Work plan and Research Methodology

Population of the study

Population is a statistical concept which denotes a group of larger number of units from which a smaller group of some units is opted and used for achieving some objectives.

“A population is the aggregate of all the cases that confirm to some designated set of specifications.”

Population is the aggregate or totality of all the humans. Objects, records, documents etc. on which the results of the study can be applied. In an educational research, population is termed as ‘target population’, more often defined as “all members of a real or hypothetical set of events, people, objects or other units.” It is a large group spread over a wide geographical area.

“Population means the aggregate or totality of objects or individuals regarding which inferences are to be made in a sampling study.”

The population of the present study comprises of supervisors of English medium schools of Gujarat.

Sample of the Study

It is difficult to study the whole population for different reasons and hence it becomes next to impossible. Even if it is possible, it is a waste of time, energy and resources. To select a group of some elements from the totality of the population is termed as the sample. When we select some of the elements with the intention of finding out something about the population from which they are taken, we refer to that group of elements as a sample.

The assumption is that what is derived of the population as a whole. But it may not always be true as it depends on the way the sample is drawn. If the sample is a replica of the population, the forgoing assumption will be correct. But if it is bias, such inferences about the population may be incorrect. A sample drawn in a scientific manner will always be true about the larger group or population. Equally important is the requirement that the sample be representative of the population under consideration.
A representative sample is that which has all those characteristics present in the same intensity or amount in which they are found in the population. In a nutshell, a sample is a small part of the population which is selected for the observation and analysis of the whole population.

In the present study, the probability sampling technique, of which the multistage sampling will be used to select 250 supervisors as the sample subject from the given population. In the first stage, Gujarat will be divided into four zones-North, South, East and West. In the second stage, schools will be selected from each zone randomly.

**Tools of the Study**

The tools of the research are important source in research to collect the data. In the present study, the opinionaire of professional competence of school supervisors which includes the principals, supervisors, administrators, head mistress, head masters, co-ordinators etc. which are doing supervision work in the schools, will be constructed and standardized.

On the basis of discussion with guide and reviewing the different literature through e.library, journals and books etc., the researcher has prepared an opinionaire. In this opinionaire about 150 statements were prepared on different sub heads, which are as follows:

1. Proficient Competencies
2. Methodological Competencies
3. Motivational Competencies
4. Knowledge Competencies
5. Instructional Process Competencies
6. Teaching Evaluation Competencies
7. Thinking Competencies
8. Interaction Process Competencies
9. General Competencies
10. Material Utilization Competencies
This opinionaire has been sent to the experienced experts in the field of education for their review and suggestions. After reviewing the opinionaire, the experts sent the opinionaire back with their suggestions. On the basis of the suggestions of the experts, changes have been done in the opinionaire with necessary modifications and final opinionaire of 112 statements has been prepared. This opinionaire is prepared for pre-pilot study on 40 subjects of English medium schools of Ahmedabad.

The pre-pilot opinionaire is administered on the 40 samples of principals, supervisors of different English medium schools of Ahmedabad. Based on the responses and observations received through pre-pilot opinionaire a compiled sheet has been prepared. This pre-pilot compiled data has been further subjected to statistical analysis using suitable method through statistical expert. The statistical expert has modified the opinionaire and final tool with 43 statements are prepared. This “final opinionaire tool” has been sent to the 250 samples for collecting data. Based on the responses and observations received through “final opinionaire tool” a compiled sheet has been prepared. This “final opinionaire tool” compiled data has been further subjected to statistical analysis using suitable method through statistical expert. After that reliability and validity of the tool has been checked.

A test score is said to be reliable if on repeated administration of the test on the same group of subjects the value of the score remains almost stable or fixed. There are four methods which are commonly used for computing the reliability coefficient of a test. These methods are:

1. **Test-Retest Method:**
   The test is administered on the group of subjects and it is repeated on the same group and correlation coefficient is computed between the first and second set of scores. This correlation coefficient is also called the reliability coefficient of the test. The reliability coefficient of the test is obtained by the formula of Karl Pearson’s product moment method.
2. **Method of Alternate or Parallel forms:**
In some psychological tests, alternate or parallel forms are constructed. The two forms of a test are administered on the same group of subjects and the correlation coefficient between the score of these two forms is obtained and this correlation coefficient is called reliability coefficient. This method eliminates the limitation of the test-retest method.

3. **Split-half Method:**
In this method, the test is first divided into two equivalent halves and the correlation coefficient between scores of these half-tests is found. This correlation coefficient denotes the reliability of the half-test. From the reliability of the half-test, the self correlation coefficient of the whole test is estimated by the Spearman Brown prophecy formula.

This Split-half method is employed when it is not possible to construct parallel forms of the test or when it is not advisable to repeat the test. This sort of situation arises with many performance tests as well as with questionnaires and inventories dealing with personality variable, attitudes and interest.

The split-half method is considered to be best method of measuring reliability of the test. Most salient feature of this method is that all data for computing reliability is obtained on one occasion.

4. **Rational Equivalence Method:**
The method of Rational Equivalence makes an attempt to provide an estimate of the reliability of a test, free from the objections raised against the methods of reliability described in this section.

This method puts stress on the inter correlations of the items with the test as a whole.

**Validity of tests:**
The question of validity of test has many aspects and it requires clear thinking. A test is said to be valid when it measures what it is supposed to measure. In other words, a test is set to be valid if it measures the truth. This property possessed by a test is known as the Validity of a test. A test which measures a quantity for the purpose of which it is constructed is set to be valid. Alternatively, a test whose performance closely resembles with an objectively defined criterion is set to be valid.
Reliability of a test can be estimated by repetition of measurements; while validity of a test can be obtained by comparison with some standard criterion. Reliability of a test is nothing but self-correlation where as validity of a test is its correlation with an external criterion. For validity of a test, the test has to be necessarily reliable.

In the present study, the researcher is going to construct and standardized the tool to test the professional competence of school supervisors.

**Research Methodology**

The research methodology should be directly connected to the problem statement and the goal of research because the research goal and problem may be varying with different methods of research. Research is a purposeful, precise and systematic search for new knowledge, skills, attitudes and values for the re-interpretation of existing knowledge, skills, attitudes and values. Research means the search for knowledge or as any systematic investigation to establish novel facts, solve new or existing problems, prove new ideas or develop new theories, usually using a scientific method. There are various kinds of research methods in education. The method of the present study will be descriptive method of which survey method will be used for this research.

**Planning for Data Collection**

After selecting the appropriate tool, methodology and the sample and seeking the permission of school principals, the researcher shall go to the schools on the decided date and time and shall administer the test as required and as per the instructions. Similarly, the test shall be administered in the other schools on the other samples and thus the data shall be collected.

**Analysis and Interpretation of the Data**

After the data collection, the researcher shall conduct the scoring of the tools and shall score each of the tools as per the key. This data would be called as a raw data. The raw data being not sufficient to provide the information as required shall be grouped as per the requirement and then the statistical techniques such as the mean, standard deviation and t-test shall be used for the
analysis. T test, r, factor analysis, S.D., Q₁, Q₃ method will be used to check the reliability of the developed opinionaire.

The researcher has planned to divide the study into the following chapters as per the research design.

**Chapter 1 includes**
Introduction, Statement of a Problem, Defining the Key words, Objectives, Hypothesis, Limitations, Significance, Tools, Methodology, Planning for Data collection and data analysis.

**Chapter 2 includes**
Review of related literature, Need and Importance of review literature, Variables of the study, Review of the past researches.

**Chapter 3 includes**
Base of the Research and Research Design, Origin of the study, Population, Sampling, Research Methodology, Tools, Data collection and techniques of analysis.

**Chapter 4 includes**
Analysis and Interpretation of data.

**Chapter 5 includes**
Findings of the study, Suggestions and New areas for further research.
Last will be the summary and conclusion of the study.