**STATISTICAL DATA: TYPE, SOURCE AND METHODS OF DATA COLLECTION**

What is Statistics?

To a lame man, Statistics is synonymous to figure, data, numbers or information. However, Statistics is simply the science of collecting, organizing, presenting, analyzing and drawing conclusion from data. In the plural sense, it is often refer to as the collection of numerical and non-numerical data. For example Educational statistics, Economic Statistics, Health Statistics, Crime Statistics, Labour Statistics e.t.c

**USES OF STATISTICS**

1. To evaluate the existing condition
2. To provide information that can be useful in formulating plan for development program
3. To measure progress
4. To guild research
5. For decision making and forcasting

**BASIC STATISTICAL CONCEPT**

Some of the basic terms in Statistics are discussed below

1. Data: It can be defined as the basic raw material for Statistical investigation. They are the value (measurements or observation) that the variable can assume. Data forms a basic for discussion and action.

A collection of data value forms a data set.

2. Experiment: It is simply refers to as any study that can yield one or several outcomes.

3. Variable: It is a characteristic of interest which, if we observe, takes different values at different unit. It can be simply put as characteristics of interest being measured.

4. Population: It consists of all individual, unit or entity of interest or under discussion. In other word, it consist of all subject ( human or otherwise) that are being study. It can be finite and infinite

i) Finite population: it is when it is possible to list all the unit or entity in the population. In other words, they can be counted.

ii) Infinite population: it is when it is impossible to list all the elements of population.

5. Sample: It is a portion or part taken from a population. It is simply refers to as a subset of a population.

6. Unit: it is any individual member of a population

7. Census: it is define as a complete enumeration of characteristics in the population. It involves taking observation from every unit of the population.

8. Survey: it involves taking observation from only a fractional part of the population.

9. Parameter: it is numerical value that describes a characteristic of a population. Note that a parameter is fixed constant but it's value is unknown in most cases.

10. Statistic: it is a single numerical value that describes the characteristics of sample. This number is derived from a sample which may be used to estimate the value of parameter. Note that the value of Statistic is known when a sample has been taken. Hence the value changes from sample to sample.

**SOURCES OF DATA**

1. Primary source of data

2. Secondary source of data

1. Primary source of data: These are data used for specific purpose for which they were collected. In other words, it could be regarded as data drawn from its original source. Example: census, sample survey, record of vitals Statistics ( birth, death e.t.c ) and information.

Advantages of using primary source of data

1. It constitute the exact information been sort for

2. It is more reliable.

3. It constitutes more detail information.

Disadvantages of using primary source of data

1. It is expensive to collect i.e it is costly.

2. It is time consuming and it requires more professional personal

2. Secondary source of data: These are data that are made available by others. It could as well be referred to as generated data used for some purposes other than that for which they were collected especially from administrative course. E.g CBN publication, NBS publication

Advantages of using secondary source of data

1. The required information is quickly gathered or collected

2. It allows for timely result.

3. It is less expensive to collect.

Disadvantages of using secondary source of data

1. It usually involves lose of details.

2. It is less reliable.

**METHODS OF DATA COLLECTION**

1. Questionnaire: It can simply be described as a set of printed and standardize questions designed to get information from respondent on a given subject of research or administration. E.g employment, admission e.t.c. Questionnaire is in personal and self-administered, respondent record their responded in space provide or select one of the option provided in the questionnaire. It may be delivered by hand or post.

Advantages of questionnaire

1. It is relatively cheap to administer over a very large sample.

2. It has a wide coverage.

3. Eliminate biasing error associated with interviews

4. Offer greater anonymity of the subject.

5. Anonymity enhance the reliability of information supplied especially when the subject of study is sensitive

Disadvantages of questionnaire

1. A reasonable level of literacy is required.

2. It doesn't offer adequate prove into subject of research which may arise from the response of the respondent.

3. Researcher is not able to clerify questions that are not understood by responded and their answers may therefore be inadequate.

4. A person other than the intended responded may complete the form.

5. Low responds rate than the interview approach.

6. Lost of uncompleted or completed questionnaire in trances.

7. Researcher is unable to observe body gestures that may provide insight into the respondent reactions.

Design of Questionnaire

Things to note: In the design of a questionnaire the following points should be observed.

1. Questions should be simple, brief and unambiguous.

2. It should be questions which allows the printed answers to be ticked.

3. It should neither be too personal or be irrelevant.

4. Leading questions should not be hard.

5. It should be design so that the questions fall into a logical sequence to enable the respondent understand it's purpose and improve the quality of answer.

2. INTERVIEW METHOD

Interview involves face to face interaction in which respondent is asked a set of printed and standardize questions designed to get information from respondent on a given subject of research or administration. The main difference between questionnaire and interview is that the formal is self administered and the later is completed by the interviewer while the respondent verbalize response. Interview may also be conducted through telephone. Further interview may be recorded in audio or video format.

Advantages of interview

1. It is flexible because interviewee can clearify questions or prove response.

2. Higher response rate is obtained through this techniques.

3. It can be conducted with both literate and non literate sample.

4. Non verbal behavior of respondent can be observed and these can help the interview to determine the accuracy of response and reactions of respondent.

5. Only respondent who are intended are actually interviewed.

6. Must questions are answered by the respondent because of the presence and clearification of interviewer.

Disadvantages of interview

1. High cost of administration. Interviewers have to be paid.

2. Take a longer time to be administered.

3. The presence of an interviewer undermine the anonymity of the responded and leadto both interviewer and respondent biase.

4. Interviewer error associated with reading a question and recording of response.

3. Observation Method

These entails direct contact between the researcher and respondent or event under investigation. It involves systematic observation of event activities or behavior as they occurs. Observation could be classified into participant and non participant.

\* Participant observation refers to the involvement or participation of a researcher in the event or activities he or she is investigating.

\* Non participant observer are present at the event or activities but doesn't get directly involved.

Advantages of observation Method

1. More comprehensive information can be obtained.

2. Context for behavior can be observed and better understanding achieved.

3. Behavior and activities are observed and recorded as they occurred, thereby reducing error associated with forgetfulness.

4. Both literate and non literate sample as well as event such as traditional and religious rite can be study in their natural settings.

Disadvantages of observation Method

1. Present of researcher may encourage people been study to distort the activities or behavior.

2. Access to the event, sight of activities and behavior may be difficult.

3. Information from observation are difficult to organize and analyze.

4. Objectives of observation may be impaired.

5. Researcher has very little control over when or how the event or behavior of interest may take place.

Documentary Method

Documentary source are used to get information when it will be unnecessary to interview. All that is needed is to get to the archives ( Library and administrative office ) and collect the data. Data collected are usually from secondary source.