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FACTORS INFLUENCING MANAGEMENT COMMITMENT TO SAFETY PERFORMANCE IN THE CONSTRUCTION INDUSTRY

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The significance of safety commitment to improving safety performance and reducing risk is widely accepted and substantive research has been conducted globally in order to improve the safety performance of the construction industry such as: "safety commitment", "design for safety", "safety culture", "safety climate", "behavior base safety BBS". Despite the research and improvements that have been made through the years, construction stakeholders are continuously being challenged with occurrences of injury on site. Therefore, this paper aims to identify the factors, which influence of management commitment toward improving safety performance in the construction industry of Nigeria. Data was collected through a questionnaire and analysis was performed using SPSS version 16 software. The results of the study showed that "involvement of workers in the preparation of safety programs for the site" and "appropriate issuance of motivational directives by the top management to enhance safety" significantly impact on the safety performance of construction stakeholders. Thus, the research outcome would be of benefit to top management of construction companies, policy makers and building development approvers.

Keywords: Construction management, Safety commitment, Safety and health, Construction safety, Building developers.

1 INTRODUCTION

The construction Industry plays a vital role in boosting the economy of many countries, especially in developing country like Nigeria (Dlamini 2011). It is regarded as the pillar of the domestic economy in many countries. As noted by Okoye *et al.* (2018) the industry has contributed substantially to economic growth (5% - 7% improvement in the GDP growth, and over 42% of the fixed capital growth). It provides the infrastructure required for other sectors of the economy to flourish (Mudi *et al.* 2015). A study by Okoye *et al.* (2016) revealed that the construction workers are less informed about safety performance, though, workers from all categories in the construction industry makes much contribution towards economic growth of many nations, through job creation for a large population. Developing countries, are being challenged with increasing level of casualties on sites that is further aggravated by the socioeconomic level (Alkilani *et al.* 2013). Thus, the complex nature of the activities carried out in building construction lead to various impacts on the health and safety of workers with occupational risks during building production. However, in order to improve the safety performance of the

construction industry, attempts have been considered at several times and interest has shifted globally to improvement of preventive measures to enhance safety practices rather than just monitoring its performance (Saracino *et al.* 2015). Tangible progress has not been achieved in Nigeria. Though, (Diugwu and Baba 2014) posit that successful delivery of the project depends on the level of compliance with regulations on health and safety. Although, Umeokafor and Isaac (2016) were of the opinion that Nigeria still lack regulation of health and safety practices. A study by Idoro and Aluko (2011) shows that contractors with the best safety records in Nigeria still record substantially high numbers of injuries on their sites, with about 5 injuries per worker and 2 accidents per 100 workers. While, according to (Ezenwa 2001) these figures are by far higher because of non-reporting or concealment by workers due to fear of retribution from the company.

Table 1. Research effort towards safety commitment.

S/No.	Authors	Description
1	Amponsah-Tawiah and Mensah (2016)	The study demonstrates the link between health and safety and management commitment
2	Fruhen *et al.* (2014)	The study demonstrates that the number of problem-solving and ideas generated to solve a problem were positively related to demonstrations of safety commitment.
3	Amponsah-Tawaih and Adu (2016)	The study establishes that worker behavior is influenced by the commitment of management, also work pressure moderate behaviors which greatly affect safety.
4	(Zwetsloot *et al.* 2017)	ZAV adoption in 27 European companies. Companies realize significant safety improvements over time with ZAV. Committed companies had a more mature organizational safety climate through effective communications.
5	Guo *et al.* (2016)	The focus of the study is on worker behavior and the underlying influence of management commitment, which is one element that contribute to safety performance.

2 SAFETY COMMITMENT AND SUPPORT IN THE CONSTRUCTION INDUSTRY OF NIGERIA

The philosophy of commitment strategies was initially established by the Human Resource Management (Brown *et al.* 2011). According to (Zwetsloot *et al*. 2017) safety commitment is the extent to which accident prevention and safety promotion forms an integral part of an organization goals and values, morale, beliefs and willingness of organizational leadership is represented in the organization. Thus, safety performance is a concept of commitment approach based on establishing safety program, in contrast to the traditional approach where motivation stems out from adhering to establish procedures, policies or regulations (Filstad 2011). The significance of safety commitment to improving safety performance is widely accepted. Much research has been conducted on safety commitment, such as focused predominantly toward the contractor (Abudayyeh *et al.* 2006), designer (Park *et al.* 2014), safety climate (Guo *et al.* 2016), workers (Ayessaki and Smallwood 2017). Safety culture (Choudhry *et al*. 2007, Fang and Wu 2013) behaviour base safety (Choudhry 2014). Thus, the focused of most of the research is also specialized cases, so the literature continues to demonstrate how commitment served as an effective tool in improving safety performance which also necessitated the industry to embrace the concept of commitment. Although, there is little attention given to the developer's commitment to safety performance through the use of the performance indicators at all project

phases of construction. Due to increase of interest toward safety performance, several studies have been made to examine how commitment can improve safety performance globally (Zwetsloot *et al.* 2017). As shown in Table 1, these studies did offer insight into the impact of the commitment to safety performance at all project phases.

3 RESEARCH EFFORT IN THE NIGERIAN CONSTRUCTION INDUSTRY

Developing countries like Nigeria still lack laws and regulations on health and safety practices, though, interest has shifted globally to improvement of preventive measures to enhance safety practices rather than just monitoring its performance (Abubakar *et al.* 2015). It was further established that financial-economic and social-humanitarian perspectives among other factors that aid the affectivity of safety practice. Banihashemi *et al*. (2017) opined that enlightenment should be provided by construction companies on the outline of each project, its safety and level of its necessity, disciplinary measures, policy for testing substance manhandle as well as methods of management needed for the project. Agwu (2012) observed in his study that total safety management, when integrated in policy of the organizations has the potentials of enhancing safety practices on construction works. According to Nnedinma (2016) embracing 'training', 'risk-management' and 'safety policy formulation', promises much improvement in safety of work settings in small scale companies. Findings from a similar study also confirm that, small scale firms are significantly influenced by their available resources, designed framework for achieving objectives of work and the kind of management system manifested in the organization (Oladiran 2011). A research conducted by Awwad *et al.* (2016) found that though there is an existing law for construction labor safety, there is no implementation standard, and monitoring. Mudi *et al.* (2015) showed that the development and introduction of 'safety act' as well as training and re-training of construction workers on safety practices were recommended by the study to control site-based accidents.

4 RESEARCH METHODOLOGY

To achieve the aim of this paper, the following activities were carried out:

- The extant literature review conducted to identify the different variables, relevant to measure safety commitment and support towards construction safety performance one.
- Focus group discussion was conducted with 11 professional (9 practitioners and 2 academicians) and the survey was administered to them. 91% of the participants are master's graduate with an average of 12 years' experience in the construction industry of Nigeria
- The participants are agreeing/disagree on the variables and also ranked them based on their level of importance
- Descriptive statistical analysis was performed using SPSS software version 16

5 DISCUSSION AND CONCLUSION

According to the descriptive analysis, 17 valid attributes were found from literature, which was used to evaluate the influence of commitment and support towards safety performance in the construction industry of Nigeria. Thus, the paper identified factors, which can influence stakeholders in the construction industry of Nigeria towards improving the level of safety performance with varied level of importance. Table 2 showed the result of the descriptive statistical analysis. Thus, appropriate issuance of motivational directives by the top management to enhance safety was considered the most important variable in demonstrating management

commitment to safety performance with a variance of 0.00. The less importance variable in this category is having a variance of 0.655.

Table 2. Analysis of the variables to support demonstrate commitment to safety.

Variables	N	Mean	Std. deviation	Variance
Management emphasis on the establishment of safety committees for all projects	11	3.18	.40452	.164
Monitoring of contractor's performance in terms of safety on the construction projects	11	4.90	.30151	.091
Safety makes a major criterion for evaluating the performance of a supervisor	11	3.81	.60302	.364
Availability of proper procedure for receiving and reviewing feedback of workers on health and safety related issues	11	3.81	.40452	.164
Provision for review of injury reports by top management	11	2.90	.70065	.491
Appropriate issuance of motivational directives by the top management to enhance safety	11	5.00	.00000	.000
Involvement of top management in the establishment of reward system to enhance adherence to safety plan by all personnel	11	4.18	.75076	.564
Direct involvement of top management in the activities of safety committees	11	2.63	.80904	.655

Also, “availability of proper procedure for receiving and reviewing feedback of workers on health and safety related issues” was rated medium with a mean value of 3.81, however, analysis of the variable in SPSS indicates the level of importance with a variance of 0.164. Moreover, “monitoring of the contractor’s performance in terms of safety on the construction projects” also impact on the commitment of stakeholders on safety practices on construction sites.

Table 3. Analysis of the variables to support demonstrate commitment to safety.

Variables	N	Mean	Std. deviation	Variance
Obvious emphasis on the management on safe work above output	11	3.81	.60302	.364
Accident cases reported on a site influence the number of safety personnel deployed to the site	11	2.54	.93420	.873
Top management directly takes part in the enforcement of safety on sites.	11	2.09	1.04447	1.091
Corporate safety targets are set by the management	11	2.81	.40452	.164
Availability of personnel specifically responsible for handling and implementation of safety policy	11	3.90	.53936	.291
The emphasis on open discussion between workers and supervisors on safety related matters	11	4.81	.40452	.164
Encourages involvement of workers on decisions that affect safety on site	11	4.90	.30151	.091
Involvement of workers in preparation of safety programs for the site	11	5.00	.00000	.000
Subcontractors are involved in all aspects of site safety issues	11	4.72	.46710	.218

Furthermore, Table 3 continues to demonstrate, the influence of commitment on construction sites. "Involvement of workers in the preparation of safety programs for the site" also indicate strongly influence commissioning on site with a variety of 0.00 contrary to "top management directly takes part in the enforcement of safety on sites" and "accident cases reported on a site influence the number of safety personnel deployed to the site" were considered less important in supporting commitment with a mean value of 2.09 and 2.54 and a variance of 0.873 and 1.091 respectively. Construction safety performance can be significantly improved by considering the important variables.

Finally, commitment should be established as part of management interest, morale and values and not as a policy or regulation, so as to promote a safe and healthy work environment, this will in turn motivates workers to be conscious of safety as part of work ethics and pay no attention to the fear of retribution.

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