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« MEASURING SUSTAINABLE ECONOMIC DEVELOPMENT IN NIGERIA: A CONCEPTUAL APPROACH »

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Abstract:
Sustainable economic development is the desire of all nations of the world but how to attain a sustainable economic development remains a challenge to many nations. Measuring sustainable economic development is a permanent theoretical and empirical argument in the economics literature. Measuring and managing Nigeria's sustainable development is key to achieving the 2030Development Agenda. The multiple challenges to development in Nigeria necessitate the use of a holistic approach that integrates economic, social and environmental development. As stated under the economic objectives of Nigeria, the State shall harness the resources of the nation and promote national prosperity, and an efficient, a dynamic and self-reliant economy; control the national economy in such manner as to secure the maximum welfare, freedom and happiness of every citizen on the basis of social justice and equality of status and opportunity; manage and operate the major sectors of the economy; and protect the right of every citizen to engage in economic activities. A new way of economic life that will empower Nigerians to meet their needs and still be able to conserve the earth and its resources for present and future generations is needed. The controversy in interpreting sustainable economic development has allowed alternative methods for measuring sustainable economic development. In general, this paper reviews the neoclassical approach in measuring economic sustainability and introduces World Bank concept for measuring sustainable economic development based on Adjustment net savings concept. The study concluded that to measure overall sustainable economic development in Nigeria, Adjusted Net Savings is the best measurement because it measures total wealth of a nation

1.0 Introduction:

The concept of sustainable development has become a widely recognized goal for human society of the 21st century. The idea of sustainable development came into light in 1987 with the publication of *Our Common Future,* which firmly established sustainable development as a critical component of international development (Bolt, 2002). As the anomalies were increasing inequalities within and among the nations, increasing poverty, especially in developing countries; depletion of the ozone layer;

global warming; depletion of natural resources, some species of animals and plants, water and air pollution, etc., sustainable development came as an effort to change the way of thinking towards the planet. Sustainability is mostly perceived as the combination of environmental, social and economic performance. Today, the human needs of many people are not met, and by the same time the ability of future generations to meet their needs is being compromised. It is because of this that sustainable development has raised as a concept, affected by the need to offer people a kind of development which can meet the needs of the present without compromising the capacity of future generations to meet theirs instead it opens a wide range of interpretations.

Economic sustainability forms an important component of sustainable development. Economic sustainability is the maintenance and sustenance of a high real growth rate of the economy to achieve the development or economic objectives. Despite the huge resources in Nigeria, the country ranks low in economic performance. Nigeria has not been able to maintain the growth rate necessary to reduce poverty. Nigeria suffers from lack of balanced development where economic, social and environmental dimensions are given due consideration for long term sustainable development.

Measuring and managing Nigeria's sustainable economic development is key to achieving stable economic (Mercy, 2015).The multiple challenges to development in Nigeria necessitate the use of a holistic approach that integrates economic, social and environmental dimensions. As stated under the economic objectives of Nigeria, the State shall harness the resources of the nation and promote national prosperity, and an efficient, a dynamic and self-reliant economy; control the national economy in such manner as to secure the maximum welfare, freedom and happiness of every citizen on the basis of social justice and equality of status and opportunity; manage and operate the major sectors of the economy; and protect the right of every citizen to engage in economic activities. The fulfillment of these objectives requires a sustainable economic development.

The crave for attainment of sustainable economic development has led to the development of various tools and measures for structuring and conducting sustainable economic development by various researchers. Prior studies reviewed concentrated on variables such as Gross domestic product (GDP) (klash,1994; Jonathan,2000; Ishmael and Rosemary 2015; Michael,2016) , Generational environment debt(Jernelov, 1992; Azar and Holmberg, 1995), ratio of debt to export(Sofi, Ghulam and Zakir, 2011) and Gross National Product (GNP) (Edward, 1987; Moses, Timothy and Abiodun, 2017; and Shahbaz, Ahmed and Liaquat, 2008) all this proxy measure more of economic growth which is an external notion, whereas development is a broader internal one by including the raise in standards of living and poverty reduction. This paper focusedon Adjusted Net Savings (ANS, also known as *Genuine Savings*).This indicator benefits from a very high visibility. It has been developed by the World Bank (2002) and estimated for more than 190 countries over the period 1970-2019. Furthermore, it has been praised by many economists (Fereira and Vincent, 2005; Bolt 2002; Hamilton and Cement, 1999; Hartwick, 1993; Pearce, 1993; Hanan, 2014; Atkinson and Hamilton, 2007)as being anchored in a coherent theoretical framework, being therefore a better indicator than many other composite "sustainability" indicators. As this indicator is to influence policy conclusions, namely at the World Bank level, its potential impact on many countries deserves that transparency be made on its normative aspects.

2.0 LITERATURE REVIEW

2.1 Concept of Sustainable Development

The concept of sustainable development appears to have emerged by one of its earliest efforts in the global arena with the Stockholm Conference held in 1972. World Conservation Strategy (IUCN/WWF/UNEP, 1980) defines sustainable development as follows:

"For development to be sustainable, it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base; and of the long-term as well as the short-term advantages and disadvantages of alternative action."

World Commission on Environment and Development (WCED, 1987) ascertain that Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
It is now widely agreed (at least amongst those promoting and studying the concept) that there are three pillars to sustainable development:

a. Economy: The creation of wealth and livelihoods;
b. Social: The elimination of poverty and improvement of quality of life;
c. Environment: The enhancement of natural resources for future generations. (Dalal-Clyton and Bass, 2000,).

2.2 Concept of Sustainable Economic Development

Economic development forms an important pillar of sustainable development. Sustainable economic development is the maintenance and sustenance of a high real growth rate of the economy to achieve the development or economic objectives.

Sustainable economic development is normally measured by real GDP which focus more on economic growth than sustainable economic development in a nation GDP has been unable to tackle central issues related to the quality and sustainability of people and societies' ways of life. However, a better proxy for measuring sustainable economic development is Adjusted Net Saving (ANS) which measures the true rate of saving in an economy (World Bank, 2002; Pearce and Atkinson, 1993 and Fereira and Vincent, 2005).

2.3 Concept of Adjusted Net Saving

Adjusted net saving(ANS) measures the true rate of saving in an economy after taking into account investments in human capital, depletion of natural resources and damaged caused by pollution. Adjusted net saving, known informally as genuine saving, is an indicator that aims to assess an economy's sustainability based on the concepts of extended national accounts. The very first formulations of the ANS (Adjusted net savings), as a measure improving the traditional measures of savings, appear in (Pearce and Atkinson, 1993; Hamilton, 1993; Hamilton, 1994; World Bank, 2002; Hamilton, Pearce and Atkinson, 1997 and World Bank 2006). A more formal basis to the ANS is to be found in Hamilton and Clemens (1999), where the authors more rigorously present the adjustments to be done to savings measures to come to a more comprehensive indicator. This new type of measure was perceived and justified as contributing to enrich national accounting, enabling along the way a better conceptualization of "sustainable development" Hartwick (1993).

World Bank operationalizes net adjusted savings formular is as follows:
ANS= investment in man-made capital net - foreign borrowing +net official transfers-depreciation of man-made capital-net depreciation of natural capital+current education expenditures
Where as:

Investment in produced capital, net foreign borrowing and net official transfers are obtained from the national accounts. Although depreciation of produced capital is not, estimates can be derived from data on produced capital formation. The World Bank uses estimates from the United Nations Statistics Division.

Net depreciation of natural capital can be divided at a basic level into resource extraction on the one hand and environmental pollution on the other. The World Bank estimates resource extraction for a range of fossil fuels (oil, natural gas, hard coal and brown coal), minerals (bauxite, copper, iron, lead, nickel, zinc, phosphate, tin, gold and silver), and one renewable resource (forests).

2.4 Theoretical Review

Neoclassical theory of Intergenerational equity

The genuine savings approach is based on theoretical assumptions of neoclassical approach of intergenerational equity. It requests the usual neoclassical assumptions: efficiency prices; a market economy composed of individuals acting independently, each individual is motivated to maximize his marginal utility; wellbeing stems from the consumption of goods and services (Fels and Zeckhauser, 2008). A major contribution of this assumption is the possibility of substitutability between different production resources used to manufacture goods and services. This allows for a safe assumption of a basic aggregate production function that sums up the different types of capital. Among the neoclassical assumptions is the concept of intergenerational equity, which depends on the present value to establish conditions for the efficient paths for allocation of resources overtime, and to select which path eventually maximizes social welfare (Muller, 2008). It also assumes a social welfare function which sums up individual utility functions and defined in terms of the marginal utility of individuals in society based on their consumption function. In principle, there are many paths of efficient intergenerational allocation of resources, but, only one can maximize welfare (Kondyli, 2010).

Studies such as Uchenna, Antonio and Yuchen, (2013); Pearce (2008); Edward (1987); Hanan (2014) adopted this theory.

Economic sustainability development theory

This work is anchored on sustainability development theory propounded by Gro Harlem Brundtland (1980). The theory proposes that sustainable development must meet the needs of the present without compromising the ability of future generations to respond to their needs. The import of this statement is that sustainable development in Nigeria ensures that future generations have the right to a better standard of living, prevent the crises in resources, show the need for national quality and create the awareness of environmental, economic, and social needs of the people (Abbas, 2011). In line with this theory, the social, economic, political and environmental sustainability factors in Nigeria must be stable, viable and equitable for us to be able to achieve sustainable development in Nigeria. Economic sustainability in development theory 'Economic sustainability' implies a system of production that satisfies present consumption levels without compromising future needs. The 'sustainability 'that 'economic sustainability' seeks is the 'sustainability' of the economic system itself. The notion of 'economic sustainability' was originated by Hicks. In his classic work *Value and Capital*; second edition 1946, Hicks defined' income' as 'the

amount one can consume during a period and still be as well off at the end of the period'. Traditionally, economists, assuming that the supply of natural resources was unlimited, placed undue emphasis on the capacity of the market to allocate resources efficiently. They also believed that economic growth would bring the technological capacity to replenish natural resources destroyed in the production process.
Studies such as Alba, 2013; Ishmael and Rosemary, 2015; Daniel, Georgeta and Stefan, 2017 and Xuluo and Jiangang, 2019 are in line with this theory.

2.5 Empirical Review
This section reviews related empirical studies on measuring sustainable economic development. Available studies have individually considered different proxies for measuring economic development across the globe. These therefore, serve as the review area in this study.

Jonathan M. Harris (2000) studied the principles of sustainable development. He employed the Rostow's stages of Economic growth to advance his argument for sustainable Development. He also emphasized the major area of concentration for development purposes over the years which are; industrialization and agriculture, basic needs in the 1970s which included Education, nutrition, health, sanitation and employment. Human Development index (HDI) which uses health and education measured together with Gross Domestic product (GDP) as indicator for economic and find out that education and health contribute to sustainable development. Although the study distinct itself by using Rostow's stages of Economic growth to advance his argument for sustainable development, however, the study used GDP to measure economic development, which would have been measured by adjusted net saving that act as a counter weight to traditional system of national accounting because it measures total wealth of an economy rather than merely calculating economic growth.

Shahbaz, Ahmed and Liaquat (2008) investigated the impact of trade and financial development on sustainable economic development in Pakistan. Findings revealed that financial sector indicators and real interest rate had a positive significant effect on economic development which was proxy using Gross National Product (GNP). However, GNP only measure a national's total economic activities not the total wealth in an economy.

Sofia, Ghulam and Zakir (2011) investigated the relationship between financial sector development and sustainable economic development in Pakistan. The study found out that financial sector had positive impact on the sustainable economic development in short run as well as in the long run. The study measured sustainable economic development using ratio of external debt to export which is not among the indicator of measuring sustainable economic development. The acceptable proxy for sustainable economic development is adjusted net savings, which has been used in the work of World Bank (2002); Hamilton (1994) and Drastichova, (2016).

Alba Kruja (2013) examined sustainable economic development in Nigeria. The study found out that there exists a relationship between the three pillar of sustainability (economic, social and environment). He also found out that a nation cannot be sustainable without these three pillars. The study used human capital, poverty reduction and carbon emissions as an indicators for sustainability. However, Human capital is not a good measure for economic development.

Ishmael and Rosemary (2015) studied environmental degradation and sustainable economic development in Nigeria. The study found out those floods, erosions and drastic drop in agricultural output as a result of environmental degradation affect sustainable economic development in Nigeria. The study looks at the effect of environmental pollution on real Gross Domestic Product (GDP) as an indicator for sustainable economic development. Sustainable economic development is different from economic growth, GDP measures the real growth of an economic but cannot be used to justify a nation development.

Michael (2016) examined strategies for achieving sustainable economic development in Nigeria through financial inclusion in the agricultural sector. The study found out that financial inclusion in Nigerian agricultural sector can be used to achieve sustainable economic development. Although, the study used good indicators to proxy financial inclusion in agricultural sector but however, proxy sustainable development using Gross Domestic product (GDP) which is among the advanced indicators to measure sustainable economic development in the literature, see World Bank (2002) and Hamilton & Atkinson (1996).
Fizza, Muhammed and Akbar (2016) studied pattern and sustainability of development in Pakistan. The study employed the Hicks-Page-Hartwick-Solow rule for measuring sustainable development. The study reveals that Pakistan has experienced unsustainable economic growth and development.

Daniel, Georgeta and Stefan (2017) investigated drivers of sustainable economic development in EU-28 countries. The study employed panel data regression models, in the form of fixed and random effects models, alongside system generalized method of moments, they examine several drivers of real gross domestic product (GDP) as a proxy for sustainable economic development. They found a negative connection between technology, communication and old-age dependency ratio and

sustainable economic development. However, GDP cannot be used to ascertain the total wealth of a nation which means it is not a good proxy for measuring sustainable economic development.

Moses, Timothy and Abiodun (2017) examined Human capital and sustainable economic development in Nigeria. The study found out that human capital formation leads to sustained economic growth with reducing environmental degradation. However, the study focuses on economic growth proxy by GDP which does not capture sustainable economic development unlike adjusted net savings.

Oyegoke and Wasiu (2018) carried out a research on the effect of economic growth on poverty reduction in Nigeria and posit that there is a negative relationship between economic growth and poverty. The study however, measured economic growth with GDP (Gross Domestic Product) which only capture the real growth of an economic but cannot be used to justify a nation development.

Radu, Vladimur and Cristian (2019) studied impact of financial sector development on sustainable economic development. The study found out that financial sector development is negatively and significantly influenced by real GDP growth rate and real GDP per capita growth rate which are used to proxy sustainable economic development. However real GDP growth rate as used in the study measures more of economic growth which doesn't capture sustainable economic development.

Xuluo, Xuan and Jiangang (2019) examined the impact of financial inclusion on sustainable development in China. The study found out that financial inclusion has a short term positive impact on sustainable development. However, the study use real Gross Domestic Product to proxy sustainable development which doesn't capture social and environmental aspect of sustainability.

Stephen, Kling and Gretches (2019) studied the role of economies in analyzing sustainable economic development. They concluded that economies play a positive role on natural capital, human capital and manufacture capital. These variables are used to measure economic development in this study. However, the study did not explain the reason why sustainable economic development was measured with natural, manufacture and human capital.

Adetula, Adesina, Owolabi and Ojeka (2019) examined investment in education for economic development in Nigeria. The study concluded that investment in education will affect the economic development of a nation positively using Gross domestic product to measure economic development. However, GDP is used to measures mere economic growth rather than total wealth of an economy.

3.0 DISCUSSION OF FINDING

From the empirical of this study, studies in Nigeria have used differs proxy to measure sustainable economic development. For example, studies of Jonathan, (2000); Ishmael and Rosemary (2015); Michael, (2016); Xuluo and Jiangang (2019); and Radu, Vladimur and Cristian (2019)among many others measured economic development with GDP. On the other hand, studies that use generational environment debt to proxy economic development: Jernelov, (1992); and Azar and Holmberg. (1995). Sofi, Ghulam and Zakir, (2011) measures economic development using ratio of debt to export and Gross National Product (GNP) was used by : Edward, (1987); Moses, Timothy and Abiodun, (2017); and Shahbaz, Ahmed and Liaquat, (2008) to measure development among several others. This study pinpoint that Adjusted Net Savings (ANS) is a good indicator, which tackles a global issue and aims at enlarging the conception of "wealth" which none of the above studies have not used it in capturing sustainable economic development in Nigeria and therefore, cannot be said to have capture the overall economic development of a nation.

CONCLUSION

The study concludes that there are several variables to consider when measuring sustainable economic development in a nation. In order to measure proper sustainable economic development of a nation, the World Bank introduced indicator (ANS) which is referred to as a step in the right path to develop a fully comprehensive sustainable economic development should be put into consideration because it measures comprehensive sustainability which reflect as much as possible the actual interaction of ecological and social pillars of sustainable development.

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