CHAPTER III

METHODOLOGY
"Technique is to research what method is to teaching
or in a sense what logic is to thinking."

- R. Rusk
CHAPTER III
METHODOLOGY

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CHAPTER III
METHODOLOGY

3.1. INTRODUCTION

Research has proved to be an essential and powerful tool in leading man towards progress. Without systematic research, and its application, there would have been very little progress.

"The secret of our cultural development has been research, pushing back the areas of ignorance by discovering new truths, which in turn leads to better ways of doing things and results in better products."¹

The goal of all research is progress and good life. It is one of the most valuable services rendered towards mankind. It enhances the efficiency of all the agencies engaged in the welfare and the uplift of man.

"Man's desire to know about his world has led him from primitive superstition to modern scientific knowledge. From unsystematic observations, he has developed the method of deductive - inductive thinking which has become the foundation of scientific method."²

Research is an honest, exhaustive, intelligent searching for facts and their meanings or implications, with reference to a given problem. It is the process of arriving at dependable solutions to problems through the planned and systematic collection, analysis and interpretation of data. The best research is that which is reliable, verifiable and exhaustive, so that it provides information in which we have confidence.

Since the right of every individual to full development through education has been recognized everywhere, every country is aiming at providing universal education to its people, in the shortest possible time. As a result, a number of new educational problems, never imagined hitherto, have arisen and many old problems, in various educational fields have become more complicated and acute. For a successful solution of the problems and for full realization of the educational aims set up during the present times, it is realized that research work, adequate both in quantity and quality should be carried out by properly trained research workers.

In the words of Principal Lahiri, "Research economises effort, prevents wastage, increases efficiency and reacts to vitalize and dignify the work of the teacher." ³ Undoubtedly, significant educational research must, by its very nature,

³L.LAHIRI, "Research experiments in Education in India", Educational India, Vol.XXV, No:5, 1957, p.150.
develop a faith in the new methods resulting in improving the educational practices, it must provide a vision for a better future and promote policies and plans that shall lead to progress.

3.2. METHOD SELECTED FOR THE STUDY

"No category of educational research is more widely used than the type known variously as the survey, the normative survey, status and descriptive research. This broad classification comprises a variety of specific techniques and procedures, all similar from the standpoint of purpose: that is, to establish the status of the phenomenon under investigation."

The investigator has selected the survey method, for it serves the following purposes:

- It gathers data from a relatively large number of cases at a particular time. It is not concerned with characteristics of individual as individuals. It is concerned with generalized statistics that result when data are abstracted from a number of individual cases.
- It is essentially cross-sectional.
- It secures evidence concerning an existing situation or current condition.

- It identifies standards or norms with which to compare present conditions, in order to plan the next step.
- It determines how to make the next step (having determined where we are and where we wish to go).

3.2.1. NORMATIVE SURVEY RESEARCH

Survey Research may be variously classified on the basis of the fields they study, the purposes they achieve, the geographical areas they cover, or the techniques they employ. According to the field of study, we come across Social Surveys, Commercial Surveys, Community Surveys and Educational Surveys.

The investigator is concerned here with the Educational Survey Research.

3.3. SELECTION AND PREPARATION OF THE TOOL FOR THE STUDY

Factual material or data unknown are essential in every study. They can be obtained by many sources, direct or indirect. It is necessary to adopt systematic procedure to collect essential data. Relevant data, adequate in quantity and quality, should be collected. They should be efficient, reliable and valid.

For collecting unknown data required for the study of any problem, one may use various devices. The instruments thus employed as means, are called 'Tools'. The selection of appropriate tools, is of vital importance for successful research. Different tools are suitable for collecting various kinds of
information for various purposes. It is of vital importance for successful research worker to be familiar with the types of tools available and he should also attempt to learn how to construct and use them effectively.

So, before selecting a tool for the study, the investigator has to see whether the selected tool possesses all the characteristics of a good tool.

Fully aware of the fact that as the tools in the carpenter's box, each research tool is appropriate in a given situation to accomplish a particular purpose, the investigator has chosen the following five Tools. Among the five Tools, Tools 1 is meant for the two senior Teachers of the Higher Secondary Schools and Tools 2, 3, 4 and 5 are for the Heads of the Institutions.

3.4. TOOLS USED FOR THE STUDY

Tool 1 Organisational Climate Description Questionnaire, Baroda Version Form I Section I.

Tool 2 Kundu Introversion Extraversion Inventory by Dr. Ramnath Kundu.

Tool 3 Sixteen Personality Factors Questionnaire by Raymond B Cattell and Herbert W. Eber.

Tool 4 Mukhopadhyay's Change Proneness Inventory by Dr. M. Mukhopadhyay.
Tool 5 Modern Management Technique Questionnaire, validated by Dr. Mrs. Vasantha, Karnataka University, and adapted by the Investigator.

3.5. QUESTIONNAIRE

A questionnaire is used when factual information is desired from the respondents. The word questionnaire refers to a device for securing answers to questions by using a form which the respondent fills in himself. A questionnaire has great potentialities when it is properly used. It can cover a large group at a time. It is an economical way of accumulating information of significance to educators. Once it has been constructed skillfully the investigator may ask anybody to administer it, on his behalf. It places less pressure on the subject for immediate response. He can answer it at leisure, whereas interview and observation demand specific fixation of time and situation. Moreover this is a written record which adds to the validity of the responses. Keeping in mind the requisites of an ideal questionnaire, the investigator has selected the questionnaire as the main tool for her study.

The first main questionnaire is prepared to collect the background factors regarding the Heads and about the Institution. They are as follows:
PART 1 REGARDING THE HEADS

(A) Name.
(B) Age.
(C) Sex.
(D) Qualification.
(E) Experience.

PART II REGARDING THE INSTITUTION

(A) Name of the institution.
(B) Percentage of the Results in Std.XII, for five years duration.
(C) Place (Revenue District).
(D) Locality (Rural/Urban).
(E) Type of Management (Government, Municipal/Corporation, Private - Aided/Unaided).
(F) Nature of the Institution (Boys/Girls/Mixed).

3.6. DESCRIPTION, ADMINISTRATION AND SCORING OF THE TOOLS

3.6.1. TOOL 1 Organisational Climate Description Questionnaire
Baroda Version Form I Section 1.

(Ref. Appendix 10, p. 475)

This tool is administered to two senior teachers of each of the institutions, to find out the prevailing climate in the institutions. This particular tool consists of 115 Likert
type of items distributed over 12 dimensions. The respondents were asked to indicate the extent to which each statement characterises his school. The scale, against which the respondents indicated the extent to which each statement characterised their schools were defined by five categories.

1. Strongly disagree.
2. Disagree.
3. Indifferent.
4. Agree.
5. Strongly agree.

For scoring these five categories of responses five successive integers namely, 1, 2, 3, 4 and 5 were assigned respectively. Thus the maximum score possible for a respondent is $115 \times 5 = 575$. The responses for a positive statement will be accorded as they are listed above. The choices (responses) to negative statements will be scored using a reversed scale. The scores that are obtained for each school will be in raw data form.

Items, which compose each of the twelve corresponding subjects, are as follows:

<table>
<thead>
<tr>
<th>SUBJECTS</th>
<th>ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers'</td>
<td>1. Disengagement</td>
</tr>
<tr>
<td></td>
<td>16, 33, 55, 64, 75, 76, 78, 80, 86,</td>
</tr>
<tr>
<td>Behaviour</td>
<td>2. Hindrance</td>
</tr>
<tr>
<td></td>
<td>10, 28, 36, 49, 66, 79, 88, 114 (6)</td>
</tr>
</tbody>
</table>
3. Esprit 2, 17, 22, 35, 39, 63, 81, 91, 98, 104 (10)
4. Intimacy 7, 21, 36, 43, 52, 93, 106, 111 (8)

Principals' Behaviour
5. Aloofness 8, 51, 59, 61, 67, 89, 97, 103 (8)

7. Thrust 6, 14, 24, 34, 41, 48, 56, 83, 110, 112 (10)
8. Consideration 1, 13, 30, 46, 53, 57, 65, 70, 72, 77, 95, 113 (12)

Administrative order
9. Non graded order 4, 9, 19, 29, 42, 50, 82, 93, 100 (9)

Behaviour
11. Human Relations 11, 26, 27, 37, 44, 45, 47, 62, 73, 84, 90, 101 (12)
12. Autonomy 5, 12, 58, 60, 66, 71, 96, 99, 87, 102, 109 (10)

The above 12 dimensions are described below. The first four dimensions are referred to the characteristics of the Teachers as a group, the second four dimensions to the characteristics of the Principals as a group and the third four dimensions to the administrative behaviour.
3.6.1.1. DESCRIPTION OF DIMENSIONS

3.6.1.1.1. TEACHERS' BEHAVIOUR SUB-TESTS

1. DISENGAGEMENT

It refers to the teachers' tendency to be 'not with it'. This dimension described a group which was 'going through the motions', a group that was 'not in gear' with respect to the task at hand. In short, this sub-test focused upon the teachers' behaviour in a task-oriented situation.

2. HINDRANCE

It refers to the feeling among the members that the Principal burdened them with routine duties, management demands, and other administration requirements, which they consider as unnecessary. At the same time, they perceived the Principal as highly dictatorial in his behaviour. He was not adjusted to feedback from the staff. His style of communication tended to be unindividual.

3. ESPRIT

It refers to morale. The teachers felt that their social needs were being satisfied and they were, at the same time, enjoying a sense of accomplishment in their job.

4. INTIMACY

It refers to the teachers' enjoyment of friendly social relations with each other. This dimension described the social needs satisfaction which was not necessarily associated
with task accomplishment.

3.6.1.1.2. PRINCIPALS BEHAVIOUR DIMENSIONS

5. ALOOFNESS

This refers to the behaviour pattern of the Principal, which is characterised as highly formal and impersonal. It reveals the degree to which the Principal 'goes by the book' and adheres to policies, rather than dealing with the teachers in an informal face to face situation. He does not encourage employees to get close to one another, because the Principal is afraid that this clique formation might endanger his authority. The Principal considers that he knows what is to be done.

6. PRODUCTION EMPHASIS

It refers to the behaviour of the Principal which is characterised by close supervision of the staff. He is highly directive and plays the role of a 'straw boss'. His communication tends to go in only one direction and he is not sensitive to feedback from the staff.

7. THRUST

It refers to the behaviour of the Principal which is marked by his attempts to motivate the teachers through personal example. He does not ask the teachers to give of themselves any more than they willingly give of themselves. The behaviour of the Principal, though unmistakably task-oriented is at the same time characterised by an inclination
to treat the teachers humanly and tender heartedly. He attempts to do something extra for them in humanistic terms and consequently, his behaviour is viewed favourably by the teachers.

8. CONSIDERATION

It refers to the Principal's behaviour. The Open Climate is characterised by exchange of warmth, sympathy and concern among group members. This factor helps to strengthen group cohesion and minimise interpersonal conflict. The Principal realises that human resources are the most precious among all the resources, and they have needs and feelings, likes and dislikes and they can think for themselves. So the Principal treats people as human beings, helps them to meet their needs, as they contribute to the achievement of organisational goals, that places their full personal growth alongside the objectives of the organisation.

3.6.1.3. ADMINISTRATIVE BEHAVIOUR DIMENSIONS

9. NON GRADED ORDER

This is characterised by conspicuously friendly behaviour of both the Principal and the teachers. The teachers establish personal friendship among themselves and socially everyone is part of the large, happy family. Social needs satisfaction is extremely high. The Principal exercises leadership in an indirect manner and tries to keep the production
satisfactory. His behaviour is job oriented. That does not hinder the social needs and satisfaction of the teachers.

10. HUMAN RELATIONS

These skills are unquestionably a part of the administrator's behaviour and generally refer to one's ability to maintain constructive social relationships with fellow beings. Such skills are forged throughout life and are a function of one's values, understanding and experience. The success of an administrator is dependent in large part upon the human relationships.

11. FEED BACK

This refers to the behaviour of the administrators. The administrator gives the subordinates more feedback about their performance such as more reaction, more appreciation and even more concrete criticism, all of which help to communicate what is specifically needed for improvement.

12. AUTONOMY

This refers to an environment in which the teachers enjoy friendly relationship and a high degree of group morale. They satisfy their social needs to a great extent, and enjoy a degree of job accomplishment.
3.5.1.2. FEW SAMPLE ITEMS FROM EACH SUB-TEST

3.5.1.2.1. (a) TEACHERS’ BEHAVIOUR

1 DISENGAGEMENT
i) "More work, only if more pay" is what the teachers say in private.

ii) Teachers keep to themselves.

iii) Teaching in this school means, teachers just go and come out of the class.

2 HINDRANCE
i) Teachers, while teaching, are called into the Principal’s office, through peons.

ii) A lot of time is wasted in staff meetings.

iii) Many extra curricular activities interfere with teaching work in this school.

3 INTIMACY
i) Group work is favoured by the teachers of this school.

ii) Teachers praise their colleagues for their achievement.

iii) The school work of a sick teacher is readily shared by other teachers in the school.

4 ESPRIT
i) Teachers are happy with recreational facilities provided to them.

ii) Teachers manifest a positive attitude towards the work.

iii) Teachers are interested in private tuitions only.
3.6.1.2.2. PRINCIPALS' BEHAVIOUR:

5 ALOOFNESS

i) The Principal of the school orders rather than directs teachers.

ii) The Principal is proud of his objectivity and impersonal behaviour.

iii) The Principal keeps teachers at a distance.

6. PRODUCTION EMPHASIS

i) Supervisory work of the Principal keeps teachers alert.

ii) The Principal is vigilant that school work is completed by the staff.

iii) Easy-going teachers have a hard time in this school.

7. THRUST

i) The Principal helps teachers in their school work.

ii) The Principal explains when he differs from the teachers.

iii) The Principal's behaviour is conducive to better work.

8. CONSIDERATION

i) The Principal tries his best to make the work in the school enjoyable for the teachers.

ii) The Principal's behaviour is characterised by affection, sympathy and understanding.

iii) The Principal is a man of confidence to the teachers.
3.6.1.2.3. ADMINISTRATIVE BEHAVIOUR

9 NON-GRADED ORDER

i) Teachers are cogs in the organisational machine of this school.

ii) Co-ordination of the school activities is done through staff meetings.

iii) All the staff members shoulder responsibility in regard to one or the other activity of the school.

10 HUMAN RELATIONS

i) The Principal inquires about the well being of the family of the teachers when he meets them.

ii) Friendly and kindly guidance is the motto of the staff of the school.

iii) The atmosphere of the school is smooth and inspiring.

11 FEED BACK

i) Staff meetings serve as a communicative device.

ii) The school community is happy about its two way flow of communication among teachers and administrator.

iii) Teachers and students have free communication with the Principal.

12 AUTONOMY

i) The Principal is in the habit of taking all important decisions without consulting anyone.
ii) The Principal dislikes teachers who argue or differ from him.

iii) The management is willing to make changes when suggested by the staff.

3.6.1.3. THE IDENTIFICATION OF THE THREE ORGANISATIONAL CLIMATES

The following procedure was devised and adopted by the investigator to classify the sampled school climate.

After scoring each item of each respondent, of each subtest, score was computed by summing up the item scores, subtest by subtest and dividing each of the twelve sums, by the number of the items in the corresponding subtest. To construct the school profile, a school mean subtest score for each of the twelve score subtests was computed. These scores define the average response of teachers for each respective subtest. Hence the profile of scores shows how most of the teachers in a school characterise the organisational climate of their particular school. Specifically, the scores indicate how often a certain type of behaviour 'occurs' among the teachers and with the Principal.

Then the schools were classified on the basis of organisational climate. The three climates were ranked in respect to openness versus closedness and using the content of the items of the subtest. The behaviour which characterised
the Principal and the teachers in each climate can be described as follows:

3.6.1.3. OPEN CLIMATE

- High Esprit
- Low Disengagement.
- Low Hindrance.
- Average Intimacy.
- Average Aloofness.
- High Consideration.
- Low Production Emphasis.
- High Thrust.
- High Non-graded Order.
- High Human Relations.
- High Feedback
- Average Autonomy.

3.6.1.3.1. BEHAVIOUR DESCRIPTION

The open climate depicts a situation where the group members enjoy friendly relations with each other, work well together, have a high sense of duty, obtain considerable job satisfaction, as there is no hindrance from the Principal, rather the Principal's policies facilitate the accomplishment of their tasks. They are proud to belong to that school.

The Principal is genuine in his behaviour, he sets an example by working hard himself, he is flexible in his attitude,
controls and directs when necessary, is also considerate and goes out of the way to help people on occasion; he provides leadership, allows leadership acts to emerge from the teachers as well. In short this climate is characterised by authenticity of behaviour among all participants.

3.6.1.3.2. THE CLOSED CLIMATE

High Disengagement.
High Hindrance.
Average Intimacy.
Low Thrust.
High Aloofness.
High Production Emphasis.
Low Consideration
Low Esprit.
Low Non-Graded Order.
Low Human Relations.
Low Feedback and
Low Autonomy.

3.6.1.3.2.1. BEHAVIOUR DESCRIPTION:

This climate is characterised by a high degree of apathy on the part of all members of the organization. The teachers do not work well together, there is very little job satisfaction or social needs satisfaction as the Principal is ineffective in directing their activities, nor does he show any
interest in their relationship, and over simplifies the factors.

Halpin says that a Closed Climate can occur without evil or malice on anybody's part, and that it can result from a combination of fortuitous events, over which the members of a particular school have little or no control. He advises that the term as 'open' and 'closed' should be used with great temperance, forbearance and with kindness.

"The recognition how exceedingly difficult it is to change an organizational climate, permits us to use such terms as 'open' and 'closed' with great temperance... We use them with no intent to either praise or down the climate of a particular school. Obviously we believe that a closed climate is undesirable, that it is crippling for both the faculty and the students. Yet we prefer to view a closed climate as unhealthy or sick—not as evil." 5

3.6.1.3.3. INTERMEDIATE CLIMATE

This climate comes in between open and closed climate. This is neither open nor closed climate. The twelve sub-tests referred to, under the two extreme climates are more or less in an interim position.

5. HALPIN, A.W., "The Organizational Climate of Schools." A Paper read at a meeting of the Campus of the Ohio State University, spring, 1954. p. 1370.
3.6.2. TOOL 2 KUNDU'S INTROVERSION - EXTRAVERSION INVENTORY

Dr. Ramnath Kundu, Calcutta University. (Ref. Appendix 1 [b] p.478).

3.6.2.1. DESCRIPTION

The purpose of the inventory is to obtain a reliable measure of Introversion - Extraversion Dimension of adult behaviour. The inventory consists of 70 items, with uneven number of response choices divided into 5 Blocks. The number of item choices are shown in Table 3.

TABLE 3

<table>
<thead>
<tr>
<th>BLOCK</th>
<th>ITEMS</th>
<th>RESPONSE CHOICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>11</td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>D</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>E</td>
<td>14</td>
<td>2</td>
</tr>
</tbody>
</table>

In order to minimise faking effect and also to reduce the nature and number of slanted responses, non-aggressive types of items have been included in the inventory. The mode of response in each block is different and directions for indicating answers for different blocks are given in a test booklet. With a view to checking the subjects who have a tendency to
respond to the middle most category, from a pattern of systematic presentation, the arrangement of the response choices from 1 to 5, 1 to 4, or 1 to 3 is not made according to the increasing or decreasing degree of extraversion.

3.6.2.2. A FEW EXAMPLES OF EACH BLOCK IS GIVEN BELOW ALONG WITH THE DIRECTIONS.

3.6.2.2.1. BLOCK:A

This consists of 11 items, for each item 4 possible answers are given. The respondent has to choose only one answer among the 4 answers, so that it suits best in his case. The respondent must pick out the number of the chosen answer and put a tick (√) mark in the appropriate box of the answer sheet against the corresponding question number.

EXAMPLE

1. Which one of the following four jobs would you like best as your profession?
   1. Laboratory Research Worker.
   2. Political Leader.
   3. Military Officer.
   4. Officer in a Factory or Office.

2. Which one of the following four types of pictures (cinemas) do you enjoy most?
   1. Picture of a battle.
2. Picture of a comedy.
3. Picture of a grim tragedy.
4. Picture of a natural devastation.

This consists of 17 items, the respondent must put a tick (✓) mark in the proper box of the answer sheet against the corresponding item number, in the following manner:

If you like the activity to a great extent, put a tick (✓) in the box 1.
If you dislike the activity to a great extent, put a tick (✓) in the box 2.
If you like the activity to some extent, put a tick (✓) in the box 3.
If you dislike the activity to some extent, put a tick (✓) in the box 4.
If you are more or less indifferent towards the activity put a tick (✓) in the box 5.

EXAMPLE

1. Always thinking about yourself.
2. To be cautious while making decisions.
3. To have always a planned life.

This Block consists of 14 items. There are questions for which the respondents must give their preference over one
of the two types of activities given therein. For each of these items, the respondent must put a tick (✓) in the proper box of the answer sheet against the corresponding item number in the following manner:

If you agree with the preference given, put a tick (✓) in the box 1.

If you disagree with the preference given, put a tick (✓) in the box 2.

If you do not have any positive preference for either of the activities, put a tick (✓) in the box 3.

**EXAMPLE**

1. While doing a work, do you pay more attention to details than to important aspects?
2. Do you prefer more to work alone than in groups?
3. Do you find more interest in spending time with books than with people?
4. Do you want to derive knowledge more through books than through practical experience?

**BLOCK D**

This Block consists of 14 items. Each statement represents some of our feelings or activities. On the answer sheet, against the corresponding item number for these items, the respondent must put a tick (✓) in the appropriate box.
box in the following manner.

If it is true for you in most of the cases, put a tick (✓) in the box 1.

If it is not true for you in most of the cases, put a tick (✓) in the box 2.

If it is true for you in some of the cases, put a tick (✓) in the box 3.

EXAMPLE

1. Checking and rechecking of letter before mailing.
2. Sitting alone for a long time without being tired.
3. Concealing your activities from others.
4. Feeling disturbed to a great extent after doing something wrong.

3.6.2.2.5. BLOCK E

This Block consists of 14 items. The respondents will find questions on some of their activities. The respondents must read carefully and put a tick (✓) against the corresponding item number, in the following manner.

If it is applicable in your case, put a tick (✓) in the box marked 'Y'.

If it is not applicable in your case, put a tick (✓) in the box marked 'N'.

EXAMPLE
EXAMPLE

1. Are you always conscientious in your activities?
2. Can you tolerate slight abnormality in health?
3. Can you work better when you get incentive through others' praise?
4. Do you dislike to write about yourself even to very close friends?

3.6.2.3. ADMINISTRATION

The inventory is self-administering in nature. No time limit is to be imposed. Accuracy of the results depends on the truthfulness of answers and thorough the co-operation of the subjects. The scoring key is prepared on the basis of judgement given by the psychiatrists, psychoanalysts and psychologists.

The general order of scoring is such that high score indicates introversion. But some of the items have been framed in such a way that negative response in these items would indicate extraversion. Classification of items from this point of view is shown in Table 4.
Classification of items as Positive or Negative indicating Introversion.

TABLE 4

<table>
<thead>
<tr>
<th>Negative answers</th>
<th>Positive answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block Number of Items</td>
<td>Number of Items</td>
</tr>
<tr>
<td>A</td>
<td>1, 4, 6, 10 and 11</td>
</tr>
<tr>
<td>B</td>
<td>12, 13, 15, 17, 18, 21, 22</td>
</tr>
<tr>
<td>C</td>
<td>24, 25, 26 and 28</td>
</tr>
<tr>
<td>D</td>
<td>36, 41 and 42</td>
</tr>
<tr>
<td>E</td>
<td>43, 44, 45, 46, 49, 50, 51</td>
</tr>
<tr>
<td></td>
<td>52, 53, 54 and 56</td>
</tr>
<tr>
<td></td>
<td>68 and 69</td>
</tr>
<tr>
<td></td>
<td>58, 63, 66 and 70</td>
</tr>
</tbody>
</table>

The different categories of responses are given different weights depending upon the degree of Introversion they measure.

3.6.2.3.2 GENERAL MODE OF SCORING

The general mode of scoring is presented. That shows the order of response and order of score for positive responses to Introversion and Extraversion. This is presented in Table 5.
TABLE 5

Statements indicating positive responses.

<table>
<thead>
<tr>
<th></th>
<th>Introversion</th>
<th>Extraversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order of Block Response</td>
<td>Order of Score</td>
<td>Order of Order of response</td>
</tr>
<tr>
<td>A 1-2-3-4</td>
<td>4-3-2-1</td>
<td>4-3-2-1</td>
</tr>
<tr>
<td>B 1-3-5-4-2</td>
<td>5-4-3-2-1</td>
<td>2-4-5-3-1</td>
</tr>
<tr>
<td>C 1-3-2</td>
<td>3-2-1</td>
<td>2-3-1</td>
</tr>
<tr>
<td>D 1-3-2</td>
<td>3-2-1</td>
<td>2-3-1</td>
</tr>
<tr>
<td>E Yes-No</td>
<td>2-1</td>
<td>No-Yes</td>
</tr>
</tbody>
</table>

3.6.2.4. SCORING

The scoring procedure is simple and is summarised in the following steps. No scoring key is necessary as the design of the answer sheet has been made with a view to facilitate quick scoring without consulting any key or using any stencil.

1. Count the tick (✓) marks in each row in each block and enter the figure under the column T against the respective rows:

   2. Multiply these totals (Ts) in the following order:

   First Row Total × 1
   Second Row Total × 2
   BLOCK A Third Row Total × 3
3. Enter all the products under the column S against the respective rows.

4. Find S in each block to obtain the block score and together all the block scores to obtain total Introversion - Extraversion Score.

5. If block scores are not required, all the entries in the column S may be added together to get the total Introversion - Extraversion at a time.

6. Find out the value of C from the Table 5 of the manual and, for a ready reference, the position of the individual tested may be recorded in the scale given at the bottom of the answer sheet and marked as C.
7. Check: Since none of the items are to be omitted in this inventory, a check may be done for omission and wrong counting by adding Ts in different blocks separately. T in each block should be as follows:

- T in Block A = 11
- T in Block B = 17
- T in Block C = 14
- T in Block D = 14
- T in Block E = 14

3.6.3. TOOL 3 SIXTEEN PERSONALITY FACTOR QUESTIONNAIRE, by Raymond B. Cattell. (Ref. Appendix.106, p.486)

The Sixteen Personality Factor Questionnaire is an objective scorable test devised by basic research in Psychology to give the most complete coverage of personality possible in a brief time. This questionnaire was prepared by Cattell, R. B. and Herbert W. Eber. The complete coverage is ensured by the sixteen functionally independent and psychologically meaningful dimensions, isolated and replicated by more than 30 years of factor analytic research on normal and clinical groups. The sixteen factors are given technical terms as A, B, C, E, F, G, H, I, L, M, N, O, Q1, Q2, Q3, and Q4. In addition to the sixteen primary factors,
The test can be used as a measure of eight secondary dimensions, which are scorable from the component primary factors of the eight dimensions; the first four, which will generally be of most interest to practitioners are (i) Anxiety, (ii) Extraversion, (iii) Poise and (iv) Independence.

3.6.3.1. BRIEF DESCRIPTION OF THE 16 PERSONALITY FACTORS

FACTOR A

RESERVED vs OUTGOING

The persons who score low on Factor A tend to be stiff, cool, skeptical, and aloof. They like things rather than people working alone, and avoiding compromises of viewpoints. They are likely to be precise and 'rigid' in his way of doing things and in personal standards, and in many occupations these are desirable traits. They may tend at all times to be critical, obstructive, or hard.

The persons who score high on Factor A tend to be good natured, easy-going, emotionally expressive (hence naturally affectothymia) ready to cooperate, attentive to people, soft hearted, kindly adaptable. They like occupations dealing with people and socially impressive situations. They readily forms active groups. They are generous in personal relations, less afraid of criticism, better able to remember names of people.
FACTOR B

LESS INTELLIGENT

Less Intelligent persons tend to be slow to learn and grasp, dull, given to concrete and literal interpretation.

MORE INTELLIGENT

More Intelligent persons tend to be quick to grasp ideas, a fast learner, intelligent.

There is some correlation with level of culture, and some with alertness.

FACTOR C

EMOTIONALLY LESS STABLE vs EMOTIONALLY STABLE

(Lower Ego Strength) vs (Higher Ego Strength)

People under this category tend to be low in frustration, tolerance for unsatisfactory conditions, changeable and plastic, evading necessary reality demands, neurotically fatigue, fretful, easily emotional and annoyed, active in dissatisfaction, having neurotic symptoms phobias, sleep disturbances, psycho-somatic complaints etc.

People of this kind tend to be emotionally mature, stable realistic about life, unruffled, possessing ego strength, better able to maintain solid group morale.

FACTOR E

HUMBLE vs ASSERTIVE

Persons under this factor

Persons under this factor
tend to give way to others to be docile, and to conform. They are often dependent, confessing, anxious for obsessional correctness. This passivity is part of many neurotic syndromes.

**FACTOR F**

**SOBER vs HAPPY-GO-LUCKY**

The persons of this category tend to be restrained, reticent, introspective. They are sometimes dour, pessimistic, unduly deliberate, and considered smug and primly correct to be sober, dependable persons.

The persons of this category tend to be cheerful, active, talkative, frank, expressive, effervescent, carefree. They are frequently chosen as elected leaders. They may be impulsive and mercurial.

**FACTOR G**

**EXPEDIENT vs CONSCIENTIOUS**

*(Weaker superego strength)*

Persons having this trait tend to be unsteady in purpose. They are often casual and lacking in effort for group undertakings and cultural demands. Their freedom from group influence may lead to antisocial acts, but at times

*(Stronger superego strength)*

Persons having this trait tend to be exacting in character, dominated by a sense of duty, persevering, responsible, planful, 'fills the unforgiving minute'. They are usually conscientious and moralistic and they prefer hard working people to witty
make them more effective, while their refusal to be bound by rules, causes them to have less somatic upsets from stress.

FACTOR H

SHY vs VENTURESOME

The persons of this category tend to be shy, withdrawing, cautious, retiring, 'wall flowers'. They usually have inferiority feelings. They tend to be slow in expressing themselves, dislike occupations with personal contacts, prefer one or two close friends to large groups and are not given to keeping in contact with all that is going on around them.

The persons of this category are sociable, bold, ready to try new things, spontaneous, and abundant in emotional response. Their 'thickskinnedness' enable them to face wear and tear in dealing with people and grueling emotional situations, without fatigue. However, they can be careless of detail, ignore danger signals, and consume much time talking. They tend to be 'pushy' and actively interested in the opposite sex.

FACTOR I

TOUGH-MINDED vs TENDER-MINDED

People under this category tend to be practical, realistic masculine, independent, responsible but skeptical of subjective

People under this category tend to be tender-minded, daydreaming, artistic, fastidious, feminine. They are sometimes
cultural elaborations. They are sometimes unmoved, hard, cynical, smug. They tend to keep a group operating on a practical and realistic 'no-nonsense' basis.

**FACTOR L**

**TRUSTING vs SUSPICIOUS**

Persons under this factor tend to be free of jealous tendencies, adaptable, cheerful uncompetitive, concerned about other people, good team workers. Persons under this factor tend to be mistrusting and doubtful. They are often involved in their own ego, are self-opinionated and interested in internal, mental life. They are usually deliberate in their actions, unconcerned about other people, poor team members.

**FACTOR M**

**PRACTICAL vs IMAGINATIVE**

The persons of this category tend to be anxious to do the right things, attentive to practical matters and subject to the direction of what is obviously possible. They are demanding of attention and help, impatient, impractical. They dislike crude people and rough occupations. They tend to slow up group performance, and to upset group morale by unrealistic business.

The persons of this category tend to be unconventional, unconcerned over everyday matters, bohemian, selfmotivated, imaginatively creative, concerned with 'essentials' and obvious of
concerned over detail, able to keep their head in emergencies but sometimes unimaginative.

particular people and physical realities. Their inner-directed interests sometimes lead to unrealistic situations accompanied by expressive outbursts. Their individuality tends to cause them to be rejected in group activities.

FACTOR N

FORTHRIGHT vs SHREWD

Persons having this trait tend to be unsophisticated, sentimental and simple. They are sometimes crude and awkward, but easily pleased and content with what comes, and natural and spontaneous.

Persons having this trait tend to be polished, experienced worldly, shrewd. They are often hardheaded and analytical. They have an intellectual, unsentimental approach to situations, an approach akin to cynicism.

FACTOR O

SELF ASSURED vs APPREHENSIVE

Persons under this factor tend to be placid, with unshakable nerve. They have mature, unanxious confidence in themselves and their capacity to deal with things. They are resilient and secure, but to

Persons under this factor tend to be depressed, moody, worriers full of foreboding, and brooding. They have a childlike tendency to anxiety in difficulties. They do not feel accepted in groups or free to
the point of being insensitive participate. High Factor 0 score of when a group is not going along with them, so that they may evoke antipathies and distrust.

FACTOR Q1

CONSERVATIVE vs EXPERIMENTING

People under this category are confident in what they have been taught to believe, and accept the 'tried and true'. Despite inconsistencies, when something else might be better, they are cautious and comprehending in regard to new ideas. Thus, they tend to oppose and postpone change, are inclined to go along with tradition, are more conservative in religion and politics and tend not to be interested in analytical 'intellectual' thought.

FACTOR Q2

GROUP-DEPENDENT vs SELF-SUFFICIENT

Persons having this trait prefer to work and make decisions with other people's likes are temperamentally independent. Accustomed to going their own
and depend on social approval and admiration. They tend to go along with the group and may be lacking in individual resolution. They are not necessarily gregarious by choice; rather they need group support.

way, making decisions and taking action on their own. They discount public opinion, but are not necessarily dominant in their relations with others. They do not dislike people but simply do not need their agreement or support.

**FACTOR Q3**

**UNDISCIPLINED SELF-CONFLICT vs CONTROLLED**

The persons of this category will not be bothered with will control and regard for social demands. They are not overly considerate, careful or painstaking. They may feel maladjusted, and many maladjustments show Q3.

The persons of this category tend to have strong control of their demands, emotions and general behaviour, are inclined to be socially aware and careful, and evidence what is commonly termed self-respect and regard for social reputation. They sometimes tend however, to be obstinate. Effective leaders, and some paranoids, are high on Q3.

**FACTOR Q4**

**RELAXED vs TENSED**

The persons of this category tend to be sedate, The persons of this category tend to be tense
relaxed, composed, and satisfied. In some situations, over satisfaction can lead to laziness and low performance, in the sense that low motivation produces little trial and error. Conversely, high tension level may disrupt school and work performance.

excitable, restless, fretful, impatient. They are often fatigued, but unable to remain inactive. In groups they take a poor view of the degree of unity, orderliness, and leadership. Their frustration represents an excess of stimulated, but undischarged, drive.
3.6.3.2. ARRANGEMENT OF QUESTIONS:

The two forms 'A' and 'B' consist of 189 items. Ten to thirteen items are provided for each factor. The questions are arranged in a cyclic order, determined by a plan to give maximum convenience in scoring by stencil and to ensure variety and interest in the examinee.

3.6.3.3. FUNCTIONAL EFFICIENCY

Functional efficiency was determined by following the usual statistical methods for finding out the Reliability and Validity of the tool. The data concerning the findings are given in the appendix (Ref. appendix 163, p. 430).

3.6.3.4. SAMPLE ITEMS FOR EACH FACTOR.

FACTOR A

1. With the same hours and pay, it would be more interesting to be:
   a) a carpenter or cook,
   b) uncertain,
   c) a waiter in a good restaurant.

2. In starting a useful invention, I would prefer:
   a) working on it in the Laboratory,
   b) uncertain,
   c) selling it to people.

FACTOR B

1. "Size" is to "length" as "dishonest" is to
2. "Flame" is to "heat" as "rose" is to:
   a) thorn,
   b) red petals,
   c) scent.

FACTOR C
1. If people talk loudly while I am listening to music:
   a) can keep my mind on the music and not be bothered,
   b) in between,
   c) find it spoils my enjoyment and annoys me.

2. If I make an awkward social mistake, I can soon forget it.
   a) Yes,
   b) in between,
   c) no.

FACTOR E
1. The use of foul language, even when it is not in a mixed group of men and women, still disgusts me.
   a) Yes,
   b) in between,
   c) no,

2. I occasionally tell strangers things that seem to be important, regardless of whether they ask about them.
a) Yes,
b) in between,
c) no.

FACTOR F

1. Most of the people I know would rate me as an amusing talker:
   a) Yes,
   b) uncertain,
   c) no.

2. To be cautious and expect little is better than to be happy at heart, always expecting success:
   a) true,
   b) uncertain,
   c) false.

FACTOR G

1. I think that plenty of freedom is more important than good manners and respect for the law:
   a) true,
   b) uncertain,
   c) false.

2. I always make it a point in deciding anything, to refer to basic rules of right and wrong.
   a) Yes,
   b) in between,
FACTOR H

1. On social occasions I,
   a) readily come forward,
   b) in between,
   c) prefer to stay quietly in the background.

2. When a bit of diplomacy and persuasion are needed to get people moving, I am generally the one asked to do it.
   a) Yes,
   b) in between,
   c) no.

FACTOR I

1. I have a good sense of direction; (find it easy to tell which is North, South, East, or West) when in a strange place,
   a) Yes,
   b) in between,
   c) no.

2. Because it is not always possible to get things done by gradual, reasonable methods, it is sometimes necessary to use force.
   a) true,
   b) in between,
   c) false.
FACTOR L

1. I can generally put up with conceited people, even though they brag or show they think too well of themselves.
   a) Yes, 
   b) in between, 
   c) no.

2. Business superiors or members of my family, as a rule, find fault with me only when there is real cause.
   a) Yes, 
   b) in between, 
   c) false.

FACTOR N

1. In a group task I would rather, 
   a) try to improve arrangements, 
   b) in between, 
   c) keep the records and see that rules are followed.

2. I would enjoy being a newspaper writer or writer of drama, concerts, opera, etc.
   a) yes, 
   b) uncertain, 
   c) no.

FACTOR N

1. I would rather mix with polite people than with rough,
rebellious individuals.

a) Yes,

b) in between,

c) no.

2. In travelling abroad, I would rather go on an expertly conducted tour than plan by myself the places I wish to visit.

a) yes,

b) uncertain,

c) no.

FACTOR O

1. There are times when I don’t feel in the right mood to see anyone.

a) very rarely

b) in between,

c) quite often.

2. People regard me as a solid, undisturbed person, unmoved by ups and downs in circumstances.

a) Yes,

b) in between,

c) no.

FACTOR Q1

1. I would rather have a job with,

a) a fixed, certain salary.

b) in between,
2. I think it is more important in the modern world to solve,
   a) the question of moral purpose.
   b) uncertain,
   c) the political difficulties.

FACTOR Q2.
1. Most people would be happier if they lived more with their fellows and did the same things as others.
   a) yes,
   b) in between,
   c) no.

2. I like to do my planning alone, without interruptions and suggestions from others.
   a) yes,
   b) in between,
   c) no.

FACTOR Q3
1. I feel mature in most things.
   a) true,
   b) uncertain,
   c) false.

2. I like to wait till I am sure that what I am saying is correct, before I put forth an argument,
a) always,

b) generally,

c) only if it is practicable.

FACTOR Q4

1. I am always able to keep the expression of my feelings under exact control.

a) Yes,

b) in between,

c) no.

2. If people shout suggestions when I'm playing a game, it doesn't upset me.

a) true,

b) uncertain,

c) false.

3.6.3.5. ADMINISTRATION AND SCORING:

Simple and clear instructions were printed for the examinees on the cover page of the test booklets. Although the test could be virtually self-administered, it was considered important to establish good rapport with the examinees. Further, the instructions were reinforced by orally reiterating that the examinee will, in the long run, do good to himself by being frank and honest in his description of himself.
The respondents were asked to give their answers on a separate answer sheet. They were instructed to enter their name, age, etc., on the top of the answer sheet and then to read the instructions on the cover of the test booklet. Initially they had to work the four examples. About five minutes were allowed for reading the instructions and working the examples. Then the examinees were asked to turn the page and begin.

It was ascertained that the names had been filled in before collecting the answer sheets and that one, and only one answer was given for every question on the test. Each answer scored 0, 1 or 2 points except the Factor B answers which scored 0 for incorrect or 1 for correct answers. The score of each single item contributed to only one factor total.

3.6.4 TOOL 4 MUKHOPADHYAY'S CHANGE PRONENESS INVENTORY

The word proneness means "inclination" or "readiness" or "likelihood". Thus change proneness means the inclination or readiness one has towards changes. It indicates a person's mental orientation towards changes. It is a composite of several characteristics.

According to Miller (1967), the change proneness is the congregational effect of Curiosity, Open-mindedness and Mental Flexibility. He believed that by raising a series of
questions about these aspects of behaviour it would be possible to measure the change proneness of an individual.

In order to develop the inventory it was essential that the personal commitment be split into smaller components. To specify the components, Dr. M. Mukhopadhyay sought help of experts comprising of school teachers, researchers and experts in research on innovation and change proneness to define a change prone teacher. It was found that a change prone teacher is openminded, eager to know, ready to make extra efforts, reviews his/her own actions periodically, communicates ideas to others, and have experimental attitude. Further it was thought that the Principal's change proneness needs to have special consideration. Besides his personal action, his administrative behaviour should also reflect his change proneness.

This tool consists of 33 items that are common to both Teachers and Principals and 12 on the Principal's administrative aspect. The items are in interrogative sentence form and are provided with 5 point scale where each question can be answered from 'Always' to 'Never' through 'Frequently,' 'Sometimes' and 'Seldom'.
3.6.4.1 ITEM SAMPLES

1. Do you try with different methods of teaching for a particular subject?

2. Do you think that you will try with a new practice even if the Principal is not willing?

3. Do you make any effort to know about innovations in your field?

4. Do you think that the innovations suggested by the Training Colleges are practicable?

5. Do you bring new ideas and developments to the attention of other Teachers as well as the Principal?

6. Will you try something which is suggested by the students?

7. Do you think you get adequate freedom to try out new ideas?

8. Do you stop to try out an innovation in order to maintain the relationship with other teachers?

9. Does your headmaster allow you to conduct any experiment of your own, may be even without his permission?

10. Do you discuss about an innovation with your colleagues?
3.6.4.2. FUNCTIONAL EFFICIENCY

On functional efficiency of the scale refer (Appendix 1(c) p.505)

3.6.4.3 SCORING

The data were collected and tabulated. Processing was done by using electronic computers. The average was found out for each questionnaire. The Heads scoring above the average were considered to have good innovative proneness and the Heads scoring below the average poor innovative proneness.

3.6.5. TOOL 5 MODERN MANAGEMENT TECHNIQUES IN SCHOOL

3.6.5.1. ADMINISTRATION

This tool has been designed on the basis of the theory behind the Modern Management Technique. The following Management Techniques are included in the tool. They are classified under functional groups. They are Planning, Organising, Operations Management, Personnel Management and Public Relations Management. Under each technique a number of questions are given.

The questionnaire is included in the Appendix 1(c) (p.511). For each Management Technique and each functional group, the following descriptions are given, meaning, significance and why it is applied.
3.6.5.2 MANAGEMENT TECHNIQUES

3.6.5.2.1 PLANNING

Planning is a process, in which the future course of action is chalked out. It must answer what, why, when, how and whom it is to be done. It is preparing the institution to face the uncertain future. Planning helps us to find out whether all the resources, like men, money etc., that are at the disposal of the organisation, are going to be utilised effectively and whether they would be used for the purpose for which they are supposed to be used.

3.6.5.2.2 ORGANISING

Resources are put into a structure through this process. It is a vehicle through which results are achieved. Without a structure this is not possible. The structure should be orderly. The role of all the personnel should be in the know of everybody.

J. B. SEARS, says that the term organisation is used widely to refer to any collection of persons, materials, procedures, ideas or facts, so arranged and ordered that in each case the combination of parts makes a meaningful whole.17

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17. J. B. SEARS Quoted in Educational Administration, by M.S.P. Sukhia, Published by Vinod Pustak Mandir, AGRA, 1982., p.8.
3.6.5.2.3.  OPERATION MANAGEMENT

It is a process. Through this process the actual execution of action is managed. The function of management is execution, it transforms a set of inputs into some desired output. Operation management typically entails,

a) Planning the operations system.
b) Organising the necessary human and capital resources.
c) Directing operations and personnel
d) Monitoring the systems performance to be sure it meets organisational objectives.

This operation system aims at achieving the objectives. In this, actual plans are executed. This management of operations assumes critical importance.

3.6.5.2.4.  PERSONNEL MANAGEMENT

"This is managing the human beings of an organisation. Personnel management is an extension of general management, that of promoting and stimulating every employee to make his fullest contribution to the purpose of the business." Personnel administration is primarily concerned with the selection, training, motivation and compensation of employees.

It is clear that personnel management is concerned

with a careful handling of relationships among the individuals at work. For the survival and success of the organisation, management of human beings is the most important function.

3.6.5.2.5.

PUBLIC RELATION MANAGEMENT

Public constitutes all the members from the external world on whom the organisation is dependent for its survival. This human element is perhaps the non business character that greatly influences its business character and the two are inseparable. It is the business of the administrator to harness these dynamic forces and mould them together to work towards common goals.

The process of projecting a proper image among the public is known as Public Relations Management. In a school, the public world constitutes the parents of the children, the government, the educational authorities, other educational institutions and the general public. An educational institution is dependent on each of these segments for its long term survival. All the above described dimensions are given importance in this study, because of their impact on management.

3.6.5.3.

TEST SCALE EFFICIENCY

3.6.5.3.1.

RELIABILITY

The Reliability of the tool was established as per the procedure. The method test-retest was used to find out the
Reliability which was found to be .78.

3.6.5.3.2. VALIDITY

The Validity of the test itself is meant to be a Concept Validity. That is, the items used in this tool are good measures of the managerial skills. The Validity was determined referring to the books, discussion with experts, research students and scholars, administrators and teachers.

3.6.5.4 SCORING AND INTERPRETATION

The investigator recorded the responses in the questionnaire. Data were tabulated. They were checked for completeness, significant discrepancies or omissions, internal inconsistency or apparent inaccuracy.

The tabulated data were processed by the computer. The electronic computer was preferred to manual process, on account of its operational quickness and accuracy.

In ordinary parlance, average is the useful type of measure of central tendency. Average is a significant, single, simple, summarising expression, representing the whole series of items. This value can be substituted for each and every value in the series. It is a figure below and above which the data are evenly distributed. It is a value around which there is the greatest amount of concentration.

The average of each skill was kept as the cut off point. The Heads scoring above the cut off point, were
considered to have high Managerial Skills, and the Heads scoring below the cut off point, low Managerial Skills.

3.7 PRESENTATION OF DATA

Tables are accompanied by graphic representation. The details which are lost in them are compensated by a better visual impact and attractiveness. The aim is not to provide quantitative information. It is to give a qualitative appreciation of the data. Bar Diagrams and Pie Diagrams are used.

3.8 PROCEDURE FOR COLLECTION OF DATA

The investigator visited the schools and contacted the Heads of the institutions. Effort was made to establish good rapport with them. The purpose of the visit was made clear and detailed instructions were given to the Heads of the institutions, regarding the furnishing of the questionnaires. With the help of the Heads, questionnaires were also distributed to two senior teachers of each institution.

They were requested to give their free opinions, which would be kept confidential. Where the investigator could not go in person, representatives were sent, with a requisition letter to the Heads of the institutions. To some of the schools, questionnaires were mailed with covering letters and with all necessary requisites, avoiding cost effort difficulty on the part of the respondents.
3.9. PICTURE OF THE STATE BOARD HIGHER SECONDARY SCHOOLS IN TAMIL NADU

The "total picture" of the Higher Secondary Schools in Tamil Nadu is presented in the form of a "Fork Chart".

TABLE 6. Illustrates the schools that are classified on the basis of the following norms:

1. Classification based on Proprietorship and Management.
2. Classification based on Affiliation and Recognition.
3. Classification based on Location.
4. Classification based on Sex of Pupils.
FIG. CLASSIFICATION OF HIGHER SECONDARY SCHOOLS IN TAMIL NADU

On the basis of

- Proprietorship & Management
- Affiliation & Recognition
- Location
- Nature of Institution

Central Board
Central Government
State Board
State Government

Semi Rural
Urban
Urban

Boys
Girls
Mixed

Central Government owned & State Government managed, including Schools owned and managed by Local Administration. Government Schools, Corporation/Municipal Schools.

State Government
Self financed
aided & State Government controlled.

Individual
Educational
Societies
Trusts
Companies

Education
Limited
Proprietorship.

Non Minority Schools with greater degree of State Government Control.

Minority Schools with less degree of State Government Control.

Individual
Educational
Societies.

Educational
Limited
Trusts.
Companies.
<table>
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<th>Functional S1. Aspects</th>
<th>No of School Administration</th>
<th>S1 Management of Schools</th>
<th>S2 Managed by Local Administra-</th>
<th>S3 Managed by Societies, Municipalities, Panchayats, etc.</th>
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<td>Managed by Educational Societies, Municipalities, Panchayats, etc.</td>
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<td>Managed by Religious minority or Linguistic minority.</td>
</tr>
<tr>
<td></td>
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<td>Managed by Educational Societies, Municipalities, Panchayats, etc.</td>
<td>Managed by Religious minority or Linguistic minority.</td>
</tr>
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<td>Managed by Government or</td>
<td>Managed by Educational Societies, Municipalities, Panchayats, etc.</td>
<td>Managed by Religious minority or Linguistic minority.</td>
</tr>
</tbody>
</table>

2. Affiliation and Recognition of Secondary Education, Govt. of India.

3. Locality

4. Nature

Boys only

Girls only

Mixed.
Sample was selected from the State of Tamil Nadu.

The State covers an area of 1,30,058 sq.kms. with a population of 48,408,777 (1981 Census). It touches Andhra Pradesh and Karnataka on the North, Kerala on the West, Bay of Bengal on the East, and the Indian Ocean on the South. At the time of the Study there were twenty Revenue Districts. All the State Board Higher Secondary Schools were taken into consideration for the present study. By random sampling method 177 Schools, about 12% of the total population of the State Board Higher Secondary Schools were selected as the sample.
FIG. 1 MAP OF INDIA SHOWING

TAMIL NADU
FIG A2 MAP OF TAMIL NADU
### 3.10.1. DEMOGRAPHIC FEATURES OF THE SAMPLE:

The following Table shows a clear picture about the demographic features of the sample.

**TABLE 7**

#### 3.10.1.1. Demographic Features of the Selected 177 Higher Secondary Schools

<table>
<thead>
<tr>
<th>Set. No.</th>
<th>Demographic Features of Schools</th>
<th>Number of Schools</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Locality</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>87</td>
<td>49.15</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>90</td>
<td>50.85</td>
</tr>
<tr>
<td>2</td>
<td>Type of Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Government</td>
<td>83</td>
<td>46.89</td>
</tr>
<tr>
<td></td>
<td>Aided</td>
<td>82</td>
<td>46.33</td>
</tr>
<tr>
<td></td>
<td>Municipal</td>
<td>7</td>
<td>3.95</td>
</tr>
<tr>
<td></td>
<td>Private</td>
<td>5</td>
<td>2.82</td>
</tr>
<tr>
<td>3</td>
<td>Nature of Composition</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed</td>
<td>77</td>
<td>43.50</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>54</td>
<td>30.51</td>
</tr>
<tr>
<td></td>
<td>Girls</td>
<td>46</td>
<td>25.99</td>
</tr>
<tr>
<td>4</td>
<td>Scholastic Achievement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>46</td>
<td>27.12</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>52</td>
<td>29.38</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>77</td>
<td>43.50</td>
</tr>
</tbody>
</table>

In the following pages, Pie Graphs are affixed for showing the demographic features of the Selected Higher Secondary Schools.
FIG. 2 Distribution by the locality of the schools under investigation.

49.15% Rural Schools.
50.85% Urban Schools.
FIG. 3 Distribution by the Type of Management of the Schools under investigation.

- Aided: 46.33%
- Government: 46.89%
- Private: 3.95%
- Municipal: 2.82%
FIG. 4 Distribution by the nature of composition of the schools under investigation.

- Boys: 30.31%
- Girls: 25.99%
- Co-Education: 43.50%
FIG. 5 Distribution by the Scholastic Achievement of the Schools under investigation.

- Low: 27.12%
- Average: 43.50%
- High: 29.38%
Table 8 gives a clear picture about the demographic features of the Heads of the Selected 177 Higher Secondary Schools.

### TABLE 8

#### 3.10.1.2. Demographic Features of the Heads of the Selected 177 Higher Secondary Schools

<table>
<thead>
<tr>
<th>Sel. No.</th>
<th>Demographic Features</th>
<th>Number of Heads</th>
<th>Percentage of Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sex of the Heads</td>
<td>Male</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td>Age of Heads</td>
<td>Below 45 Years</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Between 46 &amp; 50</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Above 50</td>
<td>106</td>
</tr>
<tr>
<td></td>
<td>Length of Experience</td>
<td>Below 9 Years</td>
<td>79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Between 10 &amp; 50</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Above 50 Years</td>
<td>76</td>
</tr>
<tr>
<td></td>
<td>Professional Qualifications</td>
<td>B.Ed/B.T</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M.Ed/M.Phil</td>
<td>141</td>
</tr>
</tbody>
</table>

In the following pages, Pie Graphs are affixed for showing the demographic features of the Heads of the Selected Higher Secondary Schools.
FIG. 6 Distribution by the Sex of the Administrators of the Schools under investigation.

- Male: 72.88%
- Female: 27.12%
FIG. 7 Distribution by the Age of the Administrators of the Schools under investigation.

- Below 46 Yrs.: 17.51%
- Between 46 and 50 Yrs.: 22.60%
- Above 50 Yrs.: 59.89%
FIG. 8 Distribution by the Experience of the Administrators of the Schools under investigation.

- Below 9 Yrs.: 44.63%
- Between 10 and 15 Yrs.: 12.43%
- Above 15 Yrs.: 42.94%
FIG. 9 Distribution by the Professional Qualification of the Administrators of the Schools under investigation.

- B.Ed./B.T. (20.34%)
- M.Ed./M.Phil. (79.66%)

- B.Ed./B.T.
- M.Ed./M.Phil.
3.11 DATA TREATMENT

The data collected with the help of the questionnaires administrated to the Headmasters and the two senior teachers of the 177 Higher Secondary Schools of Tamil Nadu were treated in appropriate manner.

3.12 STATISTICAL TECHNIQUES USED

Statistics is a quantitative approach of the scientific method which seeks to develop quantitative tools for managerial decisions. Its contribution to decision-making in an uncertainty is great. It enables us to develop techniques to make valid inferences or judgement by virtue of its conspicuous influences on managerial analysis. While probability considerably influences managerial decision-making, it provides a basis for statistical analysis, since the probability theory lays the very foundation of the Law of Large Numbers or the Law of Statistical Regularity.

Many statistical techniques, methods and tools are often employed in the analysis and interpretation of data as an aid to management and managerial decisions. An attempt has been made to discuss briefly the techniques used in the present study.
3.13.1 THE FOLLOWING STATISTICAL TECHNIQUES WERE USED IN THIS STUDY:

1. CHI-SQUARE TEST:

\[ \chi^2 = \frac{(f_o - f_e)^2}{f_e} \]

\[ df = (r - 1) \times (c - 1) \]

Where:
- \( f_o \) = Number of observed frequency
- \( f_e \) = Number of expected frequency
- \( df \) = Degrees of freedom

2. MEAN

\[ \bar{X} = \frac{\sum X}{N} \]

Where:
- \( \bar{X} \) = Arithmetic Mean,
- \( \sum \) = Sum of
- \( X \) = Scores,
- \( N \) = Number of scores.

3. STANDARD DEVIATION

\[ s = \sqrt{\frac{\sum X^2}{n-1}} \]

Standard deviation of population estimated from a sample.

4. REGRESSION COEFFICIENT

A number of computational procedures exist for calculating the required regression weights with more than 3 variables. The method described here originated with AITKIN (1937) and has been called the method of pivotal condensation.

The multiple regression equation in standard score form is,
\[ Z_1 = p_2 Z_2 + p_3 Z_3 + p_4 Z_4 + p_5 Z_5 \]

The raw score of this equation is,
\[ X_1 = p_2 \frac{s_1}{s_2} X_2 + p_3 \frac{s_1}{s_3} X_3 + p_4 \frac{s_1}{s_4} X_4 + \frac{s_1}{s_5} X_5 \quad --(1) \]

Where \( A \) is given by
\[ A = X_1 - p_2 \frac{s_1}{s_2} X_2 - p_3 \frac{s_1}{s_3} X_3 - p_4 \frac{s_1}{s_4} X_4 - p_5 \frac{s_1}{s_5} X_5 \]

where \( A \) denotes the criterion by \( X_1 \) and the predictors by \( X_2, X_3, X_4 \), and \( X_5 \). The criterion may be regarded as a measure of success in an occupation, and the predictors may be psychological tests used to predict performance in the occupation.

With any substantial number of variables the calculation of multiple regression weights is clearly a laborious procedure and requires the use of modern computing devices.

Selective and choice statistical techniques above were used to secure simplicity and direct appeal to any reader for whom the report may be of use.
<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Edition</th>
<th>Publisher</th>
<th>Location</th>
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<th>Title and Edition Details</th>
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<td>Allyn Bacon INC. Massachusetts, 1986.</td>
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