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The Relevance of Statistics in Science and Technological Advancement

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Abstract: *The paper discusses the relevance of statistics in technological advancement with emphasis on the contribution of all sectors of the economy and their roles in contributing to the technological advancement. To achieve a sound advancement in terms of technology the areas to be developed includes the applications of statistics in the sectors such as Educational Development, the need for an efficient information system for Data Analysis and Information Dissemination. Development of a good Statistical System backed up by a well developed act to provide a reliable data base to network with.*
There is need to map out strategic plans, set up by machinery for execution of plans and monitor the implementation process, so that the nations of the world especially can appreciate the beauty of statistical data.
Keywords: *National Accounts, Millennium Electronic Devices, Genuine, Stock-Exchange, Sale Registers, Matrix, Astrology, Probability theory, Least Squares, Permutations.*

I. Introduction

Statistics science as a course can be said to start around 1749. The word statistics has various interpretations in early times and the meaning was restricted to information about states. This was later extended to include collections of information of all types, and later still it was extended to include the analysis and interpretation of such data. In modern terms, statistics data "means both sets of collected information, as in National Accounts and Temperature records and analytical work which requires "statistical inference" statistical activities are often associated with models expressed using probabilities, and requires probability theory for them to be put on a firm theoretical basis.

By the 18th century, the term "statistical data" designated the systematic collection of demographic and economic data by states. For at least two millennia, these data were mainly tabulation of human and material resources that might be taxed or put to military use. The genuine definition of statistics came about in the 19th century; the meaning was broadened to include the discipline that is concerned with the collection, summary and analysis of data. In modern times data are collected and statistics computed and widely distributed in government, business, and most of the sciences and sports and even for many past times. The interventions of electronic computer have really assisted in the statistical computation.

Though the electronic devices facilitated the collection and aggregation of data. A single data analyst have large volume of data to be diagnosed because the analyst may have available set of data, files with million of records, each with dozens or hundreds of separate measurements which were collected overtime from computer activity (for example, a stock exchange) or form computerized sensors, point of sale registers. The computer system, then produces simple, accurate summarises and allows more tedious analysis, such as those requiring inverting a large matrix or performing hundreds of steps of iteration that would never be attempted by hand.

Faster computing has allowed statisticians to develop 'computer intensive' methods which may look at all permutations, or use randomization to look at 10,000 permutations of a problem, to estimate answers that are not easy to quantify by theory alone. Also the concept of "Mathematics Statistics" comes into play to designate the mathematical theories of probability and statistical inference, which are used in statistical practice. The relationship between statistics and probability theory developed rather later In the 19th century, statistics increasingly used "probability theory" whose initial results were found in the 17th and 18th centuries, particularly in the analysis of games of chance (gambling). By 1800, astronomy used probability models and statistical theories, particularly the method of least squares. Johnson and Kotz (1970) produces a four volume compendium on statistical distribution (first edition 1969-1972), which is still valuable currently.

II. Statistical Data In Science And Technology

Statistics play a vital role in virtually all branches of science, statistical methods are commonly used for analyzing experiment results, testing their significance and displaying the result accordingly. It is relevant for a scientist to make an objective judgment as to make an objective judgment as to whether or not a particular hypothesis can be established by a set of collected data or objective method for either accepting of rejecting, that hypothesis must be used. This is why, when collecting these results, it is essential that statistics are included to

ascertain the level or degree of accuracy in the hypothesis. Statistics can be used to explain qualitative as well as the more easily decipher quantitative results.

That is to say it is possible for statistics to reveal elements of an experiment that would ordinarily be referred to a characteristics value, rather than in a measurable way. It is far easier for the general public to understand the results of an experiment in greater clearly and detail if they have the simple reference if they have the simple reference point of numbers rather than scientific language, mathematics or equations. It therefore argued that without the use and advancement of statistics and statistical research the empirical observation of today's scientist and inventors would be far less accurate and progressive. We all benefit fro the development and improvements in science that have been made to our day-day life most of the time taking for granted what has been achieved with the aid of statistics.

III. National Development And Statistical Information

Statistical information is needed for making complex evidence base national decisions. Planning in developing countries required formulation of goals that is followed by a well thought out programme for execution is of the utmost importance. Planning a nation's technological advancement and economic and social development is complex involving the process of constructing, executing and checking interrelated sets of decisions. The outcome of such series of tasks when prepared for a given period is normally called a development plan.

Planning has become a permanent part of major government decision making; the integration of the entire exercise necessitates the exercise, of a highly organized and well developed statistical systems, without which a planned economy is unthinkable. Such statistical system must make available (for planning and other purposes of government in industry and business) a well integrated mass of accurate data at different degrees of aggregation, which can be used at each stage of the plan process (Adamu, S.O) (1978). However, planned decisions rely very heavily on high quality statistical data).

Technological advancement coupled with National development requires a well organized statistical system allowing planners to work on the broad act of statistical indicators that are indispensable for the development and improvement of planning. In order to involve the statistical system in the planning and delivery of the designed and desired statistical date, there is need to link statistical planning and national goals.

Applications Of Statistics In Research For Technological Advancement

There are various research methods that use statistics to record their results, especially when it comes to experiments in the field of science. Once a number of experiments have been carried out, statistics will show a certain result. Then, scientists can accumulate all the statistics from each test to identify if there are any differences or changes overtime. It is important to have statistics because it is simple and stand-out way of representing a result.

IV. Significance Of Statistics In Developmental Plan For Science And Technological Advancement.

The word statistics are a single number or a collection of numbers that show the importance of a certain change or development. In terms of technology, this is important because statistics can show what the current trends are and in terms of various technologies and the development of them. It is also good market research for companies that are creating various devices because statistics from areas around the country can help identify what the best device is to move forward with.

V. Relevance Of Statistics In Predictions

The value of statistics is strong because within a lot of scientific research it is about trial and error, and what reaction work best. If there are no professionals working towards substances for medical use, statistics can identify what works best.

VI. Educational Development.

The National Centre for Educational Statistics (NCES) is the primary Federal entity collecting, analyzing and reporting data relating to education in the United States and other nations. It fulfills a congressional mandate to collect, collate, analyze and report full and complete statistics on the condition of education in various countries of the world.

They conduct and publish reports and specialized analyzes of the meaning and significance of such statistics, assist state and local education agencies in improving their statistical system, and review report on education activities in foreign countries, NCES activities are designed to address high priority education data needs, provide consistent, reliable, complete and accurate indications of education status and trends, timely

reports useful and high quality data to Educational Sector required for assessing, monitoring and evaluating the goals of technological advancement.

VII. Conclusion

We conclude that statistics as a science course is very crucial in National Development as well as the technological advancement of any nation especially Nigeria. As evident in the write up that statistics have wide applications in all facets of life especially in the conduct of Research, Educational Standards, Innovations, Modeling, National development and finally technological advancement.

VIII. Recommendations

Statistics information aids to the direction, growth and the development of a Nation in relation to technological advancement. Therefore, we recommended that the production of statistics should be legislated for a timely, accurate and effective dissemination of data. In Nigeria the provision of the 1957 Act of Statistician Ordinance for data collection, particularly population census and the duties of the Federal the chief statistician should be encouraged and make to stand to solve Nigeria statistical problems.

References

[1]. Adamu, S.O. (1978). The Nigerian Statistical System Ibadan University Press, Shangodoyin D.K and Agunbiade D.A (1999). Fundamentals of Statistics and Database Management: Ransmed Publications, ISBN 978-34610-5-2.
[2]. Central Office of Statistics (2008). 2003 Poverty Datum Line for Botswana.
[3]. Ward, M. (2004). Qualifying the world: UN ideas and Statistics, United Nations intellectual History Project Series. Indiana University Press, USA.
[4]. Fagoyinbo, I.S (1999). Introductory Statistics, Delak Ventures, Ilaro Nigeria.
[5]. Spiegel, Murray (1992), Statistics Theory and Problems New York.