



Assessment of Health and Safety Management on Safety Performance of Small and Medium-Sized Construction Companies in Abuja

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Abstract

All over the world, construction is regarded as one of the most hazardous industries due to its unique nature. As a result, construction workers face different kinds of safety and health hazards while working every day. As a result, this study aims to assess the impact of health and safety management on the safety performance of small and medium-sized construction companies in Abuja. The study adopted a quantitative research approach, which included the use of a questionnaire. The population of the study includes professionals working with registered small and medium construction companies in Abuja. Based on the chain referral method, 25 small and medium-sized construction companies in Abuja were identified, and 130 respondents were sampled from the identified companies. A snowball sampling technique was used to select the small and medium construction companies. Purposive sampling was used in selecting the respondents from the identified firms. The questionnaire was then served to the professionals in the population purposively, and a total of 104 questionnaires representing an 80% response rate were retrieved. The data collected was analysed using a mean item score and a t-test.) health and safety practises were identified during the research. The two most successful health and safety practises utilised by small and medium-sized construction enterprises in Abuja, ranked first and second, are safety rules and procedures and safety communication. From "management commitment" and "safety communication and feedback," which are rated highest, to "safety training," which is ranked lowest, these correlations between safety management practises and safety performance vary. A threshold of 3.50 was established to get the most significant association based on the mean score. Six (6) safety management practises had scores of over 3.50 and were thus deemed important. The second-ranked factor, unemployment, came before this. It was discovered that the study's criteria had a significant impact on how well small and medium-sized construction firms performed in terms of safety. This study concludes that

there is a substantial correlation between the safety performance of small and medium-sized construction enterprises in Abuja and recommends that the companies should make sure that their staff receive continuous education on proper equipment selection and usage.

Keywords: Health and Safety, Management, Safety Performance, Small and Medium-Sized Construction Companies

Introduction

All over the world, construction is regarded as one of the most hazardous industries, due to its unique nature (Oluwase, 2014). As a result, construction workers face different kinds of safety and health hazards while working every day (Akinwale & Olusanya, 2016). Over 60,000 fatal injuries are reported every year from construction projects around the world (Lingard, 2013). The Occupational Safety and Health Administration (OSHA), an agency under the United State Department of Labour, reported that 1 in 10 construction site workers are injured every year. The American Bureau of Labor Statistics figured roughly 150,000 injuries occur each year on construction sites. Such figures shows that the construction industry is one of the most hazardous and accident-prone working environments. However, the safety of construction workers on sites is important towards the success of any project. This is because it is only when workers are in a sound state of mind and are healthy can work go on efficiently (Okoye, Ezeokonkwo, & Ezeokoli, 2016).

Given the occurrence of accidents or injuries to workers in the construction industry, studies have echoed the need for an effective health and safety management (Akinwale & Olusanya, 2016), which aims at forestalling the risks and hazards inherent on site, thus

improve health and safety performance. However, a number of factors influencing safety performance in the construction industry were identified which include worker's attitudes, construction company size, safety policy and training, project coordination, and economic pressure (Chen *et al.*, 2020). The industry has a long-standing poor performance record of health and safety (Chen *et al.*, 2020). This has been blamed on the complexity, multiple stakeholders, dynamic operational environment, and organisational arrangements of construction projects, which have regularly resulted in accidents and injuries to workers (Chen *et al.*, 2020).

Health and safety issues on construction sites are a global problem (Zhou *et al.*, 2013), and this has given rise to poor project time, cost, and quality performance, with numerous claims and disputes (Zhou *et al.*, 2013). The occurrence of accidents could lead to a temporary stoppage of work, which could result in delays, damage to finished work, an increase in operating cost, and quality issues (Tunji-Olayeni *et al.*, 2018). Like in other developing countries in the world, the Nigerian construction industry is dominated by 78% of indigenous small-and medium-sized construction organisations (Tunji-Olayeni *et al.*, 2018).

These firms are predisposed to several forces, both from their external and internal environments (Okoye, 2018). The influence of these forces is more on them because of their characteristics and management style, which make them more susceptible to higher health and safety deviance practices when compared to the large and mostly foreign multi-national construction organisations (Okoye, 2018). This is evident in the submission of Okoye (2018) who posited that in Nigeria, small and medium-sized construction projects are still being exposed to injuries, disease, and fatalities. Regardless of the level of technological advancement and professionalism in the construction industries in the twenty-first century, safety performance on construction sites is usually measured using lagging indicators such as accidents and not by using leading indicators such as safe work behaviors (Eghosa *et al.*, 2017). Traditionally, safety in construction sites has always been measured by the level of implementation of safety rules and procedures, and hazard control mechanisms (Izobo *et al.*, 2018). Recent advancements in construction safety such as the move towards safety culture and behavior-based safety have proven to generate better results (Izobo *et al.*, 2018). Safety culture is when safety is the priority concern of people working in an organisation. However, stressing that an organisation can only be identified as having a safety culture after it has developed to a certain stage (Eghosa *et al.*, 2017). Based on the foregoing, this study seeks to gain an understanding of the health and safety management on safety performance of small and medium-sized construction companies in Abuja.

Statement of the Research Problem

The construction industry operates in a very uncertain environment where conditions can change due to the complexity of each project (Okechukwu, 2015). Small and medium enterprises (SMEs) are in dire need of implementing health and safety management properly, as it is estimated that around 60% of workplace accidents that occur are accounted for by SMEs (DOSH, 2018). The major obstacle is that occupational health and safety (OHS) laws do not totally cover SMEs (Williams *et al.*, 2019). This has resulted in poor awareness of implementing OHS in SME. In advanced countries of the world, visible improvements have since been made to mitigate site accidents (Olotuase, 2014). This, in turn, cannot be said of Nigeria as the industry is blighted by reports of accidents on construction sites, with even multinational companies falling prey to such distasteful occurrences (Mohammed *et al.*, 2015). Construction managers, over time, have devised a cheaper means of employing labourers on a casual or temporary basis (Agyekum *et al.*, 2018). This in turn affects the performance of such labourers as issues of life are taken first before work, hence the evident defect seen in workmanship output. Moreover, information about accidents in the Nigerian construction industry is not properly documented (Olusoga and Fagbemi 2018). This makes it an arduous task to get relevant data. Most contractors fail to report cases of accidents to the ministerial departments in charge of such occurrences. As such, many studies have gone down the line on the subject of construction safety provisions and practices. Though focus has been on the causes of accidents, the condition of work settings, workers' attitudes, and the provision of health and safety training (Olotuase, 2014; Umeokafor *et al.*, 2014; Dodo, 2014; Abas *et al.*, 2020; Agyekum *et al.*, 2018; Belayutham & Ibrahim, 2019; Chen *et al.*, 2020; Mohammed *et*

al., 2015; Williams *et al.*, 2019). However, there is a limited study on health and safety management on the safety performance of small and medium-sized construction companies in Nigeria in general and Abuja in particular. That is why Mojidi and Fidelis (2019) lamented that in the construction industry, health and safety practises and safety performance are less documented, especially in developing countries like Nigeria. This current study evaluates the health and safety practises employed by small and medium-sized construction companies and determines the relationship between safety management practises and safety performance.

Research Methodology

A quantitative research approach was used in this study. The population of the study was made up of professionals working with registered small and medium construction companies in Abuja. A Snow ball sampling technique was used to select the small and medium construction companies while purposive sampling was used in selecting the respondents from the identified firms. This research sought to determine how health and safety management affected the performance of small and medium-sized construction companies in Abuja in terms of safety. In Abuja, 25 small and medium-sized construction enterprises were found using the chain referral technique, and 130 respondents were randomly selected from these companies. Through the use of a questionnaire, primary data were gathered from 104 professionals in Abuja. After gathering the data, it was analysed to provide logical conclusions using both descriptive (tables) and inferential statistics (t-test).

RESULTS AND DISCUSSION

Result and Discussions on Health and Safety Practices Employed by Small and Medium Construction Companies

This section covered health and safety practises employed by small and medium construction companies in Abuja. Each practise was studied using the Statistical Mean Score to examine the level of effectiveness, such as (VE) = Very Effective; 4 (E) = Effective; 3 (ME) = Moderately Effective; 2 (LE) = Less Effective 1 (NE) = ineffective. The ranking of practises which were examined by the researcher from the point of view of all respondents is shown in the tables below.

Table 1. Health and safety practices

Health and Safety Practices	Mean scores	Rank	Remarks
Safety rules and procedures	4.23	1	Effective
Safety communication	4.00	2	Effective
Worker's involvement in safety	3.84	3	Moderately Effective
Safety training	3.76	4	Moderately Effective
Entrepreneur's commitment	3.61	5	Moderately Effective
Safety promotion policies	3.53	6	Moderately Effective

Table 1 shows that six (6) health and safety practises were identified from the literature. According to the mean scores, safety rules and procedures (4.23) and safety communication

(4.00) are the most effective health and safety practises used by small and medium construction companies in Abuja, Niger State, ranking first and second. This result agrees with Subramaniam *et al.* (2016) and Fernandez-Muiz *et al.* (2012), where it was reported that when safety rules and procedures are implemented well in the organisation through regular safety inspections and enforcement of safe working procedures, employees are compelled to work safely. Employees are also encouraged to provide feedback and comments for safety-related improvements. Thus, with an efficient communication and feedback system, management can track hazards to prevent accidents and injuries. Similarly, worker involvement in safety, safety training, entrepreneurial commitment, and safety promotion policies were ranked third, fourth, fifth, and sixth, respectively, with statistical mean values of 3.84, 3.76, 3.61, and 3.53. The findings are consistent with those of McGonagle *et al.* (2016), who found that the entrepreneur's commitment is positively associated with employee occupational safety motivation, safety participation, and adherence to safety rules, but negatively associated with minor injuries.

Result and Discussions on Relationship between Safety Management Practices and Safety Performance

Table 2 shows the mean score of the relationship ranges between 4.53 and 4.23. These relationships between safety management practises and safety performance ranged from "management commitment" and "safety communication and feedback" (mean = 4.53), which are the highest ranked, to "safety training" (mean = 4.23), which is the least ranked. To get the most significant relationship based on the mean score, a threshold of 3.50 was set. As a result, six (6) safety management practises were scored above 3.50 and considered significant. These Safety Management Practices include: "Management Commitment" (mean = 4.53; SD = 0.63; $t(103) = 16.61$; $p = 0.00$), "Safety Communication & Feedback" (mean = 4.43; SD = 0.63; $t(103) = 16.61$; $p = 0.00$), and "Safety Rules and Procedures" (mean = 4.46; SD = 0.63; $t(103) = 15.38$; $p = 0.00$). "Workers' Involvement" (mean = 4.46; SD = 0.63; $t(103) = 15.38$; $p = 0.00$), "Safety Promotion & Policy" (mean = 4.30; SD = 0.60; $t(103) = 13.53$; $p = 0.00$), "Safety Training" (mean = 4.23; SD = 0.80; $t(103) = 9.27$; $p = 0.00$). The approach revealed all the six (6) safety management practises have a significant relationship with the safety performance of small and medium construction companies in Abuja.

Table 2: Relationship between safety management practices and safety performance

Relationship	MS	SD	t-value	df	Sig. (2-tailed)	R
Management Commitment	4.53	0.63	16.61	103	.00*	1 st
Safety Communication & Feedback	4.53	0.63	16.61	103	.00*	1 st
Workers' Involvement	4.46	.63	15.38	103	.00*	3 rd
Safety rules and procedures	4.46	.63	15.38	103	.00*	3 rd
Safety Promotion & Policy	4.30	.60	13.53	103	.00*	5 th
Safety Training	4.23	.80	9.27	103	.00*	6 th

Note: *SD* = Standard Deviation; Sig. = level of significant of the relationship between Safety Management Practices and Safety Performance where 5 (VS) = Very Significant; 4 (S) = Significant; 3 (AS) = Averagely Significant; 2 (I) = Insignificant 1 (VI) = Very Insignificant). The higher the mean score the more significant the level of relationship between safety management Practices and Safety Performance; df = degrees of freedom, *Significant at the 95 per cent level ($p < 0.05$).

Conclusions

All over the world, construction is regarded as one of the most hazardous industries due to its unique nature. Construction safety is always a grave concern for both practitioners and researchers. his research sought to determine how health and safety management affected the performance of small and medium-sized construction companies in Abuja in terms of safety. Six (6) health and safety practises were identified during the research. The two most successful health and safety practises utilised by small and medium-sized construction enterprises in Abuja, ranked first and second, are safety rules and procedures and safety communication. From "management commitment" and "safety communication and feedback," which are rated highest, to "safety training," which is ranked lowest, these correlations between safety management practises and safety performance vary. A threshold of 3.50 was established to get the most significant association based on the mean score. Six (6) safety management practises had scores of over 3.50 and were thus deemed important. The study's final finding was that there is a substantial correlation between the safety performance of small and medium-sized construction enterprises in Abuja and six of the practises recommended for safety management. This study proposes the following recommendations: The companies should make sure that their staff receives continuous education on the proper equipment selection and usage. The companies should take sufficient supervision, good design, equipment inspection, and frequent tool and equipment maintenance measures to guarantee that ladders are placed correctly. Location of warning signs in an obvious place and proper use of safety equipment.

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