IMPACT OF BLUE ECONOMY ON ECONOMIC GROWTH IN NIGERIA

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Abstract

The study examined the impact of blue economy on economic growth of Nigeria for the period of twenty-three (23) years spanning through 2000 to 2022. The independent variables employed in the study include fisheries, desalination, aquaculture, and tourism. Meanwhile, the dependent variable (economic growth) proxy by (RGDP). Data were collected from the Central Bank of Nigeria Statistical Bulletin and World Bank Development Indicator (2022). Data set was analyzed using descriptive statistics, correlation analysis and ARDL with the help of E-VIEW version 9.0. The findings reveal that desalination, aquaculture, and tourism significantly influence economic growth of Nigeria. The study thereby recommends that efforts to increase fishing activities in as much as it would not amount to overfishing should be encouraged. Also, Investments should be focused on activities such as harvesting fish and other seafood, aquaculture and tourism as the results reveal that the blue economy is a good alternative to promote economic growth.

Keywords: Fisheries, Desalination, Aquaculture, Maritime Tourism

JEL Classification: Q01 R11 Q22 O47

1. INTRODUCTION

The blue economy, which includes water-dependent businesses in the fields of tourism, maritime transportation, energy, and fishing, is a relatively new field of research. As the oceans and seas constitute the backbone of the global economy and provide great potential for development and innovation, blue growth fosters the long-term expansion of maritime and marine industries. The blue economy has emerged as a critical driver of national economic development. A significant part of maritime states tries to improve the use of marine resources efficiency, including marine space (Elisha, 2019). A decade ago, the EU implemented a blue economy growth strategy known as the Intra Maritime Policy (IMP) within the objectives of the 2020 Strategy

in order to achieve sustainable and inclusive growth. To achieve it five main sectors were selected: biotechnology, renewable energy, coastal and maritime tourism, aquaculture and mineral resources, as well as other emerging subsectors. The principles of the 2020 Strategy are based on ocean management, with the commitment to a sustainable and environmentally friendly development of ocean and economic activities (Sulanke & Rybicki, 2021).

The term "blue economy" refers to a broad range of industries, including aquaculture, shipping, tourism, renewable energy, and marine biotechnology. It has great promise for the expansion of the global economy and the development of new jobs, particularly in coastal developing nations. Sustainable ocean resource development can open up new business opportunities and diversify coastal economies (Bhattacharya & Dash, 2020). Furthermore, fishing and aquaculture are important sources of protein and a source of income for millions of people worldwide. To ensure long-term food security, these resources must be managed in a sustainable manner. However, the ocean is an important carbon-dioxide sink and a key player in controlling global climate change. Numerous ecosystems and a wide variety of marine creatures can be found in the ocean, but many of them are under threat due to overfishing, pollution, and climate change. Again, the Nigerian economy, until the late 1960s, heavily relied on agricultural products and a few solid minerals for its foreign exchange. However, the discovery of abundant oil resources and the subsequent oil boom of the 1970s led to the neglect of other key sectors, particularly agriculture and the blue economy. (Adeyemi & Abiodun, 2013).

Blue economy activities, associated with ocean resources, are globally recognized for playing a crucial role in alleviating extreme poverty and hunger through employment and economic opportunities. Nigeria, endowed with a coastline of about 870km and approximately 3,000 kilometers of inland waterways, possesses various natural resources such as petroleum, natural gas, tin, columbite, iron ore, coal, zinc, limestone, lead, and other minerals. The negative consequences of excessive reliance on oil highlight the necessity of diversifying into the blue economy, encouraging a strategic shift away from oil toward alternative economic sectors. The blue economy, integral to biodiversity, ecosystems, food chains, livelihoods, and climate regulation, offers an innovative approach to sustainable development for a growing global population (Abdullahel, 2017). As the ocean covers about 75% of the Earth's surface and supports more than half of all living things, sustainable management becomes paramount to ensuring its ability to sustain human populations. This study shows how Nigeria can benefit from the blue economy. Gross Domestic Product (GDP) is the most widely regarded indicator of economic performance, (Henderson et al., 2011). GDP per capita reflects the average economic output or income per person and is commonly used as a measure of a nation's economic performance and living standard.

Gross domestic product is the gross value of all resident producers in the economy plus product taxes (Hoshino, 2011). GDP per capita measures how much a nation spends on each person and measures economic success (Peña-López, 2017). The concept of blue economy solves environmental problems and turns limited

resources into plentiful ones, according to Kathijotes (2013). Sarker et al. (2018) focused on developing a framework for managing blue growth to help the blue economy and boost economic growth. It is worth noting that overfishing, marine pollution, and coastal erosion, all aggravated by climate change, are tipping points for the seas and oceans. Healthy oceans mitigate global warming and provide employment and food (Mulazzaniet al., 2016). Blue economies require interdisciplinary research to relate them to economic progress (Golden et al., 2017). Both the blue economy and the creative economy in Nigeria have the potential to fuel long-term economic expansion by capitalizing on innovation, entrepreneurship, and intellectual property. Nigeria can boost economic growth and promote environmentally friendly practices by applying innovative thinking to the responsible exploitation of maritime resources. This research addresses aquaculture, fisheries, marine tourism, and desalination in the context of ocean resource management. The study examines how the blue economy affects economic growth in Nigeria.

1.1. STATEMENT OF THE RESEARCH PROBLEM

The World Bank Group (WBG) identified some significant human impacts on blue economy to include; Overfishing, Habitat degradation, climate change related phenomena, unfair trade and ad-hoc development, among others. In Nigeria, available data show that about three components of the maritime economy which include desalination, tourism and fishing are developed. However, there is currently no unified and comprehensive policy framework that integrates these sectors under a maritime economy regime. According to Webmaster (2018), Nigeria's shipping policy which is considered out-of-date presently is a stand-alone policy. In addition, the Agricultural Promotion Policy (2016-2020) which is superintended by the Federal Ministry of Agriculture and Rural Development (FMARD) does not include fishing in her agricultural objectives. Also, there appears not to be unity of purpose between the National Fisheries Development Committee (NFDC) and the Federal Ministry of Agriculture. In addition, the activities of sea pirates and armed robbers discouraged some individuals who developed interest in championing the cause of blue economy in the country. Above all, Nigeria has a number of maritime institutions which include Maritime Academy of Nigeria (MAN) Oron, the Nigerian Institute of Oceanography and Marine Research (NIOMR), Federal Department of Fisheries Department (FDF), the Nigerian Maritime Administration and Safety Agency (NIMASA), the Nigerian Ports Authority (NPA), and the Nigerian Shippers' Council (NSC), among others.

The challenges here are multi-faceted and they pose problems occasioned by the existence of some of these institutions under different ministries that operate independently and this hinders coordination of activities and proper accountability that would enhance the nation's blue economy. Consequently, the battle of supremacy and certain budgetary issues that might weary the government and slow down the growth of blue economy could arise. Generally, lack of enabling laws, regulatory policies and lack of proper enforcement of the few existing laws create additional problem to the development of blue economy in Nigeria. For instance, the

proposed National Fisheries Policy, which is yet to be fully discussed and adopted, six years after it was first presented at a National Fisheries Development Committee (NFDC) meeting in Lokoja (Olorunyomi, 2022). Inadequate documentation of the activities of formal and informal agents in the sector makes some data and information unavailable for meaningful research efforts.

Furthermore, there are studies on blue economy and economic growth that are either inconclusive or contradicting, reporting positive or sometimes negative results examples are (Elia & Indrajaya 2022; Jacob and Umoh 2022; Bhattacharya, and Dash, (2021) who disclosed a positive relationship among blue economy and economic growth. However, (Islam, et al, 2018; Kakonge 2019) disclosed a negative relationship between blue economy and economic growth in their results. The possible reasons for those inconclusive issues depend largely on their choice of economic variables, the economy in question, choice of methodology, and the inherent assumptions upon which the model is built. Another possible major reason for the shortcomings recorded in extant studies lies in the fact that most of the previous studies assumed linearity and symmetric relationship between the studied variables, and such assumptions are considered too restrictive. Keeping in view the shortcomings of previous studies in check, the current study intends to fill the aforementioned gaps by examining the dynamic interactions of blue economy and economic growth in the Nigerian context using the Autoregressive Distributed Lag (ARDL) Regression Model. It's on this premise this study seeks to examine the impact of blue economy on the economic growth of Nigeria.

This study significantly contributes to understanding the link between the blue economy and sustainable economic growth in Nigeria. By examining factors such as fisheries, aquaculture, desalination and tourism, it sheds light on their impact on Nigeria's economic growth. The study provides important insights into both the benefits and challenges of harnessing ocean resources for sustainable growth, offering policymakers and stakeholders a comprehensive analysis of the blue economy influences Nigeria's economic growth. These findings can guide policymakers in developing effective strategies to promote sustainability, maximize economic potential along Nigeria's coast, and protect marine ecosystems for future generations.

1.2. RESEARCH OBJECTIVES

The main objective of this study is to examine the impact of blue economy on economic growth in Nigeria. Specifically, this study sought to:

i. determine the effect of fisheries activities on economic growth of Nigeria
ii. investigate the effect of desalination on economic growth of Nigeria
iii. ascertain the effect of aquaculture on economic growth of Nigeria
iv. explore the effect of tourism on economic growth of Nigeria

1.3. SCOPE OF THE STUDY

The scope of this study covered the impact of blue economy on economic growth in Nigeria. Geographically, the study was confined to the Nigeria blue

economy industries. In terms of time scope, this study covered the studied periods of 23 years spanning from 2000 to 2022.

2. REVIEW OF LITERATURE

2.1. CONCEPTUAL REVIEW

2.1.1. ECONOMIC GROWTH

Economic growth is defined as the sustained increase in the production of goods and services within an economy, typically measured by the percentage increase in real gross domestic product (RGDP), adjusted for inflation. RGDP is the market value of all final goods and services produced in a nation. Economic growth can be expressed as per capita income, where the aggregate production is divided by the population, either in nominal or real terms (Economist Intelligence Unit, 2015). Economic development, on the other hand, encompasses sustainable increases in output and incomes, considering factors such as equal income distribution, healthcare, education, environmental preservation, and social justice.

2.1.2. CONCEPT OF BLUE ECONOMIC

The term "blue economy" was first introduced by Professor Gunter Pauli in 1994 as an economic philosophy reflecting business models for the future (Pauli, 2010). The concept gained prominence during the Rio+20 summit in 2012, introduced by the United Nations Environment Programme, (UNEP) as an application of green economy principles to the ocean realm. The blue economy aims to foster economic growth, enhance social inclusion, protect livelihoods, and maintain environmental sustainability. It aims to decouple socioeconomic development from environmental degradation and optimize the benefits derived from marine resources. Various definitions highlight the blue economy's focus on the sustainable use of ocean resources for economic growth, improved livelihoods, and job creation while safeguarding the health of ocean ecosystems (Islam, et.al, 2018). The concept covers a wide range of economic activities associated with oceans, seas, and coasts, including established and emerging sectors. Additionally, the blue economy recognizes nonmarketable economic benefits, such as carbon storage, coastal protection, cultural values, and diversity.

2.1.3. PRINCIPLES FOR A SUSTAINABLE BLUE ECONOMY

The world's oceans, seas, and coastal square measure are the most important ecosystems in the world and a precious part of our natural heritage. They are additionally very important to the livelihoods and food security of billions of individuals around the world, and to the economic development of most countries (DESA, 2017).

The ability of those marine environments to produce jobs and nutrition over the long run is, however, already fraught from human economic activities; and it is being more vulnerable by development approaches that square measure fragmented, uncoordinated, and infrequently in conflict with what science tells us is physically potential or ecologically sound.

Fortunately, several governments, organizations, and communities in each developed and developing countries have become attentive to the necessity for a lot of coherent, integrated, fair, and science-primarily based approach to managing the economic development of the oceans.

Humanity increasingly understands that we tend to square measure an integral part of the marine sector, which we tend to, should set up and implement our economic activities with care, equalization the will to enhance human living standards and eudemonia with the imperative to sustain scheme health.

Visionary leadership in both the public and private sectors is essential to guide the blue economy toward a highly sustainable path. This includes delivering on commitments already created–globally, regionally, nationwide and locally (Elia & Indrajaya, 2022).

2.2. THEORETICAL UNDERPINING

The paper is supported by the theories of economic growth and that of business expansion. Specifically, the Harod-Domar Models, Solow-Swam models and the Endogenous growth theory. The endogenous growth theory is a contemporary concept that attributes an economy's long-term growth rate to internal (endogenous) factors rather than external (exogenous) neo-classical growth theory. The endogenous growth models emphasize technical progress resulting from the rate of investment, the size of the capital stock, and the stock of human capital (Jhingan, 2012).

2.3. EMPIRICAL REVIEW

Elia & Indrajaya (2022) examined blue economy as it affects fishery production through sustainable fisheries development. The study adopted a mix of quantitative and survey approaches to research. Samples were obtained from 150 respondents who are members of Fishermen Cooperative in Indonesia. Findings revealed that blue economy contributes to increase sustainable fisheries development and production.

Jacob & Umoh (2022) examined the economic issues and challenges of blue economy in Nigeria using a descriptive research approach. The study captured the origins and conceptualization of blue economy, the geographical perspective of the Niger Delta, economic development, long term principles of blue economy, potentials and natural resources, among others. It was concluded that blue economy has the potential to lead to faster and greater Gross Domestic Product (GDP) growth. The formulation of essential policies that would support and build the blue economy in the Niger Delta and Nigeria as a whole was recommended.

Bhattacharya, & Dash, (2021) examined the determinants of blue economy activities, namely tourism and fisheries, in 19 Asia-Pacific Island countries for the period 1996 to 2016. Using a panel data model, our findings indicate that the size of the blue economy is positively influenced by gross fixed capital formation and access to electricity. Additionally, it is positively responsive to policies promoting sustainable ocean management. Hence, our findings support the need for, and the

effectiveness of sustainable ocean governance policies in the Asia-Pacific Island countries to further strengthen the growth of these countries.

Keen, et.al, (2018) reviews reports, academic literature and regional speeches to develop a Blue Economy conceptual framework which is then applied to three case studies from the fisheries sector small scale fisheries, urban fish markets and onshore tuna processing. The cases highlight an imbalance in the attention given to key components of the Blue Economy, as well as missed opportunities for integration across different scales, timeframes, and stakeholders, with only a few notable exceptions. Issues related to power, agency, and gender continue to be insufficiently addressed, even in recent initiatives. While clearly defining the components of the Blue Economy serves as a valuable tool for evaluating the coverage of essential aspects of sustainable ocean management, it is less clear that the Blue Economy label itself significantly advances practice beyond existing sustainable development frameworks. The proliferation of terminology adds further complexity to an already challenging management environment. Nonetheless, the conceptual framework remains useful for structuring evaluations of practice and identifying critical gaps necessary for the sustainable development of ocean resources.

Bhattacharya & Dash (2020) examined the effect of blue economy activities in fisheries and tourism sectors in twenty-one (21) Asia and Pacific Island countries for the period covering 1996 to 2016. A panel data approach was adopted, and it was found that gross fixed capital formation and access to electricity impact the size of the blue economy positively in Asian and Pacific Island countries. The findings support the need for, and effectiveness of, the implementation of sustainable ocean governance policies in the Asian and Pacific Island region

Elisha (2019) sees blue economy as an instrument for diversification of the Nigerian economy from oil-dependence. The study focused on the blue economy and its impact on the economic growth of Nigeria and the Niger Delta. It was found that blue economy is capable of providing employment, creating jobs and eradicating poverty but that there are some challenges which include sea piracy, illegal arms trafficking, terrorism, pollution and maritime ecosystem destruction, among others. It was recommended that youths should be employed as coast guards along the deep seas and water ways to reduce the problem of sea piracy.

Kakonge (2019) while assessing the ways ahead of Kenya blue economy highlighted those numerous challenges needs to be surmounted and that the support of all Kenyans of all socioeconomic classes was necessary to overcome shortage of capacity, inadequate research, lack of funds, etcetera, in order to attain progress. The ways forward which was based on previous studies were highlighted such as mainstreaming the blue economy into the National agenda, partnership and collaborations, robust resource base and continuous research and education.

Islam, et.al, (2018) examined the opportunities and challenges to sustainable development of blue economy in Bangladesh using secondary data. It was found that Bangladesh can hasten its economic growth through sustainable use of sea resources,

though lack of institutional capacity and the socio- cultural composition of the country are a great challenge to their effort.

3. METHODOLOGY

The method involved collecting data (where available) from the various industries that form the basis of blue economy such as fishing, coastal tourism, energy and minerals production, boat building, shipping and port activity, aquaculture, marine renewable energy technologies, and desalination, among others. The study utilized an ex post facto research design. Data for the study were obtained from the world development indicators (WDI), and they are secondary in nature. From the selected industries of a typical blue economy, based on data availability, data were obtained from four industries, namely; fisheries, desalination, aquaculture, and tourism. Accordingly, the study employed five variables in all, comprising four independent variables (fisheries, desalination, aquaculture, and tourism) and one dependent variable (Economic growth).

3.1. MODEL SPECIFICATION

This study modeled after the empirical study of Islam, Rahaman, & Ahmed, (2018) though with little modifications since the studies of Emmanuel, (2023) did not capture desalination, aquaculture and tourism). Hence, our model is stated in functional as:

$$RGDP = f(FHSR, DELN, ACQRE, TOUR,) \text{ ----------1}$$

The econometric form of the model is given as:

$$RGDP = \beta o + \beta_1 FHSR + \beta_2 DELN + \beta_3 ACQRE + \beta_4 TOUR + \mu \text{-----2}$$

Where:
RGDP= Real gross domestic product
FHSR = Fisheries
DELN = Desalination
ACQRE= Aquaculture
TOUR = Tourism
Ut = error term at time t.
β_1- $\beta_4$are parameters to be estimated.

3.2. MEASUREMENT OF VARIABLES

Table 1 defines the variables used, as well as the *priori* expectation

Table 1: *Measurement of Variables*

Study Variable	Denotation	Measurement	Nature of Variable	Aprioiri Expectation
Real gross domestic product	RGDP	Real GDP = $\frac{Nominal\ GDP}{R}$ Where: GDP = Gross domestic product R= GDP Deflator	Regressand	Nil

Fisheries	FHSR	Total fisheries production (Metric ton)	Regressor	+
Desalination	DELN	Annual freshwater withdrawals. Total (billion cubic meters)	Regressor	+
Aquaculture	ACQRE	Aquaculture production (metric ton)	Regressor	+
Tourism	TOUR	International tourism receipts (% of total export)	Regressor	+

Source: Researcher's Compilation, (2024).

4. DATA ANALYSIS

The descriptive statistics accounts for the mean and standard deviation value. The result is presented below:

Table 2: *Descriptive Statistics*

	RGDP	FSHR	DELN	ACQRE	TOUR
Mean	2.88E+11	834.8604	11.99322	184.4322	1.236838
Median	3.39E+11	856.6140	12.47200	221.1280	0.887174
Maximum	5.47E+11	1212.475	12.47200	316.7270	5.142780
Minimum	3.578456	467.0950	10.30300	24.39800	0.128600
Std. Dev.	1.72E+11	252.5327	0.705969	112.0012	1.138083
Skewness	-0.299435	-0.158484	-1.214636	-0.310745	2.026833
Kurtosis	1.738206	1.525476	3.072647	1.425974	7.205041
Jarque-Bera	1.869488	2.179912	5.660530	2.744480	32.69314
Probability	0.392686	0.336231	0.058997	0.253538	0.000000
Sum	6.62E+12	19201789	275.8440	4241940.	28.44727
Sum Sq. Dev.	6.53E+23	1.40E+12	10.96463	2.76E+11	28.49512
Observations	23	23	23	23	23

Source: Econometric Views Version 9.0 Output, (2024).

The result from the descriptive statistics above discloses that Fisheries (FHSR) has the highest mean value of 834.8604 while Aquaculture (ACQRE), Desalination (DELN), and Tourism (TOUR) had 184.4322, 11.99322, and 1.236838 respectively. This means that they generated annual average gross revenues of about N834.8604 billion, N184.432billion, N11.99billion and N1.23638billion each during the period between 2000 and 2022. Besides, the maximum amounts ever generated by the four independent variables were N1212.475 billion N12.47200 billion N316.7270 billion and N5.142780 billion, respectively. All the variables except Tourism (TOUR) exhibited negative skewness.

This is to ascertain the direction and strength of the nexus between the dependent variables and explanatory variables.

Table 3: *Correlation Analysis*

	RGDP	FSHR	DELN	ACQRE	TOUR
RGDP	1.000000				
FSHR	0.580301	1.000000			
DELN	0.658539	0.366689	1.000000		
ACQRE	0.659264	0.276367	0.889132	1.000000	
TOUR	0.173341	0.605688	0.332983	0.493826	1.000000

Source: Econometric Views Version 9.0 Output, (2024).

Results presented in Table 3 revealed that all the variables related positively to the growth rate of RGDP. However, fisheries, desalination and aquaculture showed a moderate positive correlation with RGDP. Meanwhile, Tourism showed weak positive correlation with RGDP. The implication of a positive correlation or relationship between two variables is that both of them move in the same direction. This means when one of the variables moves upward, the other also would be found to move upward.

The study adopted the Augmented-Dickey Fuller (ADF) unit root test to determine if the mean and variance are constant over time or not. The ADF unit root test is presented in table 4 below:

Table 4 *Unit Root;*

ADF test at Level (1)(0))				
Parameter	**ADF test statistic**	**Test critical value @ 5%**	**Prob.***	**Decision**
RGDP	-1.236869	-3.004861	0.6392	Non-Stationary
FSHR	-1.241486	-3.004861	0.6371	Non-stationary
DELN	-4.182209	-3.004861	0.0578	Stationary
ACQRE	-2.277461	-3.004861	0.1880	Non-stationary
TOUR	-1.995838	-3.004861	0.2863	Non-stationary
ADF test at First Difference (1)(1))				
Parameter	**ADF test statistic**	**Test critical value @ 5%**	**Prob.***	**Decision**
RGDP	-3.916196	-3.012363	0.0076	Stationary
FSHR	-4.580318	-3.012363	0.0018	Stationary
DELN	-4.182209	-3.012363	0.0069	Stationary
ACQRE	-3.082320	-3.012363	0.0016	Stationary
TOUR	-3.909966	-3.012363	0.0077	Stationary

Source: Econometric Views Version 9.0, (2024).

Since our series were found to be stationary at levels (1(0) and first differencing (1(1) justify the need to examine the long run relationship between blue economy and economic growth of Nigeria.

Table 5: *ARDL Bound Test*

ARDL Bounds Test

Date: 07/03/24
Sample: 2001 2022
Included observations: 22
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	1.282818	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

Source: Econometric Views Version 9.0 Output, (2024).

The ARDL Bounds test results shown in Table 5 has F-statistic value of 1.282818, lower bound (I0) value of 2.86 and upper bound (I1) value of 4.01; both at 5 per cent level of significance. Since the F- statistic value of 1.282818 is lower than both the lower and upper bounds values, the study accepts the null hypothesis (H_0) and concludes that there is no long-run cointegrating relationship among real Gross Domestic Product (RGDP), Fisheries (FSHR), Desalination (DELN), Aquaculture (ACQRE), and Tourism (TOUR) in Nigeria over the 2001–2022 sample period accordingly with ARDL Bounds Test for Cointegration results.

Regression Result

Table 6: *ARDL Short Run Estimates*

ARDL Cointegrating
Dependent Variable: RGDP
Selected Model: ARDL (1, 0, 0, 0, 0)
Date: 07/03/24 Time: 02:49
Sample: 2000 2022
Included observations: 22

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FSHR)	0.87488	0.621024	1.40877	0.3629
D(DELN)	-0.732495	0.285374	-2.56679	0.0320
D(ACQRE)	0.859248	0.443222	1.93864	0.0510
D(TOUR)	0.420659	0.205422	2.04778	0.0320
CointEq(-1)	-0.60882	0.11634	-5.23312	0.0001

R-squared	0.678593	Mean dependent var	2.98E+11
Adjusted R-squared	0.578153	S.D. dependent var	1.69E+11
S.E. of regression	1.10E+11	Akaike info criterion	53.91365
Sum squared resid	1.94E+23	Schwarz criterion	54.21121
Log likelihood	-587.0502	Hannan-Quinn criter.	53.98375
F-statistic	6.756213	Durbin-Watson stat	1.795983
Prob(F-statistic)	0.001455		

Source: Econometric Views Version 9.0 Output, (2024).

The result above displayed R-squared of 67.85% which implies that 67.85% of the total deviation in the economic growth of Nigeria proxy by (RGDP), is explained by FSHR, DELN, ACQRE, and TOUR. Meanwhile, the remaining 32.15% is explained by factors not included in the model. The F. statistic of 6.756213 which is greater than 2% is statistically significant at a level of 0.001455. Lastly, the Durbin Watson Statistics value estimated at 1.795983 indicate that the model is not serially correlated.

4.1. TEST OF STUDY OF HYPOTHESIS.

H_{01}: There is no significant relationship between Fisheries and Economic growth.

The result above displayed a positive coefficient for fisheries which implies a positive relationship with economic growth. However, in terms of level of significant, FSHR disclosed a p-value (0.3629) greater than the 0.05% level of significant. This connotes that the null hypothesis which states that there is no significant relationship between fisheries and economic growth should be accepted.

H_{02}: There is no significant relationship between Desalination and Economic growth.

The result above displayed a negative coefficient for Desalination which implies a negative relationship with economic growth. However, in terms of level of significance, DELN disclosed a p-value (0.0320) lesser than the 0.05% level of significance. This implies that the alternate hypothesis which states that there is significant relationship between desalination and economic growth should be accepted.

H_{03}: There is no significant relationship between Aquaculture and Economic growth.

The result above displayed a positive coefficient for Aquaculture which implies a positive relationship with economic growth. However, in terms of level of significant, ACQRE disclosed a p-value (0.0510) lesser than the 0.05% level of significant. This implies that the alternate hypothesis which states that there is significant relationship between aquaculture and economic growth should be accepted.

H_{04}: There is no significant relationship between Tourism and Economic growth.

The result above displayed a positive coefficient for Tourism which implies a positive relationship with economic growth. However, in terms of level of significance, TOUR disclosed a p-value (0.0320) lesser than the 0.05% level of significant. This implies that the alternate hypothesis which states that there is significant relationship between tourism and economic growth should be accepted.

4. 2. DISCUSSIONS OF REGRESSION RESULT

4.2.1. FISHERIES AND ECONOMIC GROWTH

The empirical evidence from Table 6 indicates a positive but statistically insignificant relationship between fisheries (FSHR) and economic growth (RGDP), with a coefficient value of 0.87488. This suggests that, although fisheries contribute to food production, employment, and trade, their overall impact on economic growth remains weak. This limited impact can be attributed to the predominantly subsistence and informal nature of fisheries in Nigeria, which restricts the sector's ability to generate strong multiplier effects across the economy. Furthermore, the P-value is greater than 5%, indicating that fisheries fail the test of statistical significance. This finding is consistent with Elia & Indrajaya, (2022).

4.2.2. DESALINATION AND ECONOMIC GROWTH

The empirical evidence from Table 6 shows a negative and statistically significant relationship between desalination (DELN) and economic growth (RGDP), with a coefficient of -0.732495. This implies that increased desalination activities are associated with a decline in economic growth in Nigeria. Economically, this outcome is explained by its capital-intensive and energy-dependent nature**,** which results in high operational costs, heavy reliance on energy infrastructure, and opportunity costs from diverting resources away from more productive sectors such as agriculture and manufacturing. Additionally, desalination functions mainly as a consumption-supporting infrastructure, meaning its high-cost structure may outweigh its economic benefits. The P-value being below 0.05 confirms statistical significance, indicating that desalination has a meaningful negative effect on growth. This finding is consistent with Elia & Indrajaya, (2022).

4.2.3. AQUACULTURE AND ECONOMIC GROWTH

The empirical evidence from Table 6 reveals a positive and statistically significant relationship between aquaculture (ACQRE) and economic growth (RGDP), with a coefficient value of 0.859248. This indicates that an increase in aquaculture activities contributes meaningfully to economic growth in Nigeria. Aquaculture represents a modern and commercially viable subsector with strong growth transmission mechanisms, including increased productivity through controlled fish farming, expansion of the value chain (such as feed production, processing, and marketing), employment generation, and income diversification. In addition, aquaculture promotes forward and backward linkages, thereby stimulating related industries and enhancing overall economic activity. Furthermore, the P-value is lower than 5%, indicating that aquaculture passes the test of statistical significance. This finding is consistent with Elisha, (2019).

4.2.4. TOURISM AND ECONOMIC GROWTH

The empirical evidence from Table 6 indicates a positive and statistically significant relationship between tourism (TOUR) and economic growth (RGDP), with a coefficient value of 0.420659. This suggests that increased tourism activities contribute significantly to economic growth in Nigeria. Tourism drives growth

through several key economic channels, including foreign exchange earnings, job creation across multiple sectors, stimulation of infrastructure development, and increased demand for local goods and services. It also operates through a strong multiplier effect, where tourist spending circulates throughout the economy, boosting income, investment, and consumption. In addition, tourism promotes structural transformation by reallocating resources toward service-based and high-value sectors. Furthermore, the P-value is lower than 5%, indicating that tourism passes the test of statistical significance. This finding is consistent with Jacob & Umoh, (2022).

5.. CONCLUSION

This study evaluated the impact of blue economy on economic growth in Nigeria for the period of 23 years spanning from 2000-2022. Blue economy, otherwise known as ocean-based economy, has the potentials to outperform the land economy. Based on available data in Nigeria, the estimation of blue economy revealed that fisheries, aquaculture and tourism impact the growth rate of the economy positively. Meanwhile, desalination activities impact the growth rate of the economy negatively and significantly. Thus, it is essential to implement sustainable ocean management policies in order to foster economic growth and employment of the blue economy

6. POLICY RECOMMENDATION

Based on the empirical results, the researchers hereby recommend that:

1. Efforts to increase fishing activities in as much as it would not amount to overfishing should be encouraged.
2. Investments should be focused on activities such as harvesting fish and other seafood, aquaculture and tourism as the results reveal that the blue economy (BE) is a good alternative to promote economic growth.
3. Since desalination has negative impact, further reduction of energy use and resultant carbon footprint of desalination by introducing a new generation of membranes, pump and energy recovery technologies.
4. Government should improve amenities, from housing, tourist accommodation, urban mobility to public space.

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