INTRODUCTION TO SOCIAL STATISTICS

In our world today characterized by multiple applications to science and technology, the field of statistics seems to be the most recurring decimal in application. Statistics in the recent past has offered vital assistance to dissimilar subjects, like medicine, sociology, business administration, accountancy, zoology and education. In spite these applications of statistics and its rapid development, so many people: laymen and professionals alike see it through different perspectives. A statistician is sometimes thought of as a person who manipulates numbers in order to prove a point. On the other hand some students of sociology or other social sciences have tended to adore the statistician as a demi-god or someone who with the aid of a magical computer can make any study - scientific. This of course may be as a result of the mathematical application of statistics. Statistics has existed before man was created and it become an aspect of man's culture. Nothing could be done by man that is not statistical.

But in this exposition we are going to discuss statistics as a special field of study especially in the global field of social sciences, and education. Before we get into the definition of the concept statistics we shall in the words of Blalock H. M. Jr. (1979) - state what statistics is not. Statistics first of all is not a method by which one can prove almost everything one want to prove. There is nothing inherent in statistical methods to prevent the careless or intellectually dishonest individual from drawing his or her own conclusions in spite of the data, however any one in course of a study like this is guard against possible misuses of this tool.

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Statistical is not simply a collection of facts. If it were there would hardly be much point in studying the subject? Nor is statistics a substitute for abstract theoretical thinking or for careful examination of exceptional cases . Finally statistics is not a substitute for measurement or the careful construction of an interview schedule or other instrument of data collection. Having stated what statistics is not, one would then ask what is statistics? Of course the Aristotelian dictune may help. "Initio disputandi est definitio nonimis" (For any discussion to be intelligible it must start with the definition of terms)

As a matter of fact, the definition of statistics is an uphill task. It is indeed difficult to say precisely and satisfactorily what statistics stand for. This is because statistic stands a meaning as many as the perspectives from where the statisticians conceives denominator for all the definitions ever knows that is, that statistics is a body of methods or approaches meant for decision making to solve human problem in a socio-cultural plane. Let us explore a bit some of these definitions.

A professor of social research Norman R. Kurtz(1983) believed that statistics is a body of methods; these methods are used to assemble, describe, analyse numerical data pertaining to various aspects of social life. For example statistics are used to describe such things as the number of members in an average family, the relationship between family size and amount of income and the correspondence between amount of family income and measures of attitudes. These characteristics above are called variables.

A social statistician Nwabuokei P.O. (1990) said statistics is collection, compliance distribution, presentation and analyses of data or information. Taking a pragmatic approach Blalock (1979) see statistics as the summarizing of information in such a manner as to make it more usable. And secondly as playing an inductive role which involves either making generalizations about some population, on the basis of a sample drawn from this population, or formulating general laws on the basis of repeated observations, for Walpole (1968). The science of statistics deals with methods used in the collection, presentation, analysis and interpretation of data.

Hence we can convincingly say that statistics is a body of methods of collection compilation, distribution, presentation, analysis, and interpretation of data for decision making to solve man's social problems in his social life. The statisticians is basically concerned with the chance outcomes that occur in scientific investigations.

Statistics is subdivided into two: Descriptive and Inferential or Inductive statistics. Descriptive statistics is the body of methods used to assemble, organize and display distributions of variables (called data). Descriptive statistics involves such measurements like

1. the measures of central tendency,
2. the measures of variability,
3. the measures of relative standing or position and
4. the measures of association or interrelationships.

Inferential Statistics

The second category of statistical methods is inferential statistics which are used to infer the characteristics of a population from observations made on a sample. Inferential or Inductive statistics makes it possible to describe large populations using information from relatively small samples representing the populations. The social research mainly relies on the inferential statistics because ordinarily the study of large populations is too difficult and expensive.

Theoretical model
propositions

ke decisions about
fit of data and theory

variables and
hypothesis

Organise data and
test hypothesis

Define population
and select sample

Develop instruments
and collect data

tory of Statistics

Statistics has history as old as man on earth and even
ond some statisticians contended. In early biblical times
istics was used to provide information relative to taxes,
s, agricultural crops, and even athletic endeavours.
church from early times uses a lot of statistical
rds. Inferential statistics, depending largely on the
ry of probability has made its greatest impact since the

sixteenth century. Statistics today is as a result of active
research by many scientists for over 500 years behind.

Walpole (1967) believed that it was perhaps man's
unquenchable thirst for gambling that led to the early
development of probability theory. The over zealous
gamblers of the old in an effort to maximize their winnings
approach the mathematicians for the development of an
optimum strategy. The answer to the problems of the
gamblers were supplied by the great mathematicians like
Pascal, Leibnitz, Fermat, and James Bernoulli.

Some others include DeMoivre who discovered the
equation for normal distribution in 1733. It was the normal
distribution that formed the basis for the theory of inductive
or inferential statistics. This bell shaped distribution is also
known as Guassian distribution in honour of Guass (1777-
1855) who derived its equation from a study of errors in
repeated measurements of the same quantity. Laplace applied
statistics to astronomy for the first time.

In the 19th century a statistician from Belgium, Adolph
Quetelet (1796-1874) applied statistical methods to
education and sociology.

In the field of social sciences and the most prominent
statistician was Sir Francis Galton (1822-1911). His most
notable contributions were in the fields of heredity and
eugenics where he successfully applied statistics to solve
problems. Galton discovered percentiles regression and
correlation analysis. Pearson alone worked on the present
theory of sampling.

Statistics in the 20th century ushered in developments of
methods for decision making based on small samples by
William S. Gosset. This was discovered while working for
an Irish brewery who could not grant him permission to
publish his results for fear of her competitors. Gosset
therefore published his results under the name "student". It
then answers t-distribution. Further contributions on small

sample theory and also in experimental designs were discovered by Sir F. _____ _____ and he is regarded as the most outstanding statistician till date.

There are several noteworthy statisticians in the world today still working on new theories and applications of statistics. Today statistics is shifting from classical approach to estimation theory to Bayesian approach. Professors Adichie and Onubuogu and some Africans statisticians are still working on observed information provided by the random sample. Statistics become a separate programme of study in the 1950s in the Western World. The availability of electronic Computers is certainly a major factor in the modern - development of statistics.

In the future, we shall see many new theories developed. Productive research is been anticipated in the areas of Mathematical statistics, probability, the theory of games, linear programming, stochastic processes, and experimental designs. Today, nothing could be said to be more useful to a research worker than the application of statistics.