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Examine the Impact of Inland Waterways Transportation on Socio-Economic Development of Ogun State Coastal Area of Nigeria

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Abstract

This study examined the impact of inland waterways transportation and challenges of Ogun State coastal area of Nigeria. Data were collected from both primary and secondary sources. Two types of questionnaires were administered in this research. Both descriptive and inferential statistical methods were used. The descriptive methods were employed for tabulation and data summary. Orthogonal factors analytical procedure was used for data reduction, multiple regression analysis was used to study impact of the water transportation on socio-economic development. And post -hoc analysis was to establish significant variations. The inferential analysis used in the study were analytical procedure, multiple regression methods. The study revealed that:- Inland waterways have high potential in Ogun State coastal area. The basic morphometric confirms that the area is riverine in nature. The water transportation is still under developed and underutilized, the report of ridership shows a low uses of inland waterways due to lack of facilities. The factors underlying the challenges at the jetties vary from one jetty to another. In Ogun State water jetties, five factors explained 78.9% of the variance. That 4 major problems impacted on the inland waterways developments . These are Financial constraints , Insufficient jetty facilities, Political influence and government policy that did not allow individual to own jetty, the un-dredged waterways. The study recommended, stronger policies and the need to encourage private /public participation in waterway development in Ogun State coastal area of Nigeria.

***Key words**: Ogun state coastal area; waterways transportation; constrains; impact; challenges.*

1. Introduction

Transportation , throughout history is the economic wealth and military power of the people or any nation. Transport has been closely tied to efficient methods of transportation and movement of people and goods from one location to another. It has generated more increase in transport demand for social activities, exchange of products and services. Owoputi (2018) concluded that transportation provides access to natural

resources and promotes trade. Inland waterway transport is the more natural and least obstructive mode of transportation. It was an important catalyst in the early spread of civilization and industrial revolution (Ikporukpo, 1994). Nigeria is blessed with a dense network of river, streams, creeks and coastal lagoons which provide huge potentials for the development of an efficient inland water transport. This sub- section is still very under developed.

Presently, apart from private operators of canoe and ferry services, government agencies such as the Lagos State ferry services corporation now known as Lagos State inland waterway Authority, Central water transport company and the national inland waterway authority also provide skeletal inland water transport services in few locations across the country, but recently, government are refocusing attention on the development of inland rivers and coast (Jim Kruse, 2013). The basis for inland water transportation was borne out of the desire for inland locations to enjoy the same commercial advantage as the ports, which were more fortunately situated at the sea. It enjoys the singular advantage of transporting goods and people to the interior places far away from the sea. It is cost effective and can transport large volumes over great distances (Oliver Klein et al., 2012). The modes involves the use of lakes, creeks, naturally navigable inland rivers, coast which uses boats, ferries among other vehicles as means of transportation.

The initial impetus in the development of the inland waterways as its true of other modes such as rail and road was the colonial interest in opening up the interior for resources exploitation and to ease administration. Indeed as initially conceived by the British, the rivers were expected to be part of the multimodal system with rail, road and air acting as tributaries to one another. The efforts by the federal government to develop the country inland waterways transportation through the National inland waterways Authority (NIWA0 with the dredging of the lower river Niger was crippled by corruption and mismanagement, these has yielded little or no positive results after 59 years of conception (Akintayo, 2010). The situation has become worrisome as experts and other Nigerians harp on the opportunities in the inland waterways transportation sector, which could have been a money – spinner for the country are losing.

Tourists, the world over, love fun and have come to believe that cruising on the rivers could be indeed, pleasurable and thrilling. Others see it as a fabulous experience navigating on water as a means of transporting both goods and human passengers from town to another inter- state and across- borders. With a teaming population supported by

enormous and varied natural resources, the growth potential was indeed limitless, as it was intimidating to attract global envy, still the country is further endowed with vast stretch of coastline subtended by flourishing hinter land. All these equated to shipping simply translated to unparalleled possibilities to attain maritime power with proper planning and systematic development and political will.

Inland waterways play a vital role in the economic development of remote rural area and in the welfare of their inhabitant, who are usually among the lowest of low – income groups in the community or state. In the absence of river and other forms of inland waterways transport, many remote underprivileged communities would be inaccessible or too costly to service by other means.

The open –up of numerous inland rivers to assist in the distribution and as a feeder to the big ports, jetties in shipping services, shipment, storage, security, low cost. No country has sufficient traffic to become the unique hub in the region. Moreover, shipping companies will be strongly influenced by the need to provide alternative port I n case of emergency or security problems. To sustain and enhance that economic, vitality and growth and the productivity of commerce, the nation and Ogun State government in particular needs a health and responsive transportation system (Badejo, et al., 2010). Consequently it has been the policy of a nation to make investments that will allow its transportation system to be the engine of tomorrow's growth and prosperity and to take full advantage of new and emerging transportation technologies. These transportation systems are essential to a modern society and there are substantial economic benefits to be realized from them, There are also significant negative environmental impacts, including preemption land, disruption of topography, use of energy and resources, noise and air pollution.

Transport is an elementary economic activity. An effective freight transport machinery is a primary condition for growth and development survival of the economy. To establish a position of a gateways of Nigeria with high quality hinter land connections a few conditions has to be fulfilled based on awareness that nobody would consider treating such critical important sector as good transport without the greatest care and consideration, shipping, short sea, inland waterways, coastal traffic are all sub – section deserving great attention research effort.

It is against the background of the so named National Traffic and Transport plan. The issue of management, policy, operation policy, infrastructure policy has to be developed in order to create a

transport efficient economy, and an efficient, safe and sustainable inland waterways in an economy has led to this research work on Ogun State coastal waterways.

The coastline is generally considered to be the edge or margin of land next to the sea or ocean. Various technical definitions of coastline are used by different coastal management and regulatory agencies but most coastal zone researchers describe the coastline as interface between land and water. Coastlines are dynamic and are therefore areas of constant change (Boak and Turner, 2005). The changes in the coastline largely depend on its geology and geomorphology; the nature of tidal waves impacting the coastline; changes in sea- level; and sediment transport by long shore currents Coastline changes often result in erosion of coastal areas or accretion of sediments, depending on the dominant processes acting on the coastline (Pidwirny, 2006).

Coastlines can also be affected by dredging, construction of breakwater infrastructure and physical development; mineral exploration, ports construction, removal of backshore vegetation, construction of barrages and coastal control works. The coastline is the bridge between aquatic life and terrestrial life, and it is usually a fragile ecozone. As a result of the coastline, changes can be of immense benefit to the understanding of inland coastal waterways transportation. Coastlines are widely used as ports for navigation and maritime commerce activities. They are of economic value and critical to the socio- economic development of non-land locked nations.

With the high numbers of rivers, creeks, lakes, canal and coastal water across the nation which could be used for fishing, agricultural production, distribution of goods, freight, movement of passengers from one location to another that will reduce tension of road infrastructure was not developed. The development of jetties, ports and ship building yard will lead to economic advancement that more revenue generation could be derived. This will also reduce the high rate of road accidents and damage to road transport infrastructures. Nigeria aspires to be amongst the 20 largest economies by the year 2020 according to Vision 2020. A successful development and operations of the inland waterways by the implementing the enacted cabotage laws in Nigeria is important to the success or otherwise of the plan cabotage laws because of the indispensable impact that shipping plays in not just the movement of goods and services around the country alone but as well as revenues collected as tax from the various actors in the industry.

2. Statement of Problem and Research Methodology

The Maritime/inland waterways transportation in Nigeria is saddled with a lot of problems. These include:

a. Poor participation of indigenous private sector in shipping business.
b. The dearth of ships that can guarantee lifting of cargoes as enunciated in the UNCTAD cargo sharing formula.
c. The clearance of cargoes and distributions from the Nigerian ports is still very cumbersome,
d. Many Nigerian ports and Jetties do not have adequate serviceable plants and equipment for major port operations
e. Excessive and too many port charges have encouraged the shipment of cargoes to other ports of West African countries, away from the Nigerian ports / Jetties. And lastly
f. The available maintenance facilities for ships are inadequate.

The rainfall in the coastal belt allows waterways transportation throughout the year, as the channels leading to most of the ports have relatively constant flow. The major seaports of Nigeria are Lagos, Port Harcourt, which together handle about three-quarter of the Federations imports and export, other ports like Burutu, Calabar, Warri, Sapele, Bonny, Degema, with more than fifty jetty along the coast serving as feeder to the bigger ports and means of movement to the communities along the coast, means of communication and governance with which social amenities are provided. These allow the distribution and forwarding of agriculture products and civilization development. About 150 different water-car / vehicles are on operation in the coastal water of Nigeria which can be increased, if properly manage it will provide job opportunities, create recreation, improve insulter and relaxation centre with easy distribution of cargoes and serve as industrial development area long the sea side. Trade and commerce activities will grow, revenue generating for both public and private organizations will increased.

Inland water transport should not be considered less important because on broad environmental grounds waterways transport produces little noise, relatively low level of atmospheric pollution and vibration, it also serves to reduce heavy vehicular traffic on roads system which in many places are already congested or costly to maintain. The threat of climate change with it's accompany violent weather is a challenge for Nigeria in the near future. Seasonal weather conditions, including unusually prolonged droughts and recurrent flooding, have been experienced in the recent pass and this has serious implications for water security, Agricultural areas adjacent to rivers and fishing on which millions of Nigerians depends for their food. The change are also affecting Nigerians demography with more and more formerly rural Nigerians moving from the coastal regions and cities in search of employment . This will place stress on urban economics and escalate cases is already doing so. The initiatives and strategies forecasted for the future economy does not move a foot if the problem of enforcement, geometrically progresses and unchangeable management

governing the corridors of power in this maritime sector, that most of operators still lack the rudimentary understanding of the working modalities and likewise its operational system (Ndikom, 2006). The inland waterways transportation is a terrain which makes coastal ports and inland waterways occur within proximity of two of the scarcest ecosystem categories; free flowing rivers and estuarine wetlands. The ability to employ larger bulk vessels is expected to significantly lower the delivery cost of agricultural export and distribution impact on the total quantity shipping activities. The growth in average vessel size will impact trade and inland waterways routes.

Also availability of many rivers, canal, dam, creeks makes inland waterways to be easy and comfortable, cheap and safe for both freight and passenger movements. The fact that the coastal belt area of Nigeria has the highest concentration of industrial estates with the combined high population, skilled manpower, and center of oil and gas industries plus allied business organization makes marketing of inland waterways transportation easy available to both international and national users and products consumers.

In the light of the foregoing, therefore, the pertinent statement of research problems are:

1. How effective are coastal / inland waters and rivers in the coastal area of Nigeria as a mode of transport
2. How efficient is water transportation be developed to complement and compete with other modes of transportation in Ogun State.
3. How inland water transportation contribute to the economy of the State and the Nation.
4. How will the operations of waterways transport system be improved to create job, generate revenue, facilitate easy distribution of agricultural produce, and trade commodities?
5. How will improved technology assist waterways transportation development?
6. How inland/coastal waterways transportation improve the synergizing, social, cultural, political, trade distribution and transfer of products, goods, services to a wider market for value for products and labour.
7. How will inland/coastal waterways transportation improve Maritime services within the Maritime Industry in a nation?
8.

3. Results and Discussion

3.1 Impacts of Inland Waterways on Socioeconomic Development of Ogun State Coastal Area.

To examine the impacts of inland waterways on socioeconomic development, eighteen (18) variables were collected which were subsequently reduced to five (5) orthogonal variables. Variables with loading greater than 0.70 was selected as defining variables. The results of the factor analysis after vari-max rotation show some underlying factors. These five (5) factors altogether gives 78.93% in the explanation of the variation on the impacts of inland waterways on socioeconomic development of Ogun State coastal area (Table 1).

This analysis was based on the variance:- Co-variance matrix of the original variables. The method grouped the original variables together which we called Factors, and the proportion of variability's accounted for by each factor indicated. This has to do with variance of the original data.

Table 1: Characteristics of Inland Waterway Transport Service in the Ogun Coastal Area.

Characteristics	Freq.	%
Years of Usage		
1 - 5 years	25	50.0
6 - 10 yrs.	06	12.0
11 15 yrs.	-	-
16 - 20 yrs.	19	38.0
Adequate facilities		
Strongly disagree	1	2.0
Disagree	44	88.0
Undecided	2	4.0
Agree	1	2.0
Strongly Agree	2	4.0
Functional Facilities		
Total Radar coverage	49	98
Communication	1	0.2
Criteria for payment		
Weight	27	54
Journey distance	23	46
Type of goods Carried		

Waterway under Utilized		
Disagree	4	8.0
Undecided	2	4
Agree	3	6.0
Strongly Agree	41	82.0
Sufficient Jetties		
Strongly disagree	2	4.0
Disagree	6	12.0
Undecided	3	6.0
Agree	39	78.0
Jetties Facilities aged		
Strongly disagree	1	2.0
Disagree	3	6.0
Undecided	2	4.0
Agree	44	88.0
Facilities Easily Access		
Strongly disagree	3	6
Disagree	2	4

Bulk cargo	3	6.0		Undecided	38	78
General cargo	33	66.0		Agree	7	12
Specialized cargo	12	24.0		**Professional Skilled Employed**		
Containerized cargo	2	4.0		Disagree	3	6.0
Other Mode of Transport				Undecided	40	80.0
Yes	4	8.0		Agree	2	4.0
No	46	92.0		Strongly agree	5	10.0
Infrastructure Assessment				**Facilities Properly Maintainace**	Freq.	%
Poor	42	84		Strongly disagree	2	40
Fair	5	10		Disagree	39	78.0
Good	3	6		Undecided	5	10.0
Waterways over Utilized				Agree	3	6.3
Strongly disagree	43	86.0		Strongly agree	1	2.0
Disagree	5	10.0				
Strongly agree	2	4.0				
Politics Influence						
Undecided	1	2.0				
Agree	43	86.0				
Strongly disagree	6	12				

Source: Author's Computation (2018)

The method does not reduce number of variables, one can describe the variables grouped together with a factor name and the percentage contribution to total variance indicated. In this analysis the method is not used to just group variables that are similar but to extract factors that have impact on the environment where the research was conducted.

Factor I: Sufficiency of Jetties facilities has the highest number of loading; with high loadings on sufficient jetties facilities control variables. This factor contributed 23.02% explanation to the variance on the impacts of inland waterways on socioeconomic development and has an Eigen value of 4.144. In other words, the sufficiency of jetties facilities is the most important factor that determines the variation in the impacts of inland waterways on socioeconomic development in Ogun State coastal area.

Table 2: Impacts of Inland Waterways on Socioeconomic Development of Ogun Coastal Area (Rotated Component Matrix[a])

SN	*Parameters*	*Factor 1*	*Factor 2*	*Factor 3*	*Factor 4*	*Factor 5*
1	Educational Status	0.244	-0.676	-0.146	-0.04	-0.027
2	Occupation	0.091	0.365	0.307	-0.583	0.439
3	Average Monthly Income	0.761	0.032	0.425	-0.076	0.28
4	Years of Waterways Usage	0.354	-0.282	0.62	-0.404	0.433
5	Adequate Terminal Facilities	-0.124	**0.868**	-0.025	0.064	0.02
6	Port Functional Facilities	-0.051	0.22	**0.924**	**0.058**	-0.053
7	Criteria for Cargo Payment	0.449	0.227	0.08	0.374	0.25
8	Types of Good Transport	0.368	0.371	-0.395	-0.054	-0.126
9	Other Mode of Transport	0.755	-0.247	0.202	-0.328	-0.092
10	Terminal/Jetties Infrastructure Assessment	-0.072	0.713	0.383	-0.062	0.461
11	Waterways Over Utilized	-0.825	0.087	0.015	0.275	0.25
12	Waterways Under Utilized	0.779	-0.308	0.119	0.132	-0.38
13	Sufficient Jetties Facilities	**0.84**	**-0.176**	-0.046	0.147	-0.072
14	Facilities Easily Accessed by Users	0.007	0.153	0.149	**0.917**	-0.013
15	Political Influence	-0.282	0.074	-0.024	-0.015	**0.888**
16	Facilities Properly Maintained	-0.034	0.764	-0.27	0.369	0.06
17	Professional Skilled Employed	-0.435	0.455	-0.394	0.615	-0.065
	No of Ship(s) Berthing at terminal/Jetties	0.42	-0.051	0.842	-0.019	0.013
	Factor defining Variable	Sufficient Jetties Facilities	Adequate Terminal Facilities	Port Functional Facilities	Facilities Easily Accessed	Political Influence
	Factor Description	Sufficiency of Jetties Facilities	Adequacy of Terminal Facilities	Functionality of Port Facilities	Users Ease of Facility Accessibility	Political Influence
	Total Eigen value	4.144	3.186	2.862	2.244	1.771
	% Variance	23.02	17.701	15.898	12.469	9.84
	% Cumulative variance	23.02	40.722	56.62	69.088	78.929

Source: Author's Data Analysis (2015)

Factor II: Adequacy of Terminal Facilities has an Eigen value of 3.186 and contributed 17.70 % to the variance on the impacts of inland waterways on socioeconomic development of Ogun State coastal area. It has the highest loading on adequate terminal facilities. This suggested that adequacy of terminal facilities is the second most important factor that explains the variation in socioeconomic development that can be attributed to inland waterways in Ogun State coastal area.

Factor III: Functionality of Port Facilities is the third factor that determines the variation in socioeconomic development that can be attributed to inland waterways has the highest loading on port functional facilities. This factor has an Eigen value of 2.862 and explained 15.90 % of the variance in socioeconomic development of the coastal area of Ogun State that can be attributed to inland waterways. In other words, the third factor that determines the variation in the socioeconomic development of Ogun coastal area is the functionality of port facilities.

Factor IV: Users Ease of Facilities Accessibility is fourth factor has the highest loading on facilities easily accessed by users with an Eigen value of 2.244 and explained 12.47 % of the total variance in the socioeconomic development of the Ogun coastal area that can be attributed to inland waterways. In other words, users' ease of facility accessibility at the jetties is the fourth factor that determines the variation in socioeconomic development that is attributed to inland waterways usage in Ogun State coastal area.

Factor V: Political Influence factor has an Eigen value of 1.771 and contributed 9.84% to the variance in the socioeconomic development of Ogun State coastal area. It has the highest loading on political influence.. This suggested that political influence in Ogun State coastal area is the fifth factor that explained the variation in the socioeconomic development that can be attributed to inland waterways usage.

3.2 Relationship between Inland Waterways and Socioeconomic Development in Ogun Coastal Area

The five (5) factors identified as the underlying factors that explains the impacts of inland waterways on socioeconomic development in Ogun coastal area, were subjected to multiple regression analysis to model the impacts of inland waterways on socioeconomic development in the study area and the results is presented in Table 3. The dependent variable is number of ship berthing at the terminal while the independent variables are the identified socioeconomic development (sufficiency of jetties facilities, adequacy of terminal facilities, functionality of port facilities, users easy of facility accessibility, political influence) variables.

Table 3: Relationship between Number of Ship Berthing and Socioeconomic Development Indices in Ogun State Coastal area

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.940	.021		91.739	.000
	Sufficiency of Jetties Facilities	.178	.021	.420	8.347	.000
	Adequacy of Terminal Facilities	-.022	.021	-.051	-1.022	.312
	Functionality of Port Facilities	.357	.021	.842	16.719	.000
	Users Ease of Facility Accessibility	-.008	.021	-.019	-.384	.703
	Political Influence	.005	.021	.013	.257	.798

a. Dependent Variable: Number of Ship(s) Berthing

Table 3 show the results of the multiple regression analysis with an R^2 of 0.888, which signifies that five identified socioeconomic development factors accounted for 88.8% variability in the number of ship berthing at the terminals in the study area. This shows that the sufficiency of jetties facilities such as storage space, grabbing attachments, and cranes among others is the most dominant factor that determines the number of ship berthing at the terminals in Ogun coastal area. The relationship between number of ship berthing and socioeconomic development indices in Ogun coastal area is presented in Table 4.

Table 4. Model Summary of Inland Waterways and Socioeconomic Development in Ogun State Coastal Area

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943[a]	.888	.876	.150

a. Predictors: (Constant), sufficiency of jetties facilities, adequacy of terminal facilities, functionality of port facilities, users ease of facility accessibility, political influence

From Table 4 for every 1% increase in sufficiency of jetties facilities, functionality of port facilities, political influence, there is 0.178%, 0.357% and 0.005% increase respectively, in variation in the number of ship berthing in Ogun coastal area. Also, for every 1% decrease in adequacy of terminal facilities and users' ease of facility

accessibility, there are -.022% and -.008% decrease in number of ship berthing in the study area. Based on the results in Table 4. the relationship between number of ship berthing and the identified socioeconomic development factors can be written as shown in equation 5.2.

Model of waterways

$$NSB = 1.940 + .178_{SJF} - .022_{ATF} + .357_{FPF} - .008_{UEFA} + .005_{PI} \quad (1)$$

Where NSB= Number of Ship Berthing, SJF= Sufficiency of Jetties Facilities, ATF= Adequacy of Terminal Facilities, FPF= Functionality of Port Facilities, UEFA= Users Ease of Facility Accessibility, PI= Political Influence

3.3 Challenges of Inland Waterways in Ogun State

To determine the problems of Inland waterways, forty-eight (48) variables were entered into factor analysis model, which were subsequently reduced to three (3) orthogonal variables. Variables with loadings greater than 0.80 were selected as defining variables for the study. The results of the factor analysis after vari-max rotation show some underlying factors. These three factors altogether gives 97% in the explanation of the problems of inland waterways in Ogun State.

This analysis was based on the variance; co-variance matrix of the original variables. The method grouped the original variables together which we called Factors, and the proportion of variability is accounted for by each factor indicated. This has to do with variance of the original data. The method does not reduce number of variables, one can describe the variables grouped together with a factor name and the percentage contribution to total variance indicated. In this analysis the method is not used to just group variables that are similar but to extract factors that have impact on the environment where the research was conducted.

Factor I: Underutilization and Financial constraints in Infrastructures Provision is a factor that has the highest number of loadings, the strongest loadings were recorded on underutilization of inland waterways along southwest coast and financial constraints hinders inland

waterways transportation infrastructures provision & maintenances control variables. This component is also strongly loaded on 10 other variables. The factor defining variable is underutilization of inland waterways. This factor contributed 40.10% explanation to the variance and has an Eigen value of 19.249. This is an indication that underutilization and financial constraints in infrastructures provision is the dominant problem of inland waterways in Ogun State coastal area, contributing 40.10% to the variance in the problem of Inland waterways in the area.

Table 5: P**roblems of Inland waterway Transport service in the Ogun coastal Area.**

Characteristics	**Frequency**	**%**
ProfessionalSkill Employ		
Strongly Disagree	3	6.0
Undecided	40	80.0
Agree	2	4.0
Strongly agree	5	10.0
Financial Constrain /Facilities Provision		
Strongly disagree	1	2.0
Disagree	44	88.0
Undecided	2	4.0
Agree	1	2.0
Strongly agree	2	40
SufficientJetties facility		
Strongly disagree	2	4.0
Disagree	6	12.0
Undecided	3	6.0
Agree	39	78.0
Under Utilized waterways		
Disagree	4	8.0
Undecided	2	4.0
Agree	3	6.0
Strongly agree	41	82.0
Failure of Cabotage Law		
Strongly agree	120	26.0
Agree	90	19.0
Undecided	130	28.0
Disagree	86	18.0

Strongly disagree	44	9.0
Polities Influence		
Strongly disagree	6	12.0
Disagree	43	86.0
Undecided	1	2.0

Source: Author's Computation (2015)

Factor II: Political Influence and Hiring of Non- Professionals factor has an Eigen value of 17.398 and contributed 36.24% to the variance in problems of inland waterways in Ogun State coastal area within the study area. It has the highest loading on professional labour are not handling maritime infrastructure and facilities, politics influenced the development of inland waterways and insufficient jetties. The factor defining variable is political influence.

This is an indication that political influence & hiring of non-professionals is the second dominant problem of inland waterways in Ogun State coastal area, contributing 36.24% to the variance in the problem of Inland waterways in the area.

Factor III: Failure of Cabotage Law and Inland Waterways Transportation not Operating at Full Capacity third problem of inland waterways in Ogun State has the highest loading on inland waterways transportation not operating at full capacity and failure of cabotage law. This factor has an Eigen value of 11.353 and explained 20.65% of the variance in the problem of inland waterways. The factor defining variable is cabotage law failure.

Table 6. Problems of Inland Waterways in Ogun State

SN	Variables Description	Variables	Factor 1	Factor 2	Factor 3
1	Congestion at Jetties/Port/Terminal	Strongly Disagree	0.923	0.237	0.303
2		Disagree	0.911	0.108	-0.214
3		Agree	-0.947	-0.08	0.31
4		Strongly Agree	-0.878	0.183	-0.443
5	Cabotage Law has Failed	Strongly Disagree	0.769	0.512	-0.382
6		Disagree	0.547	0.695	0.466
7		Agree	0.407	0.615	0.675
8		Strongly Agree	0.21	-0.461	0.985
9	Inland Waterways Transportation Operating at Full Capacity	Strongly Disagree	0.43	0.87	-0.242
10		Disagree	0.565	-0.151	0.957
11		Agree	-0.699	-0.358	-0.619

12		Strongly Agree	-0.29	-0.008	0.811
13	Improvement in Human Resources in Maritime Transportation Management	Strongly Disagree	-0.285	0.345	-0.894
14		Disagree	0.661	0.519	0.541
15		Agree	-0.658	-0.72	0.219
16		Strongly Agree	0.86	0.459	-0.226
17	Inland Waterways Transport Over Utilized	Strongly Disagree	-0.323	-0.906	-0.273
18		Disagree	0.117	0.123	0.862
19		Agree	0.424	0.899	0.106
20		Strongly Agree	-0.292	0.681	0.671
21	Inland Waterways along Southwest Coast Under Utilized	Strongly Disagree	0.015	0.795	0.607
22		Disagree	-0.396	0.226	0.89
23		Agree	0.972	0.328	-0.064
24		Strongly Agree	-0.434	-0.874	-0.22
25	Sufficient Jetties Facilities	Strongly Disagree	-0.263	0.939	0.916
26		Disagree	0.692	0.596	0.407
27		Agree	-0.899	-0.366	-0.24
28		Strongly Agree	0.292	0.303	0.183
29	Infrastructure Facilities easily Accessed by Users	Strongly Disagree	0.285	0.715	0.638
30		Disagree	0.814	0.555	0.172
31		Agree	0.475	0.867	0.153
32		Strongly Agree	0.413	0.842	-0.347
33	Politics Influenced Development of Inland Waterways Transportation	Strongly Disagree	-0.01	-0.568	0.179
34		Disagree	0.837	0.539	0.098
35		Agree	-0.82	0.984	-0.073
36		Strongly Agree	0.88	0.408	0.221
37	Infrastructural Facilities and Handling Equipment Properly Maintained	Strongly Disagree	0.198	0.46	0.865
38		Disagree	-0.791	-0.592	-0.155
39		Agree	0.903	0.398	0.16
40		Strongly Agree	0.283	0.856	-0.432
41	Professional Labour Handles Maintenance of Maritime Infrastructures and Facilities	Strongly Disagree	0.294	0.977	0.171
42		Disagree	0.868	0.05	-0.494
43		Agree	0.925	-0.185	0.185
44		Strongly Agree	-0.425	0.785	0.451
45	Financial	Strongly Disagree	0.911	0.259	-0.32

46	Constraints Hinders Inland Waterways Transportation Infrastructures Provision and Maintenances	Disagree	0.048	0.94	-0.206
47		Agree	0.969	0.204	0.139
48		Strongly Agree	-0.526	-0.85	0.029
Factor defining Variable			Underutilization of Inland Waterways	Political Influence	Failure of Cabotage Law
Factor Description			Underutilization and Financial Constraints in Infrastructures Provision	Political Influence & Hiring of Non-professionals	Failure of Cabotage Law & Inland Waterways Transportation not Operating at Full Capacity
Total Eigen value			19.249	17.398	11.353
% Variance			40.102	36.245	20.653
% Cumulative variance			40.102	76.347	97

Source: Author's Data Analysis (2015)

3.4 Discussion and Findings

The analysis and research finding of the impact of Inland waterways on transport development in the coastal Water of Ogun State, has yield some important results from which implications and conclusion can be drawn. The study established the characteristics of coastal Inland waterways and freights in the study area 'southwest coastal Water of Ogun State, the research identified the factors that influenced the usage, operation and movement of goods and services along the coastal inland waterways in the study area. It has also examined and evaluated the social economic impact development in coastal inland waterways of Ogun state of Nigeria. The study assessed the problems and hindrances of the maximum-utilization of the waterways transportation in the study area and it impact on safety, security and economic development.

The research study examined various usage of the waterways and it contribution to the communities and the nation at large. It also looks at various activities with the Local governments of the state along the coastal / Inland water ways of the study area activities. The primary and secondary sources of data were employed to achieve the objectives set for the study. The relevant review of literature on coastal Inland waterways transportation and related problems associated with Inland waterways environment, safety, security, operation ownership and regulation, with maritime laws in stripping and water ways transportation were used to find some suggestions for the way forward in

development of coastal Inland waterways operations in Nigeria.

Two different questionnaires were used by employing a systematic-random sampling techniques, the first questionnaire was targeted to the users of coastal Inland waterway transportation and the communities while the second questionnaire was targeted to the operator of the water motor vehicle in the study area.

Majority of people who engage in fishing 65.4% are found in the income bracket (N5,000 – N20,000) majority of the people have formal education with 83.6% in the operator sector.

The loading and offloading method dominate the area was by manually with 45% respondent while on 16.3% was by agree that electrically method being use for vessels.

The analysis of variance indicated that there is no significant difference in the fishing and trading occupation while significant differences existed in the educational level and income. The study examined the current trade and shipment between southwest of Nigeria, and took a bottom-up approach in which existing data on trade flows / shipment within the region and the ports that participate in this trade were used to analyze the prospects for Inland waterways transportation in the area. Detailed data were examined concerning the commodities that flow between Jetties and terminal in the study area and the vessels that carry them.

Container traffic was analyzed separately from all other types due to the unique type of infrastructure and equipment employed in the container trade. The researcher also identified possible triggers that might cause an abrupt increase in Inland waterways transportation activity in the region. Researcher examined the potentials role of the southwest inter coastal waterways in handling coastwise trade and the possibility of developing a viable ocean going coastwise domestic trade in Ogun state coastal area. The researcher then analyzed the likely effects of Inland waterways on Ogun State transportation system in short to medium term, focusing specifically on adequacy of channels, Jetties, Terminals, docks available cranes, vessel, water motor vehicles of different dimensions and required storage space the researcher also look at a new Inland waterways transportation operation that has been announced for free-export promotion zone site for industrial development with the study area. The researcher made some suggestion for further studies and research on some area while making contributions to knowledge about what could be done to improve and increase the usage and development of coastal Inland waterways transportation in Ogun State.

Conclusion

The Nigeria inland waterways is reputed to be one of the longest in the world, Nigeria's Inland water ways extend out to about 86 000km. of this vast and extensive water, which stretches from the republic of Niger-Benin borderline down to the confluence

where it joins forces with the Benue of it journey to Gulf of Guinea and with coastal line of 190km creating a rich network of clustered waterways that stretch to the coastal line, the largest of its kind in Africa. It is a surprise that over a half of it is yet to be exploited. 'It's Nigeria's Fallow Resources'.

Considering the many factors that limit our nation today, the untapped treasures and huge economic opportunities abound in the maritime/coastal, and inland waterways (rivers) and tributaries that transverse the entire landscape of Nigeria, with over 50 rivers and coastal water are of potential benefits to our people, if properly harnessed. Coastal inland water ways can add value to the economy in the area of mass transportation, international trade, agriculture, human capacity development, tourism and hospitality, mineral exploration, as well as provide the much sought after employment to mention but a few. And lastly with the development of the inland waterways container port/Jetties, investment opportunities are imminent in the area of haulage, ferry services, boat movements.

Fabrication and assemblage, warehousing and storage facility services, heavy material handling services, dredging services, dockyard facility provision, protocol and safety management services, hydrographical survey catering services, towage stevedoring consultancy and many others. The silent potential revolution of coastal, inland water and maritime services and resources left to fallow will be brought back to live and both state and federal government with the communities enjoy much of the awaited economic change that would take place. Huge vacuum is for both private participation and public-private partnership. It is high time every businessman start to think investment in the inland waterway.

Ogun State coastal and inland waterway plays a vital role in the economy of State, when inland waterways transportation development succeed, the navigation industry and the customer it serves face a great opportunity.

The need for strategic plan for the waterways that will include the local communities, authorities who have role for themselves in the formulation and implementation of such a plan, so that many Opportunities for Development of the inland waterways for economic and transportation services activities along the waterways corridors including; Trade, personnel movement, tourism, freight forwarding, all related projects should take into consideration potential adverse effects on the heritage of the waterways.

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