

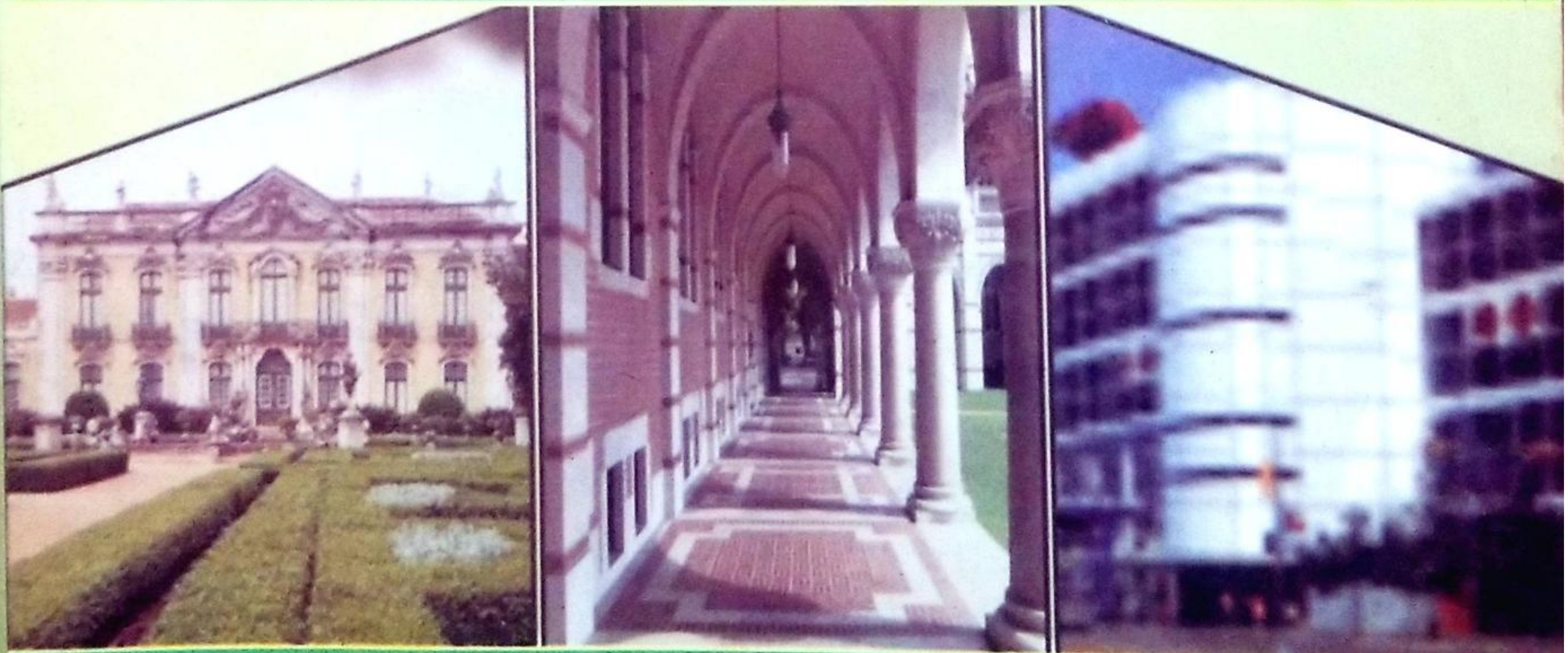
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## AWARENESS AND IMPLEMENTATION OF HEALTH AND SAFETY (H&S) IN THE NIGERIA CONSTRUCTION INDUSTRY

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### ABSTRACT

The level of awareness and implementation of health and safety (H&S) in the Nigeria construction industry was investigated. A questionnaire survey was conducted on construction projects to establish the level of awareness and implementation of construction health and safety. Physical observations were also conducted on construction sites in order to relate questionnaire responses to what actually obtained on construction sites. The study covers the six geopolitical zones in Nigeria with a random sampling of one state from each zone. Findings from the research reveal that the level of health and safety awareness is low, health and safety legislation is not complied with, most sites do not possess the health and safety plan. Contractors are not committed to health and safety implementation, health and safety management systems, procedures, and protocol in most of the construction companies are not proper, clients and designers do not participate in the implementation of health and safety. It was recommended that Council of Registered Builders of Nigeria (CORBON) should relax the Yardstick of admittance and open up for more people to become Professional Builders so that the Implementation of Health and Safety plan (document) will be achieved.

**KEYWORD(S):** *Awareness, Implementation, Construction industry, Project, Health and safety.*

### INTRODUCTION

Accident on sites is a major concern to everybody in the construction industry, it is a pity that the issue of health and safety has not been properly addressed in the Nigeria construction industry, this statement could be proved with the fact that Nigeria has not yet possessed its own Site construction safety regulations to take care of site personnel in Nigeria. From the Observations made by the researcher, many construction sites in Nigeria revealed that health and safety (H&S) measures such as the use of personal protective equipment (PPE), protection against falls, site H&S audits, and site H&S meetings were not observed by most building contractors. Furthermore, most sandcrete block and other masonry unit production factory, Most Aluminium roof, window and door production factory visited do not have health and safety plan. Most building construction project site meetings attended by

the researcher did not include Health and safety as an agenda item, which is a further indication of lack of commitment to Health and safety. A poor record of fatalities from the inspectorate department of Federal ministry of labour and productivity reveals that Nigeria construction industry as a poor H&S awareness and implementation system. Human being an invaluable asset constitutes the most vital part of a builder's resources which requires protection and security from hazards associated with construction operations on sites but unfortunately this is not being so due to many reasons (Jimoh, 2008). Any loss of life as a result of an industrial accident is retrogressive in terms of human development, and therefore is unacceptable. The fatalities themselves are a source of concern for the current state of H&S in the construction industry. Petersen (1996) succinctly puts it that; an unsafe act, an unsafe condition, and an accident are all symptoms



that something is wrong in the entire management system.

The afore-mentioned observations and the occurrence of accidents and fatalities motivated the study, the objective being to evaluate the level of awareness and implementation of Health and safety in Nigeria's construction industry, based upon surveys and observations. The results emanating from the study provide some insight into the current level of awareness and implementation of Health and safety, and should be viewed in the context of an effort to improve H&S in Nigeria's construction industry.

#### **Health and Safety awareness**

The Concise Oxford Dictionary defines "aware" firstly as "conscious; not ignorant; having knowledge" and secondly, as "well informed". Knowledge in turn is defined as *inter alia*, "awareness or familiarity gained by experience" "a person's range of information" and "a theoretical or practical understanding of a subject, language etc" (Allen, 1990). Likewise, H&S awareness can be defined as the state of having knowledge of the risks, hazards, and consequences associated with a construction site. According to Krause (1997), evidence of H&S oriented artefacts, values, and assumptions indicate the adequacy of H&S implementation. Therefore, it can be argued that knowledge is also an indicator of the level of awareness because artefacts, values, and assumptions are influenced by the knowledge that the organisation and workers have of Health and Safety. Health and Safety awareness is an antecedent of displays of behaviour, with accidents and incidents being the consequences of behaviour in the industry. That is why statistics of accidents, injuries, and/or incidents alone as a measure of the level of awareness is misleading and is not sufficient to determine the status quo. In general, determining the Health and Safety culture in the construction industry should be the focus of H&S awareness endeavours (Krause, 1997). An example of the importance

of behavioural analysis is seen in the way which organisations post proclamations, and mission statements, or even artefacts, as warning signs concerning H&S, but do not actually "walk the talk" in the sense that unsafe behaviour, values, and assumptions are observed, do not reflect the proclamations. Behavioural analysis is reliable in determining the level of H&S awareness because accidents in the construction industry depend on various factors, such as the number of projects being undertaken. This is more so because a reduced number of accidents, or the total lack thereof, does not necessarily imply that an optimal H&S culture exists (Krause, 1997). The level of H&S awareness in the construction industry has impacted negatively on the implementation of H&S, in that it determines the behaviour of individuals in organisations. In fact, the behaviour management concerning H&S, that is, the way management manages in relation to H&S, to a greater or lesser extent influences the workforce's behaviour (Smallwood, 1999). Krause (1997) also points out that this issue of at-risk behaviour is part of the management system that is either implicitly encouraged or condoned by management.

#### **Barriers to Health and Safety implementation – the socio-economic environment**

Most economic and labour-market policies have compounded the H&S related problems in the industry which has led to insecurity of job. According to Daykin and Doyal, (1999) Workers are often prohibited from complaining about conditions and employees face diminished incentives to invest in more and appropriate safer methods of work. Because of this, it is difficult to get employees and employers alike to act and behave safely, or contribute to the identification of hazardous conditions and substances at the place of work. Authors such as Loosemore *et al.* (1999) and Ngwenya Msele (1999) agree that contractors gain a competitive advantage from a good safety record. An incentive exists for contractors



keep their prices very low in order to obtain work. Therefore, it could be argued that since H&S is rarely considered in the award of contracts, this in itself constitutes a barrier to the implementation of H&S in the construction industry. Workers are the worst affected by a prevailing economic situation, since they are mostly not involved in decision making. Workers are seen to be at the mercy of their employers. According to Kabiaru (2002), the perception that workers are at risk is reflected in the way they make a decision. He argues that this is usually based on a subjective risk assessment, that is, the probability and severity of the potential injury. This is then compared to the possibility of losing a job and, ultimately, the loss of income if they refuse to undertake a particular task that is perceived to be risky. His conclusion is that the economy impacts negatively on the improvement of health and safety because everybody wishes to survive, one way or the other.

Maloney and Smith (1999) argue that workers focus more on job security and that management focuses more on performance. In support of this ascension, observations made by Cheyne *et al.* (2002), could be said to be true. Their argument is that there are mainly two fundamental causes of occupational accidents. These are the characteristics of the work and the organisational environments as well as the psychological and behavioural characteristics of the individuals. Both are highly influenced by the focus that workers and management put on job security and performance.

According to Smallwood (2004), clients have to accept that there is an health and safety premium to pay in the cost of construction. To date, few clients have explicit policies for the financing of health and safety in construction. In as much as contractors are being asked to raise their level of commitment, clients, as well, must be seen to be more committed.

#### ***Participation of Stakeholder***

Cooperation of all Stakeholders in the construction industry is an impetus to meeting

the basic health needs on construction sites. Management and workers, designers and clients all need to be alert to potential H&S risks (Gould and Joyce, 2002). The industry as a whole, rather than separate entities needs to collectively strive for the successful implementation of health and safety. A multi-stakeholder approach is advocated by many researchers *inter alia*, Rwelamila and Smallwood (1999), who maintain that the project manager should understand that H&S is not only the responsibility of the contractor, but also of designers and all project stakeholders. Coble and Haupt (1999) also rightly point out that the way to address poor health and safety performance in construction is to require cooperation at all levels and in all forms. However, this requires the combination of limited resources with a shared resolve and purpose. Stakeholder participation calls for a wider participation from all parties. The responsibility of ensuring that H&S is implemented rests with every one, starting with the government and the people that actually initiate projects. Coble and Haupt (1999) maintain that H&S implementation must also be accompanied by commitment from all construction project clients, all levels of management, and a reciprocal commitment by construction workers.

#### **METHODOLOGY OF THE RESEARCH**

The survey instrument was designed so as to capture people's actions, perceptions and also determine peoples understanding of the practice on awareness and implementation of Health and Safety. Interviews with supervisory staff on construction sites, coupled with physical observations were made. Questionnaires were developed and administered to building construction sites and a Checklist was also used to collect information obtained from observations. Lists of behaviours, artefacts, or elements were recorded on the checklist to validate the authenticity of the questionnaire responses. 30 active building construction projects within the selected states of the six geopolitical zone which were being undertaken by 30



contractors (5 from each state) were studied. 60 questionnaires were distributed (2 to each contractor). A total of 56 questionnaires were appropriately completed and included in the analysis of the data, which equates to a response rate of 93.3 per cent (Table I).

## RESULTS AND DISCUSSION

### *Level of awareness*

Findings from observations on construction sites lead to the conclusion that the level of awareness and implementation of health and safety is low and discouraging. Observations indicated that only 17 per cent of sites have workers wearing hard hats, and workers not wearing eye protection while working with power tools observed from 88 per cent of the sites studied. On 95 per cent of the sites, workers were not wearing the requisite gloves while carrying sharp tools or materials. On 98 per cent of the sites, scaffolding without guardrails or toe boards was observed. These observations provided an indication of the level of health and safety awareness in the industry. The level of awareness can also be gauged based upon the assessments and inspections that are conducted by contractors, clients, and designers. About 32 per cent of the respondents said that their management conducted inspections. As inspections are part of procedures, policies, and programs, the 28 per cent affirmative response to procedures, and 20 per cent affirmative response relative to health and safety policies are inconsistent with the response relative to inspections. If inspections are undertaken at all, why is it that the observations indicated that management inspections are virtually non-existent (Table II). As noted earlier on, 83 per cent of the 30 sites, the workers were not wearing hard hats whilst working in areas requiring them to do so, and almost all of the 30 sites had no protection against persons and objects falling from heights. Also, 98 per cent of the sites had workers working with power tools without guarding. This is deemed to be a contradiction and it can be concluded that inspections are generally not undertaken. Similarly, the

purpose for the conducting of assessment and inspections in an H&S aware environment is to observe and record risk-taking behaviour on construction sites, and to use it to mitigate or prevent future occurrences. However, only 21 per cent of the respondents stated that their organisations observed and recorded risk-taking behaviour on construction sites (Table III). This further reinforces the conclusion that the level of H&S awareness is low. Essentially, endeavours to prevent accidents, incidents, and occupational diseases are not taken.

### *Implementation of legislation*

To implement Health Safety entails implementing the requirements of legislation, namely standards as well as systems, procedures, and protocol. A total of 21 per cent of the respondents indicated that their organisations were registered with the Ministry of labour and productivity, and 6 per cent of the respondents were unsure. This response can possibly be attributed to the fact that the respondents were line managers based on sites and some of them probably did not have access to information at top-management level. However, legislation requires that a copy of the registration certificate be retained in a file on site. Therefore, the expected response should only have been "Yes" or "No." The 6 per cent of respondents that were not sure could then be considered to not have registered with the ministry of labour. Otherwise, respondents genuinely were not sure of the status of their organisations' registration. Therefore, it can be concluded that legislation is not adequately implemented. The reporting of serious injuries as required by law further reinforces the conclusion that health and safety legislation is not implemented. When asked whether serious injuries that caused workers to be absent from work for at least three days had occurred on their sites, 69 per cent of the respondents responded in the affirmative. However, findings indicate that only 16.7 per cent of the 48 per cent said that they had reported these cases to the department of labour. This is yet a



further indication that Health and Safety is not being implemented. With respect to the retaining of a copy of the Factories Act on site, and the National Building code, 21 per cent of respondents said "Yes", 69 per cent "No" and 6 per cent were "Unsure." Of the 21 per cent that said "Yes" only 8 per cent indicated that they had displayed a copy of the Factories Act in a prominent place on site. However, physical observations revealed that only one contractor, representing about 3.3 per cent of the 30 sites, had displayed the Act. This indicates untruthfulness on the part of respondents even though it was clear that the Act was not displayed on sites. However, the 23 per cent response is an indication of what the general practices in construction are. Results of the physical investigations conducted reveal that all health, safety, and welfare provisions of the Act are not adhered to.

The inspectorate rarely or never conducted inspections. About 66 per cent of the respondents said that despite the requirement of the Act, the Inspector of Factories had never visited their construction sites. In fact, this is consistent with the percentages relative to rarely or never conducted inspections, which equates to 66 per cent when the percentages for those responding rarely and never are combined. These results confirm that health and safety legislation is not being implemented by the factories inspectorate. From a management perspective, it would appear that there is limited effort relative to the implementation of health and safety. Protocol relative to the implementation of health and safety appears to be non-existent.

### **Contractor's perspective**

From the contractor's perspective, health and safety policies, programs, meetings, representatives, health and safety procedures, and documented work procedures are almost non-existent (Table IV). In terms of the mean, 19.3 per cent of respondents stated that they had health and safety policies, programs, meetings, representatives, and documented

work procedures, 62.7 per cent stated that they did not have, and 15 per cent did not respond to the question. It is argued that if the aforementioned existed or took place, all employees would be aware thereof. In essence, it could be argued that the mean 15 per cent "No" response equates to non-existence and non-occurrence. However, if they genuinely were unsure, then it can be concluded that certain documents were available, but had not been communicated and used, and that there is a general problem in terms of communication from management. Literature informs that without protocol or a system of rules governing the implementation of H&S, it is unlikely that efforts directed towards the implementation of health and safety will be successful. These results further confirm that health and safety legislation is not being implemented, in this case, by contractors.

### **DISCUSSION**

Literature informs that the level of awareness can be established by determining the organisational culture. This is seen through both workers' and managements' actions. Appropriate actions or behaviour will be exhibited if workers and management have knowledge of health and safety standards, causes of accidents, and legislation. However, the physical observations indicate that health and safety standards are low. Literature informs that one of the major contributory factors of accidents is lack of knowledge. This finding was confirmed through observations on sites – the workers' level of awareness and that of management was low. Literature also informs that management systems, procedures, and protocol are essential to the implementation of health and safety. The findings indicated that there is lack of management systems, procedures, and protocol in the construction industry. Hazard identification and risk assessment, prior planning, and record keeping were found to be inadequate in some organisations while in others they were completely non-existent. This suggests that shortcomings in management



systems, procedures, and protocol contribute to the current health and safety performance.

As regards the extent to which clients and designers participate in the implementation of H&S on construction sites, findings are that participation by clients and designers is low. This is based upon the number of health and safety audits and inspections, the lack of emphasis on health and safety during site meetings, prior planning through the usage of health and safety plan prepared by a builder, and the inadequate allowance for health and safety in contract documentation. The findings indicate that client and designer driven audits and inspections are limited and then inconsistent if conducted – either sometimes or rarely.

Overall, the findings of the study reveal that the level of H&S awareness is low and that the implementation of H&S is inadequate.

## CONCLUSIONS

From the study, it can be concluded that, the level of awareness of Health and Safety in the Nigeria construction industry is low

- the implementation of health and safety is inadequate;
- the implementation of legislation is inadequate;
- non-contractor stakeholders in the form of clients and designers are not committed to the implementation of health and safety;
- accidents have occurred and risk-taking behaviour is prevalent;
- the degree of contractors' management commitment is inadequate;
- health and safety management systems do not exist in many organisations; and
- health and safety procedures and protocol are inadequate for the implementation of health and safety.

Although the survey was conducted from six states in the country, each representing one of the six geopolitical zones we have in Nigeria, the findings can be generalised to be

representative of the situation throughout the country due to the following:

- In Nigeria there are 36 states, which spread across the six geopolitical zones. Each zone is a description of the socio-cultural, economical and behavioural representation of the country.
- Each state choosing portrays the states were very large construction activity and development is carried out.
- Most of this states possess the highest population density in the zone, and therefore most construction and business activity occurs there.
- Most government institutions and industries are located in this states.
- Therefore, the argument is that it is not possible that health and safety would be enforced in less developed states when it is clear that it is not being enforced in the city and country's capital where most construction and human safety/health regulatory bodies are based.

## SUGGESTIONS

- Literature informs that the level of health and safety awareness needs to be increased relative to contractor employers and employees, clients and designers, and, indeed, for all stakeholders in order for the impact of H&S on construction to be appreciated.
- Literature also indicates that the right management systems, procedures and protocol, optimum management commitment, client and designer commitment and collaboration, and appropriate legislation need to be in place. Therefore, to improve upon the current H&S status, the aforementioned need to be realised. Relevant legislation and regulations, which address all areas, including client and designer responsibilities, should be promulgated in accordance with ILO recommendations. Appropriate guidelines should be published as a supplement to such legislation and regulations. Currently, the



implementation of H&S is the sole responsibility of the contractor and stakeholders generally do not care whether they are complying with legislation or not. Respondents in this study strongly agreed that clients, designers, and contractors should take equal responsibility for the implementation of H&S in the construction industry.

- It is also recommended that contracts should address H&S just as they do quality and cost. This will help many contractors, as both contractors and designers will be required to address H&S during the execution of projects. Nigeria's construction industry as a

reasonable number of small- and medium-size contractors, which, in most cases, have no or limited capacity to address H&S. Management systems and procedures may be too much to be expected from them. Therefore, it is recommended that clients appoint H&S consultants to ensure the implementation of H&S by integrating the activities of clients, designers, and contractors.

**Table 1: Response rates per contractor category**

Category	Value (N 000)	Questionnaires distribution (No.)	Response (No.)	Response rate (%)
A	< 100	7	7	100.0
B	> 100 < 500	12	12	100.0
C	> 500 < 2000	12	12	100.0
D	> 2000 < 10,000	13	11	84.6
E	> 10,000	16	14	87.5
Total		60	56	93.3

**Table 2: Frequency of audits and inspections by all stakeholders**

Stakeholders	Response (%)				
	Never	Rarely	Sometimes	Often	Always
Contractors	23.0	38.0	7.0	30.0	2.0
Clients	61.0	23.0	8.0	12.0	6.0
Consultants	54.0	20.0	14.0	10.0	2.0
Inspectors	66.0	32.0	6.0	3.0	0.0
Relevant Regulatory Bodies	79.0	6.0	8.0	5.0	2.0

**Table 3: Recording of risky behaviours on sites**

Response	Percent
Yes	21.0
No	69.0
Unsure	6.0
No response	4.0
Total	100.0



**Table 4: Existence of Health & Safety programme elements**

Element	Response (%)			
	Yes	No	Unsure	No Response
H and S Policy	20.0	64.0	4.0	12.0
H and S Procedures	28.0	60.0	0.0	12.0
H and S Program	4.0	64.0	8.0	24.0
H and S Representative	12.0	68.0	0.0	16.0
H and S Meeting	20.0	64.0	4.0	16.0
Documented work Procedures	32.0	56.0	0.0	12.0
Mean	19.3	62.7	2.6	15.0

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