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Determinants Influencing the Environmental Impact Assessment Compliance Rate by Industries in Aba City, Southeast, Nigeria

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ABSTRACT

A United Nations (UN) report on the severity of pollution in cities around the world in 2020 rated Aba City, Nigeria, as the most polluted city in the world. This has become a source of worry and embarrassment for environmental policymakers in the country. The matter of whether industries are efficiently managing their wastes came to the fore, and policymakers questioned the compliance of these industries with environmental laws and Environmental Impact Assessment (EIA) guidelines and the reasons behind the seemingly non-compliance of the industries with these guidelines. The study aimed to investigate the determinants that influence compliance with EIA guidelines by industries in Aba. A survey research method was employed in the study. Questionnaires and interviews were also used to elicit data from industrialists and environmentalists in the study area. 384 industries were sampled in the study. Principal Component Analysis was used to test the hypothesis. The study revealed seven factors that influenced the compliance rate of EIA guidelines by industries, and they include weak public participation (65.5%), ignorance (54.5%), an effective legal system and legislation (42.4%), the cost of compliance (40.5%), weak coordination along the line of departments (town planning officers and consultants) (35.5%), delay in approval (30.5%), and limited scope (28.9%). It was recommended that the government strengthen the legal system as it relates to the implementation of EIA; then, there is a need to involve affected stakeholders in the preparation of EIA documents.

INTRODUCTION

Over the decade, industrialization and urbanization have taken place, thereby giving room to tremendous growth, which in turn has given rise to environmental degradation and depletion. The practice and implementation of environmental impact assessment (EIA) guidelines vary from country to country for many reasons. While developed countries are more effective in the implementation of environmental guidelines, developing countries are less effective in the use of EIA systems.

In 1969, the United States of America promulgated the National Environmental Policy Act (NEPA) as a measure to check the present worldwide desire and efforts to control man's unabating degradation of his environment (Rachael 2017). In Europe, a draft made in 1987, referred to as the Commission of European Communities (CEC), listed the types of projects that must be subjected to an assessment, and this was in response to the US National Environmental Policy Act. In developing countries like Kenya, for instance, the EIA Act was domesticated in 1999 as the Environmental Management and Coordination Act (EMCA) to check the activities of developers of major projects (Kelvin 2016). The issue of environmental impact assessment in developed countries like Europe is in the form of a regional or sub-regional approach, but efforts in other parts of the world have been initiated through measures in the form of legislation and guidelines by individual governments. A good example of such individual countries' initiatives is the Federal Environmental Protection Agency's (FEPA) Decree of 1988 in Nigeria, which was meant to check the development and growth of industrialization and urbanization (Mohammed et al. 2014). However, the Nigerian government in the early 20s created another body, NESERA, to replace FEPA and was saddled with the job of managing the environment. This agency (NESREA), through her consultant, is charged with the onus of carrying out environmental audits within a space of 3 years for industries and reporting such audits to NESREA as specified in the National Guidelines for Environmental Audit in Nigeria. In the law establishing the agency, Section 8(k) of the law charged the body to make laws, one of which is Regulation S.I. No. 29, which

demands industries do environmental audits and submit reports of such audits every 3 years. Various states in Nigeria equally established bodies and agencies that complement the activities of the NESREA in the state; hence, the Abia State Environmental Protection Agency (ASEPA) was saddled with the responsibility of complementing the NESREA effort in enforcing compliance to the extent of environmental regulations in Aba and other cities of Abia State, Nigeria.

There are various developments in Nigeria, particularly in Aba, one of the largest commercial cities in Nigeria. The town is located in Abia State, in the southeast region of the country. These developments span industrial, social, economic, etc., and all these developments have an effect on people and the immediate environment of man. Aba, as one of the commercial nerve centers of Nigeria, has hosted many industries (manufacturing, construction, and production), and efforts have been made by various governments to reduce or mitigate the negative impact of these ever-increasing industrial developments in Aba, especially using the legislative tool called EIA guidelines. Each industry is required by this law to produce guidelines on how development should take place and how to mitigate the anticipated negative effects. However, the level of compliance with this responsibility by various industries has been a concern to policymakers, owing to the fact that there seems to be enormous industrial effluents and pollution in Aba. In Aba, the study area, the nature of the environmental condition is not in any way different from what is obtainable in many other cities in Nigeria. The increase in non-industrial and industrial activities in the urban area, such as plastic manufacturing industries, agricultural processing industries, confectioneries, surgical, and pharmaceutical companies, has necessitated this unhealthful environmental condition. More so, in the recent rating by the UN on the cities that are polluted in the world, Aba was rated the highest among the worst polluted cities (UNEP 2022). This has remained a worry to planners since there has not been any empirical evidence of the compliance rate of industries to development guidelines, let alone ascertain the categories of industrial development and their compliance rate in Aba Urban. It has been speculated that many companies do not comply strictly with the EIA guidelines. It is against this background that environmental compliance with basic environmental guidelines in the industrial and manufacturing sectors is topical. Therefore, the study aimed to empirically investigate the factors that influence the compliance rate of industries with EIA guidelines since such a study has not even been ascertained in Aba, hence the essence of this work. The study hypothesized that the factors that are associated with the compliance rate of industries with EIA guidelines cannot be patterned. The findings of the study will stimulate project proponents, EIA consultants, policymakers, environmental standards, and regulations enforcement agencies to have an empirical understanding and knowledge of the factors responsible for the non-compliance of environmental regulations by industrialists in the city and other Nigerian cities at large, thus evolving policies that will ensure a sustainable, convenient, healthy, and safe environment.

PAST STUDIES

In a study conducted by Hussain et al. (2015) on factors influencing the performance of EIA practices in Pakistan, they posited that ineffective management, centralized decision-making, political setup, bureaucratic structure, and poor control systems are major hindrances to effective compliance with environmental impact assessment guidelines. For Nwafor (2006), the most critical factors affecting compliance with EIA regulations and performance are public participation and a lack of relevant human resources in the implementation of environmental management plans (EMP). Furthermore, Zaelke et al. (2005) did a study on the challenges and status of environmental compliance and audit processes by industries in Kenya. The study posited that most industries carry out audits for compliance purposes only. The study concluded that proponents' concern after initial compliance does not extend to monitoring and effective follow-up; rather, compliance is targeted at obtaining approval from relevant authorities. Also, Wood (1993) researched factors influencing the environmental audit of educational institutions. It was noted from the study that the environmental audit was done primarily to show the areas of weaknesses and strengths, understand the ways that educational institutions follow legislative regulations related to environmental management plans, and know how the audit would help handle environmental problems in the school and its environs, disposal of waste techniques, potential environmental management constraints, and the focus of future audits. The research, however, found that the institutions complied with some environmental laws and legislation but had areas of lapse. And they highlighted these lapses due to a lack of follow-up and monitoring. The finding collaborated with that of Zaelke et al. (2005), who also found a lack of follow-up and monitoring as major factors affecting compliance with EIA guidelines.

Furthermore, Sadler (2011), examining the factors influencing compliance with EIA guidelines in tea factories in an African sub-Saharan country such as Kenya submitted that the primary causes of non-compliance with EIA guidelines in the tea industry were the over-utilization of primary resource bases such as water and forest products, inadequate use of appropriate technologies, insufficient

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support for technology change, and weak enforcement of environmental laws.

Morrison et al. (2017), in their study on compliance with environmental safety guidelines in the oil and gas industry, found that compliance with safety environment best practices was weak. This was because stakeholders and staff of the industry were not properly advised and trained by safety professionals; thus, they possess very inadequate skills or competence to enhance compliance. Similarly, Leknes (2001) and Mangogrie (2015) have also identified that legal framework and institutional capacity have a remarkable impact on the performance of EIA practices, including screening, scoping and mitigation, environmental management plans (EMP), and reporting. Also, they found that some countries are more effective in complying with EIA guidelines while others are less effective. They concluded that compliance varies significantly between consultants, the size of the project, and the stage of the EIA process. In contrast to the findings of Leknes (2001) and Mangogrie (2015), Kelvin (2016), in his study on the variables that influence the implementation of EIA recommendations on commercial projects in Kenya, documented poor quality and incomplete Environmental Impact Statements (EIS) often overpopulated with information, inadequate implementation of the proposed mitigation measures, and a lack of meaningful partnership with the concerned public, among others, as factors militating against the implementation of EIA regulations for commercial projects. The findings of his study are in tandem with those of Sadler (2011), who found similar factors responsible for ineffective compliance with EIA guidelines. Salihu et al. (2015) found that the nature of the administrative setup, weak coordination, inadequate screening and scoping, limited scope of EIA review, poor quality of EIA reports, weak public participation, inadequate implementation of mitigation measures and monitoring, effective legal system and legislation, extensive politicization of the EIA process, and availability of baseline data are limitations to EIA guideline compliance. The study corroborates what Leknes (2001), Mangogrie (2015), and Kelvin (2016) posited; they observed that very minimal public participation and involvement are done during the Environmental Impact Assessment process due to the several challenges encountered during the implementation of EIA participation.

In Pakistan, Agwu et al. (2009) attributed poor environmental impact assessment practice to a lack of consultants' experience, proponents' attitudes, inadequate expertise for the review of EIA reports, and inconsistent EIA review criteria. The quality of compliance is normally hard to measure based on the EIA report alone without verification of the project's location and implementation (Kakonge 1998). Again, to further comprehend the factors that influence compliance with EIA guidelines by proponents, Rowan et al. (2016) used a structured questionnaire to measure the variables that explained the reasons proponents fail to comply, and they identified six factors in order of increasing importance that influenced compliance rate: the unclear nature of the EIA system, proponents regard EIA exercise as unnecessary, EIA is too stringent, EIA is too expensive, EIA increases costs, and EIA delays projects. The finding also shows that large projects have a higher level of compliance than smaller projects. He concluded that the implication is that the EIA system is not effectively achieving its intended objectives since strict compliance is necessary to achieve the protection of the environment. As affirmed by Leknes (2001), the factors that affect implementation of EIA compliance are inadequate enforcement of EIA requirements, especially EIA report quality, implementation of mitigation measures and impact monitoring, lack of specialization in EIA, low entry barriers, unethical practices by consultants, and inadequate consultant vetting methods, resulting in EIA services being provided by incompetent consultants even though the competent ones are available, and a lack of up-to-date EIA guidelines to facilitate EIA studies that are scientific and can provide adequate decision-making information. The findings of the researcher agree with those of Rowan et al. (2016), who found lack of specialization in EIA, inadequate consultant vetting methods resulting in EIA services, and unethical practices by consultants as factors affecting compliance with EIA guidelines.

Unfortunately, none of these studies investigated the determinants that influence compliance with Environmental Impact Assessment guidelines by industries in Aba North and South local government areas. Secondly, it was observed that most of the published empirical studies conducted on factors affecting compliance with EIA guidelines did not focus on the three industrial sectors of the economy, manufacturing, construction, and service. Hence, there is a dearth of literature on the factors affecting compliance with EIA guidelines in the manufacturing, construction, and service industrial sectors in Aba. In an attempt to fill the gaps created in the literature, this study investigates the determinants that influence compliance with EIA guidelines by industries in Aba City, southeast Nigeria.

THE STUDY AREA

The study area is the commercial nerve center of Abia State in the southeast region of Nigeria, as seen in Fig. 1. Aba is located between latitudes 5°6' N and 5°7' N and longitudes 7°18' E and 7°22' E and is made up of two local

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Fig. 1: Map of Nigeria, showing Abia State, South East of Nigeria.

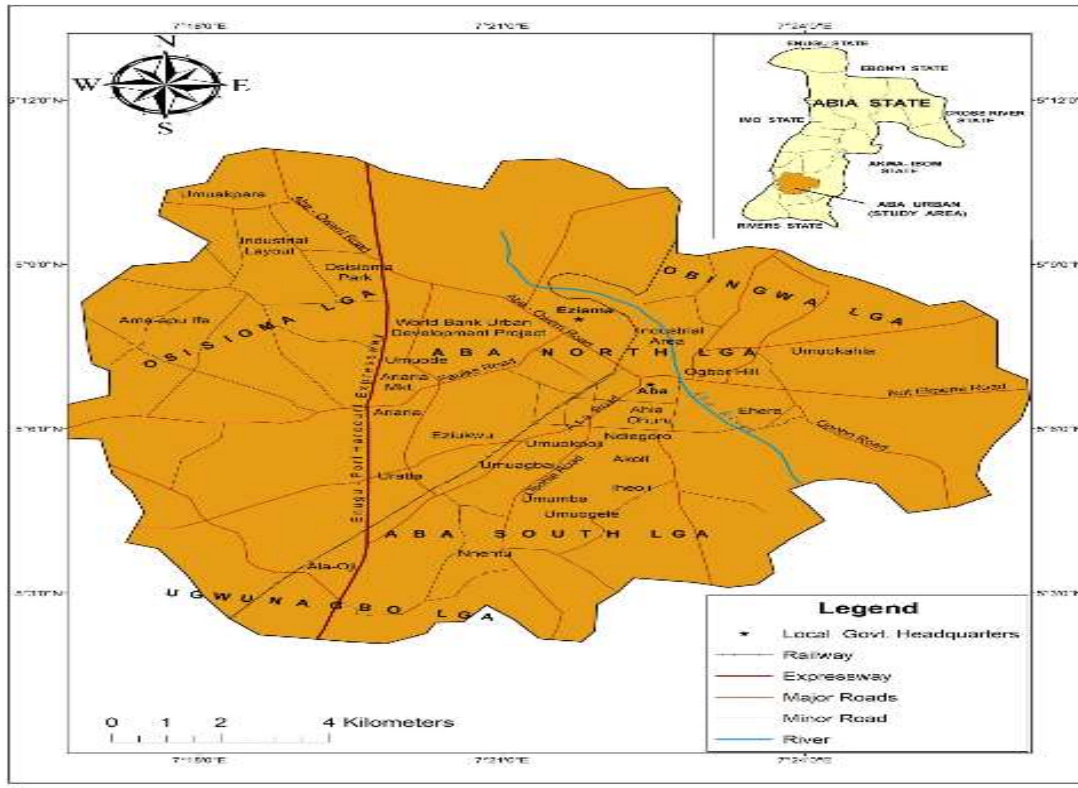

Fig. 2: Abia State map showing the two LGAs under study. Source (Maduko 2016).

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governments, Aba North and South (Ofomata 2002), as seen in Fig. 2. The city houses many industrial sectors whose activities impact the environment negatively.

Aba has numerous commercial and industrial activities. Aside from Onitsha, the most pronounced commercial town in the southeast area of Nigeria, the study area is second in its scale of commerce in Nigeria. The body that is responsible for commerce and industry in the study area is the Aba Chamber of Commerce, Industry, Mining, and Agriculture. There are about 2000 industries in Aba, with some of them going moribund and many small-scale industries springing up (ACCIMA 2020). Apart from the large industries, there are also many artisans as well as small and medium-scale industries in the study area. Large-scale industries in the area include 7up Bottling Company Guinness Plc, New Erra Foods, Nigerian Breweries Plc, Clover Paint, Tonimas Oil, and Gas. Medium-scale industries include Nicen Paint, Afro Beverages and Distillers, Starline Nig. Ltd., and Hanonimbiz Foods. Some of the few small-scale industries seen in Aba include John Chuks Metal Ltd., G&C sachet water, Okoson Aluminum, Divine Gate Aluminium Ltd., Aku Plastic, etc.

RESEARCH METHODS

The research adopted a survey research design. The researchers collected data from primary and secondary sources. The list of industries in Aba was sourced from the Aba Chamber of Commerce, Industry, Mines, and Agriculture (ACCIMA) catalog, 2020. The sample population includes the management staff of the various categories of industries/proponents operating in Aba as well as environmentalists (town planners) from the two local governments of Aba North and South Town Planning Authorities. The sample frame consisted of 384 staff at the management level in the three industrial sectors (production/manufacturing, construction, and services) in the study area. The reason for using only management staff was because they are directly involved in formulating and implementing compliance policies; hence, they possessed the required information regarding how companies comply with EIA guidelines. Cluster and simplified random sampling techniques were employed in this study. Industries were selected using the cluster stratified sampling technique, where the sectors were clustered into three: production/manufacturing, construction, and services. Simple random sampling was then adopted in the selection of the industries in each cluster.

Furthermore, the number of industries in each sector to be included in the sample was determined using proportionate allocation, and each industry had a non-zero probability of being selected. To determine the share of questionnaires to be distributed to each industry, it is calculated as follows:

N_m = total no. of manufacturing industries 1024

N_s = total no. of service industries 722

N_c = total number of construction industries 310

N = total population of the three industries 2056

n = which is the sample size 384

The proportionate allocation method was used to calculate the number of questionnaires that were administered to each sector of the industries and the formula is stated thus:

Therefore $n_h = n \frac{N_h}{N}$ …(1)

Where n = 384

N = 2056

So, $n_m = 384 \frac{1024}{2056}$ = 191 industries

$n_s = 384 \frac{722}{2056}$ = 135 industries

$n_c = 384 \frac{310}{2056}$ = 58 industries

Total = 384 industries

Therefore, 191, 135 and 58 questionnaires were allocated proportionally between the manufacturing, service, and construction industries, respectively, for a total of 384 copies. Out of 384 copies of the questionnaire administered to the three different industrial sectors, 345 were correctly filled out and returned.

Notably, there was no sample selection amongst the town planners or town planning consultants because they were not such a large number. Therefore, 37 copies of the questionnaire were administered to 37 of them (Aba South: 15 town planning officers, Aba North: 13 town planning officers, and 9 planning consultants in the two LGAs). The inferential statistical tool used to test the hypothesis was principal component analysis (PCA)

Selected Variables that Influence Compliance with EIA Guidelines

In Table 1, 13 variables have been identified through literature and questionnaire administration to influence compliance with EIA guidelines, which were later transformed into fewer variables for easier data management. The identified variables are shown in Table 1.

The Principal Component Analysis (PCA) statistical tool was used to compress the 13 identified primary compliance factors into 7 orthogonal dimensions, which then formed the secondary factors. However, for proper evaluation, the 384 responses were transformed by 13 data matrixes, and the varimax rotation was also computed. Thus, their respective

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Table 1: Variables have been identified to influence compliance with EIA guidelines.

Variable Identity	Variables
F 1.	Legal system
F 2.	Public participation
F 3.	Cost of compliance
F 4.	Screening and scoping
F 5.	Weak coordination
F 6.	Quality of EIA
F 7.	Limited scope
F 8.	Fear of project change
F9	Ignorant on how to comply
F10	Mitigation measures
F11	Delay in Approval
F12	Meeting requirements
F13	Administration

Eigenvalues were obtained, and the 7 dimensions were selected in their order of importance as presented in their order of importance.

The PCA output shows that seven components (factors) express the bulk of the common variance among the 13 primary variables. These seven factors were referred to in the study as the factors that influenced the compliance rate of the EIA guidelines in the study area. The factor loading for each variable was between ±0.462 and ±0.828, approximately as presented in Table 2. The matching name was used to identify each of the components. Table 3 shows the factor loading of each of the components.

Factor 1: Ineffective legal/ public participation

Factor 2: Cost of compliance

Factor 3: Weak coordination

Factor 4: Limited scope

Factor 5: Mitigation measures

Factor 6: Delay in approval

Factor 7: Meeting requirements

To better understand the output, Table 3 shows the factors and the variables that were the subsets with their factor loading.

The result of the PCA shows that the factors that influence the compliance rate of EIA by industries can be discernibly patterned into seven components. It explained 55.103 percent of the observed variation in compliance with EIA guideline variables. In other words, seven critical factors influence developers' compliance with EIA guidelines

Table 2: The Rotated value of each component in matrix form showing factor loading.

	Component						
	1	2	3	4	5	6	7
Legal system	.746						
Public participation	-.708						
Ignorance							
Cost		-.718					
Screening and scoping		.533					
Cordination			.694				
Quality of EIA			.629				
Fund							
Limited scope				.664			
Change				-.498			
How to comply				.494			.460
Expertise and skills							
Mitigation measures					.828		
Approval						.787	
Meeting requirements							.662
Administration							.462

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 19 iterations.

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Table 3: Component names for the primary compliance variables.

Component Names	Variable Identity	Factor Loadings
FACTOR 1: Ine*ffective legal system/participation*		
Effective legal system	F1	.746
Effective public participation	F2	.708
FACTOR 2:*cost compliance*		
-cost compliance	F3	.718
-screening and scoping	F4	.533
FACTOR 3: Weak coordination		
Weak coordination	F5	.694
Quality of EIA	F6	.629
FACTOR 4: *limited scope of EIA*		
-limited scope	F7	.664
-Fear of change of project	F8	.498
-Ignorant on how to comply	F9	.494
FACTOR 5: *Implementation of mitigation measure*		
Mitigation measures	F10	.828
FACTOR 6: *Delay in approval of EIA reports*	F11	.787
Delay in approval		
FACTOR 7: *poor administrative setup*		
-Administration	F12	462
-Meeting requirements	F13	662

in the study area. These factors were ineffective legal mechanism/public participation (1.760), cost of compliance (1,420), weak coordination (1.251), limited scope (1.201), mitigation measures (1.113), delay in approval (1.038), and administrative (1.034).

DISCUSSION

The study shows that the ineffective legal system and legislation had the strongest influence on the compliance of industries with Environmental Impact Assessment guidelines in Aba. The result of the finding supports what Rachael (2017) proved: a lack of coherent legal framework and guidelines makes for ineffective enforcement of the sections of the EIA guidelines to curb environmental degradation. In the same vein, Rai et al. (2015) found that legal framework and institutional capacity are significantly affecting the performance of Environmental Impact Assessment practices screening, scoping and mitigation, EMP, and reporting. Again, the level of developers' awareness of EIA guidelines strengthens or weakens the legal framework of any environmental endeavor. This assertion, according to Rai et al. (2015), has been validated by the findings of this study in Aba.

In this study, ineffective implementation of mitigation measures and monitoring by lead agencies were found to be influencing the successful implementation of EIA guidelines. This study indicated that there is poor evaluation and monitoring by the staff of the Ministry of Environment, the supervisory body saddled with the responsibility of inspecting the industries to ensure proper management of industrial effluents and waste. This is in sync with the findings of Sadler (2011), who submitted that the monitoring and evaluation of the implementation of EIA guidelines is crucial to preventing environmental degradation and ensuring sustainable development. This proves that adequate evaluation and monitoring have a great impact on the prevention of environmental degradation by industrialists in Aba. The studies of Mahlatse (2015), Kelvin (2016), Maduko (2016), Rachael (2017), and Clarke & Cong (2021) found that the major factor affecting compliance with EIA was the lack of engagement of the affected members of the public during EIA endeavors. This was also seen in this study. It was posited that most of the stakeholders and the public were not consulted during various EIA exercises in the study area. Aba, being one of the commercial nerve centers of the southeast, houses numerous businessmen and women who are always busy with their trading activities and hence devote little or no time to environmental endeavors around them. This is further buttressed by the study, where respondents affirmed that consultation was not done prior to the execution of projects in their area. Furthermore, this finding suggests that there is a very low level of public participation by affected stakeholders prior to development projects in the study area. Nwafor (2006) asserted that though public participation could be time-consuming and may involve huge financial implications, not involving the affected members of the public will have a long-lasting and far-reaching negative effect if the stakeholders revolt through litigation processes. This assertion was supported by Salihu

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et al. (2015) in their study in Niger State, which noted that stakeholders were not carried along during the introduction of projects that affected the public. A similar study carried out by Kelvin (2016) in commercial towns and projects in Nakuru Town, Nakuru County, Kenya, found that factors like evaluation and monitoring, budgetary allocation, and public participation had a strong influence on the implementation of EIA recommendations. Lead agencies have tended to overlook the importance of public involvement, either through ignorance or sometimes with the purpose of avoiding sanction by relevant authorities. In this study, it has been proven that poor public involvement by industrialists, lead agencies, and EIA experts has a direct impact on compliance with EIA guidelines in Aba. Stakeholders are therefore very important in the successful implementation of EIA guidelines by industrialists in Aba.

Further, it was posited from the study that delay in project approval does significantly influence compliance with EIA guidelines. In the same vein, Kanyi (2014) reported that delays in approving proponent's proposals by regulatory agencies have caused EIA endeavors to lose integrity and trust among those concerned. Also, Rachael (2017) found that most EIA proposals are not given approval on time and that most times, proponents start and complete their projects even before approval is granted by the relevant agencies.

It was also noted from the study that the government agency's insufficient budgetary allocation for the follow-up of the implementation of EIA guidelines in the study area. These results corroborate Rowan et al.'s (2016) argument that until the benefits of total compliance with EIA guidelines are widely recognized in terms of long-term cost savings and improved environmental management, implementation agencies will continue to under-budget finances for EIA follow-up.

Also, another factor influencing compliance with EIA guidelines in Aba was weak and poor coordination by the supervisory bodies along the lines of departments (EIA consultants). This is substantiated by the respondent's affirmations. Chris (2013) found that coordination among the Federal Ministry of Environment, local financial institutions, EIA proponents and consultants, and the Department of Petroleum Resources is generally poor and weak.

It was observed that the limited scope of the EIA review significantly influences the rate of compliance with Environmental Impact Assessment guidelines by industries in Aba. The EIA review process usually involves third-party participation to ultimately enhance the quality of the EIA study and final report (Kelvin 2016). This third-party involvement in the review can be marked as a salient feature of the EIA process in Nigeria. Although an independent EIA review commission does not exist in Nigeria, more resources are expected to be allocated by the government to transform third-party involvement into formal review bodies. Rowan et al. (2016) found that some anomalies exist in the process due to a lack of technical capacity and subjective review. The study further revealed that 89.8% of the respondents believe that the poor quality of EIA reports does influence compliance with EIA guidelines in the study area. Peter (2016) stated that the standard of the EIA report is a clear reflection of the strength and competence of the EIA review committee members and EIA consultants. The lack of experience of EIA consultants and approval authorities, along with reluctance on the part of the proponents to allocate sufficient resources, are some of the impediments to a better-quality EIA (Shahbaz et al. 2015). The study observed that consultants' role and scope in the study area have been limited to highlighting only the economic gains and benefits of the project, forgetting environmental approval. Unlike what was observed in the study area, Kelvin (2016) reported that 80% of the sampled population in his study were aware of EIA guidelines in Nakuru Town, Kenya. Surprisingly, in Aba, this study found that a significant number (63.7%) were not aware of EIA guidelines in the study area. In the same vein, the findings of this study also contrast with the findings of Muhhamed (2012), who revealed that developers' level of awareness and technical factors influenced compliance with the Environmental Impact Assessment regulation.

CONCLUSIONS

The identified seven factors that affect compliance with EIA guidelines are: ineffective legal system/public participation, cost of compliance, weak coordination along the line of departments (town planning officers and consultants), limited scope of EIA review, inadequate execution of proposed mitigation measures and follow-up, delay in approving of reports by regulatory agencies, and poor administrative set up within the responsible authorities. Furthermore, the developer's level of awareness of EIA guidelines is another identified factor that has a significant influence on the rate of compliance with EIA guidelines. This study is one of the very few that has contributed to the body of existing literature by examining the factors influencing compliance with EIA guidelines in Nigeria. The government should, as a matter of urgency, strengthen the legal and institutional framework to ensure that all issues regarding noncompliance are addressed through a strong legal mechanism and that there should be proper and timely follow-up by regulatory agencies to ensure that the contents of EIA reports as submitted by proponents are complied with as proposed. It is also recommended that NESREA, the body in charge of environmental management

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in Nigeria, should, as a matter of policy, strengthen the credibility of its regulatory role through an effective and consistent enforcement mechanism. Also, the government should encourage institutions of higher learning, research organizations, and other private bodies to set up awareness-raising and training programs for industries on environmental management and pollution mitigation.

This study recognized that other variables influence industries' noncompliance with environmental guidelines that were not captured in the work. This therefore presents the essence for further studies, even if situational circumstances are capable of influencing this act. Hence, further research in that regard will be beneficial.

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