International Journal of Innovative Technology and Exploring Engineering (IJITEE)
ISSN: 2278-3075 (Online), Volume-9 Issue-1, November 2019

Assessement of Safety Management for Public Construction Sites in Nigeria

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Abstract—The study investigates the attitude of construction firms operating within Kano metropolis towards safety provision for workers on site. In achieving these objectives Investigatory Survey Research Approach Method (ISRAM) was adopted and used in order to obtain quantitative and qualitative data. Questionnaires were distributed to various construction companies within Kano metropolis, the totals of eighty (80) copies were distributed and fifty eight (58) copies were retrieved. Data collected were found suitable. And were analyzed using Software statistical package (SPSS). From the analysis the result revealed that there is negligence in the attitude of construction companies towards safety and stricter regulations have to been forced. Dissemination of information on safety techniques would reduce accident on site and increase the worker's moral for better performance in turns to reducing overrun cost. Ineffectiveness of government policy on safety measure especially in construction work was found to have contributed to low productivity by workers on site, since they don't have access to any claim even when accident occurred on sites. Archaeologists have discovered thousands of bodies buried in the foundation of the wall. Bodies were also used to make up the wall's thickness. It has been estimated that millions of workers lost their lives due to accident, intense physical labor, starvation and disease. This is in order of magnitude of life per meter of wall length. Therefore, safety in mission statement of large construction firms or companies is not common (Amaechi, 1990). Execution is supported by correlation; some of these correlations were by organizations such as Independent Project Analysis (IPA). It has been statistically proven that there is correlation between good front end loading and safety performance of good front end loading.

Keywords— Investigatory Survey Research Approach Method (ISRAM), Software statistical package (SPSS).

I. INTRODUCTION

Today, there is high focus on safety in the construction industry; many companies have recognized that safety and well-being of their employees deserve the highest priority. Historically, this is a common occurrence if one looks at the attitude of workers (employees) and many deaths during construction projects such as the great Chinese wall which is considered to be the largest visible construction project to date. An ancient Chinese myth stated that each wall stands for a life lost during the wall construction, although no record is available on account of death. However, Archaeologists have discovered thousands of bodies buried in the foundation of the wall. Bodies were also used to make up the wall's thickness. It has been estimated that millions of workers lost their lives due to accident, intense physical labor, starvation and disease. This is in order of magnitude of life per meter of wall length. Therefore, safety in mission statement of large construction firms or companies is not common (Amaechi, 1990).

"During Industrial Revolution, little time is spent to ensure that the machinery is safe. In management of safety, one needs to execute a project that goes their life cycle of design before the procurement to ensure safety in all phases of construction. We believe that the base for a safe construction is already laid during the front end loading of a project. This covers all the work done until the completion of the basic design and solid execution plan including many aspects of early planning for safety" (Oyedeiran, 1989). Execution is supported by correlation; some of these correlations were by organizations such as Independent Project Analysis (IPA).

II. LITERATURE REVIEW

A. PROBLEM STATEMENT

Safety procedures in some construction firms are not well organized, but the attribute of a project and behaviors of workers (employees) on site deliberately ignore safe outcome.

Safety procedures in construction firms are well organized, but the attribute of a project and behaviors of workers (employees) on site sometimes deliberately ignore safe outcome. The significance of safety as controlling measure on construction site is often overlooked.

B. AIM

The aims of this thesis are to study the attitude of construction firms towards safety awareness on construction site, and to establish whether there is any relationship between safety provision for workers (employees) and workers' productivity.

C. OBJECTIVES

To achieve these aims the following objectives are to be addressed:

1. To investigate the attitude of construction firms towards safety provision for workers on site
2. To create awareness on safety programmer in order to reduce the number of workers` compensation claims and cost due to the accident.
3. To determine the benefits associated with adequate safety for workers
4. To examine government safety regulations for construction firms and their compliance to the regulations as it affect the workers.

Revised Manuscript Received on November 30, 2019.
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D. SCOPE AND LIMITATION OF THE STUDY

This research work is based on employees' safety in the construction industry which does not include materials and other related safety. The work is limited to construction firms in the case study of Kano, Nigeria in the following aspects:-

1. Importance of safety in construction industry safety officer in construction industry.
2. General safety precaution in construction site.
3. Accident in construction industry.
4. Insurance policy.
5. The role of government in the provision of safety in construction industry.

III. METHODOLOGY

The methodology will begin with construction management for which practical data will be developed on the subject matter. Data will be collected with the aid of well-structured questionnaires and oral interviews.The data from the questionnaire will be analysed based on software Statistical Package for Social Science (SPSS) version 11.5. The basis of this study was conducted through literature reviews. The literature review offer perspectives of Employees safety management. Further analysis of data collection is required in order to achieve the objectives as mentioned earlier in above point. The flowchart in depicts the methods for gathering data and information. The approaches used bear the following titles:

a) Literature Review
b) Questionnaire Preparation
c) Interview Preparation
d) General Observation
e) Data Analysis

3.1 LITERATURE REVIEW

Literature study is the initial step to acquire preliminary vision with the purpose of identifying problems and the scope of the study. Literature review entails in-depth reading, research, discussion and observation carried out before the data collection process begins. The keywords used in this work are: Safety Management, Firm, Employees.

3.2 DATA COLLECTION

3.2.1 Primary data

Primary data is the spine of every research. The data is divided into two categories: Quantitative data and Qualitative data. Quantitative data are obtained from questionnaire while qualitative data is gathered from interviews.

One approach to accumulate data from respondents is through questionnaires. The questionnaire consists of twenty-six various questions that cover all the research objectives. This questionnaire is distributed randomly to construction firms.

The questionnaire was made in such a way that relevant points raised in the literature review were used to frame the questions, oral interview was used to clarify responses made to questionnaires by the companies. This is necessary to obtain more explanation.

3.3.1 Nature of questionnaires

The nature of questionnaires distribution in the data collection is as follows:-

i. To the personal data of individual engaged in construction work
ii. To know the trend of experience in management of construction industries.
iii. To ascertain the test result for significant level of provision of adequate safety measure for work and towards their productivity on site.

3.3.2 Administration of questionnaires and problems encountered

The questionnaire was administered to various construction companies. It was all addressed to the Chief Executives. Difficulties were sometimes encountered in getting the chief executive to answer the questionnaire and oral interviews.

In such situations, the answering of the questionnaires and oral interview were delegated to the Site Engineer or the Foremen.

3.4 Secondary data

Secondary data is obtained from books, journal and newspaper articles that are related to the safety management. Generally, this data type is essential to establish the conceptions for literature review. It is used as a guideline and for additional information in order to support and strengthen all the existing statements while doing this study.

Supplementary information is retrieved from the internet source which consists of several relevant websites. The latest facts retrieved from the source are applied in the study field in order to gain additional knowledge and understanding regarding current practice of safety management and other issue linked to the subject.

3.5 DATA ANALYSIS

In data analysis stage, all the collected data were analyzed. The data from the questionnaire is analyzed based on software Statistical Package for Social Science (SPSS).

SPSS software was used to analyze 58 questionnaires retrieved out of the 80 questionnaires that were administered to various companies in study area. Analysis of the statistical data was carried out to come up with graphical and tabulated presentation.

IV. RESULT AND DISCUSSION

4.1 Data collection and analysis

In the course of this research work, data collected are presented and analyzed in this chapter and was done using the software Statistical Package (SPSS). For easy understanding, interpretation by an average reader and the user of research work as a whole.

4.2 Responses to Questionnaires

Out of the eighty (80) questionnaires that were administered to various companies only fifty eight (58) were received from respondents.

Table 4.1 show the percentage of return rate for the questionnaire.

Table 4.1 Number of the returned questionnaire.

	Number of Questionnaire		Percentage of Return Rate
	Sent	Return	
Respondents	80	58	58

Analysis of background of the respondents is based on four elements. The elements that take into account are gender, Nationality, Level of Education and profession of personnel on field.

Figure 4.1 displays the number of Respondents according to gender. Out of 58 selected respondents, the percentages between male and female students are 41 percent and 17 percent correspondingly. It signifies that male staffs with 68 .96 % dominate most construction companies. From the questionnaire, majority of the respondents are Nigerian which cover 79.31% of total 58 respondents while 20.69% are from others countries. The results are presented in Figure 4.2.

Figure 4.3 displays the number of respondents according to their level of education in Construction companies. In general, there are 6.9, 51.70, 31.03, and 10.34 percent of respondents with primary, secondary, tertiary and Non-formal education respectively.

Figure 4.4, shows the number of respondents according to their profession of personnel in construction field. It shows that 17.24, 8.62, 43.10, 13.79, and 17.29 of respondents which are Site engineer, consultant, foremen, site supervisor and clerk of work.

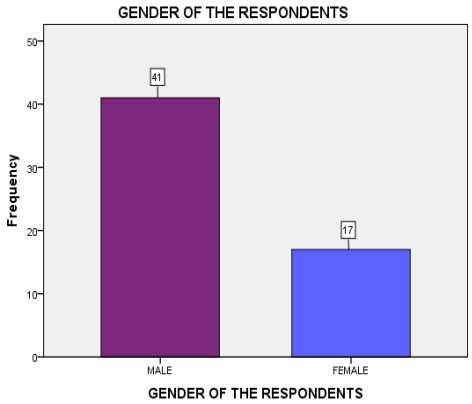

Figure 4.1

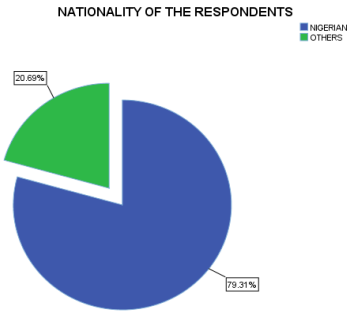

Figure 4.2

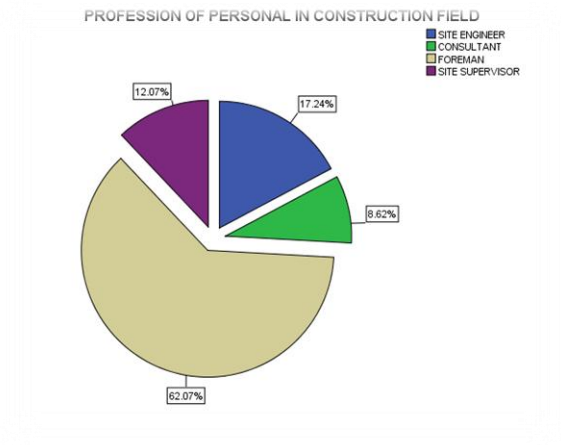

Figure 4.3

Questions 5 until question 7 in questionnaire form were surveyed to access the respondents' knowledge on safety, awareness of government regulations on safety, visitation of companies by government authorities, and regularity of the visitation. Other questions are regarding to the presence of safety measures put in place by construction companies and its efficiency. Base on figure 4.8.its shows that 68. 96 % of respondents has knowledge on safety, this shows that most construction companies know something about safety.

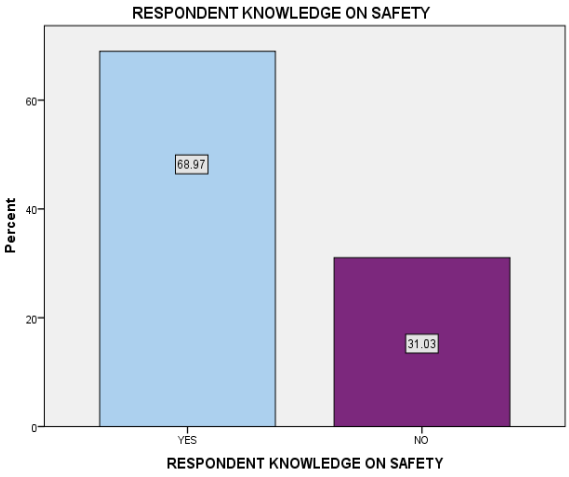

Figure 4.4

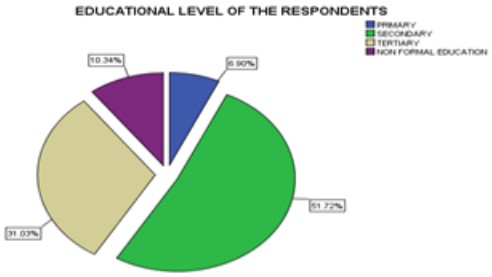

Figure 4.5

From table 4.2 it shows that most construction companies do not organize any training or educational workshop on safety. Because 65.51 % of respondent said No. out of 100% respondents.

Table 4.2: Organization of Enlightenment Program on Safety

Options	Frequencies	Percentage
Yes	18	31.03
No	38	65.51
Partially	2	3.44
Total	58	100

Table 4.3.Shows the accessement of respondents regarding the awareness of Government regulations on safety. From the results, it shows that most staffs are aware of government regulation or law concerning safety on sites in Nigeria.

Table 4.3: The Awareness of Government Regulations on Safety

Options	Frequencies	Percentage
Yes	36	62.06
No	12	20.68
Partially	10	17.24
Total	58	100

Options	Frequencies	Percentage
Yes	36	62.06
No	12	20.68
Partially	10	17.24
Total	58	100

Table 4.4 shows the result of the visitation by government authorities to construction industries. From the result, it is clear that most of construction companies are partially been inspected by any governmental authority.

Table 4.4: Visitation of Construction Companies by Government authorities

Options	Frequencies	Percentage
Yes	18	31.03
No	5	8.62
Partially	35	60.34
Total	58	100

Table 4.5 shows that most construction companies have safety measures put in place because 65.51 % of respondents answered yes out of 100 % respondents.

Table 4.5: Presence of Safety Measures put in Place by the construction Company

Options	Frequencies	Percentage
Yes	38	65.51
No	12	20.68
Partially	8	13.79
Total	58	100

V. CONCLUSION AND RECOMMENDATIONS

5.1 Conclusions

This research work focused on the employees' safety management. From the data collected and analyzed, From the results of the research the following conclusions can be listed below :-

1. Construction companies do not respect safety regulation, put in place by government agencies, (safety inspectors) on. site do not carry out inspection on construction site thoroughly and effectively.
2. There is inadequate training of employees in observing safety. This is also made difficult by the unstable nature of the labor force.
3. Construction company do not enforce the use of protection devices by their employees on sites.

5.2 Recommendations

In other to promote and improve safety at construction site, there must be positive action or response from all the parties concerned. The following are recommended.

1. Training of employees in safety programs should be implemented by the construction companies for enlightenment of their worker on safety and also given them safety consciousness or awareness.
2. Government and industries should insure compliance to safety regulation were government projects are been .executed that is where government is the client.
3. There is need for a change in attitude of government agencies (safety inspectors) towards the inspection in construction site. There is need for the enforcement of the regulation on construction site.

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