems there would be situation-specific and their significance in motivating individual behaviour would vary from person to person, too. This justified the adoption of qualitative methodology as explained earlier in this chapter.

1 Detailed in Stage II
The whole process of data collection, therefore, had to avoid standardised data collection tools such as self-administered questionnaires, and structured/semi-structured interview schedules and also to avoid rigid process of scoring/quantification of the information gathered. The ethical aspect of the investigation depended solely on the researcher's personal involvement and integrity.

The whole procedure is not only inevitable but also a necessary condition and quite pertinent in a qualitative research.¹

The researcher absorbed whatever he observed and heard about the occupational life of the case-respondents, in a real-life setting. The researcher studied the minds of the case-respondents with a holistic perspective of their perceptions, attitudes and values as relating to their wide-ranging activities. This was done through

¹ M.O.Mathew. 1981. The Coming of Qualitative Research in Commerce. Paper presented at the Summer Institute in Commerce, sponsored by the University Grants Commission and organised by Osmania University, Hyderabad (16th May to 5th June 1981)
informal, in-depth dialogues (called as 'unstructured interviews' in research terminology) with the case-respondents, besides personal observations on them. The information so gathered were supported by necessary cross-checks on them to ensure reliability of the information. As an added measure of reliability, the opinion of referent others (the Village Administrative Officers and the Agricultural Extensions Officers at the Block level) were sought regarding the behavioural components.

The case-respondents were at ease and spoke to the research team very freely and frankly with no inhibition, due to the intimacy the researcher developed with them and because of their own appreciation of a study of this kind on them.

Quantification of Entrepreneurial Behaviour

This process of information-gathering took a little over two and a half years. The gathered information were noted on a day-to-day basis in the research diary. The research notes were later content-analysed by a 5-member team (including the researcher,

1Please see Appendix A. pp. 219-229.
his supervisor and two psychological professors and one agricultural officer to sift the information) fit them into the relevant component heads of entrepreneurial behaviour. The team also defined the scoring pattern for each of the 10 components of entrepreneurial behavioural scale. The decision on scoring pattern was based on certain patterns developed in earlier studies\(^1\). As these studies suggest, an element of arbitrariness was bound to creep in due to post-field work scoring and lack of rigorous and standardized tools of data collection. The frequency/intensity of


the behaviour in each case as perceived by the researcher was the basis for scoring.

A brief description of the 10 components of entrepreneurial behaviour scale and the scoring patterns is presented below.

1. Innovativeness

Innovativeness is “a mental process through which an individual passes from first hearing about an innovation to final adoption”\(^1\). And, as Lionberger\(^2\) views, ‘it is a process by which something new is integrated into an ongoing operation through ‘repeated and continued use’. It may even be ‘a rejection of an idea or a practice widely popular when its efficacy/relevance in the specific situation is unconvincing’\(^3\).


The innovativeness in regard to readily adopting new hybrid variety of crop, new method in preparation of soil, manufacture of organic manures, new system of irrigation, new methods in processing and storing of produce were the potential areas of adopting innovative practices. Keeping 10 such adoptions as the maximum limit, each ‘firstness’ of adoption was given score 1. Thus, the score would range from 0 to 10.

2. Risk Taking Ability

This Knightian\(^1\) concept looks at an entrepreneur as the manager of uncertainties. Agriculture, predominated by ‘imperfect’ conditions in ‘factor’ and ‘product’ markets is clouded by lot of uncertainties. Uninsurable uncertainties are risks. Innovativeness involves risking. Fear of risks would mean unenterprising nature. Attraction of a reward of supra profits motivate risk-taking behaviour\(^2\).

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In this study, risk-taking ability was to be witnessed in behaviour in times of severe drought, monsoon failures, other natural calamities, glut in market for farm produce, slump in price, and decision to go in for a new crop, hitherto unknown in the area. The scoring pattern was 2 points for each of a maximum of 5 risk-involving situations observed during the study period.

3. Decision-making

This is a managerial function. It involves a thought process in evaluating different alternatives and choosing the most prudent one in a given situation. In farming activities sound decisions are of critical importance in resource allocation for maximizing profit/reducing cost of operation.

In the present study, decision-making behaviour of agriculturists pertained to the following spheres of activities: (1) decision on crop variety; (2) decision on hiring/borrowing an
equipment such as power-tiller, oil-engine for lifting water, sprayer; (3) decision to avail an attractive incentive/subsidy scheme to popularise a new farm practice; (4) decision to switch over to a new crop pattern; and (5) decision to buy a farm machinery. These are closely in line with the major items in the 1978 study of Singh. The scoring pattern was Zero for indecisive and wavering nature; 1 for slow and late decision and 2 for quick and smart decision. Thus, the maximum score one could get was 10 and minimum zero.

4. Achievement Orientation

McClelland, the proponent of this trait has defined it as ‘a desire to do well, not so much for the sake of social recognition or prestige, but to attain an inner feeling of personal accomplishment’.


With a few exceptions (e.g., Berna\textsuperscript{1}, Hoselitz\textsuperscript{2}), Western students of entrepreneurship and economic development argue that breakup of the extended family (joint-family) is necessary for the development of the entrepreneurial spirit in developing countries. The few Indian studies\textsuperscript{3} show mixed results. These studies adopted the McClelland study-based models of TAT, and sentence-completion test to measure achievement orientation of entrepreneurs. These tests were not to be used in this study, since it was believed that they would not be realistic.


In the present study, the achievement motivation of the case-respondents were ascertained by a comparison of their aspirations and expectations in life with the actual accomplishments. This was looking back and getting an evaluation based on concrete proof of achievements.

Personal ambitions, attitude towards occupational success/failure, dependence-proneness were to be the parameters to determine the achievement orientation\(^1\). This was to be evidenced by competitive spirit, participation in various contests for agriculturists, winning a recognition/reward, joining any movement for agrarian/rural development and the like. The scoring of these traits were in three grades: 'Low', 'Medium' and 'High', and the points assigned were in the range 0-2; 3-6; 7-10 respectively.

5. Knowledgeability

This refers to possessing allround knowledge about

agricultural profession. Without thorough knowledge about various aspects of agriculture one cannot be enterprising in the profession. Traditional word-of-mouth information alone is not knowledge. Knowledge means knowing the intricacies of the soil conditions, suitable crop, cropping pattern, climatic condition, monsoon cycle, cultivation methods, product markets, allied support services etc.

The knowledgeability of the farmer was assessed during the field study by way of intriguing questions. Irrespective of level of literacy, knowledgeability could vary in different degrees. The grading in this regard was: 'Low', 'Medium' and 'High', and the scores assigned were 0-2; 3-6; 7-10, respectively.

6. Information-seeking

As Kirzner\(^2\) points out one should crave for more and more

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information, rather than possessing traditional knowledge. Therefore one’s knowledgeability should be supplemented by information-seeking. This will lead to a high degree of innovativeness and other entrepreneurial talents\(^1\). Information-seeking may be with regard to discovering new economic information, economic opportunities, financial resources, marketing opportunities, support services and the like. And, it could be by reading relevant books, journals and government publications, attending meetings, seminars, conferences, workshops, and exhibitions relating to rural and agrarian development. Ultimately, then, information-seeking leads to the ‘highest order of knowledge’\(^2\) needed for harnessing maximum entrepreneurial potentialities.

The frequency of information-seeking behaviour was assessed during the field study and it was measured in three degrees: ‘Never’, ‘Less frequently’, and ‘Frequently’. The scores were in the


\(^2\) Ibid.
order of 0; 1-5; 6-10, depending on the frequency of information-seeking coupled with investment of time and money for this purpose.

This measure was believed superior to putting questions to respondents eliciting ‘Yes’ or ‘No’ answers, as was done in earlier studies known to the researcher.

7. Team building

This is a managerial role of an entrepreneur. Though an entrepreneur may desire independence and autonomy, he must be able to build a strong team and co-ordinate the different managerial functions. This, in an agricultural context, would involve co-ordinating the functions of crop planning, investment requirements, irrigation, manuring, pest control, hiring labour, harvesting, storing products, marketing and getting extension services from government through efficient staff support. The absence of efficient co-ordination of these functions would mean
crop failure. The overall element in this co-ordination function is ‘time’ sense and ‘team-work’ in marshalling human and non-human resource-inputs.

Measurement of this behavioural component was made by rating the efficacy of this managerial role played by the case-respondents as ‘poor’, ‘fair’ and ‘good’ in team building, and the scores were 0-2; 3-6; 7-10 respectively.

8. Using extension services

Agriculture being an occupation predominated ‘imperfect’ conditions in knowledge, input and output factor markets, in a developing country like India, the services of the extension agencies, both private and governmental, are instrumental to a great extent in infusing a sense of entrepreneurism among the agriculturists. The government of Tamil Nadu through its Directorate of Agriculture offers varied extension services to educate and activate the agriculturists to apply improved practices in various farming activities, through booklets, journals, radio &
TV programmes, conducted tours, farmers’ clubs, exhibitions, seminars etc and through direct personal counselling on various schemes designed to develop agricultural entrepreneurship. Improved inputs, equipments and agricultural machineries are made available at subsidized prices and liberal financial assistance.

The extent to which the agriculturists made use of these services during the five year period prior to the field study was assessed. The participation were rated into three categories: ‘Low’, ‘Medium’ and ‘High’ and these carried scores in the order 0-3; 4-6; and 7-10 respectively.

9. Internal locus of control

This is a psychological construct propounded by Rotter\(^1\). According to his theory a truly enterprising person will not attribute

his success or failure in a venture to the forces of ‘fate’, ‘luck’ or other similar forces. He would believe that his accomplishments and set-backs are within his own control and influence. He would like that he can make things happen, rather that see things happening by themselves. He would accept his mistakes and improve on them. This ‘locus of control’ is consistent with a high-achievement drive, the desire to take personal responsibility and self-confidence.

This behavioural characteristic was assessed by deep probing of the minds of the case-respondents to know their belief system in their attribution/ascription for any event of happiness/success or unhappiness/failure. Reference in dialogues about the influence of fate/curse/divinity and the like were noted and probed.


The scoring of the case-respondents was made on the basis of the researcher's impression and judgement in this regard coupled with the degree of achievement motivation, evaluated as a distinct scale. The grading was: 'Low' or 'High' with scores 0-5; and 6-10 respectively.

10. Cosmopoliteness

Cosmopoliteness is the degree to which an individual is oriented outside his immediate social system. If an individual takes no interest in the work beyond his occupation or family, he is called a 'localite' or a 'rooted individual'. One who considers himself as an integral part of the larger world is a 'cosmopolite'. This concept is relative to the members of a social system. An entrepreneur's degree of cosmopoliteness is relative to the other entrepreneurs in the occupation.

For the purpose of this study, cosmopoliteness was measured in terms of frequency of visits to model farms, demonstrations of
new farm practices, attendance of seminars, conferences, workshops, fairs and exhibitions organized by the Agricultural Department, Agricultural Universities and banks and tour to other States to gain an insight of the farming operations there.

Keeping 10 as the maximum score and assigning one point for each cosmopolite behaviour during the five years preceding the study period, the case-respondents' cosmopoliteness were scored.

**Development of Entrepreneurial Behaviour Index (EBI)**

After assessing the scores of each of the case-respondents (based on content-analysis of the case diary) for each of the ten components of the entrepreneurial behaviour scale, an entrepreneurial behaviour index (EBI) was calculated using the Guilford formula:

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EBI = \frac{\sum \text{Score obtained for the component}}{\text{Maximum score for the component}} \times \frac{\text{Scale value relative to the component}}{\text{Scale value of the component}} \times 100
\]
Reliability and Validity Tests

Though the tests of reliability and validity are built-in in a research adopting qualitative methodology, these tests were made here as an added measure of support.

Two types of reliability of the scale, namely test-retest and scores reliability tests were made (detailed in the next chapter). These are advocated by Guilford\(^1\) and Anastassi\(^2\).

Regarding validity tests of the scale, as Kerlinger\(^3\) asserts content validity (the representativeness or sampling adequacy of the content/components) is validated essentially by judgment, alone by the researcher or with other judges. In the present study, the components of the entrepreneurial behaviour scale were finalized only after wider and judicious validation

\(^1\)J.P. Guilford. *loc. cit.*


by a two-stage panel of judges\(^1\).

However, as a measure of internal consistency, the researcher made a test of criterion validity. As Garrett\(^2\) suggests such a test may be either an objective or a qualitative one. For this study both these were made use of. As an objective measure, the wealth generated by the case respondents was held the criteria and for the qualitative measure, the case-respondents 'vision of the future' was the criteria. These measures were made in the field study (details in Appendix A). The annual income and the repayment of loans as measures of criterion validity in some related studies\(^3\) were not considered inappropriate by the researcher.

Norms of Distribution of Entrepreneurial Behaviour

The development of measurement scale should be

\(^1\) Please refer pp. 83-84.


standardized. This requires subjecting the entrepreneurial behaviour scale to a test of norms of distribution. This was done using the following statistical procedure:

1. Grouping the entrepreneurial behaviour score in a frequency distribution order.

2. Measuring the central tendency. As suggested by Guilford¹ and Garrett² mean, median and mode were worked out.

3. To know whether the scatter of the entrepreneurial behaviour score scatter around the mean value, the range, quartile deviation and standard deviation of the entrepreneurial behaviour scores were calculated, as suggested by Garrett³

¹J.P. Guilford. *loc.cit.*

²H.E. Garrett. *loc.cit.*

³H.E. Garrett. *loc.cit.*
(4) As a measure of divergence normalcy, skewness and kurtosis were calculated. This was to know the direction and symmetry of the observed distribution.

(5) To know whether the set of observed frequencies in the frequency distribution had arisen from a normal distribution population, a chi-square test was made. The expected frequencies for this purpose were calculated following the procedure prescribed by Ferguson¹.

Stage III

Analysis of Data

This is the final stage of the study. It involves statistical analysis and interpretation. The qualitative information were quantified following the process described in the previous section. This became the data for

statistical analysis. Chi-square tests, 't' tests, analysis of variance, correlation analysis and stepwise regression analysis were the appropriate tools in this study. Interpretation of the results of statistical analysis and drawing therefrom implications of the findings emerged from these statistical analyses.

**Conclusion**

This chapter described the methodology and procedure of the study. The next chapter describes the procedure of developing the entrepreneurial behaviour scale and the results of statistical measures used therefor.