

ON WORKERS SAFETY BEHAVIOR ON CONSTRUCTION SITE IN ABUJA

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A Safety Manager's leadership style has a great impact on workers' safety behaviours on construction sites. Effective leadership styles of Safety managers have been associated with benefits such as increased operational efficiency, reduction in insurance cost and workers retention and satisfaction. The aim of the study is to assess the safety managers' leadership styles on construction workers, in Abuja. The study used structured questionnaires to solicit information with respect to the investigation. The questionnaires were administered to site workers on 5 selected construction project sites in Abuja. The total population of respondents on these site was 550 however, 226 was the total sample size in this study. Correlation analysis was conducted in order to determine the relationship between safety manager's leadership styles and worker's safety behaviours and the result was found to be significant ($P < 0.005$). This relationship was modelled using simple linear regression and from the model the result shows that improvement on the safety manager's leadership styles on sites will improve worker's safety behaviour. Therefore, workers' safety behaviour significantly influences the overall benefits of safety management system on the construction sites. As such there is need for potential improvement on the safety manager's leadership styles as perceived from the analysis in order to bring about the expected high performance of worker's safety behaviour on construction sites.

Keywords: Behaviour, Construction Worker's, Leadership Styles, Safety Manager's, Safety Management.

1.0 INTRODUCTION

Construction industry is an important aspect of any nation owing to its contribution to national economy. But over the years health and safety issues within the construction industry has become the concern of everyone in the industry and also the entire nation, because of the alarming rate of fatalities and hazards that has characterize its operation, it has shown negative impact on social and economic life of the society (International Labour Organisation 2011). In the meantime there is report of high rate of fatalities and hazards in terms of injuries, and disability recorded in the industries (kheni, 2008). For instance, Okorie, *et. al* (2015), observed that Nigerian construction industry within two years (2005-2006) experienced over 300 fatalities and more than 23,000 disabilities. Moreso, an estimated 180,000 days (work productivity period) were believed to have been lost due to injuries alone. In monetary terms, the loss to the Nigerian construction industry traced to health and safety related issues is in excess of N500 billion. Organização Internacional do Trabalho, (2001) reported that, rate of injuries and fatalities in construction is 7-10 times than that in other industries. Also International Labour Organisation (2005) stated that construction work environment, particularly project sites have been identified as the most hazardous. Because the activities involved pose serious health and safety risks to workers and other stakeholders. Supporting acknowledged that between 25% – 40% of fatalities in the world's occupational settings are contributed by construction industry (ILO, 2001, 2005a and 2005b).

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The preceding views agree with a common axiom that "safety is everyone's responsibility" however, is ideology may not be a true reflection of the need to specifically assign the responsibility for the health and safety management of construction site and their leadership roles to competent individuals. Leadership can be define as a process of modifies the motivation and competencies of others in the group or organization." It can be described as "the process of interaction between leaders and followers, through which leaders can exert their influence on followers to achieve organizational safety goals under the circumstances of organizational and individual factors" (Wu et al., 2007). Previous researches revealed the importance of leadership to safety (Griffin and Hu, 2013 and Hofmann *et al.*, 2003). Leadership is fully embedded in safety, and the majority of previous studies focused on the full-range model of transformational and transactional leadership styles (Barling *et al.*, 2002 & Kelloway *et al.*, 2006 & Lu and Yang, 2010). Transactional leader styles are related to monitoring and reward whereas transformational leader styles are tending towards inspiring and genuinely motivating the workforce (Reid *et al.*, 2008). Transformational leadership style can be categorized in four ways, i.e. idealized influence (charisma), inspirational motivation, intellectual stimulation, and individualized consideration. Meanwhile Transactional leadership style contains two dimensions, contingent reward and management-by-exception (Avolio & Bass, 1994). In particular, the effectiveness of transformational leadership style in motivating and inspiring employees is shown by a multitude of empirical studies. These studies found that transformational leadership style is related to enhanced employee work motivation, Shamir *et al.*, (1993), employee satisfaction Podsakoff *et al.*, (1990), innovative performance Pieterse *et al.*, (2010), and commitment to the organization Avolio *et al.*, (2004). All of these traits are closely related to employees' safety involvement and behaviour improvement. The transformational/transactional leadership style framework can be regarded as the foundation of the factor structure of safety manager leadership style. Many other studies constructed their specific dimensions of safety leadership style in order to better measure it. Dimensions of safety leadership reported in the literature include safety motivation, safety inspiring, safety policy, safety concern, safety monitoring, safety learning, safety coaching, safety caring, safety controlling, etc. (Griffin & Hu, 2013; Lu & Yang, 2010; Wu, 2005 and Wu *et al.*, 2007). However, almost all of these studies took into account different aspects of transformational/transactional leadership, resulting in that the identified dimensions have close relationships with those of transformational/transactional leadership styles. For example, safety motivation and safety inspiring have similar meanings with idealized influence and inspirational motivation. Safety caring and safety coaching overlap with intellectual stimulation. Safety caring is related to individual consideration. Safety policy, safety monitoring, and safety controlling are closely linked to contingent reward and management-by-exception. The strong predicting power of transformational/transactional leadership to safety performance has been demonstrated in a number of previous studies, some of which have developed safety-specific constructs arising from the original ones (Barling *et al.*, 2002). In this situation, safety manager leadership style can be seen as transformational/transactional leadership styles focusing on safety issues. When promoting an organization's safety culture, it is necessary to select appropriate people to be safety manager, otherwise the safety culture will stagnate (Tweeddale, 2001). Some authors (Adams, 2000 & Blair, 1999 & Swuste and Arnoldy, 2003) noted that the ideal safety managers must have both technical and management skills. Hale (1995) observes that in a complex occupational health and safety environment, the relationship between safety manager and line managers is complex and dynamic. He also suggests that safety manager can perform three leadership styles: the expert, the coordinator, and/or the controller. However, safety controlling has been defined as "the process of monitoring safety performance, comparing it with safety goals, and correcting any significant deviations" (Robbins & De Cenzo, 1998 and Wu, *et al.*, 2008). Hopkins (2006) argues that optimum H&S performance depends largely on effective managers leadership styles at all levels of management. The importance of safety managers' leadership styles in terms of organizational effectiveness, according to Northouse (2011) is that no amount of detailed regulations for safety improvements could make up for deficiencies in safety manager leadership styles. Leadership and leaders' commitment to workers' H&S are critical for effective H&S management in any contracting firm. Lees and Austin (2011) argue that leadership is not a panacea to all management problems and state that leaders have been found to often lose focus and become overwhelm. Nevertheless, leaders have the ability and personality to direct, influence and motivate groups or workers/employees to achieve organizational set goals and improve their behaviour toward safety agenda. The construction workers occupation has been observed as the most

dangerous in term of accidents and fatality rates. Leung, *et al.* (2010) stated that Construction workers are obliged to work in a poor physical environment, tolerating extreme outdoor temperatures, poor air quality, excessive noise from bulky equipment, various hazards from working at height, poor housekeeping, and exposure to chemicals, and additional factors. Prolonged work under such adverse physical conditions induces stress in construction workers, such as emotional and physical fatigues, however operating under poor physical environment, which may cause discomfort to construction workers, subsequently reduces their attention on safety behaviours. The concepts of safety culture and safety climate are important contributions from the behavioral and social sciences to workers understanding of occupational safety. In most construction sites, poor safety awareness, lack of skills, unclear safety responsibilities, boring and simple safety activities or education etc., are major factors affecting workers safety behaviour at construction sites.

Most of the literature above, deal with rate of accidents on construction sites and their cost implication, as well the role that safety manager's leadership styles on construction sites worker such as inspiring and genuinely motivating the workforce. Emphases have never been on the impact of such leaderships on workers behaviour. As such, this research tends to assess the impact of safety manager's leadership styles on workers behavior as regard to safety and health measures on construction sites.

RESEARCH METHOD

Creswell, (2003) stated that factor to be consider in selecting the best research methodology should be the impact that such method have on the research problem and objectives. The target construction companies for this study are large size (with more than 100 workforces) with both permanent and temporary construction workers. The reason was that large construction companies tend to have a high degree of safety awareness and commitment of the concepts and notions of management system. Therefore, this study is a criteria – based study, in which certain criteria were outline for the selection of the construction companies and their construction workers. Those criteria are:

1. The construction company must be built/civil engineering, construction.
2. The construction firm or company must be more than twenty (20) years in civil/building construction work.
3. The construction workers must at least be with the construction company for not less than fifteen (15) years.
4. The workers must hold a minimum of secondary school certificate.
5. The construction firm must have at least one safety supervisor, or safety and health officer (safety manager)
6. The location of the study is Abuja, the Nigeria federal capital.

The five construction sites meet the research criteria, the five construction site selected were of similar work of Wu *et al* (2008) & Lu and Yang (2010). The respondent samples used in the study were drawn from the total population of permanent construction workers in the five (5) construction sites selected for the study. The total numbers of permanent construction workers that meet the study criteria in the 5 construction companies are 550 while 226 were selected for the study following the rules of Krejcie and Morgan, (1970). The research questionnaires were administered on 226 permanent construction workers within the 5 construction site in Abuja.

RESULT AND DISCUSSION

Correlation analysis was conducted in order to determine the relationship between safety manager leadership styles and construction workers safety behaviour. Table 3.1 shows the result of the correlation analysis.

TABLE 3.1 Safety Manager Leadership Styles (Avgsmils)

Component	R	p
AVGSMLS	0.313	0.001

listwise N=226

Where,
SMLS = Safety Manager Leadership Styles

CWB= Construction Workers Safety Behaviour

Table 3.1 reveal the correlation of average safety manager leadership styles and its correlation is significant at the 0.01 level (2- tailed). N = 226. The Pearson's correlation reveals a positive, and significant relationship between average safety manager leadership style and average workers safety behaviour, The Pearson's correlation (r) from table 3.1 is 0.313 while its $P < 0.001$. This means that as the level of safety leadership styles practice on sites improves there is corresponding improvement on the safety behaviour of construction workers, also high level of general safety manager leadership styles on construction workers improve safety performance of workers on site. Following the existing of positive relationship between the variables, there is a need to predict the outcome of the variables. Therefore, simple linear regression is adopt, the simple linear regression seek to examine the effectiveness of safety manager leadership styles on site. In the simple linear regression model develop, workers safety behaviour is the dependent variable while safety manager leadership styles is the independent variable. The result of simple linear regression analysis are presented in Table 3.2

Table 3.2 Simple linear regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	.459	.393	.321	1.54873

a. Predictors: (Constant), SMLS

b. Dependent Variable: CWBSB

Table 3.2 shows that 39% ($R^2 = 0.39$) of the proportion of variation in workers safety behavior is explained by the variation of level of safety manager leadership styles. The R^2 adjusted is 0.321 implying that the model explains 32% of the variation in the workers safety behavior within the population leaving 68% unexplained. The level of awareness of construction workers on safety management standard on site fails to explain all possible variation in the workers general knowledge. Inadequate time spent on site by the safety manager which is just about an hour a day according to factories and machine act Regulation (1986) being in operation in Nigeria, Lack of individual competency understanding of workers and supervisors, ineffectiveness or lack of training and certification of competency for such knowledge failure.

CONCLUSION AND RECOMMENDATION

The effectiveness of safety manager leadership style has a great impact on the behavior of construction workers on site. It was revealed that a reasonable correlation exists between safety manager leadership styles and construction workers' behaviour ($r = 0.313$, $P < 0.001$). This means that workers' safety behaviour and safety manager leadership styles are significantly related. The regression models finding indicate that additional improvement on the level of safety manager leadership styles among the workers' will spring up enormous benefit of workers safety behaviour on the construction sites. Those are the evidence that improving safety manager leadership styles would impact positively on safety and health measures on construction sites which will in high level change the safety behaviour of construction workers on site. Also, positive workers safety behaviour established in the correlation significantly influence the overall benefits of safety leadership style employed by the manager on the construction sites. The implication of the finding is that while it might be important for contractors to put in place all necessary training relating to safety management system, the training program identified may not bring about the expected high impact standard of safety and health on construction sites. There is need for potential improvement on the manager leadership styles as perceived from the analysis in order to bring about the expected high performance standard on construction sites. The effective safety manager leadership style is an important consideration to effective safety behaviour on site as high safety and health performance could improve the organization image through less accident, less absentees of workers from work, less medical bills, etc. The importance of safety behaviour among construction workers is that it will encourage the manager to develop and implement an effective safety leadership styles in construction industry. The models could be of help to the stakeholders in the construction industry in developing an effective safety management. Adequate training of workers is important in order to increase their awareness most especially as regard to identifying and minimizing risks/hazards on the sites. Many safety professionals were of the opinion that training and educating construction workers help in reducing cost and save lives.

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