CHAPTER - 4

PROBLEM, METHODOLOGY AND PROCEDURE
4.1 STATEMENT OF THE PROBLEM

In inland fish farming, the potential fish farmers adopt leasing as a means of acquiring water reservoir as the same could not be acquired effectively otherwise and the existence of adequate water reservoir is a necessary pre-condition for the success in this type of venture. One of the important characteristics of single ownership fish farming ventures is that the owner is the sole decision maker and in charge of execution of the same. Thus each fish farmer who is going to acquire water reservoir on lease is required to take decision about the proposed investment on the basis of future stream of inflows and outflows associated with this investment. It is a fact that all lessees (fish farmers who acquire water reservoir on lease) could not be equally successful in decision making. Therefore an important question which naturally comes to our mind is that why some lessees succeed while others fail though all they are confronting with the same environmental parameters having the same objectives and working under the same market conditions. Naturally, it can be conjectured that these differences in success level mainly arise due to the differences in the ability of decision-making and difference in the degree of desire to carry out the job with a standard of excellence.

A large number of studies has led to the belief that success of an enterprise depends, to a large extent, on the human factors rather than on the non-human factors though the impact of the latter is very significant to any business
activity. It is also established that some personal qualities are common, i.e., exclusively innate and obviously these qualities could not make the all out difference in success levels. Thus, the exploration of the specific qualities is needed to find out the most contributory factors leading to the differences in decision making ability, which in its turn, would determine the causes of differences in success levels.

In order to take decision for the benefit of the venture, a lessee perceives—before hand the consequences of various decision alternatives. Precisely a lessee receives required information from the environment and then by scanning, organising and integrating the information with the help of inter-related, inter-dependent and complex cognitive processes supported by emotion and motivation, arrives to a decision, which is reflected, in reality through action. Obviously then, arriving to a decision with the help of cognitive mechanism depends considerably on the personality of an individual, who as an information processor, accepts or rejects information in accordance with the self-need structure. Thus, it is seen that individual differences play a key role in decision-making. However, it should be mentioned in this context that this individual differences may be due to the variability of some social and demographic factors like education, caste, age, experience etc.

Thus this study deals with the problem of investigating the most significant contributory factors in decision making...
which lead the lessees in actuating differential success. The financial health of an enterprise may be taken as a yardstick for the evaluation of performance of lessee of that enterprise as the lessee is the sole decision-maker and executor and thus is directly responsible for the performance of respective enterprise.

4.2. SPECIFIC OBJECTIVES OF THE STUDY

The specific objectives of the study are:

a) to construct a scale of measurement to assess overall success of the lessee in taking decision to commit long-term fund in leased water reservoir from the analysis of the financial data of the respective farm.

b) to make a comparative study of risk-taking disposition, n-Ach and personality factors of highly successful, moderately successful and relatively less successful lessees pertaining to respective investment decision.

c) to delineate comparative study between highly successful, moderately successful and relatively less successful lessees with respect to some social variables.

d) to explore perceptual differences, if any, between the highly successful, moderately successful and relatively less successful lessees as regards to other environmental factors affecting success in inland fish farming.

e) to identify the major psychological variables in order of their relative contributory influences on the success of the lessee in taking investment decision.

4.3. HYPOTHESES:

In pursuit of the above objectives, the following
null hypotheses were examined comprehensively in the present study -

HYPOTHESIS RELATING TO SUCCESS:

The lessees do not differ with respect to success score ... [Hy - 1].

HYPOTHESIS RELATING TO ACHIEVEMENT MOTIVATION:

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to n-Ach score ... [Hy-2].

HYPOTHESIS RELATING TO RISK TAKING DISPOSITION:

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to risk taking disposition ... [Hy-3].

HYPOTHESES RELATING TO PERSONALITY FACTORS:

Factor - A (Warm Vs. Aloof)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor A ... [Hy-4(a)].

Factor - B (Bright Vs. Dull):

Highly successful, moderately successful and unsuccessful lessee do not differ with respect to personality factor B [Hy-4(b)].

Factor - C (Mature vs. Emotional)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor C ... [Hy-4(C)].
Factor-E (Dominant Vs. submissive)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor E ... [Hy-4(d)].

Factor-F (Enthusiastic Vs. Silent)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor F ... [Hy-4(e)].

Factor-G (Conscientious Vs. Casual)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor G ... [Hy-4(f)].

Factor-H (Adventurous Vs. Timid)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor H ... [Hy-4(g)].

Factor-I (Sensitive Vs. Tough)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor I ... [Hy-4(i)].

Factor-M (Eccentric Vs. Conventional)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor M ... [Hy-4(j)].
Factor - N (Sophisticated Vs. Simple)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor N \[ \text{[Hy-4(k)]}. \]

Factor - O (Insecure Vs. Confident)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor O \[ \ldots \text{[Hy-4(l)]}. \]

Factor - Q₁ (Experimenting Vs. Conservative)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor Q₁ \[ \ldots \text{[Hy-4(m)]}. \]

Factor - Q₂ (Self-sufficient Vs. Dependent)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor Q₂ \[ \ldots \text{[Hy-4(n)]}. \]

Factor - Q₃ (Self-controlled Vs. Uncontrolled)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor Q₃ \[ \ldots \text{[Hy-4(o)]}. \]

Factor - Q₄ (Tense Vs. Stable)

Highly successful, moderately successful and unsuccessful lessees do not differ with respect to personality factor Q₄ \[ \ldots \text{[Hy-4(p)]}. \]
HYPOTHESES RELATING TO DEMOGRAPHIC VARIABLES:

**Age:**

There is no difference between highly successful, moderately successful and unsuccessful lessees with respect to age ... [Hy-5(a)].

**Experience:**

There is no difference between highly successful, moderately successful and unsuccessful lessees with respect to experience ... [Hy-5(b)].

NULL HYPOTHESIS:

Statistically all the above null hypotheses can be represented as $H_0: \mu_1 = \mu_2 = \ldots = \mu_K$

ALTERNATIVE HYPOTHESIS:

At least two population means are unequal i.e.

$H_1: \mu_i \neq \mu_j$

HYPOTHESES RELATING TO SOCIO-CULTURAL VARIABLE:

**Education:**

There is no dependence of the success of the lessees on their educational level ... [Hy-6].

HYPOTHESES RELATING TO SOCIAL VARIABLES:

**Caste:**

There is no dependence of the success of the lessees on their caste ...... [Hy-7(a)].
Family Structure:

There is no dependence of the success of the lessees on their family structure ... [Hy-7(b)].

Chi-square Test of Independence for r x c Contingency table:

NULL HYPOTHESIS: Statistically all the above null hypotheses can be represented as Ho: P_{ij} = P_i P_j for all cells (i,j).

HYPOTHESIS RELATING TO FORMULATION OF GENERAL LINEAR MODELS:

n-Ach, personality factors and risk taking disposition as a whole, do not contribute towards explaining the variation in the success of the lessees ... [Hy-8].

The general linear model is a mathematical equation of the form

\[ Y = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \ldots + \beta_k x_{ki} + \varepsilon_i \]

Where \( i = 1, 2 \ldots n \)

The model describes the relationship between one dependent variable \( Y \) and \( k \) independent variables \( x_1, x_2 \ldots x_k \).

The parameter \( \beta_0 \) is the Y-intercept and other parameters \( \beta_1, \beta_2 \ldots \beta_k \) are the slopes associated with each independent variables.

In all the above cases statistically the null hypothesis may be stated as Ho: \( \beta_1 = \beta_2 = \ldots = \beta_k = 0 \& \beta_0 \neq 0 \)

Alternative hypothesis \( H_1 : -\beta_1 = \beta_2 = \ldots = \beta_k \neq 0 \)
4.4 METHOD

4.4.1 SAMPLING

The study was conducted on fish farmers engaged in inland fish farming of North and South 24-Parganas, West Bengal. Selection of the sample units was made through stratified multi-stage random sampling technique. Stratification was made on the basis of districts. Separate samples were drawn from two strata.

4.4.2 SAMPLING PROCEDURE:

STEP-1: Two districts considered in the study were subdivided into a number of blocks. There are 22 blocks in North 24-Parganas and 30 blocks in South 24-parganas. With the help of random sampling technique, 7 blocks from North 24-parganas and 9 blocks from South 24-parganas were selected.

STEP-2: Selected blocks were subdivided into a number of gram panchayats. Selected 7 blocks of North 24-Parganas consist of 67 gram Panchayats and selected 9 blocks of South 24-Parganas consist of 104 gram panchayats. From the selected gram panchayats of North 24-Parganas 20 panchayats and from the selected gram panchayats of South 24-Parganas 32 Panchayats were chosen at random.

STEP-3: An extensive survey was made for about a year. Information were collected from respective fisheries' offices, FFDAs, Block Development Offices, Gram Panchayat Offices etc. Two separate lists of fish farmers with stipulated criteria\(^1\) belonging to the selected gram Panchayats of North and South 24-parganas were prepared for each of the two districts. The lists included

\(^1\) page 97.
298 fish farmers of North 24-Parganas and 337 fish farmers of South 24-Parganas, making a total of 635.

STEP - 4: 25% sample was drawn from each stratum at random. Thus the sample consisted of 75 fish farmers from North 24-Parganas and 84 fish farmers from South 24-Parganas, making a total of 159.

STEP-5: Out of the 159 fish farmers, no response was received from 5 fish farmers and 7 fish farmers did not respond to the choice - dilemmas instrument. These were excluded from the study. Thus the study was confined on 147 fish farmers.

1. Stipulated Criteria:
   a) Special:
      Nature of fish farming - spawn to fingerlings
      Mode of acquisition of water reservoir - leasing
      Status - Proprietorship
      Size of each water reservoir - 3 to 7 Bighas
      Capital employed - Rs.15,000 - Rs.50,000
   b) General:
      Mother tongue, place, sex, location of the market, nationality etc.
4.5. JUSTIFICATION FOR THE SELECTION OF FISH FARMERS ENGAGED IN INLAND FISH FARMING.

Fish farmers engaged in inland fish farming were selected in the present study because of the following reasons -

1. Inland fish farming is mainly concentrated in the rural areas. No comprehensive effort has yet been made either from Government sector or from the private sector for the development of the rural poor.

2. This sector is now well recognised as an important sector for boosting up the rural as well as the national economy.

3. No systematic research work has so far been made for the detection of the problems faced by the farmers engaged in this occupation.

4. Little efforts are so far made in formulating a standard yardstick for the measurement of the financial health of the fish farm which may be found useful to the financial institutions for extending financial help to the inland fish farmers.

5. Systematic study in this area is reasonably assumed to be fruitful for attracting attention from every corner for the upliftment of the rural poor in particular and development of the Indian economy in general through the development of this sector.

4.6. TOOLS USED:

In the present study the following tools were used -

1. Information schedule containing information relating to financial data of the fish farm.

5. Structured Interview Schedule.

4.7. **BRIEF DESCRIPTION OF THE TOOLS**

4.7.1. **SCHEDULE OF INFORMATION RELATING TO FINANCIAL DATA**

The schedule contains 13 items i.e. (1) Sales (2) Labour cost (3) Cost of soawn (4) Lease rent (5) Food expenses (6) Other expenses (7) Net profit (8) Current Assets (9) Current Liabilities (10) Fixed Assets (11) Owned Capital (12) Long term debt and (13) Leased water area. Four columns are provided in the Schedule to collect the above items for each of the successive four years (i.e. 1986-87, 87-88, 88-89 and 89-90).

4.7.2. **n-ACH SCALE (ARGYLE & ROBINSON'S QUESTIONNAIRE)**

Fifteen questions are set in the questionnaire. For each question, five probable answers are given. The subject is to mark one answer out of five answers for each of the questions. Each question is designed to measure either the motive to achieve success or the motive to avoid failure of the subjects.

**Rliability and validity of the Test:**

The reliability of the test in Indian context was examined by Sen (1981) and reported the same to be 0.64. Argyle & Robinson conducted a study on a sample of 501 subjects with this test and observed that n-Ach was significantly correlated with the achievement tendencies.
4.7.3. CATTELL'S 16 P.F. QUESTIONNAIRE (FORM-C, 1962)

This questionnaire contain 105 questions out of which 98 questions are set to determine 16 personality factors of each subject and 7 questions give the motivational distortion which are set with a view to minimise error arising out of the subject's wrong notion about self and the dishonesty of the subject in presenting wrong information.

Questions are set in the left side of the questionnaire and probable answers either in the form of 'Yes', 'Sometimes', 'NO' or in the form of 'A' 'B' 'C' are listed in the right side. Each subject is required to mark appropriate answer for each of the 105 questions on the basis of his own ideas.

RELIABILITIES:

Chatterjee (1987) used this test on students of West Bengal and reported the reliabilities (Split-half) of 16 personality factors as follows :-

$\begin{align*}
A &= 0.67 \\
B &= 0.68 \\
C &= 0.58 \\
E &= 0.70 \\
F &= 0.72 \\
G &= 0.68 \\
H &= 0.67 \\
I &= 0.65 \\
L &= 0.60 \\
M &= 0.62 \\
N &= 0.56 \\
O &= 0.70 \\
Q_1 &= 0.60 \\
Q_2 &= 0.62 \\
Q_3 &= 0.65 \\
Q_4 &= 0.67
\end{align*}$

VALIDITIES:

Factor analysis of several items has provided significant validity against the respective factors of 16 P.F.

4.7.4. CHOICE - DILEMMAS INSTRUMENT (KOGAN & WALLACH, 1964)

This is a 12-item questionnaire. Each item involves the selection of either risky or non-risky alternative. Risky alternative yields a better outcome but obtaining of that outcome
is not certain. There is a probability of failure and in such a case non-risky alternative would be profitable. A hypothetical person is faced with the problem of selection of one of the two alternatives. Each subject is required to decide whether to advise the person to select risky or non-risky alternative. If the risky alternative is recommended, he will also have to decide the minimum odds of success that should be demanded before selecting that alternative. The available probabilities in each situation for risky alternative consist of chances 1 in 10, 3 in 10, 5 in 10, 7 in 10 and 9 in 10.

RELIABILITIES AND VALIDITIES OF THE TEST:

Kogan and Wallach (1964) conducted a study on 114 males and 103 females and used the choice-Dilemmas instrument for measuring their risk-taking propensities. They calculated the reliabilities of the test based on odd-even co-efficients stepped up by Soearman - Brown formula and reported the same to be 0.53 for male subjects and 0.62 for female subjects.

4.7.5. STRUCTURED INTERVIEW SCHEDULE:

This is a Schedule of questionnaire encompassing the following areas of enquiry -

1) Enquiries relating to personal aspect like age, religion, Caste, educational qualification etc.

2) Enquiries relating to family background like. Structure of the family, father's occupation, father's income etc.

3) Enquiries relating to the business i.e. type of fish farming, source of capital, production-expenditure, leased water area, leasing problems etc.
4) Information relating to the important factors required to be considered for investment decision in leasing.

4.8. SCORING TECHNIQUE:

4.8.1. CONSTRUCTION AND SCORING OF SUCCESS INDEX SCALE (SIS)

(Data for a sample unit are tabulated alongwith the concomitant calculations to clarify the scoring technique)

STEP - 1:

Required data were collected from each of the 147 enterprises for successive four years (1986-87 to 1989-90) and stipulated six ratios were calculated for each of the four years. Thus, 147 matrices of the order 6 x 4 (Row- 6 ratios; Columns-4 years) were formed.

<table>
<thead>
<tr>
<th>Financial items</th>
<th>1986-87 (Rs.)</th>
<th>1987-88 (Rs.)</th>
<th>1988-89 (Rs.)</th>
<th>1989-90 (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>62,500</td>
<td>70,200</td>
<td>69,300</td>
<td>74,000</td>
</tr>
<tr>
<td>Labour cost</td>
<td>7,310</td>
<td>7,160</td>
<td>7,070</td>
<td>9,870</td>
</tr>
<tr>
<td>Cost of Spawn</td>
<td>13,000</td>
<td>12,220</td>
<td>13,580</td>
<td>8,850</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>42,190</td>
<td>50,820</td>
<td>48,650</td>
<td>55,280</td>
</tr>
<tr>
<td>Lease rent</td>
<td>11,500</td>
<td>11,500</td>
<td>11,500</td>
<td>12,700</td>
</tr>
<tr>
<td>Food expenses</td>
<td>5,300</td>
<td>6,250</td>
<td>8,400</td>
<td>8,820</td>
</tr>
<tr>
<td>Other expenses</td>
<td>3,200</td>
<td>3,100</td>
<td>2,900</td>
<td>3,200</td>
</tr>
<tr>
<td>Net Profit</td>
<td>22,190</td>
<td>29,970</td>
<td>25,850</td>
<td>30,560</td>
</tr>
<tr>
<td>Current Assets</td>
<td>52,000</td>
<td>38,280</td>
<td>41,130</td>
<td>41,790</td>
</tr>
<tr>
<td>Current Liabilities</td>
<td>40,000</td>
<td>25,520</td>
<td>29,380</td>
<td>29,850</td>
</tr>
<tr>
<td>Fixed Assets</td>
<td>4,600</td>
<td>4,400</td>
<td>4,000</td>
<td>3,850</td>
</tr>
</tbody>
</table>
Table - 2

Computation of financial ratios (for the sample unit)

<table>
<thead>
<tr>
<th>Financial ratios</th>
<th>Years</th>
<th>Average value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross profit ratio (GPR)</td>
<td>67.5</td>
<td>72.4</td>
</tr>
<tr>
<td>Operating net Profit ratio (ONPR)</td>
<td>35.5</td>
<td>42.7</td>
</tr>
<tr>
<td>Current ratio (CR)</td>
<td>1.3</td>
<td>1.5</td>
</tr>
<tr>
<td>Labour cost to sales ratio (LCSR)</td>
<td>11.7</td>
<td>10.2</td>
</tr>
<tr>
<td>Fixed Asset Turnover (FAT)</td>
<td>13.6</td>
<td>15.9</td>
</tr>
<tr>
<td>Working capital Turnover (WCT)</td>
<td>5.2</td>
<td>5.5</td>
</tr>
</tbody>
</table>

STEP -2

Average value of each ratio was obtained by averaging the respective ratios for successive four years. Thus, average values of six ratios for each of the 147 enterprises were obtained and a new rectangular matrix of the order 147x6 (Row-147 enterprises; Columns - 6 ratios) with the average values of six ratios was thus formed.

STEP - 3

Mean score and standard deviation of each of the six column matrices were calculated and considered as the industry average and industry standard deviation with respect to each of the particular financial ratios (as shown in table-3).
Table : 3

Industry average and industry standard deviation for each financial ratio

<table>
<thead>
<tr>
<th>Financial ratios</th>
<th>GPR (%)</th>
<th>ONPR (%)</th>
<th>CR (%)</th>
<th>LCSR (%)</th>
<th>FAT (times)</th>
<th>WCT (times)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry average</td>
<td>68.77</td>
<td>38.78</td>
<td>2.02</td>
<td>10.08</td>
<td>18.41</td>
<td>10.21</td>
</tr>
<tr>
<td>Industry standard deviation</td>
<td>7.65</td>
<td>6.89</td>
<td>0.76</td>
<td>3.26</td>
<td>5.03</td>
<td>3.61</td>
</tr>
</tbody>
</table>

STEP - 4

Raw scores of each of the six column matrices were converted into standard scores (considering a standard distribution with mean = 10 and standard deviation = 3) and a new matrix with the standard scores, having the same order (147x6) was thus obtained.

STEP - 5

Each distribution of standard scores (i.e. each of the six column matrices) was cut off on percentile basis. Two successive standard scores corresponding to two successive percentiles indicated the limits of a specific category of performance on a particular ratio dimension and was assigned with a specific weight for evaluating the performance objectively. Five-such weights ranging from 1 to 5 were considered for five specific categories of performance. Procedures for assignment of weights are exhibited in tables 4 and 5.
Table 4
Assignment of weights on a five-point scale

<table>
<thead>
<tr>
<th>Percentiles</th>
<th>Three ratios (GPR, ONPR &amp; FAT)</th>
<th>One ratio (LCSR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above P80</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Above P60 to P80</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Above P40 to P60</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Above P20 to P40</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>P20 and below</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

STEP - 6

A final rectangular matrix of the order 147 x 6 was thus formed with the assigned weights. The sum total of all the weights assigned for six ratios considered for a farm produced a composite score, indicating the overall financial performance of that particular farm (as shown in Table 6 for the sample farm) and considered as success index score for the individual lessee of the respective enterprise.

STEP - 7

The success scores of 147 enterprises formed a new distribution. In this distribution P33.33 and P66.67 percentiles were computed. The lessees with the success scores below P33.33, in between P33.33 to P66.67 and above P66.67 were considered unsuccessful (US), moderately successful (MS) and highly successful (HS) respectively.

1. Assignment of weight was made in the reverse direction as too high values in this particular dimension usually represent inefficiency in appropriating labour cost.
IDENTIFICATION OF HS, MS AND US LESSEES CONSIDERED IN THE STUDY:

147 lessees considered in the study were categorised on the above basis. 49, 50 and 48 lessees were identified as highly successful, moderately successful and unsuccessful respectively.

Table - 5
Assignment of weights on standard scores for current ratio (CR)\(^2\) and working capital turnover (WCT)\(^2\) on a five-point scale.

<table>
<thead>
<tr>
<th>Percentiles</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above (P_{40}) to (P_{60})</td>
<td>5</td>
</tr>
<tr>
<td>Above (P_{60}) to (P_{70}) and above (P_{30}) to (P_{40})</td>
<td>4</td>
</tr>
<tr>
<td>Above (P_{20}) to (P_{30}) and above (P_{70}) to (P_{80})</td>
<td>3</td>
</tr>
<tr>
<td>Above (P_{10}) to (P_{20}) and above (P_{80}) to (P_{90})</td>
<td>2</td>
</tr>
<tr>
<td>(P_{10}) and below and above (P_{90})</td>
<td>1</td>
</tr>
</tbody>
</table>

Table - 6
Determination of success score of the sample unit

<table>
<thead>
<tr>
<th>Standardised value of ratios</th>
<th>GPR</th>
<th>ONPR</th>
<th>CR</th>
<th>LCSR</th>
<th>FAT</th>
<th>WCT</th>
<th>Total (Success score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10.95)</td>
<td>(10.18)</td>
<td>(7.55)</td>
<td>(9.74)</td>
<td>(8.86)</td>
<td>(6.25)</td>
<td>(Success score)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Percentile range</th>
<th>Above (P_{40}) to (P_{60})</th>
<th>Above (P_{40}) to (P_{60})</th>
<th>Above (P_{20}) to (P_{30})</th>
<th>Above (P_{40}) to (P_{60})</th>
<th>Above (P_{20}) to (P_{40})</th>
<th>Above (P_{10}) to (P_{20})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluative score</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

2. Too high and too low values in these dimensions usually reflect conditions of inefficiency and poor management.
4.8.2. SCORING OF n-ACH TEST

Five possible responses were set for each of the 15 items and a 5-point scale 5,4,3,2,1 was considered for the scoring of each specific response. However, reverse score i.e. 1,2,3,4,5 was assigned for item numbers 2,5,8 and 12. The scale, thus constructed, ranged from 15 to 75. The sum total of the assigned score for specific responses of each of the 15 items was considered the strength of achievement motive for each subject.

4.8.3. SCORING OF 16 P.F.

98 items set in the questionnaire were grouped into 16 classes to measure the 16 P.F. While the rest items were considered as one group representing the motivational distortion meant to minimise the possible error. In all classes, except the class formed for measurement of personality factor B, 2 was assigned for the "right" answer, 1 for "intermediate" answer and 0 for "wrong" answer. However, for the items grouped for measurement of P.F.B, I was assigned for "right" answer and 0 for wrong answer. The sum total of the score assigned for each item taken in a specific class was considered as the raw score for that specific personality factor. The recommended correction for "motivational distortion (MD) allowances" (i.e. subtraction of 1 raw score point from H [Parmia] and addition of 1 to Q2 [self-sufficiency] when MD [raw score] 12) was made in the present study.
4.8.4. **SCORING OF CHOICE-DILEMMAS TEST:**

It has been discussed earlier that the probabilities of success of the risky alternatives for each of the items set in the questionnaire are 1 in 10, 3 in 10, 5 in 10, 7 in 10 and 9 in 10. The corresponding scale values of 1,3,5,7, and 9 were considered for the respective probability of success of the risky alternatives.

In order to maintain the equal interval nature of the scale, selection of the non-risky alternative was scored as 11. The sum total of the score assigned for 12 items was considered as the value of risk for each subject. The scale was so constructed that higher score used to imply greater conservatism and vice-versa.

4.9. **STATISTICAL MEASURES :**

In the present study, the following statistical techniques were used -

a) Analysis of variance - one way analysis - F test

   (Iman & Conover, 1983).

b) 't' test - Fisher's t-statistic (Garrett & Woodworth, 1973).

c) The chi-square test (Garrett & Woodworth, 1973)


4.10. **GENERAL PROCEDURE IN BRIEF :**

1. A pilot study was conducted to get primary information from the fish farmers engaged in inland fish farming.

2. On the basis of such study, structured interview schedule and information schedule relating to financial items were prepared.
3. Fish farmers were approached personally and data were collected by self-administration of the questionnaire and interview schedule from the fish farmers.

4. Necessary steps were taken to ensure ideal test conditions and a pre-session with the lessees was given much emphasis in order to establish rapport.

5. Financial data were collected for each of the fish farms considered in the study.

6. All tests were administered sequentially as follows: -
   (a) 16 P.F.
   (b) n-Ach test
   (c) Choice-dilemmas instrument
   (d) Structured interview schedule

7. Success index scale was constructed by assigning specific weights on different standardised financial ratios.

8. On the basis of the success index scale fish farmers were categorised into three groups - highly successful, moderately successful and unsuccessful.

9. Each subject's responses on each test were scored on the basis of scoring manuals and techniques.

10. Data were tabulated, statistically treated and interpreted.