

Effect of Cost Consciousness in Fishing Settlements of Cross River State, Nigeria on Income Declaration and Measurement for Inclusion in Gross Domestic Product

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ABSTRACT

This study examines the effect of cost consciousness in fishing settlements in Nigeria on income declaration and measurement for inclusion in Gross Domestic Product (GDP). The survey research design is adopted because this study made use of primary data. The population of the study comprises all the fishing settlements of Cross River State, Nigeria. A sample of five (5) fishing settlements is chosen judgmentally. One hundred (100) copies of questionnaire are distributed but only 80 are returned and used for analysis. The data are analyzed using linear regression method with the aid of SPSS 20 because of its versatility. The study discovers that cost consciousness in fishing settlements needed for inclusion in GDP are jointly significant but individually the cost needed for income declaration and measurement in fishing settlements in study area are found to be insignificant. The study recommends among others that government should reinforce the fishing management system via fishing settlement control agencies and regulatory bodies that will regulate the activities of these fishing settlements ensuring that income generated are declared and measured reliably for inclusion in GDP.

Keywords: *Cost consciousness, Income Declaration, Fishing settlement, Gross Domestic Product.*

INTRODUCTION

Cost consciousness simply put entails knowing the benefits and implications of costs. This can be seen from the view point of having a mindset of creating value for customers while at the same time minimising cost to the barest minimum, cost consciousness does

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not only have to do with cutting down prices of commodities and activities, it also considers the culture of communities or organizations and how they plan and carry out their activities (Iwuchukwu and Igbokwe 2012). It is important to note that most fishing settlements in Nigeria have a cost conscious mindset which is seen from how the fishing process is organized and carried out and how the fishermen try as much as possible to cut cost of boat, canoe manufacturing and maintenance (Tawari and Davies, 2010). Fishing includes the activities of catching, processing and marketing of fish or other sea food. Nigeria has the highest fish demand (1.5 million metric ton) and a per capita consumption of 7.5-8.5kg annually (FDF, 2005). Current national production stands at 511,000 metric tons per annum, thus producing a demand-supply gap of about a million metric tons (FDF, 2005).

Nigeria has an annual fish import of about 700,000 metric tons at a cost of about US\$400 million (Ovie and Raji, 2006). Over 10 million Nigerians are estimated to be engaged in primary and secondary fishing activities as fishers, fish farmers, fish processors, fish marketers, fishing boat builders, gear fabricators and menders, operators on board industrial fishing fleet, terminal/jetties operators, in-and-outboard engines repairers and other auxiliary activities that derive their means of living from the fisheries (Ekanem, 2010).

The Federal Government's current policy trust (FDF, 2005) is targeted at guaranteeing sustainable development of Nigerian fisheries for National Food Security, for self-sufficiency in fish production, optimum resource utilization and conservation. Pro-Natural International (Nigeria) (2004), The main focus of the policy is generation of employment, poverty alleviation, creation of wealth and reduction in rural-urban migration among others in line with the National Economic and Empowerment Development Strategy (NEEDS) of the Federal Government and the New Partnership for Africa's Development (NEPAD) initiatives. Although often undermined and not fully recognized as a major productive activity in many countries, the contribution of captured fish and aqua culture production to national economies is multifaceted.

Federal Ministry of Agriculture Water Resource and Rural Development (FMAWRRD) (1988) declares that apart from serving as food supply, captured fisheries and aqua culture production contributes immensely to the Gross Domestic Product(GDP) of Nigeria by providing a means of livelihood for fishers and fish processors, foreign currency generation (from exports of fishery products), and increases revenue of the government through fishery agreements and taxes. Small scale fishing in Nigeria contributes immensely to the generation of income in Nigeria both at the national level as well as foreign exchange, but it is very difficult to measure precisely the income that is generated from small scale fishing settlements because fishing activities in the

fishing settlements are not properly regulated and accounted for by the regulatory bodies hence, creating a difficulty in determining the income generated and to be included in the Gross Domestic Product (GDP) of Nigeria. The main objective of this study is to determine the effect of cost consciousness in fishing settlements in Nigeria. The specific objectives are:

1. To determine the extent to which cost of hiring labour in fishing settlements affect income declaration and measurement for inclusion in GDP,
2. To seek if the cost of craft repairs and fuelling boat engines in fishing settlements affect income declaration and measurement for inclusion in GDP,
3. To determine if the actual time spent fishing affects income declaration and measurement for inclusion in GDP.

The following hypothesis were formulated for the study.

H₀1: Cost of hiring labour in fishing settlements does not affect income declaration and measurement for inclusion in GDP.

H₀2: Cost of craft repairs and fuelling boat engines in fishing settlement does not affect income declaration and measurement for inclusion in GDP.

H₀3: Actual time spent in fishing does not affect income declaration and measurement for inclusion in GDP.

Gross Domestic Product (GDP) is of vital economic metric for any economy. A country's economic health is indicated in its GDP (Abiodun and Ayanda, 2007). The total fair value of goods and services manufactured in a country over a particular period of time represents the Gross Domestic Product represents of that country (Ekanem, 2010). To properly measure the GDP of a country, it is important that all goods and services produced within the country be accurately calculated.

Inland waters and Ocean (rivers, reservoirs, seas and lakes) provide significant benefits to economic and social development from fisheries and aqua culture, humanity, marine and coastal tourism, encompassing food and nutrition security from fisheries and aqua culture, shipping, energy and ecosystem services such as carbon sequestration mining, atmospheric and temperature regulation, water filtration, protection from extreme weather events and erosion (Ladu, Ovie and Sule, 2004). According to Akpan (2004), Nigeria fishing settlements are situated in the urban areas. A major barrier to the national GDP are the fishing activities of which are not accurately controlled and accounted for.

Theoretical Framework

The Classical Theory (Ricardo and Smith, 1776)

This theory posits that the economy is self-regulating, which is the level of real GDP

that is obtained when the economy's resources are fully employed. According to Moses (2002), the level where a country obtains the real GDP is the point when the resources are fully employed. The classical economists hold that this point is where the economy is capable of achieving the level of real GDP or output. Certain circumstances arise at times that causes the economy to fall below or exceed the natural level of real GDP. Within the market system exist self-adjustment mechanisms that work to bring the economy back to its natural level of real GDP (Moses, 2002). This theory has its basis on the assumption that when an economy produces a certain level of real GDP, it also generates income needed to purchase that level of real GDP. That is to say, at every point in time, the economy is capable of demanding all the output that its firms and workers produce. The theory is also based on the belief that prices, wages and interest rates are flexible.

Osuala (2004) argues that Nigeria popularly referred to as the 'Giant of Africa' was popularly known for its agricultural based economy before the 1970's, which produced and exported Agricultural commodities such as cocoa, palm oil, rubber and coffee as well as minerals such as tin and coal. Since the discovery of commercial quantities of crude oil in the Niger Delta in 1956, focus has been placed on the production and exportation of the oil at the expense of all other commodities (Osuala, 2004). Economic growth in Nigeria as discovered by Oyakhilomen and Zibah (2013) was not significantly affected by the production of fish. The States majorly known for their aqua culture industry in Nigeria include Kaduna, Niger, Taraba and Benue (Miller, Atanda, Asala and Chen, 2007). The most commonly farmed fish in Nigeria are Nile Tilapia and the sharp tooth Catfish (Brummett, Lazard and Moehl, 2008). The various types include earthen ponds, integrated fish culture, rice paddy associated cultivation, running water culture, recirculating water systems, cage culture, fish pen culture and mollusc culture (Otubusin, 1986). The use of earthen ponds is the most commonly practised method of aqua culture production in Nigeria (Grema, Geidam and Egwu, 2011).

Since Nigerians are consumers of fish, the aqua culture industry in Nigeria has failed to satisfy domestic demand for fish. According to Akinsuyi (2011), who cited Dr. Akinwumi Adesina, a former Minister of Agriculture and Rural Development:

'Nigeria spent over N100 billion on the importation of frozen fish in 2010. The estimated annual fish demand in the country was about 2.66 million as against the annual domestic production of about 0.78 million, giving a demand-supply gap of about 1.8 million metric tons.'

Fish production in Nigeria has however been affected significantly by

environmental pollution. A combination of industrial, human, agricultural and aqua culture based practices contributes to polluting the aquatic environment (Ojo, 2016). In 1988, the Federal Environmental Protection Agency Act (FEPA) was set up by the Nigerian government to protect the Nigerian environment and develop appropriate technology and standards in order to prevent environmental pollution and threat to aquatic life (Campbell, 2011). The environment was defined as being composed of the land, water and the air. FEPA was charged with the duty of ensuring that hazardous waste and materials were removed from the Nigerian environment and guaranteeing the quality of the atmosphere. The major environmental pollution issues in Nigeria are instigated by industries which discharge toxic substances into the atmosphere and water hence causing pollution (Orji, 2013). Other than pollution, there exist other factors that cause damage to Nigeria's aquatic habitat. Some of these other factors which degrade Nigeria's aquatic habitat include over fishing and harmful fishing practices which although outlawed by the Federal government may still go ahead unnoticed (Adeyemo, 2003). These harmful practices may include the deposition of toxic substances in the water to kill fish but which inadvertently has a negative impact not only on the targeted fish but also on the whole aquatic ecosystem.

The Nigerian Institute for Oceanography and Marine Research (NIOMR) was established in 1975 and its research has facilitated changes in the Nigerian fisheries industry (Jamabo and Ibim, 2010). Procedural changes have been facilitated through government legislation on access to and management of the country's fisheries resources, geographical identification and cataloguing of the country's aquatic resources has been addressed and the mechanization of an improvement in fisheries tools has been facilitated (Ajayi, 1991). According to Bene (2003), there are three fisheries management system that are involved in regulating fishing activities in Nigeria. He identifies the traditional system, mixed system and modern system. The traditional system of fishery management has to do with traditional authorities controlling the fishing activities, such as the taxes, fishing holidays, actual fishing time. Mixed system of fishery management involves both the traditional and the legal system of the country. However, this type of management system limits the power of the traditional authorities as most of the regulatory rights of this management system is held by the government leaving the traditional authority with only matters that have to do with the community. Modern system of fishery management has to do with the central unit of government where the fishery laws are enforced by the officers of the fishery department.

In summary, income generated from fishing settlements if properly measured and declared could contribute immensely to the Gross Domestic Product of Nigeria. The GDP of a country is a very important indicator of the economic health of such a

country. Fishing settlements and the aquatic environment generally have been on the receiving end of pollution caused by human and industrial activities especially in regions with little or no regulations or checks and these activities in turn have their cost associated to them.

METHOD

The study used the survey research design because it made use of primary data. The population of the study comprised all the fishing settlements of Cross River State, Nigeria. A sample of 5 fishing settlements located in Cross River State was judgmentally selected. They are Marina, Ikang, Esuk Atu, Esuk Anantigha and Esuk Akim Akim. The survey targeted head and sub heads of fishing settlement control agencies. Respondents were selected through the use of questionnaire. Responses from the respondents were collected using a 3-point likert scale of Agree = 1, Undecided = 2 and Disagree = 3. One hundred (100) copies of questionnaire were issued to the respondents but only 80 were found adequate for the study. For the analysis, the Panel Data method was applied, using the Pearson’s Product Moment Correlation Coefficient and the regression analysis to determine the degree of relationship between the variables measured – cost consciousness and income declaration and measurement. This study specified a simple regression equation model. The simple regression model was used to examine the effect of cost consciousness on income declaration and measurement with the aid of Statistical Package of Social Science (SPSS) 20 because of its versatility. In order to examine the relationship that exists between cost consciousness and income declaration and measurement, a linear equation was used. The results obtained are presented on tables. The regression equation was computed as:

$$Y = \beta_0 + \beta_x X + \mu_1 \dots\dots\dots (1)$$

Where:

- Y = Income Declaration and Measurement
- X = Cost Consciousness (independent variables)
- β_x = Coefficient of Cost Consciousness
- μ₁ = Error term

Explicitly, equation 1 can be defined as:

$$\text{Income Declaration and Measurement} = f(\text{Cost Consciousness}) \dots\dots\dots (2)$$

Representing two variables of the construct, the equation below is formulated. Therefore, the equation becomes;

$$IDM = f(CHL; CCRF; ATSF) \dots\dots\dots (3)$$

The above can be deduced to the model below.

$$IDM = CHL + CCRF + ATSF \dots\dots\dots (4)$$

Therefore, the Regression Equation is:

$$IDM = \beta_0 + \beta_1 CHL + \beta_2 CCRF + \beta_3 ATSF + \mu_1 \dots\dots\dots (5)$$

Where:

- IDM = Income Declaration and Measurement
- CHL = Cost of Hiring Labour
- CCRF = Cost of Craft Repairs and Fuelling
- ATSF = Actual Time Spent Fishing

RESULTS AND DISCUSSION

The correlation matrix presented in table 1 indicates that Income Declaration and Measurement has a very strong positive relationship with Cost of Craft Repairs and Fuelling. However, it shows a weak positive relationship with Cost of Hiring Labour and Actual Time Spent Fishing. The regression result on table 2 shows the systematic relationship between Income Declaration and Measurement and Cost of Craft Repairs and Fuelling, Cost of Hiring Labour and Actual Time Spent Fishing. The explanatory power of the model is shown by the coefficient of determinant (R-squared). It is the squared correlation coefficient; it generally forecasts variability and relationship caused by the model. We use the adjusted component of the coefficient of determination to explain this because it explains the degrees of freedom. It is only influenced by variables that cause variability in the dependent variable. The adjusted R-squared value of 0.156 shows that the independent variables; Cost of Craft Repairs and Fuelling, Cost of Hiring Labour and Actual Time Spent Fishing explain about 15% of the systematic variations in cost consciousness in fishing settlement in Nigeria: Income Declaration and Measurement for Inclusion in GDP of the fishing settlements studied. Income Declaration and Measurement is influenced by several variables including exchange rate, interest rate, inflation, taxes among others. However, the backbone of income declaration and measurement for inclusion in GDP is largely influenced by cost consciousness, hence the results obtained from the model. The Durbin Watson statistic of 1.76 drifts around 2 which is the conventional level and shows auto correlation is

absent in the independent variables. The results obtained show that with a t-statistic of 1.201 and a probability of 0.442, the P-value is higher than the 5% (0.05) significance level threshold, hence we accept the null hypothesis that says cost of hiring labour in fishing settlements does not affect income declaration and measurement for inclusion in GDP. With a t-statistic of 1.836 and probability 0.318, the P-value is higher than the 5% (0.05) significance level threshold. We therefore accept the null hypothesis that says cost of craft repairs and fuelling boat engines in fishing settlement does not affect income declaration and measurement for inclusion in GDP. With a t-statistic of -0.496 and a probability of 0.707, the P-value is higher than the 5% (0.05) significance level threshold. Again, we accept the null hypothesis that says Actual Time Spent fishing does not affect Income Declaration and Measurement for Inclusion in GDP.

Costs consciousness in fishing settlements as needed for inclusion in GDP are jointly significant. However, individually the cost needed for income declaration and measurement in fishing settlements in Cross River State, Nigeria as discovered in this study was found not to be significant. The results obtained show that cost of hiring labour has a positive relationship with income declaration and measurement, although the relationship is not significant. This result is plausible in real life scenario because the actual cost of hiring labour cannot be accurately quantified in terms of the number of hours of work because the employer at times contributes to this labour hours.

The results also show that there is a positive relationship between income declaration and measurement and cost of craft repairs and fuelling boat engines. The relationship is found not to be significant. This is so because nowadays, exchange rates, inflation and the forces of demand and supply affect the prices of goods and services. The results obtained show that actual time spent fishing has a negative relationship with income declaration and measurement, although this relationship is not significant, cost consciousness of a fishing settlement is invariably influenced by the actual time spent fishing.

Table 1: Correlation Matrix

Variables	IDM	CHL	CCRF	ATSF
IDM	1.000	0.279	0.689	0.132
CHL	0.279	1.000	-0.304	0.528
CCRF	0.689	-0.304	1.000	0.41
ATSF	0.132	0.528	0.41	1.000

Source: Authors' computations using SPSS 20

Table 2: The regression results

Variables	Unstandardized Coefficients		Standardized Coefficients Beta	t statistics	Prob.
	Coefficient	Std. Error			
Constant)	-12.420	12.658		-0.981	0.506
CHL	14.315	11.921	0.703	1.201	0.442
CCRF	9.771	5.323	0.914	1.836	0.318
ATSF	-6.837	13.788	-0.277	-0.496	0.707
	R Square	0.789			
	Durbin-Watson stat	1.64			
	Adjusted R Square	0.156			

Source: Authors' computations using SPSS 20

CONCLUSION AND RECOMMENDATIONS

As seen in the results of this study, costs consciousness when looked at holistically have a major influence on income declaration and measurement for inclusion in GDP in fishing settlements of Cross River State, Nigeria. However, when cost consciousness is looked at individually, it does not have any significant effect on income declaration and measurement in the fishing settlements. This is so because other factors such as exchange rate, interest rate, inflation, taxes also influences income declaration and measurement for inclusion in GDP.

This study was only concerned with fishing settlements in Cross River State, Nigeria. Thus, the outcome of this study may not be applicable to other States and other livestock under the agricultural sector such as poultry, pastoral nomadism. Moreover, the study generally looked at fishing settlements without specific attention to environment. These can be used to develop an additional model to study the relationship between the variables. The government should reinforce the management system via fishing settlement control agencies and regulatory bodies that will regulate the activities of these fishing settlements ensuring that income generated are declared and measured reliably for inclusion in GDP of the country.

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APPENDIX

Questionnaire on Cost Consciousness in Fishing Settlement in Nigeria: Income Declaration and Measurement for Inclusion in GDP

1. Name of the Fishing Settlement _____
2. Age of Respondent: - Please specify (in years) _____
3. Gender: - (a) Male _____ (b) Female _____
4. Marital Status: - (a) Single _____ (b) Married _____ (C) Divorce _____
5. Number of Dependents: - _____
6. Annual Income (Fishing related activities only)
(a) Below N25,000 (b) N25,000 to N50,000 (c) N50,000 to 75,000 (d) Above N75,000
7. Have you got any technical training on fishing?
(a) Agree (b) Undecided (c) Disagree
8. Did you encounter any problem like decay of fish when fishing?
(a) Agree (b) Undecided (c) Disagree
9. Is there any kind of fish which is of maximum demand throughout the year?
(a) Agree (b) Undecided (c) Disagree
10. Has fishing increased your income level?
(a) Agree (b) Undecided (c) Disagree
11. Has fishery industry increased more employment opportunities in your areas?
(a) Agree (b) Undecided (c) Disagree
12. Have you any active days without any catch?
(a) Agree (b) Undecided (c) Disagree
13. Is there a more favorable season for fishing?
(a) Agree (b) Undecided (c) Disagree
14. Do you go fishing every month?
(a) Agree (b) Undecided (c) Disagree
15. Does seasonal variation affect the income and employment?
(a) Agree (b) Undecided (c) Disagree
16. Is there any daily deviation on the actual time spent fishing?
(a) Agree (b) Undecided (c) Disagree
17. Is earning through fishing sufficient?
(a) Agree (b) Undecided (c) Disagree
18. Does the government provide transport facility?
(a) Agree (b) Undecided (c) Disagree
19. Is there any terms of purchasing and payment of fish given by marketing agencies?
(a) Agree (b) Undecided (c) Disagree
20. Are you aware about any Fishery Co-operative societies and its functions?
(a) Agree (b) Undecided (c) Disagree
21. Do you believe that the co-operative societies are effective?
(a) Agree (b) Undecided (c) Disagree