



Challenges to Health and Safety Compliance for Construction Projects in South East, Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author CAEO designed the study, wrote the first draft of the manuscript and managed the analyses of the study. Author CIO managed the literature searches performed the statistical analysis. Author KCO supervised the entire process and wrote the final draft. All authors read and approved the final manuscript.

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ABSTRACT

The aim of this research is to establish the challenges to health and safety compliance for construction projects in South East Nigeria. This study which is essentially survey based and empirical collected quantitative and qualitative data through questionnaire survey and field observations. The questionnaires were administered to indigenous construction firms and professionals in the construction projects in Abia, Anambra, Imo, Enugu and Ebonyi States of the South East area of Nigeria which are the study population. The tools used for data analysis were Regression using Friedman Q Test Ranking and crosstab. The findings revealed that the challenges to health and safety compliance in South East Nigeria are bribery and corruption, ignorance of the benefits of compliance, lack of health and safety culture, perception of stakeholders, neglect of human rights and moral values, non-commitment of the major construction players, inadequate training of staff and lack of skilled health and safety personnel, non-inclusion of health and safety in contract document and tendering process and inadequate funding. This study concludes that the lack of awareness and understanding of health and safety significantly hinders compliance to health and safety. The study therefore recommends that using enforcement

in form of incentives based approach will equally take care of the identified different challenges to Health and Safety Compliance in South East, Nigeria. Furthermore, the health and safety regulations should not be enforced only through inspections and sanctions, rather there should be economic incentives to encourage and motivate self-compliance.

Keywords: Construction sites; construction projects; health and safety; health and safety compliance; South East Nigeria.

1. INTRODUCTION

Compliance to health and safety standard in the construction industry cannot be overlooked because it is tangential to higher productivity. The development of sustainable health and safety environments is becoming one of the key issues globally. A study by [1] in [2] aver that the institutional and regulatory framework for construction health and safety is highly fragmented and poorly implemented and call for urgent need for provision of adequate and enforceable health and safety regulations for construction operations as well as the establishment of construction industry training institutes including trade centres in different parts of Nigeria, the South East area of Nigeria is part of this. Consequently, there is a need to develop a functional framework for health and safety compliance in construction projects since [3] concluded that neither the Factories act of 1990 nor the Personal Protective Equipment (PPE) EC directive, 1992, sufficiently captured the construction sites and their operations, which indicated that construction works in Nigeria is unregulated in terms of occupational health and safety.

This study also seeks to address the several calls that have been made to stakeholders in the construction industry in the South East to adopt innovative safety and health measures to improve project performance in the construction industry in Nigeria. This corroborates [4] in [5], suggestion that safety management must be thorough, and it must be applicable to all aspects of the job, from the estimating phase of the project until the last worker has left the premise at the completion of the project.

This study is to determine the challenges to health and safety standards by indigenous contractors in the South East Area of Nigeria by determining the level of compliance of construction projects by professionals in the industry to existing health and safety regulations in South East Nigeria and identifying the challenges confronting health and safety

compliance of construction projects in South East Nigeria.

[6] posits that construction contractors and professionals in developing countries of which Nigeria is one do not prioritize H&S; it ranks low on their priority list, [7] in [8], further posits that some of these Nigerian contractors fail to take responsibility for H&S, shifting the operational risks to the workers. 90% of construction workers in a study by [9] in [8], understand the importance of risk control measures such as Personal Protective Equipment(PPE), 81% still fails to wear the PPE provided, noting issues such as discomfort, inadequacy of PPE, as excuses. In some cases, H&S regulations are mentioned in contract documentation but in practice the case is different which is applicable in some of the sites in the South east states visited during research unlike sites in the South South especially Port Harcourt where safety regulations are fully adhered to by construction workers. The level of compliance to existing health and safety regulations in the South East states is low due to lack of proper enforcement by existing authority.

The study done by [5] on Nigeria construction sites and Anambra State in particular, examined and found out that the level of health and safety knowledge among construction workers in Anambra State was moderate, the level of health and safety compliance, in the state among the workers was low, the study further established a very weak positive correlation between the health and safety knowledge and compliance of construction workers. It further averred that health and safety knowledge and compliance alone are not enough to cause behavioural changes but safety factors like enforceable regulatory framework, management commitment etc. [8] opines that the Nigerian construction industry like other industries faces challenges which are not limited to: lack of skilled manpower, unstable prices of materials, poor implementation of policies, political instability, corruption, unethical practices but corruption is the major hindrance to the construction industry.

According to [10], Nigeria, the largest African country is beleaguered with bribery and corruption, and Transparency International (2012) ranks the country 139 out of 176 in terms of the corruption perception index. Regulatory institutions and the police force have been proven to be corrupt, which prevents effective implementation of legislation in the country as the activities of authorities responsible for enforcing the laws are seen as questionable. For instance, situations where firms with poor H&S practices achieve pass marks after inspection because they have bribed the enforcement officers, it is confirmed that enforcement officers do this due for selfish financial reasons, thereby marginalizing the aims of the regulations, and promoting non-compliance. Lack of skilled personnel is also another major barrier to the effective implementation of H&S in Nigeria. In a similar vein, [11] states that an insufficient number of competent occupational health services experts hinders the development of occupational health services globally. Consequently, implementation of H&S legislation requires funds to be available for effective provision of adequate facilities and recruitment of training officers who enforce the laws.

However, [12] argues that the number of technical and transport equipment is inadequate, which hinders the implementation of H&S legislation in Nigeria. The argument here is that if the ministry experiences insufficient funding, adequate enforcement will be farfetched; it may also contribute to corruption. [13] concur with the identification of insufficient funding being viewed as a barrier to the implementation of H&S legislation. Inadequate funding is another factor that can hinder the enforcement of the regulations. [14] argue that lack of resources can hinder occupational safety and health (OSH) management efforts. On the other hand, most enforcement bodies/institutions in the developing world lack the basic tools and amenities, which need funds to promote OSH regulations, educate the society, enforce the regulations, and disseminate information.

The contract document as well as the tendering process in Nigeria construction industry does not highlight the importance of OSH compliance and the imposition of fine (penalties) to offenders so this hinders the enforcement. [7], states that compliance with OSH regulations can be standardized not only in tenders as part of contract agreements but also in the instances where it is possible to that safety records and

references from previous clients can be prerequisite for tendering for contracts to indicate the OSH performance of contractors. The regulatory institutions i.e. OSH officers (Federal Ministry of Labour and Productivity 2010), trained safety officers, the key Associations, Organizations and Non-Governmental Organizations involved in OSH arrangements and issues in the country are used for political or victimization reasons and therefore appear to fulfil all righteousness, coupled with the weak legal structure. [15] argue that the weak legal structure and absence of law enforcement in Nigeria allow foreign companies to take advantage of the ineffective statutory regulation. The same can be said of the construction industry. That may also suggest that these foreign firms may not have plans to comply fully with the OSH regulations in Nigeria or have an OSH management system similar to those obtained in their countries of origin, as they intend to reduce expenses and added cost to construction outputs. Since some of these multinational construction firms have seen the loop holes and the weak and porous nature of non-compliance to the regulations, the reputable ones even cut corners.

Ignorance of the benefits of compliance is another factor that hinders the enforcement of health and safety regulations in Nigeria, some wise and knowledgeable firms comply with OSH regulations to save cost thereby increasing their profit margin, but may not comply if the cost of compliance is too much when compared with the profit margin. There is also a general belief that accidents are unavoidable in the construction industry but this is not true because some accidents that happen could have been avoided if the right safety measures were taken. [15] also posit that some believe accidents are acts of God i.e. accidents occur because God allows them. As a result of the above argument, contractors may do little or nothing to prevent these accidents; they may not take safety guidelines seriously. These therefore suggest that beliefs, be it religious or superstitious often filters into work environments resulting to lack of compliance as well as enforcement with OSH regulations in the construction industry Africa wide. Some other factors like the perception of stakeholders in the industry who feel that compliance to these regulations are costly, time consuming and even unnecessary, inadequate training of staff, non-commitment of the major construction players, unemployment, neglect of human rights and moral values, not having the

safety culture are all factors that can hinder the enforcement of the regulations in Nigeria. These factors no doubt affect and hinder the enforcement of the health and safety regulations, so provision of functional health and safety program is paramount.

2. METHODOLOGY

This paper evaluates the challenges of compliance to health and safety regulations for construction projects in South East Nigeria. The research sample was drawn from registered professionals in study area (South East area of Nigeria) and indigenous construction firms as

shown in Table 1 and Table 2 and structured questionnaires were administered to them. South East of Nigeria is one of the six geopolitical zones in the country. The region consists of the following states; Abia, Anambra, Imo, Enugu and Ebonyi. The data for the study were collected from Umuahia in Abia, Awka in Anambra, Owerri in Imo, Enugu in Enugu, and Abakiliki in Ebonyi (Table 1). A sample size of 1205 was drawn from a population of 1337 for questionnaire distribution, while a total number of 1190 were validated for the study. The structured questionnaire was designed based on a 5-point likert scale.

Table 1. Registered Professionals in Study Area

S/N	State	Architects	Builders	Engineers	Total
1	Abia (Umuahia)	25	20	30	75
2	Anambra (Awka)	35	40	45	120
3	Imo (Owerri)	70	30	250	350
4	Enugu (Enugu)	150	50	180	380
5	Ebonyi(Abakiliki)	20	52	80	152
	Total	300	192	585	1077

Source: Secretariat of various professional bodies (NIA-Nigerian Institute of Architects, NIOB-Nigerian Institute of Builders, NSE-Nigerian Society of Engineers, NITP-Nigerian Institute of Town Planners) 2020

Table 2. Indigenous contractors

S/N	State	Contractors
1	Abia (Umuahia)	20
2	Anambra (Awka)	70
3	Imo (Owerri)	60
4	Enugu (Enugu)	80
5	Ebonyi(Abakiliki)	30
	Total	260

Source: Secretariat of various professional bodies (NIA-Nigerian Institute of Architects, NIOB-Nigerian Institute of Builders, NSE-Nigerian Society of Engineers, NITP-Nigerian Institute of Town Planners) 2020

Table 3. Friedman Q Test Ranking Challenges to Health and Safety Compliance in South East, Nigeria

Items	Mean	Rank
i. Non-inclusion of H&S in contract document & tendering process	9	4.92
i. Non commitment of the major construction players	6	5.33
ii. Inadequate funding	10	4.86
iii. Inadequate training of staff	7	5.28
iv. Lack of H&S culture	3	5.73
v. Perception of stakeholders (e.g. clients and professionals)	4	5.59
vi. Lack of skilled H&S personnel	8	5.17
vii. Neglect of human rights and moral values	5	5.44
viii. Bribery and corruption	1	6.53
ix. Ignorance of the benefits of compliance	2	6.15

3. FINDINGS AND DISCUSSION

Friedman’s Q test was used to assess the health and safety compliance challenges of construction sites in South East Nigeria. Bribery and corruption (with mean rank of 6.53) happens to be the highest challenge to health and safety compliance. This is followed by Ignorance of the benefits of compliance, Lack of Health and Safety culture, Perception of stakeholders, Neglect of human rights and moral values, non-commitment of the major construction players, Inadequate training of staff and Lack of skilled Health and Safety personnel, Non-inclusion of Health and Safety in contract document & tendering process and Inadequate funding. Thus **inadequate funding** is the least constraint while **bribery and corruption** is the greatest challenge to Health and Safety Compliance in South East, Nigeria.

Cursory examination of Table 4 revealed that, of all compliance indicators, the Architects are the most complaint to HSP with count 183, Quantity Surveyors with count 132 ranked second best compliant to HSP and builders with count 110 ranked as the third best compliant with respect to HSP in South East Nigeria.

On HSA, Architects with count 120 tops all other professionals in the construction sub-sector with respect to compliance level. This is followed by Quantity Surveyors with count 96 and contractors with count 52 occupying the third position with respect to HSA compliance in South East Nigeria.

Quantity Surveyors with count 100, Architects with count 80 and Builders with count 67 occupy first, second and third positions respectively with respect to HST compliance in the South East.

Architects with count 192, Quantity Surveyors with count 112 and Engineers with count 92 dominates the compliance level of ALE as first, second and third respectively.

Architects with count 256 were the most compliant to PPE, followed by Quantity Surveyor with count 168 and Builders with count 138 occupying second and third positions respectively with respect to compliance level of PPE in South East Nigeria.

With respect to FAF, Architects with count 256 has the highest level of compliance followed by Quantity Surveyors with count 156 and builders with count 138 ranking second and third in compliance to FAF in South East Nigeria.

Architects with count 184 dominate compliance in WSS, followed by Quantity Surveyors with count 124 and engineers with count 107, in South East Nigeria.

On RID measures, Architects with count 116 Quantity Surveyor with count 80 and Builders with count 75 rank first, second and third positions respectively with respect to compliance to RID in South East Nigeria.

On SWM in South East Nigeria, Architects with count 295 ranks the topmost, Quantity Surveyors and Builders occupies second and third positions respectively.

Table 4. Compliance Variables and Designations (Consolidation of Results from Cross Tabulation of Designation on Measures to Enhance Health and Safety Compliance)

Variable	HSP	HSA	HST	ALE	PPE	FAF	WSS	RID	SWM	PTW	AAO
Architects	183 ⁽¹⁾	120 ⁽¹⁾	80 ⁽²⁾	192 ⁽¹⁾	256 ⁽¹⁾	256 ⁽¹⁾	184 ⁽¹⁾	116 ⁽¹⁾	295 ⁽¹⁾	111 ⁽¹⁾	108 ⁽¹⁾
Builder	110 ⁽³⁾	47	67 ⁽³⁾	88	145 ⁽³⁾	138 ⁽³⁾	98	75 ⁽³⁾	138 ⁽³⁾	67 ⁽³⁾	55
Engineers	100	48	51	93 ⁽³⁾	135	135	107 ⁽³⁾	68	135	36	40
Quantity surveyor	132 ⁽²⁾	96 ⁽²⁾	100 ⁽¹⁾	112 ⁽²⁾	168 ⁽²⁾	156 ⁽²⁾	124 ⁽²⁾	80 ⁽²⁾	164 ⁽²⁾	76 ⁽²⁾	64 ⁽³⁾
Estate value	48	48	48	28	72	68	60	56	52	64	68 ⁽²⁾
Urban Reg.	12	12	12	8	24	20	4	8	24	20	0
Contractor	52	52 ⁽³⁾	28	56	76	80	64	44	88	48	20

NOTE: HSP – HEALTH & SAFETY POLICY; HSA – HEALTH & SAFETY ADVISER; HST – H&S TRAINING---
 ALE – APPROPRIATE LIFTING EQUIPMENT; PPE – PERSONAL PROTECTIVE EQUIPMENT
 FAF – FIRST AID FACILITIES; WSS – WARNING SIGNS AND SYMBOLS; RID – ROUTINE SAFETY
 INSPECTION & DRILLS; SWM – SAFE WORK METHODS; PTW – PERMIT TO WORK; AAO –
 ACQUAINTANCE& ADHERENCE TO OCCUPATIONAL ETC

PTW measure has Architects leading in compliance with count 111, Quantity Surveyors with count 76 and builders with count 67 occupied second and third positions respectively in South East Nigeria. AAO measure in South East Nigeria was dominated by Architects with count 108 with respect to compliance level. Estate valuers with count 68 ranked second and was closely followed by Quantity Surveyors with count 64 to occupy the third position with respect to AAO compliance in South East Nigeria.

4. CONCLUSION AND RECOMMENDATION

In conclusion, the different Challenges to Health and Safety Compliance in South East Nigeria were identified and bribery and corruption (with mean rank of 6.53) happens to be the highest challenge to Health and Safety Compliance while inadequate funding is the least constraint (with mean rank of 4.86). Level of compliance to H&S regulations among professionals in the construction industry is moderate and this corroborates [5] the level of compliance to existing health and safety regulations in the South East states is low due to lack of proper enforcement by existing authority. Therefore construction workers in the South east area of Nigeria have to understand the need for regular health and safety awareness, trainings, monitoring and enforcement not only through inspections and sanctions, rather there should be economic incentives to encourage and motivate self-compliance. The safety of workers, safety innovations and good equipment will lead to higher levels of output which can be improved through increased adoption of safety innovations like better gear and equipment (also known as PPE- Personal protective equipment), higher quality work, positive mindset, safety and health culture. So the following is recommended:

- a. The stakeholders in the construction industry (e.g. clients and professionals) should team up to provide enforceable Health and Safety practices and plan that are in tangent with health/safety regulations in the Nigerian construction industry.
- b. The H&S regulator should not be enforced only through inspections and sanctions, rather there should be economic incentives to encourage and motivate self-compliance.
- c. There is also need for further research on Innovative approach to health and safety in

the construction industry in South East Nigeria and Nigeria as a whole

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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