The Role Of Statistics In Economic And Social Planning For Development In Nigeria And Other Developing Countries

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Abstract
This paper discusses the importance of statistics and statisticians in national development with emphasize that government at all levels should embark on building a very viable information system in order to have adequate statistical information for designing a formidable evidence based policy. This study identifies that no meaningful national development can take place without empowering the national statistical system. In national development, the aspirations of a policy is to attain national goals and to achieve a fair measure of success in the goals, there is need to map out strategic plans, set up machinery for execution of the plans and monitor the implementation process; this is exactly the point at which the role of statistics is vital and relevant.

I. INTRODUCTION

"Statistics as defined by the American Statistical Association (ASA) is the science of learning from data, and of measuring, controlling and communicating uncertainty". Although not every statistician would agree with this description, it is an inclusive starting point with a solid Pedigree.

It encompasses and concisely encapsulates the "wider view" of Marquardt (1987) and Wild (1994), the "greater statistics" of Chambers (1993), the "wider field" of Bartholomew (1995), the broader vision advocated by Brown and Kass (2009) [8]. The ASA description of statistics given above covers all elements seen in this paper and more

Although statisticians have wrestled with every aspect of this cycle, particular attention has been given by statistical theory-and- methods thinkers and researchers to different elements at different times.

For at least the last half century, the main focus has been on the use of probabilistic models in the Analysis and Conclusions stages and to a lesser extent, on sampling designs and experimental designs in the Plan stage. But a wider view is needed to chart the way of statistics education into the future.

The disciplines of statistics and, more specifically, statistics education are, by their very nature, in the "future" business. The mission of statistical education is to provide conceptual frameworks (structured ways of thinking) and practical skills to better equip our students for their future lives in a fast-changing world.

Because the data-universe is expanding and changing so fast, educators need to focus more on looking forward than looking back. We must also look back, of course, but predominantly so that we can plunder our history's storehouses of wisdom to better chart pathways into the future. For educational purposes, statistics needs to be defined by the ends it pursues rather than the means statisticians have most often used to pursue them in the past. Changing capabilities, like those provided by advancing technology, can change the preferred means for pursuing goals over time but the fundamental goals themselves will remain the same. The big-picture definition that we opened with "keeps our eyes on the ball" by placing at the center of our universe the fundamental human need to be able to learn about how our world operates using data, all the while acknowledging sources and levels of uncertainty.

"Statisticians develop new methodologies in the context of a specific substantive problem," Fienberg (2014) says, "but they also step back and integrate what they have learned into a more general framework using statistical principles and thinking. Then, they can carry their ideas into new areas and apply variations in innovative ways." At their core, most disciplines think and learn about some particular aspects of life and the world, be it the physical nature of the universe, living organisms, or how economies or societies function. Statistics is a meta-discipline in that it thinks about turning data into real-world insights. Statistics as a meta-discipline advances when the methodological lessons and principles from a particular piece of work are abstracted and incorporated into a theoretical scaffold that enables them to be used on many other problems in many other places.

II. ECONOMIC AND SOCIAL CONDITIONS IN NIGERIA

Nigeria is a Federal Republic composed of 36 States and a Capital Territory, with an elected President and a Bicameral Legislature. It operates the Presidential system of Government with three distinct but complementary arms namely the Executive, the Legislature and the Judiciary, eachacting as a check on the other two. Each State is made up of administrative entities called Local Government Areas, which number 774 at present. The country operates three tiers of governance, namely, Federal, State and Local. The country is a West Africa Nation, greatly endowed in both human and material resources. Nigeria has a population estimated at about 173.2million, bordered in the Gulf of Guinea, between Benin and Cameroon with a total area of 923,770sq km (land, 910,770sq km and water, 13,000 sq. km) and an equatorial and semi-equatorial climatic conditions characterized by high humidity and substantial rainfall.

Nigeria's real Gross Domestic Product growth averaged 5.31 percent over the last four years. The country is African's largest economy following the rebasing of her GDP of 2013 standing at **N80,092,563.38 million**. The contribution of agriculture, industry and services to real GDP in 2013 was 23.33, 24.81 and 51.86 percent respectively. Inflation moved from an average of 12.6% in 2009 to 8.5% and 8.0% in 2013 and 2014 respectively. Life Expectancy at Birth (Years) stands at 48.44in 2014, Adult Literacy Rate (%) and Incidence of Poverty are 57.9 and 69.0 respectively as at 2010.

Nevertheless, Subsidy Reinvestment Programme (SURE-P) is aimed at Supporting Social Safety Net programs like Save One Million Lives, creating jobs for the teaming unemployed youths including infrastructure and providing health care services for the Nigerian populace. Other social protection and insurance programs are the Universal Basic Education Programme, Cash Transfers Schemes, National Health Insurance Scheme, Contributory Pension Scheme etc., all aimed at improving the lives of majority of Nigerians.

Following the change in regime to democratic rule in 1999, the government once again commenced a process of reviving development planning that had hitherto been neglected by successive military administrations. This was informed by government's need for evidence based policy-making especially in view of the Millennium Development Goals (MDGs), now called Sustainable Development Goals (SDGs), the wider democratic space which allows for the plurality of political participation, as well as new governance expectations as a reflection of citizens' increasing interest, knowledge and awareness about their own civic responsibilities. In 2004, Nigeria developed a home-grown Poverty Reduction Strategies (PRS) called NEEDS, which in part aimed at strengthening the country's progress towards the attainment of the MDGs. National Economic Empowerment and Development Strategy (NEEDS) at the federal level was also replicated at the State-level as State Economic Empowerment and Development Strategies (SEEDS). Both MDGs' planning and the NEEDS/SEEDS process confronted and revealed the huge decay in country's statistical system. Indicating that the statistical system clearly requires an overhauling to support not just MDGs planning and monitoring, but development planning as well as the entire range of data dependent activities and processes for development to take place.[3]

The Paris21 and the Marrakech Action Plan for statistics development drew attention to, and proposed a roadmap to overcome one of the greatest developmental challenges of developing countries, including Nigeria. Earlier attempts to address the statistics challenge in Nigeria included the development of both National and State Statistical Master Plans, and Nigeria's National Strategy for the Development of Statistics (NSDS, 2010-2014).

The importance of statistics in planning at the macro, micro and unit levels cannot be over-emphasized as no meaningful development can take place at any of these levels without accurate and reliable data. Over the last decade, the demand for statistics continued to increase as policymakers, administrators, civil society, businesses, researchers and the general public increasingly need statistics to inform their decisions. Consequently, the Statistics Act, 2007 (Act No. 9 of 2007) established for Nigeria a "National Statistical System" (NSS) with objectives to: raise public awareness about the importance of statistics; collect, process, analyze and disseminate quality data; promote the use of statistics; and build capacity for the production and use of data. [10]

The Act has in addition established a National Statistics Office, the "National Bureau of Statistics" (NBS) which plays the role of coordinator of the NSS with powers to collect, request and be provided with data throughout the country on a wide range of matters. The NBS serves as an institution responsible for the production of official statistics that is required to sharpen the apparatus for economic growth and development. The Statistician General is responsible to the Presidency and is therefore politically in a position to influence decisions of government. Good statistics that have been collected according to agreed good practices are crucial as a tool for development. They provide the information, the evidence needed for the business of government-both day to day administrations as well as for policy analysis.

The NBS is to adopt a suitable and acceptable methodology, definitions and standards (Compendium of Statistical Terms, Definitions, Concepts and Methodologies), across all agents of statistics in the country both at the state(SSA) and local government levels, in an effort to make statistics usable.

Policy, planning, monitoring, evaluation and decision-making, need a reliable, relevant, credible and sustainable national statistical system underpinned by robust and predictable coordination mechanisms. In view of Nigeria's Vision 20:2020 (NV20:2020) which is a long term development goal designed to propel the country to the league of the top 20 economies of the world by 2020, there is need to redirect both the quantity, quality and methods of statistical production to the path of growth. The road map has been carefully laid out in the implementation plan of the Vision. Over the last eight years of NV20:2020, tremendous improvements have been made in the scope, relevance, quantity, timeliness, and quality of statistical data produced by the NBS as they are gauge for the milestone of the Vision agenda. The three pillars of the Vision agenda are:
a). Guaranteeing the productivity and wellbeing of the people
b). Optimizing the key sources of economic growth
c). Fostering sustainable social and economic development.
Essentially, the development and implementation of the NSDS within the time space is an integral part of the Vision.

III. THE ROLE OF STATISTICS IN ECONOMIC AND SOCIAL PLANNING

At the Federal level, the National Bureau of Statistics (NBS) is a parastatal of the National Planning Commission (NPC), headed by a Statistician General. With the enactment of the Statistics Act, 2007, the NBS is charged with the responsibility of coordinating national statistical system, NSDS; collect, compile, disseminate/publish and store data on a wide range of economic and social statistics using the best scientific methodologies for Nigeria. The Bureau also helps to develop and maintain databases for national statistics and interface with other countries and statistical agencies across the world. It promotes coordination of statistics among producers of official statistics in the country with a view to advance the quality and quantity for optimum use, and to serve as an apparatus for standards, classifications and procedures for producing official data [10].

The NBS has offices in all the States of the federation, including three Schools of Statistics located in Ibadan, Enugu and Kaduna respectively. It produces a wide range of data for the society with the exclusion of Population Census and related activities which are the responsibilities of the National Population Commission. In addition, it conducts necessary censuses and surveys, and produces sets of data required to gauge status of development through planning, decision-making, and assessment of government policies and provides statistical advice to the government [3].

Monitoring is a continuous process that requires data which is generated to assist in establishing whether planned targets are likely to be achieved or not. This is another area where Statistics plays an important role. In monitoring and evaluation of ongoing economic reform programs of the governments in Nigeria, statistical data is at the same time imperative as it will provide the necessary information on performance indicators which serve to measure the impact of policy and programs on the quality of life of target populations.

The various issues facing Nigeria, such as HIV/AIDS pandemic, shortage of skilled professional in technology, sciences and medicine, unemployment issues like public debt, globalization, and unemployment and reformed of social programs require statistics that will provide insight into the underlying realities. The provision of such strategic information in the context of declining resources is the major challenge for National Statistical Offices. The situation of course calls for priority setting, by this we mean identifying the new information to be produced; the dissemination approaches to be favored; the means of optimizing operationalefficiency and of reducing response burden, and the program reductions made by budget constraints. Priority setting is based on judgment rather than mechanical approaches. The inputs used to influence judgment are therefore very important and obtained through statistical data. It must be emphasized that statistical information is an input and a vital one, for the efficient operation of economic and social agents in both the private and public sectors. The role of statistics in national development becomes increasingly more complex, its areas of intervention multiply and expansion of National Statistical Offices as well as the regulations on production of statistics becomes more necessary at this point in time for any meaningful social and economic growth to be recorded.

Growth is said to occur when an economy's productive capacity increases and this in turn is used to produce more goods and services in successive time periods. Thus, economic growth is a desirable goal which leads to economic development. However, the challenge of economic development has remained a daunting one for many developing nations such as Botswana and Nigeria.

Consequently, development is meaningful only if there is improvement in the quality of life of the people and therefore, there must be defined objectives and goals for development purposes such that:-
(i) Actions can be guided towards the realization of the set goals,
(ii) The goals are recognizable and identifiable when they are reached and
(iii) Performance and results can be meaningfully appraised particularly in the course of movement towards the goals.
Timely, complete, accurate and reliable statistics is critical to creating and sustaining an environment which fosters strong, equitable development, and is an essential ingredient for formulation of sound economic development policies. Thus, for economic management to attain its ultimate goals of sustainable economic development improved societal welfare, equity and other macroeconomic goals, must be based on the availability of timely and reliable aggregate statistical indices such as Gross Domestic (GDP), Inflation Rate, Unemployment Rate, Interest Rate, Income per capita and Balance of Payments to name a few.

From the United Nations view point [9], statistics is a pathfinder for solution as well as a veritable tool in assessing the extent or level of national development of an economy in a given period. For government of a nation to have an adequate planning for the payment of pension and gratuities for the retiring workers the use of statistics is also significant [12]. The national economic policies and complex interactions among various sectors of the economy make it imperative for building up macroeconomic planning models. This kind of model build-up is only possible with statistical information (which is also used in estimating the parameters of the model) enables us to monitor the performance of the economy and the social well-being of the people; the basic statistics required in economic policy formulation include:

- Macroeconomic aggregates (GDP, GNP, Capital Formation, External transactions, input/output coefficients, etc.).
- Consumption data (Government & Private)
- Investment Expenditure (Government & Private)
- Import and Exports
- Prices and Inflation
- Industrial Production and Indices
- Energy and Power production/ consumption
- Agricultural and raw Material Production
- Transportation & Communication Indicators
- Government Services
- Housing & Finance
- Interest Rates & Exchange Rates
- Banking & Finance

Also some basic statistics needed in social policy formulation and execution include:
- Basic Statistics on Education
- Health Indicators
- Population Characteristics
- Sanitation and Water Supply Indicators
- Cultural and Immigration Flows
- Religion & Human Rights indicators
- Public order indicators

The role of statistics and indeed of statisticians in national development is very critical. For instance, Income per capita which immediately raises the wider issue of income distribution in a sovereign nation such as Botswana is a topic which generates public interest, especially during budget presentation to the public. It is one topic, which interests everybody, to the extent that almost everybody has a point of view. Yet, the statistician is expected to state and measure the situation as it is. Statistics can reveal to us especially in areas of income policy and any matter relating to economic planning and development that you cannot have peace where there is injustice; for peace and justice are inseparable: a person diseased and malnourished is not at peace, a young man or woman without employment is not at peace. Consequently, a society which has all these afflicting the citizens shallalways remain torn by crime, delinquency, violence, cruelty and low development.[4] Thus, statistics on these issues serves as monitoring indicators which are vital for development plans. For instance, it was observed from 2003 poverty datum line (PDL) for Botswana [3], that the incidence of poverty (persons below PDL) was 30.6% in 2002/2003. The sectoral distribution showed that the incidence of poverty in urban areas was 19.4% compared with 44.8% recorded for rural areas.

These figures provide a potent tool for policy review of pervert reduction strategies, implementation mechanisms and monitoring and evaluation. This survey also revealed that there were 181402 Households with per capita consumption less than P300 a month, which is 46% of the total number of Households surveyed. In Nigeria, for example, according to year 2009 social statistics report [10], it is observed that 65% of Nigeria's households were poor.

The sectoral distribution showed that about 74.8% of the urban households were poor while the figure for the rural was 68.9%. These poverty figures provide a potent tool for policy review and implementation for poverty alleviation purposes. This survey also revealed that the average household income for 2009 stood at less than N5,149.8 per month.

The importance and availability of timely and reliable statistics on socio-economic life of a sovereign nation cannot be over-stressed. For instance, a number of goals have become generally accepted as the objective of economic policy and development. Movement towards their attainment is deemed to lead to macroeconomic stability and increased national welfare. In the case of developing countries like Botswana, the objectives may include: full employment, or a low level of unemployment, price stability, balance of payments equilibrium, economic growth and development. The first two objectives refer to Internal Balance while the third refers to the External Balance. Full employment has been ranked amongst the foremost objectives of economic policy[2], though there is no unanimity on the meaning of full employment. It does not mean zero unemployment; full employment is not always full. It is now agreed that full employment stands for 97-98 percent employment or an unemployment rate of 2-3 percent. The objective of calculating inflation rate (Consumer Price index-CPI) is a measure of monetary stability.

An inflation rate of two to three percent (3%) a year is favored by planners because fluctuation in price brings uncertainty and instability to the economy, with unnecessary loss to some and undue advantages to others. Thus, a policy of price stability keepsthe value of money stable, eliminates cyclical fluctuations, brings economic stability, helps to reduce inequalities of income and wealth, secures social justice and promotes economic welfare.

The objectives of calculating the External Balance is equally important because equilibrium is desirable in the balance of payments since a deficit could lead to a drain of a nation's external reserves and an accumulation of external debt. A surplus, on the other hand, will lead to an increase in foreign reserves and money supply. Statistics are used in economic planning for the following purposes:
(i) Statistical data help us in comparing the rate of development of one country with the rate of development of the other country.
(ii) The importance of consumption, production, distribution etc can be known from the available statistical data.
(iii) The success that a plan achieves is measured best by the use of statistical methods.
(iv) Statistical data are used for knowing about the progress in the techniques of production, volume of productions imports, exports, etc.
(v) Planning involves fixation of targets and priorities. Targets which are fixed have to be achieved within a specific period of time.

IV. STATISTICAL INFORMATION AND NATIONAL DEVELOPMENT

As already seen above, statistical information is needed for making complex evidence based national decisions; in this millennium planning in developing countries required formulation of goals that is followed by a well thought out program for execution is of the utmost importance. Planning a nation's economic and social development is complex involving the process of constructing, executing and checking interrelated sets ofdecisions. 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 system, without which a planned economy is unthinkable. Such statistical system must make available (for planning and other purposes of government 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 [1]. However, planned decisions rely very heavily on high quality statistical data. National development requires a well-organized statistical system allowing planners to work on the broad set of statistical indicators that are indispensable for the development and improvement of planning.

V. CONCLUSIONS

This paper concludes that statistical information serves impetus to the direction, growth and development of a Nation. The production of statistics should be legislated for a timely, accurate and effective dissemination of data. In Nigeria, the main provision of the 1957 statistical ordinance (for data collection, particularly population census and the duties of the federal chief statistician) should incorporate the reality of the present e-data needs and dissemination around the world. Statistics Act should be reviewed to enable the National Statistics Office to grow beyond its present formation so as join its comity of National statistical offices in producing timely and accurate data for national, regional and international users.

VI. RECOMMENDATION

a. **Statistics Trust Fund:** There is need to strengthen the case for establishing a Statistical Trust Fund (STF) based on the decision of stakeholders and in order to reduce the burden currently on the Government. Such a Trust Fund could flow from corporate bodies as well as through TETFUND.

b. **National bureau for statistics (NBS) coordination of donors:** NBS should ensure that each producer has an annual work program to which users can key into. The work program should take into consideration all the users' needs. Therefore, local and international users demand for fresh data through surveys, should be sent through NBS who should in turn check the program of producers to see if any of them has such survey in its program.By so doing, the following will be achieved:

- Coordination and collaboration within NBS will be strengthened,
- There will be sanity in the field
- The producers will be seen to be busy and
- NBS will be a position to direct Development Partners assistance

c. **Government Takeover of Funding of Statistics Production**: It was envisaged in the NSDS, 2010-2014 that the Governments of the Federation should by the end of the strategy have taken over from the Development Partners, the funding of Statistical Production at all levels.

d. **Implementation of The Strategy and Plan:**Strategic implementation is perhaps the most central aspect of the NSDS. Putting projects into action is the vital step linking planning stage to the final achievement of strategic objectives, which makes implementation of utmost importance to strategic planning efforts. Many effectively formulated strategies fail because they are not successfully implemented. The NSDS is all about attaining the vision, fulfilling and achieving the mission, core values, objectives and key outputs of the NBS.

e. **Establishing Plan -Supporting Structures:**An evaluation of the Project Implementation Unit (PIU) in NBS in terms of efficiency, timely implementation and role in capacity development for the NSDS indicated a substantial degree of success over the last years. Project Implementation Unit (PIU) was formed in NBS to provide for support, manage and improve capacity of the Bureau to collaborate and coordinate the implementation process of the medium term plan.

f. **Monitoring and Evaluation System of statistical report:**Monitoring and evaluation avail the satisfaction of reporting progress made and imputing corrective measures to loopholes that hinder achievements to strategic objectives and goals. It follows a logical framework in which quality can be measured and institutionalized

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