

Appraisal of Health and Safety Management of Construction Workers on Site in Damaturu

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Abstract

Construction industry is an important part of the economy in many countries and is often seen as a driver of economic growth especially in developing countries. Owing to its relatively labour intensive nature, construction works provide opportunities for employment for a wide range of people; skilled, semi-skilled and unskilled. Despite its importance, construction sites are considered risky with frequent and high accident rates and ill-health problems to workers. This study examined the health and safety management of construction workers on site in Damaturu. Questionnaires containing information relating to health and safety management at site were used for the collection of data. Mean Score Index was the statistical tool used, decision point was put at 2.0. The result revealed that there was low level of health and safety compliance among building construction workers with average mean score of 1.54 and the impact of accidents and injuries to the progress of the construction and family of the employee was high with average mean score of 2.10. It is also found that the factors influencing the implementation of the health and safety measure are: Health and Safety management policy, Training of employee on health, safety and management guideline, Leadership and management commitment, Health and safety committee and budgets for Health and Safety. The study recommends use of more proactive and integrated management mechanism to enforce the existing safety and health regulations in construction sites in Damaturu in order to prevent accidents, injuries and ill health on sites and construction work to progress.

1.0 INTRODUCTION

Health and safety management has a high responsibility, especially in construction industry since it is one of the huge sectors among other industrial sectors. Moreover, it has large number of workers and those workers need to be controlled by administrators such as managers, contractors and site engineers. Therefore, it is important to train and educate the novice engineers and workers and have health and safety plan and also follow the safety regulations to reduce the expected

and unexpected accidents on construction sites.

Construction site is a very important place, as a considerable number of workers are involved in construction activities. Employments in construction site can be categorized into three groups; “Management and technical” work force, “Skilled” work force and “Semi-skilled and Unskilled” work force. Personnel with high educational qualifications, usually graduates, trained to design, manage and instruct the construction processes can generally be identified as “Management

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and technical” work force. Persons who possess extensive knowledge and experience in their construction activities or profession are identified as “Skilled” work force. “Semi-skilled and Unskilled” work forces are the site labourers with little or no construction knowledge. Generally, all skilled, semi-skilled and unskilled workers are at risk of being injured, death or various illnesses in a construction site, although the level of risk varies with activities they are engaged in (Vitharana, 2015).

Pungvongsanuraks, Thitipoomdacha, Teyateeti and Chinda, (2010) elicited that construction industry is unique and complex compared with other industries and it contains a wide range of construction materials and products, building services, manufactures, contractors, sub-contractors, design operation, and refurbishment services. These complexities make the construction industry as one of the most hazardous industries that causes high rate of accidents. Safety in construction sites is needed to be highly considered in order to reduce the risk of being injured at work. Safety, health and welfare on construction sites”, the training manual published by the International Labour Office in Geneva (2012), states that high rate of accidents occurs in the construction industry than in the other manufacturing sector.

Nigeria is enjoying relatively strong growth in construction activities, efforts towards ensuring improved safety performance have yielded minimal results. The enforcement of safety regulations is not widespread within the industry (Okoye *et al.*, 2016). More construction workers

are killed, injured or suffers ill health than in any other industry (European Agency for Safety and Health at Work, 2004). It is however, disheartening that despite several efforts towards improving the health and safety status of Nigeria construction industry, continuous increases in the number of accidents both reported and unreported on construction sites still go unabated. Furthermore, Nigeria has a very high accident record attributable to lack of effective monitoring, reporting and control practices. Thus, occupational health and safety in construction work should start at the designing table and continue throughout the construction phases until the safety and health of end users is ensured due to the complexity of the industry and the hazards it contains (Kayumba, 2013).

As a state on transition, Yobe State is one of the few states in Nigeria that is witnessing tremendous infrastructural development especially with respect to building projects. Almost all these projects are being handled by the local Company, contractors and construction workers. Thus, the issue of whether these workers are complying adequately with health and safety issues and whether they comply with health and safety rules and guidelines on site come to fore.

Like in every other business environment, construction business should be guided by certain regulations to ensure health and safety of its workers. According to (Adebola, 2014) safety and health have become an integral component in the workplace as employers, labour unions and others engage in trainings and procedures to ensure compliance with

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safety standards and also to keep a healthy workforce. These therefore forms the gab of this work which aimed at appraising the health and safety management of construction workers on the site in Damaturu, with the following objectives.

Objectives of the Study

1. To examine the level of health and safety compliance in the construction site.
2. To determine the factors that inhibit the compliance of health and safety measures at construction site.
3. To determine the factors influencing implementation of health and safety measures in the construction sites.

Overview of the Study Area (Damaturu)

Damaturu is a Local Government Area in Yobe State in northern Nigeria. Yobe's headquarters are in the town of Damaturu, the state capital. The postal code of the area is 620 with coordinates of 11° 44' 40" N, 11° 57' 40" E. The Local Government Area has an area of 2,366 km² and a population of 88,014 at the 2006 census. The town lies in a plains region that is covered by savanna and that supports crops of millet, sorghum (Guinea corn), and peanuts (groundnuts). The occupations of Damaturu people are mostly civil services, farming and business.

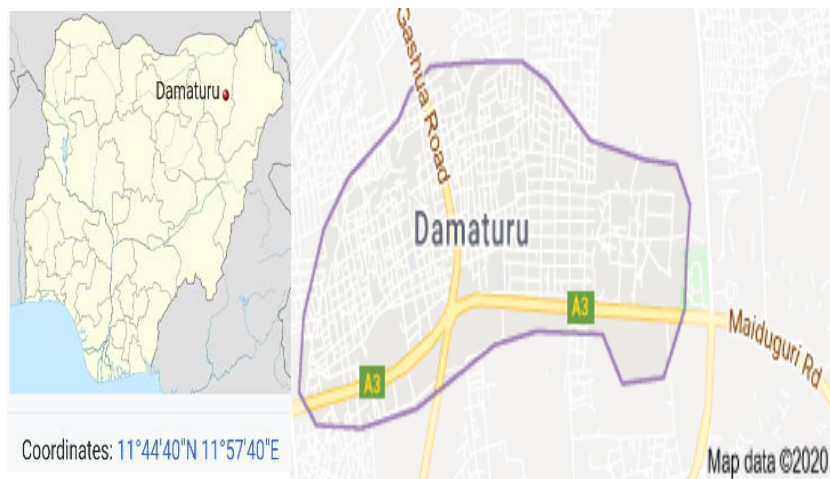


Figure 1: Overview of Damaturu Local Govt Area

2.0 LITERATURE REVIEW

Health and Safety Management System

Health and safety management system means the part of the Organisation's management system which covers: the health and safety work of organisation and policy in a company, the planning process for accident and ill health prevention, the line management responsibilities and the

practices, procedures and resources for developing and implementing, reviewing and maintaining the occupational safety and health policy (Famakin and Fawehinmi 2012). The system should cover the entire gambit of an employer's occupational health and safety organization.

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Occupational Health and Safety (OHS) is a very sensitive management responsibility that influences the very survival of organizations in some extreme cases. That is to say that construction projects do not operate independently of the society in which they are located (Neale, 2013). Thus, the emergence of new regulations, laws, standards and codes has also made many construction organizations to improve their safety performance. (Agwu, 2012) took safety management as a performance-oriented approach to construction safety that gives an organization a sustainable competitive advantage in the global marketplace by establishing a safe work environment that is consistent with peak performance and continuous improvement through the integration of all aspects of construction safety (intention, behaviour, culture and process).

Health and Safety can be viewed as a point at which all associated risks with a particular job are well managed in a reasonable manner. Ahmad *et al.*, (2016) defined safety as unique event that is paramount to continuous attainment of productivity. In the same vein, Ahmad *et al.*, (2016) opined that safety focus on curbing accidents at work setting and its negative effect on the workers in all manner. Assessment of various researchers such as: Idubor and Oisamoje (2013); Dodo (2014); and Umeokafor *et al.*, (2014); on provisions and management of health and safety in construction project reveals that adoption and compliance with health and safety provision served as catalyst in optimizing construction production process.

Adeogun and Okafor (2013) report that in Nigeria the perspectives of most industries and organisations show that the stage of occupational health and safety is still at infancy in the country due to employer/employee attitudinal behaviour, lack of safety culture and non-implementation of OHS policies. In addition, only big multinationals recognise occupational health and safety and run the policies as constituted in their parent countries of origin (Adeogun and Okafor 2013).

Meanwhile a typically effective safety management system should encapsulate the actions managers at all levels take in order to create an organisational setting in which workers will be trained and motivated to perform safe and productive construction jobs (Olotuase, 2014). Al-Kilani (2011) suggests 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.

Construction Health and Safety Knowledge

Safety knowledge encompasses awareness of occupational health and safety risks, including an evaluation of occupational health and safety programmes in an organisation (Akinwale and Olusanya, 2016). Sources of safety knowledge according to (Akinwale and Olusanya, 2016), include incident investigation, teamwork, collaborations, and survey of

safety culture. Problem solving entails specific decisions on occupational health and safety risks in an organisation. This implies decision-making for the maintenance of occupational health and safety.

The role of trainings in promoting health and safety has also been highlighted by Idubor and Osiamoje (2013), and Kumar and Bansal (2013) argue that effective safety knowledge among construction professionals can reduce accidents that directly or indirectly reduce project cost, because in developing countries, safety rules usually do not exist, and if exist; regulatory authorities are unable to implement such rules effectively. The above view is supported by (Kamar, Salleh, Mamter and Suhaimi, 2014). On this basis, (Idoro, 2008) infer that safety learning should not only be considered as an acquisition of knowledge through instructions and training in classrooms or other formal settings rather safety should be considered as the final outcome of a dynamic and collective construction process. In this case, a safe workplace is the result of constant engineering of diverse elements, such as knowledge and skills, equipment, and social interactions, which are integral to the work practices of various project stakeholders.

Health and Safety Practices in Construction Industries

The occurrence of risk in the construction industry has become a must encounter and as such requires proper identification, analysis and management to create a relatively conducive construction environment by improving the health and

safety of the workers on site (Okechukwu, 2014). Health and safety at construction sites deals with both physical and psychological well-being of workers on sites and other persons whose health is likely to be adversely affected by construction activities on site (Kheni, 2008). Construction industry has many sub-sectors ranging from simple housing to major high-rise buildings as well as bridge, road, tunnel, and even under water construction; each of these sectors has its distinct hazard and risks determined by the peculiarities of its construction process irrespective of the project delivery (Ahmed & Mahmud, 2012). The twenty-first century construction is marked by rapid execution of projects and the extensive use of machinery and mechanized production processes. However, despite a relatively large pool of construction machines and mechanism as well as high level of prefabrication in building construction and installations, the proportion of manual labour remains approximately 50% (Okechukwu, 2014). In all over the world, construction workers are greatly exposed to death and injuries than workers in other occupations.

Construction Health and Safety Regulations

Nigeria like any other country in the world, health and safety regulations governing the construction industry and other work related industries exist. A number of legislations on occupational health and safety exist. These include; Labour Act of 1974 modified to Labour Acts 1990, and updated to Labour Act, Cap L1, Laws of the Federation of Nigeria (LFN), 2004; the Factories Act of 1987

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which became effective in 1990 and later updated to Factories Act, Cap. F1, LFN, 2004 (FGN, 1999), (FRN, 2004); the Workman's Compensation Act of 1987 which became effective in 1990, modified to Workman's Compensation Act, Cap W6, LFN, 2004 and repeal to Employee's Compensation Act, No. 13, 2010 of the laws of the Federation of Nigeria (FRN, 2010), the Insurance Act, 2003 (FRN, 2003).

The Federal Ministry of Labour and employment is saddled with the responsibility of enforcing the Factories Act and Employee's Compensation Act, while the Labour, Safety, Health and Welfare Bill of 2012 empowers the National Council for Occupational Safety and Health of Nigeria to administer the proceeding regulations on its behalf. In the developed countries such as UK, USA, Australia, Singapore and Germany, these regulations are well developed and functional. However, despite being among the countries that signed the occupational health and safety law in the Geneva Convention of 1981, the pathetic health and safety situation in Nigeria construction industry still pervades.

In spite of numerous statutory provisions and expectations in Nigeria, gap still exist in health and safety management (Diugwu, Baba and Egila, 2012). Adeogun and Okafor (2013), contend that these acts are not being enforced in Nigeria as evidenced from the reports of unhealthy exposure to risks of workers and employees in various organisations. Kolo (2015) further observes that some provisions from these laws do not necessarily meet the conditions experienced in Nigeria.

Health and Safety Compliance in Construction Industry

Safety compliance refers to the state of being in accordance with established safety standards and regulations, or the process of becoming so. Safety compliance is regulated by safety compliance companies or organizations, as well as government legislation, and is monitored and enforced by these bodies to ensure compliance with the established standards. Businesses or companies in all industries must comply with safety regulations that are relevant to their industry (Safeopedia, 2017). According to (Idubor and Osiamoje 2013), lack of strict enforcement of OSH regulations enables non-compliance to OSH regulations; while (Okeola, 2009) state that non-compliance to OSH regulations is a major contributor to the poor state of OSH in Nigeria. On the other hand, OHS measures are said not to be effective in improving safety and health conditions in workplace (Kamau, 2014).

3.0 METHODOLOGY

This study was a Descriptive survey and observation research which made use of questionnaires containing well-structured preformatted set of information on health and safety management of construction workers' on site and a critical observation. Almost all construction works going on in Damaturu are being handled by the local company, contractors and construction workers. Though there were more than fifty construction projects going on in Damaturu at the time of this study, only six (6) construction sites were selected based on the nature of the project, the

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scope of the project, the organisation of construction site, variety of construction workers involved, the stakeholders involved in the project and the location of the project. Majority of construction projects in the town were privately owned residential building projects with the owner being the contractor and involving few construction workers usually coming to work when their services were demanded. Secondly, majority of these projects were not organised and do not have regular construction activities going on in them. The questionnaires were administered to 65 construction workers (artisans) of various trades who were randomly selected. Out of this total number, 60 questionnaires were retrieved

and used for analysis. Meanwhile, the data generated from questionnaire survey were subjected to descriptive and quantitative analysis using tables and Mean score Index was calculated. Means score index is mathematically represented as:

$$MSI = \frac{\sum Fx}{N}$$

Where,

MSI = mean score index of each variable;

f = frequency of responses to each rating;

X = score or rating given to each variable by the respondents; and

N = total number of responses concerning the variable.

4.0 RESULT AND DISCUSSION

Table 1: Level of Health and Safety Compliance in the construction site

S/N	Variables	Mean Score
1.	Health and Safety plan availability before commencement of Construction work	1.05
2.	Brief on health and safety before commencement of daily work	1.50
3.	Availability and Monitoring of health and safety policy and records	1.08
4.	Compulsory use of Personal Protective Equipment on site	1.33
5.	Adequate communication on health and safety issues to all concerned	1.58
6.	Available and Functional of First Aid Kits and Banners/Signs	2.00
7.	Health and Safety Rules and Regulations observation on site	1.33
8.	Health and Safety training and education	1.03
9.	Ladders and Scaffolding were properly and securely anchored and erected before ascending them	2.33
10.	Good, clean and proper handling of equipment and working environment	2.16
Average Mean Score		1.54

From table 1 above, it was revealed that the average means score value (1.54) for the level of health and safety compliance

by construction workers in the sites was low. This was a clear indication of health and safety non-compliance. Idubor and

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Oisamoje (2013), contend that the numbers and magnitude of accidents occurring and recorded on construction sites in Nigeria underscored low level of health and safety practices. This fact is

buttressed as health and safety plan/policy is one of the parameters in prequalifying suitable contractors for the award of construction projects in Nigeria (Windapo, 2013 and CDM, 2015).

Table 2: Factors that inhibit the compliance of health and safety measures at the construction site

S/N	Variables	Mean Score
1.	Unavailability/inadequacy of PPE	2.75
2.	Inadequate knowledge and training on health and safety to workers	2.83
3.	Not conducive using PPE because of weather	2.33
4.	Poor Leadership and commitment	2.67
5.	Lack of health and safety committee/guards	2.33
6.	Lack of good management guideline	2.00
7.	Low strict enforcement of health and safety policy on sites	2.16
8.	Employee low participation	1.50
Average Mean Score		2.32

Table 2 above, reveals mean average value 2.32, indicated that Unavailability/inadequacy of PPE, Inadequate knowledge and training on health and safety to workers, Not conducive using PPE because of weather, Poor Leadership and commitment, Lack of health and safety committee/guards, Lack of good management guideline, and Low strict enforcement of health and safety policy on sites are the factors that inhibits compliance of health and safety measure at

the construction sites. The table also reveals that employee participation has no influences on the compliance of health and safety measures on the construction sites.

According to (Idubor and Osiamoje 2013), lack of strict enforcement of OSH regulations enables non-compliance to OSH regulations; while (Okeola, 2009) state that non-compliance to OSH regulations is a major contributor to the poor state of OSH in Nigeria

Table 3: Factors influencing implementation of health and safety measures on construction sites

S/N	Variables	Mean Score
1.	Strict enforcement of Health and Safety management policy	2.67

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2.	Proper and timely training of employee on health and safety	2.75
3.	Proper health and safety management guideline	2.50
4.	Leadership and management commitment	2.83
5.	Provision of health and safety committee/guards	2.17
6.	Availability of Personal Protective Equipment (PPE)	1.66
7.	Effective Employee participation	1.83
8.	Health and Safety budgets to ensure the adequacy of implementation	2.08
Average Mean Score		2.31

From Table 3 Above, reveals that average mean score 2.31 on Factors influencing implementation of health and safety measures on construction sites was agreed that Strict enforcement of Health and Safety management policies influences implementation of health and safety measures on the construction sites.

This study is in-line with Olutuase (2014) who studied safety management in the context of Nigerian industry with an intention to compare level of compliance with the international standards. The study outcome established existence of safety regulations in the management of construction projects. However, the system seems to be poorly characterized by ineffectiveness and poor documentation. The study called for urgent attention on construction managers to strictly adhere with the provisions safety regulation requirements for site management. Idubor and Osiamoje (2013), opine that regulations without proper enforcement are tantamount to no laws.

Kumar and Bansal (2013) argue that effective safety knowledge among construction professionals can reduce accidents that directly or indirectly reduce project cost, because in developing

countries, safety rules usually do not exist, and if exist; regulatory authorities are unable to implement such rules effectively.

5.0 CONCLUSION

The study finds that level of health and safety compliance by construction workers in the sites was low which is a clear indication of health and safety non-compliance and also showed how negligent government agencies were in pursuit of safety improvement in the construction sector. The study also revealed that strict enforcement of Health and Safety management policy, guideline, commitment, participation and availability of Personal Protective Equipment (PPE) are the factors that when put in place will influences implementation of health and safety measures on the construction sites. The study also finds that almost all the construction works going on in Damaturu are being handled by the local companies, contractors and construction workers.

The study in conclusion highlighted the need for effective and enforceable health and safety regulations in Damaturu and Yobe State, based on the result of this study, this would serve as a wakeup call to agencies responsible for ensuring strict implementation of safety rules on construction sites. And also to improve the health and safety performance of construction industry in the Damaturu, Yobe State government should establish the State Safety Commission whose function would include; policy formulation, setting of safety standard for all sectors in the state, issuance and withdrawal of safety compliance certificates at all levels, conduct of safety training, seminar and workshops, public enlightenment and awareness creation among others.

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