ASSESSMENT OF HEALTH AND SAFETY DEVIANCE NORMALIZATION OF CONSTRUCTION PROJECTS IN ABUJA, NIGERIA

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ABSTRACT

Deviance refers to rule breaking behaviour which fail to conform to the norms and expectation of a particular society. In sociology deviance describes an action or behaviour that violates social norms including a formally enacted rule. Normalization of Deviance is the process where clearly unsafe practice becomes considered normal if it does not cause harm immediately. Hence, this study assessed health and safety deviance normalisation of construction projects in Abuja, Nigeria, with the view of suggesting strategies for eliminating health and safety deviance normalisation. A total of 155 copies of the questionnaire were administered, and 150 copies were returned and used for data analysis, with a response rate of 97%. The analysis of the data was carried out with the use of percentage, mean item score, and Spearman's rank correlation analysis. The study identified fourteen (14) major causes of health and safety deviance normalization. All fourteen causes had a mean score (MS) ranging between 4.52 and 2.94, with an average mean score of 3.67, which implies the identified causes are important. The study identified six (6) levels of application of health and safety practices in construction projects undertaken by the workers and management (average MIS = 3.85). The findings revealed that safety communication among workers was the most effective level of effectiveness in the application of health and safety practices (MIS = 4.54). The result of Spearman's rank correlation analysis revealed that there exists a positive, fairly strong and significant relationship between the causes of health and safety deviance normalisation and labour performance, at the 5% level of significance ($p = 0.01$; $r = 0.567$). The study identified six (6) strategies for eliminating health and safety deviance normalisation by the workers and management which are safety communication among workers and safety training among workers (average MIS = 4.09). The study concludes that there is a low level of occupational health and safety policy application and performance in the construction industry. This poor health and safety performance is caused by HS risk normalization promoted by factors such as prioritization of production over safety at construction sites and lack of training of labor, employees' attitude towards work. As a result of the conclusions made in this study, the study recommended the use of a well-thought-out and comprehensive health and safety management strategy. This would guarantee a safe job execution plan, lower health and safety costs as a consequence of fewer incidents, and management should bear the responsibility for safety for all the construction workers.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background of Study

The construction industry is one of the most important sectors in any country, contributing significantly to economic and infrastructure development. The fast growth of construction activities is a result of a country's economic prosperity (Tanko *et al.*, 2020). The industry, according to Eze *et al.* (2017), is the economics' primary mover and the basis of its existence. Despite the industry's enormous significance in fostering fast growth and development, its operations have been shown to lead to a relatively high rate of accidents and fatalities when compared to other industries (Chen *et al.*, 2020). The sector has a lengthy history of poor health and safety (H&S) performance. Construction projects have been criticized for this due to their complexity, numerous stakeholders, changing operating environment, and organizational structures, which have often resulted in worker accidents and injuries (Chen *et al.*, 2020). The constant changes in technology, building methods, construction materials, client expectations, and work environment, according to Odeyinka *et al.* (2006), have made risks and risk management more challenging. Construction site health and safety problems are a worldwide issue (Zhou *et al.*, 2013), and this has resulted in poor project time, cost, and quality performance, as well as many claims and disputes. Accidents may cause a temporary halt in production, resulting in delays, damage to completed work, an increase in operating costs, and quality concerns. The performance of construction companies in Nigeria's construction sector in terms of health and safety is low. This is apparent in Okoye (2018). It has been suggested that construction workers in Nigeria are still subjected to injuries, illness, and deaths. Despite the advancements in technology and expertise in the construction industry in the twentyfirst century. Williams *et al.* (2019) also stated that the number of accidents and deaths in Nigeria has remained

high. Construction operations, according to Udo *et al.* (2016), are carried out in an open and exposed environment. Furthermore, according to Khosravi *et al.* (2014), construction employees complete their tasks in a hazardous and unhealthy atmosphere, which may lead to a decrease in productivity. The poor safety performance of the labour in construction industry can be attributed to deviance normalisation (risks normalisation) (Bell and Healey, 2006).

Deviance is generally perceived to be disruptive, weakens established norms and creates disorder (Umeokafor *et al.*, 2014). The boundaries of what is acceptable risk gradually expands with time and the comfort zone widens, the deviance is institutionalized and become part of the culture, the way of doing things this makes normalisation deviance difficult to address before disaster occurs. According to Vaughan (2016) Normalization of Deviance is a process in which deviance from correct or proper behaviour or rule becomes culturally normalized.

Construction projects in general, often suffer from poor performance in terms of time delays, cost overruns and quality defects. The causes of poor performance have often been analyzed, however few studies have addressed the influence of cultural norms and the processes through which unacceptable management practices or standards may have become acceptable, thus leading to poor performance. It is important to remember that normalisation of deviance does not happen only due to deliberate efforts to violate norms, but also due to corporate cultures that accept these counterproductive behaviors. Not every deviation, specifically the ones that are a natural phenomenon in project organizations, such as conflicts necessarily equate to normalisation of deviance. The problem arises when behaviors become culturally embedded and destructive but remain viewed as a normal part of organisational processes (Pinto, 2014). This study therefore assessed health and safety deviance normalisation of construction projects in Abuja,

Nigeria.

1.2 Statement of the Research Problem

There are numerous studies on construction health and safety that have sampled Construction Professionals, Consultants, Clients or Contractors (Abas *et al.,* 2020; Agyekum *et al.,* 2018; Belayutham and Ibrahim, 2019; Chen *et al.,* 2020; Mohammed *et al.,* 2015; Williams *et al.,* 2019). However, only a small percentage of these studies took samples from construction workers (artisans, craftsmen, operatives), who carry out the actual construction production (Kukoyi and Smallwood, 2017; Okoye, 2018; Tanko *et al.,* 2020). H&S deviance normalisation is common among inexperienced workers (Szóstak, 2019). Szóstak (2019) found that workers with fewer years of work experience, often fall victim of accidents on-site as a result of; inadequate of occupational health and safety (OHS) training, working without medical fitness examinations, working with medical contraindications, ignorance of the principles and provision of OHS, inadequate concentration on activities being performed, inadequate experience. Randy (2017) observed that the culture of placing more emphasis on productivity over safety and indiscipline and lack of adherence to safety practices are key contributors to the normalisation of risks. The consequence of H and S risks normalisation is accidents or disaster which could lead to loss of lives, incapacitation of employees, disruption of work, temporary suspension of work, rework and waste, loss of jobs, schedule extension, cost overrun, and disputes, among others. Furthermore, H&S risks normalisation is not unconnected to the conditions under which construction projects are executed. According to Szóstak (2019), construction projects are executed under a diverse and unpredictable condition in the construction industry, this includes even the works carried out at evening and night times, especially when completion time is of essence.

Little has been done on the impact of health safety deviance normalization on labour performance of construction projects especially in the geographical area of the present study.

1.3 Research Questions

1. What are the major causes of health and safety deviance normalization on construction projects?
2. What is the level of application of health and safety practices on construction projects?
3. Is there a relationship between the causes of health and safety deviance normalization and labour performance?
4. What are the probable solutions to eliminate health and safety deviance normalization?

1.4 Aim and Objective

1.4.1 Aim

The aim of this study is to assess health and safety deviance normalization of construction projects in Abuja.

1.4.2 Objectives of Study

In order to achieve the aim, the objectives are:

1. Identify the major causes of health and safety deviance normalization on construction projects;
2. Evaluate the level of application of health and safety practices in construction projects;
3. Determine the relationship between the causes of health and safety deviance normalisation and labour performance;

4. To suggest strategies for eliminating health and safety deviance normalisation on construction projects.

1.5 Research Hypothesis

In view of the research questions, objectives and review of literature relating to the research questions and objectives, the following hypotheses were formulated:

Hypothesis 1:

H_0: There is no significant relationship between the causes of health and safety deviance normalisation and labour performance.

H_1: There is a significant relationship between the causes of health and safety deviance normalisation and labour performance.

1.6 Justification for the Study

Stiles et al. (2012), Said of safety culture "it is worth pointing out that if you are convinced that your organization has a good safety culture you are almost certainly mistaken that same applies that if you think that your organization is not susceptible to normalisation of deviance then you are probably wrong"

Risks normalisation is the underlying reason why employees and management play deaf and blind to several warning signs before the occurrence of a disaster or accident. The poor safety performance of the small organisations have also been attributed to poor budgetary allocation to health and safety, financial insecurity, the use of part-time safety personnel, and informal safety arrangements (Stiles *et al.,* 2012; Lin and Mills, 2001).

Kukoyi and Smallwood (2017) conducted a qualitative investigation on Health and Safety (H&S) Construction Practices in Lagos. The study explored the perceptions of mainly production workers (ironworkers, masons, carpenters, roofers, and electricians) engaged

in construction projects regarding H&S on construction sites. The study reported that productive activities on construction sites as hazardous and risky, yet there is a lack of understanding of the use of Personal Protective Equipment (PPE).

The Occupational Health and Safety Risk Levels of Building Construction in Nigeria (Okoye, 2018). The research focuses on determining the origins, frequency and degree of hazards associated with different building construction in Anambra State using simple random sampling, the research discovered that the frequency, size, and effect of safety risk variables vary by construction trade while the scope of this research is restricted, the kinds of accidents and methods for avoiding them on the job site were not included in the sample. Tanko *et al.* (2020) investigated compliance with the Use of Personal Protective Equipment (PPE) on Construction Sites in Johor using a mixed-method study methodology, the research, which focused only on PPE compliance, found that construction workers in the study region had a high degree of knowledge but poor compliance with PPE usage. The majority of these studies ignored the construction labour people who are the most critical site-based workers that are often the victims of safety failures. Furthermore, the variety of activities, operational modes and condition under which the different artisans, craftsmen involved in the construction work carryout their tasks increase the occurrence of H&S deviance normalisation.

In Nigeria, like other developing countries, the construction industry is also dominated by small and medium enterprises (SMEs), health and safety risks normalisation is inherent in the characteristic of the activities of the SMEs and are promoted by certain barriers to effective health and safety management practices. These, however, make the SMEs suffer a consciously higher health and safety risks deviance practices than their large foreign and multi-national construction organisations counterparts. While most research efforts on

health and safety in the construction industry have been concentrated on large foreign and multi-national construction organizations Ozmec *et al.,* (2014), this study will focus on health and safety deviance normalization on construction projects within Abuja metropolis as a case study.

1.6 Scope of the Study

This research work focused on active building construction sites, construction project supervisors, artisans (bricklayers and electricians) and labourers working in the built environment in Abuja. Abuja was selected because it is one of the cosmopolitan cities in Nigeria that has the high population of professional in the built environment. The study focused on the major causes of health and safety deviance normalisation and the level of application of health and safety practices by construction projects. Also, the relationship between the causes of health and safety deviance normalisation and labour performance was determined and probable solutions to eliminate health and safety deviance normalization were offered.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 The Construction Industry

Construction is a general term meaning the art and science to form objects, systems, or organizations (Lu, 2018) and comes from Latin construction (from com- "together" and struere "to pile up") and Old French construction (Gao *et al.,* 2019). In its most

widely used context, construction covers the processes involved in

delivering buildings, infrastructure and industrial facilities, and associated activities through to the end of their life. It typically starts with planning, financing, and design, and continues until the asset is built and ready for use; construction also covers repairs and maintenance work, any works to expand, extend and improve the asset, and its eventual demolition, dismantling or decommissioning (Gao *et al.,* 2019). As an industry, construction accounts for more than 10% of global GDP (6-9% in developed countries) and employs around 7% of the global workforce - over 273m people. The output of the global construction industry was worth an estimated $10.8 trillion in 2017. Broadly, there are three sectors of construction: buildings, infrastructure and industrial: (Arunkumar and Gunasekaran, 2018).

i. Building construction is usually further divided into residential and non-residential.
ii. Infrastructure, also called heavy civil or heavy engineering, includes large public works, dams, bridges, highways, railways, water or wastewater and utility

distribution.

iii. Industrial construction includes offshore construction (mainly of energy installations), mining and quarrying, refineries, chemical processing, power generation, mills and manufacturing plants.

The industry can also be classified into sectors or markets. For example, Engineering News-Record (ENR), a US-based construction trade magazine, has compiled and reported data about the size of design and construction contractors. In 2014, it split the data into nine market segments: transportation, petroleum, buildings, power, industrial, water, manufacturing, sewer/waste, telecom, hazardous waste, and a tenth category for other projects. ENR used data on transportation, sewer, hazardous waste and water to rank firms as heavy contractors.

2.2 Concept of Normalisation of Deviance

The term “normalization of deviance” was first coined by Diane Vaughan, a sociologist who studied the Challenger disaster and found a series of missteps, flawed assumptions, and a culture of risk-taking. “Social normalization of deviance means that people within the organization become so much accustomed to a deviant behavior that they don't consider it as deviant, despite the fact that they far exceed their own rules for the elementary safety” (Eden *et al.,* 2015). More insidiously, Vaughan's work has found that people grow more accustomed to the deviant behavior the more it occurs. Put simply, normalization of deviance suggests that the unexpected becomes the expected, which becomes the accepted (Pinto, 2014). Thus, one phenomenon of this normalization of deviance is that while a series of behaviors may appear deviant to people outside the organization, for personnel within the firm, the deviance often goes unrecognized; that is, it is simply assumed to be normal occurrence. It is usually only with hindsight that people

within an organization can realize that their seemingly "normal" behavior was, in fact, deviant (Vaughan *et al.,* 2015).

Part of the challenge in recognizing and addressing normalization of deviance is the role that the "gradualism" phenomenon plays in promoting these concerns. As Starbuck and

Milliken (2014) pointed out, in the wake of the Challenger disaster, acclimatization to "deviance" behavior occurs as a process of steps, sometimes over an extended period. The unacceptable behavior does not occur all at once, but rather, may serve as the summation of multiple decisions made or avoided, with no visible or discernible negative effects.

Thus, the potential for catastrophe is never envisioned as an option until it occurs. In a project setting, we see gradualism occur in scope adjustment, safety standards modification, or incremental changes to plans and other control documentation (Eden *et al.,* 2015; Winch, 2013) and often experience the effects that gradualism plays in ballooning project costs and schedules. As Winch (2013) noted, a constructivist perspective yields a number of causes of project escalation many involving elements of gradualism including strategic misrepresentation, "end gaming," "governmentality," culture, and escalation of commitment on major projects (Clegg *et al.,* 2012).

It is also important to distinguish between the concepts of "deviation" and "normalization of deviance" as they relate to project development (Bourrier, 2015). It is commonly understood that projects are prone to deviation during the development process, as specific technical, commercial, or environmental issues can lead to nonconformity with the expected standards (Geraldi *et al.,* 2015; Hallgren and Soderholm, 2010). Deviation from plan, for example, may be a "normal" element in the development of most projects and our response to these deviations efforts to "stabilize the situation" (Hallgren and Soderholm, 2010) can be viewed as an important, but relatively commonly-applied component of the project development process (Jin and Levitt, 2016; Orr and Scott, 2018). The critical nature of deviation in this sense lies in assessing how effectively an

organization reacts to unexpected events; i.e., how quickly they are able to get a project back on track with minimal lost time or expense. Normalization of deviance, on the other hand, is a mindset that the organization's actors adopt as cultural norms during the project development cycle. This behavior anticipates errors but more critically, it seeks to reduce perceptions of these errors to normal operating procedure. When "the unexpected" fully migrates to "the accepted," the danger for organizations is that they have rationalized away destructive behaviors or created an environment where deviance is permitted to thrive.

2.3 Normalisation of deviance in project organizations

Normalization of deviance phenomenon in multiple industries and professions including engineering (Gerstein, 2018), medical care (Banja, 2010; Green, 2014), and industrial and financial organization. Although widely observed, normalized deviance differs from the more commonplace nature of organizational accidents due to engineering overreach (Petroski, 2012) or other design or development failures. Errors, particularly due to unexpected risk factors (e.g., "unknown-unknowns") will continue to remain a part of organizational life despite firms' attempts to identify and therefore minimize their effects as much as possible, leading to the "normal accidents" which are the price paid for the failure to jointly design technology and organization (Perrow, 1999).

Further, some risks are accepted as a process of rational cost-benefit analysis, as has been argued to have occurred with NASA's decision to launch Challenger in the face of technical concerns. In this case, technical risk was outweighed by political risk, where NASA faced tremendous pressure to carry out missions to support the image, they had created that space flights had become both routine and a profitable enterprise through contracting for satellite launches (McConnell, 1986). Normalization of deviance represents a cultural attitude that consciously creates conditions in which mistakes are made; in effect, it provides a perfect petri dish environment for corporate (or project)

misbehavior. As Vaughan (2015) notes, with normalization of deviance, individuals, teams, and organizations repeatedly drift away from what are acceptable standards of practice until the drift has become the norm.

The project management literature is replete with research on the causes of project failure. It is helpful, therefore, to contrast the pathologies that can lead to cost or schedule overruns, technical failures, cancelations, and other negative results and the more insidious dynamic of normalization of deviance, as it applies to project management. Researchers have examined numerous issues that can derail projects, including identifying "decision traps" in project development, political issues (Levine and Rossmoore, 2015), bureaucratic red.

2.4 Causes of Health and Safety (H&S) deviance Normalisation in construction The construction industry drives and influences economic growth and infrastructural development of nations. Eze *et al.* (2020) described the industry as the economic prime mover and the bedrock of survival of economies. Despite the benefits of the industry in the acceleration of growth and development, it is the most hazardous sector owing to its long-standing records of accidents and deaths (Abas *et al.,* 2020; Sunindijo, 2015). Globally, health and safety issues in the construction industry is a complex one as a result of the number of accidents and injuries involved (Aghimien *et al.,* 2019; Othman *et al.,* 2017; Chiocha *et al.,* 2011). The industry is underdeveloped in developing countries and these have led to underperformance and substandard and total disregards of safety rules and measures which have subsequently resulted in accidents and other health problems (Aghimien *et al.,* 2018; Laryea and Mensah, 2010).

Shabangu (2017) and Orji *et al.* (2016) submitted that it is now a commonplace among construction organisations to overlook health and safety management practices. The construction industries of both developing and developed countries are dominated by the small and medium enterprise (SMEs), and their activities impacts on the socio-economic growth of the countries (Eze *et al.*, 2020; Unnikrishnan *et al.*, 2015; Arewa and Farrell, 2012; Eash, 2003). Construction Small and Medium Enterprises (SMEs) has been blamed for the poor safety record of the construction industry. EU-OSHA (2014) for instance, reported that in Europe, 82% of work-related injuries were caused by small organisations. The poor safety performance of the construction SMEs in relation to their large counterparts which have more robust safety management practices and performance (Sunindijo, 2015; Arocena and Núñez, 2010; Kheni *et al.*, 2010); can be attributed to deviance normalisation (risks normalisation) (Bell and Healey, 2006). Risks normalisation is the underlying reason why employees and management play deaf and blind to several warning signs before the occurrence of a disaster or accident.

1. The poor safety performance of the small organisations has also been attributed to poor budgetary allocation to health and safety, financial insecurity, the use of part-time safety personnel, and informal safety arrangements (Stiles *et al.*, 2012; Lin and Mills, 2001). Randy (2017) observed that the culture of placing more emphasis on productivity over safety and indiscipline and lack of adherence to safety practices are key contributors to the normalisation of risks (Randy, 2017). The consequence of H&S risks normalisation is accidents or disaster which could lead to loss of lives, incapacitation of employees, disruption of work, temporary suspension of work, rework and waste, loss of jobs, schedule extension, cost overrun, and disputes, among others.

2. Furthermore, H&S risks normalisation is not unconnected to the conditions under which construction projects are executed. According to Szóstak (2019), construction projects are executed under a diverse and unpredictable condition in the construction industry. Throughout the entire year, construction activities are going on under a fluctuating atmospheric condition (Szóstak, 2019), which cannot accurately be predicted. This includes even the works carried out at evening and night times, especially when completion time is of the essence. Continuous effective and efficient supervision and monitoring of the conditions under which tasks are carried out is a key to the effective management of H&S risks normalisation. This could be the reason why Gunduz and Laitinen (2018) advocated for supplementing risk assessment with continuous monitory of the conditions under which work items are discharged. It was further maintained that monitoring would unearth the underlying causes like unsafe acts, mechanical hazards, order, tidiness, and ergonomics.

3. The variety of activities, operational modes and conditions under which the different professionals and tradespeople involved in construction projects carry out their tasks; increases the occurrence and magnitude of H&S risks normalisation on construction projects. In Nigeria, like other developing countries, the construction industry is also dominated by small and medium enterprises (SMEs). These organisations are characterized and influenced by a lot of internal and external forces. Dominant among these are; lack of proper documentation, instability in government and legislation, poor control of the resource, financial problems, inefficient business management and control, unsuitable scientific knowledge application, poor contractual risks management and response strategies, absence of practical scientific skills, insufficient skilled professionals, the existence of

statutory requirements hampering growth, debilitated contract, inefficient materials management, lesser resources and soleleadership and - management system (Eze *et al.,* 2020; Aghimien *et al.,* 2019;

Thwala and Mvubu, 2009). These, however, make the SMEs suffer a consciously higher health and safety risks deviance practices than their large foreign and multinational construction organisations counterparts.

4. Research efforts on health and safety in the construction industry have been concentrated on large foreign and multi-national construction organisations (Ozmec *et al.,* 2014), little has been done on SMEs (Legg *et al.,* 2015), especially in the geographical area of the present study. Risks normalisation impedes effective health and safety management practices. Health and safety risks normalisation is inherent in the characteristic of the activities of the SMEs, and are promoted by certain barriers to effective health and safety management practices. In order to improve health and safety performance of the construction SMEs in developing countries and beyond, this study assessed the factors promoting health and safety (HS) risks normalisation in the construction industry, using Nigeria as a case study.

5. Possible measures for overcoming H&S risks normalisation in the industry were recommended based on the findings. It is the understanding of this study that by knowing the major causes of health and safety risks normalisation and proffering solution to eliminate them would lead to an improvement in health and safety performance of the industry as a whole. Furthermore, construction projects and SMEs performance will improve. Health and safety issue have been identified as one of the components of the social dimension of sustainable construction project delivery (Aghimien *et al.,* 2019). Therefore, the outcome of this study will also

find use in achieving the social dimension of sustainability; this will complement the economic and environmental dimensions of sustainable construction.

6. Loosemore and Andonakis (2017) submit that the constant changes in the management and leadership of most SMEs in the contractual relationship have been blamed for the poor and inconsistent health and safety performance. Although, most projects where the SMEs play key roles are usually small and medium sized. This is supported by Belayutham and Ibrahim (2019) submission that construction SMEs occupies the general contractors' position on small and medium-sized projects, and in large projects where the larger firms are the main contractors, they are sub-contractors.

7. According to Belayutham and Ibrahim (2019), SMEs uses occupational health and safety methods that are less formal. Sunindijo (2015) submit that in the large and more organisation construction firms who are constantly being engaged in large projects requiring a wide-ranging and detailed health and safety approaches; health and safety performance is better unlike what is obtainable in SMEs. Construction projects being undertaken by SMEs have been reported to be prone and dominated by poor health and safety risks. This situation is attributed to the features and nature of the SMEs which can make health and safety risks normalisation to worsen. One of these features is poor financial strength. Financial issues have been attributed to be the major problems of the SMEs in implementing comprehensive health and safety management practices (Belayutham and Ibrahim. 2019; Jaroenroy and Chompunth, 2019; Surienty, 2012).

8. Financial constraints impact on the abilities of the SMEs to do proper planning and commitment to safety management programmes. Cash flow and payment issues

from the main contractor or principals is another issue that hampers efficient health and safety practices of the SMEs (Lingard and Blismas, 2013). Also, according to Hasle *et al.*, (2010), there is no clear-cut difference between management and operations of the SMEs, thus this makes it difficult to separate health and safety management functions from the other operations of the company. Legg *et al.*, (2015) submit that the problems of SMEs are their heterogeneous nature, non-centralized representation, geographical spread (dispersion), organisational issues, limited market spread, insufficient access to external supports sources, and high level of resources limitations.

9. There is also a lack of proper in-house occupational health and safety policy and system documentation, poor knowledge of health and safety risks evaluation, poor knowledge of health and safety acts, regulations and code of practices. Construction SMEs are known to use part-time hired skilled and unskilled labour forces; because they are more engaged as trades' sub-contractors on most projects (Loosemore and Andonakis, 2017). Kolo (2015) confirmed that a larger

   proportion of construction workers are temporary staff. Thus, there is the absence of a sense of job security in temporary employment, and these have also been blamed for lack of commitment to safety warnings. Most of the unskilled workers are less educated and have issues reading, understanding and interpreting occupational health and safety (OHS) management manuals.

10. According to Gao *et al.* (2019), this set of workers find it difficult to read and learn OHS manuals because of language and intellectual incompetence which undermine good safety practices. Also, labour nomadism and the temporary nature of employment practices of the SMEs make it difficult to retain workers that are

knowledgeable about the company's health and safety policies. Casualization of workers also contributes to HS risks normalisation. Contracting and sub-contracting organisations take advantage of casualization and temporary employment loopholes not to treat workers well. This according to Belayutham and Ibrahim (2019), makes it impracticable to keep and maintain workers over a long time. Also, the lack of unionism worsens the effort to manage safety among the SMEs (Loosemore and Andonakis, 2017; Sunindijo, 2015). Stiles *et al.* (2012) submit that Small organisations are not financially secured, engage temporary safety personnel, insufficient budgetary allocation for safety implementation, and safety measures are not formalized. Hence, the normalisation of health and safety deviances.

2.5 Factors Promoting Health and Safety (HS) Risks Normalisation in construction

Deviance normalisation occurs when entities in an organisation continue and becomes used to certain deviant behaviours, which is no longer consider as deviant, even though, that behaviour is inconsistent with laid down rules for basic safety (Randy, 2017). A conscious decision of repeating as normal a risk that has not been injurious in the short term; thus, leading to accepting as standard the deviant conduct is known as risk normalisation (Jennings, 2016). Deviance normalisation is also known as risk normalisation. In order to meet the task deadline, employees take shortcuts and these are sometimes tolerated or ignored by their line manager (supervisors).

This attitude continues uncorrected and without caution, until it becomes a normal occurrence; even when it could lead to an unsafe act or even an accident. According to

Randy (2017), normalisation of deviance is the reason why some organisations have better health and safety performance more than the other. On a construction site, team's health and safety performance and even productivity differ as a result of deviance normalisation. Health and safety is every stakeholder's responsibility, thus management, tradespeople and other project stakeholders are guilty of normalisation of deviance. This could be the reason why Jennings (2016) submitted that the acceptance of risks that were not acceptable originally could happen to a worker, a team or an organisation. The acceptance of deviance is a very slow (Jennings, 2016), gradual and conscious process.

Over time, organisations have cultivated the habit of tolerating well-known risks that had not caused harms previously (Jennings, 2016).

1. The culture of placing more emphasis on productivity over safety, and indiscipline and lack of adherence to safety practices are key contributors to the normalisation of risks (Randy, 2017). Deviance normalisation hinders the effective practices and implementation of occupational health and safety in construction organisations. HS risks normalisation is common among inexperienced employees as implied by (Szóstak, 2019). Szóstak (2019) found that employees with fewer years of work experience, often fall victim of accidents on-site as a result of; inadequate of occupational health and safety (OHS) training, working without medical fitness examinations, working with medical contraindications, ignorance of the principles and provision of OHS, inadequate concentration on activities being performed, inadequate experience, poor professional preparation as regards activity performance, ignorance of task execution with a work permit. It was also submitted that employees of less than 30 years (20 to 29year) of age, are most prone to safety issues.

2. Occupational health and safety risk normalisation are promoted by factors such as lack of training, prioritization of production over safety, inadequate manpower, employees attitude, planning issues, employees demands, not seeing benefits in prevention, defensiveness of employees, low literacy, language barriers, lack of management commitment to OHS, insufficient resources, organisational health and safety culture, lack of technical support (Masi *et al.,* 2014; Whysall *et al.,* 2006; Barbeau *et al.,* 2004; Champoux and Brun, 2003). In Australia, Ying *et al* (2015) identified cost, time and lack of awareness as the major groups of factors hindering the performance of small construction companies in health and safety practices. The basic factors according to Ying *et al.* (2015) include the absence of financial benefit in OHS investment, limited expertise, poor bargaining power, tight project deadline, long training and education time, underestimation of safety risks, fragmented nature of construction industry, and inconsistency of health and safety legislation.

3. Belayutham and Ibrahim (2019) investigated the barriers and strategies for better safety practices of Malaysian construction SMEs and found that the key barriers to good safety practices are the cost of implementation, insufficient safety culture, and client lack of commitment to safety issues. Sunindijo (2015) grouped the factors that support HS risks normalisation into client demands, negative perception towards safety, Lack of safety knowledge and safety training and Poor safety culture. It was submitted that client interest is in getting an organisation that will deliver the project at the lowest cost possible, without due consideration to safety (Wadick, 2010). Thus, SMEs are under economic and competitive pressure to survive in the industry. The survival instinct makes most SMEs into placing less emphasis on safety but prioritize keeping a good relationship with their clients

(Ozmec *et al.,* 2014). The high health and safety implementation cost and the extra resource involved (Floyde *et al.,* 2013), have influenced the safety culture of most SMEs.

4. Sunindijo (2015) the leadership and management of SMEs do not perceive safety as a priority, as such is not committed to its implementation. The responsibility for the control of safety risks is placed in the H&S of the tradespeople who are majorly not full-time staff; they are usually blamed for any accidents or injury (Lingard and Blismas, 2013). Ozmec *et al.* (2014) aver that the poor employees' attitudes to health and safety exacerbate because of the absence of commitment from the management of small organisations. Another reason HS risks normalisation subsists in the construction industry is the negative perception by the owners of SMEs. Small construction companies' owners consider safety regulations and improvement as financial stress that is excessive and unattainable (Hasle and Limborg, 2006), this, however, hinders effective health and safety practices (Zhou *et al.,* 2013). Even with full knowledge of the harmful consequences of poor safety performance on the finances of the organisation, they still do not see reasons to eliminate OHS risk normalisation (Okolie, 2014). Jørgensen *et al.* (2011) posit that the sole-owners the SMEs do not have basic health and safety knowledge and as such do not appreciate the benefits of safety.

5. It was further submitted by Hasle *et al.* (2010) and Wadick (2010) that safety training is considered insufficient to obtain the needed safety knowledge that will develop the right attitudes to safety practices. Most trade works are simple and repetitive; thus, the risks involved are often underrated and are perceived to be part of the work (Champoux and Brun, 2003). The factors supporting the HS risks normalisation are the abuse of safety equipment and items, deliberate ignorance in

the use of personal protective equipment, inadequate working space, and deviation from normal safety rules (Arunkumar and Gunasekaran, 2018). Shafii *et al.* (2019) found that the major problems affecting OHS performance of construction sites are attitude of workers, poor budgetary allocation, absence of safety policies enforcement, weak management support and awareness and understanding issues regarding occupational safety. In order of relative importance, Kadiri *et al.* (2014) found that the key factors that promote HS risks normalisation include lack of attention from management leaders, recklessness, poor safety conscientiousness of managers, use of non-certified skilled tradespeople, lack of training, poor equipment maintenance weak enforcement of safety regulations, unstable organisational commitment to safety.

6. According to Williams *et al.* (2019), the top causes of HS risks normalisation are; absence of personal protective equipment, faulty and unsafe equipment, absence of training, low consciousness of employees to safety, Unsecured process of handling materials and equipment, inexperienced project manager and /or tradespeople, tiredness excess workload by workers, poor and unsafe workplace conditions, lack of willingness to invest on safety by management, lack of compliance to safety regulations and Insufficient housekeeping program. Major contributors to health and safety deviance normalisation are profit insatiability of contractors, the misconception that investment in the impact project budget, ignorance of workers, poor site and organisation management, need to meet the project deadline, lack of safety training, and inadequate safety experts (Zahoor *et al.,* 2015; Rizwan, 2012)

2.6 Labour performance

An effective performance management action is an important tool for employee motivation for optimal performance. However, it is not an enough condition for effective performance management. The most important issue with any performance management system is how critically it is taken and how devotedly it is used by managers and employees (Nduka, 2016). Performance management is all about perfection, synchronizing, upgrading to create value for and from customer with the result of economic value creation to stockholders and owners. The expansion of performance management is clearly very large, which is why performance management must be viewed within an enterprise as a tool to improve on employee motivation for high performance (Obiekwe, 2016). Efficient management of performance requires a strong apprehension of the performance domain. That is, apprehending the obligation and projects that are part of the job description within a company or organization. Once you have a full skills of what the job requires, you have the basis for assessing and enhancing performance. This is the foundation for assessing and improving performance within a company. When this is lacking, the outcome is a missing link in evaluating employee performance and the possibility of improving on the employee performance within the organization.

2.6.1 Building Project Performance

There is a strong relationship between project management and project performance because good performance is a reflection of good project management practices. This is because the characteristics of the building industry are such that a project is often a major business endeavor representing a major investment by the developer. Performance can be considered as an evaluation of how well individuals, groups of individuals or organizations have done in pursuit of a specific objective (Ailabouni *et al*, 2012). According to Kuruga (2017) performance relates to such factors as increasing

profitability, improved service delivery or obtaining the best results in the organizational activities. He described performance in building construction projects as the production of acceptable and quality projects. The accomplishment of construction projects or any other task measured against present known standards of accuracy, completeness, cost, and speed. Health and safety of the workers and the surrounding community is also a parameter for measurement of the degree of success of achievement of expected outcome of a construction project. Wangui (2015) noted that in spite of the great importance of individual performance and the increasing use of job performance as an outcome measure in empirical research, relatively not much effort has been spent on clarifying the performance concept. Project performance thus can be said to be the degree to which the project meets its overall objectives. This compares with project management performance which is the degree to which the traditional objectives of cost, time and quality are met (Kuruga, 2017). However, these objectives may vary significantly, but they generally geared toward satisfying the principal owner of the project, customers, employees and society as a whole.

2.6.2 Type of Labour and Performance

Building Construction performance is measured on various indicators, among them Labour Productivity. The American Association of Cost Engineers defines productivity as a "relative measure of labour efficiency, either good or bad, when compared to an established base or norm." Productivity is defined by the following equation:

$$\psi = \frac{V}{L} \qquad 2.1$$

Where:

ψ = average labour productivity

V= value added

L= labour employed

The Building and Construction Sector Productivity Taskforce sees productivity as a way to measure performance of construction labour. Durdyeu and Mbachu (2011) noted that Labour productivity is one of the most serious factors that affect the physical progress of any building project while Ailabouni *et al.* (2012) defined productivity as the ratio of output of required quality to the inputs for a specific production situation.

2.6.3 Type of Labour and Performance of Building Projects

Labour costs are key consideration when evaluating the overall costs of a building project. Two major categories of labour are manual or mechanized. Direct manual labour costs are a bit hard to economise on as demand of additional workers increases as the project progresses. Using machines can be faster but then the amount paid as day wages to either of the two options ultimately would determine the labour cost impact on the value of the project. Construction is a very labour intensive industry as well as a craft based activity and the behaviour of people who work here has an enormous influence upon the firm's performance in the projects they are involved in. For construction industry to have sustainable development there has to be not only focus on sustainable innovation on construction materials and building technologies but also on good and objective labour management strategies. The employed Workers have to be treated as valuable unreproducible resource with vulnerable and hardly predictable behavior.

However this research finding does create a gap in as far as while material and building technology is advancing the choices for the project executing team to either use hand or mechanised labour increases, a decision which may make a huge difference in the performance of the project in various ways. Wells and Arthur (2010) noted a shift between how workers in the construction industry are enlisted compared to other sector. This because the majority of construction firms tend to favour casual labourers as opposed to

permanent which then may complicate the use of machines with such weak engagements. According to Waris, *et al.* (2014), the utilization of mechanized equipment increases construction productivity and as well as reduces the dependency on foreign labour. Mechanisation has been described as the application of machines in carrying out a task. The level of mechanisation defined as the number of plants and equipment employed or the number of activities carried out by mechanical plants in an operation (Idoro, 2008).

However, a large amount of Construction Company's capital is also invested in procuring this equipment.

In Nigeria due to high unemployment rate majority of the young people find day jobs as casual labourers in construction sites as means of survival. This thus provides cheap Labour to the project developers. However, quality of work becomes a concern. Kuruga (2017) noted that informal construction workers are exposed to machine methods only occasionally, when contractors and/or owners of development hire items such as concrete mixers and poker vibrators. With these findings it's therefore needful to review the current choices between mechanised and manual and the overall influence of the choice of type of labour on the performance of a building project.

2.7 Strategies for Eliminating Health and Safety Deviance Normalisation on Construction Projects.

1. Commitment

"Safety first" should be the mantra in any organization at all times, not just when it is convenient. Top management must recognize and reward employees who are accountable for safety measures in both their actions and communications (Randy, 2017).

2. Discipline

The most successful companies integrate safety into their operations and create a formal process that does not encourage cutting corners and breaking the rules. Managers should hold employees accountable for deviation from the rules (Eze *et al.,* 2020).

3. Prevention

Safety-first companies do not wait for injuries and accidents to happen. They should use proactive (leading) indicators to avoid problems.

4. Participation

Employees should not just be part of the safety culture. Employees should be the safety culture by being active participants in hazard prevention.

For aspiring safety professionals, the key to creating a culture of safety is by pursuing a bachelor degree in occupational health and safety that will promote professional growth and deep understanding of the field (Jennings, 2016).

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Research design

This chapter entails the way the research was carried out as well as the tools that were used in conducting the investigation, so as to address the problems listed and achieve the stated objectives of the research work in chapter one. A research design is the programme that guides the investigators in the process of collecting analysis and interpreting observations (Cresswell and Plano, 2011). The essence of this study is to assess the impact of health and safety deviance normalisation on the labour performance of construction projects in Abuja. The research type for this design was descriptive survey. This research involved the generation of data in quantitative and qualitative form, which can be subjected to rigorous quantitative and qualitative analysis in a formal and correct fashion. This approach can be further sub-classified into inferential, experimental, and simulation

approaches to research. The research comprises a literature survey which was undertaken to provide background information on health and safety deviance normalisation on labour performance in construction projects. The information collected thereafter was used to design a questionnaire, which was the primary sources of data collection for this study.

3.2 Population of Study

The population of this study includes construction companies in Abuja. With the view of the respondents to includes architects, quantity surveyors, builders, engineers, artisans, and labourers working in the built environment in Abuja. Professionals in these fields were selected based on their experience and level of involvement in their various companies. It is believed that the information from them was authentic and served a useful purpose for achieving the objective of the study. The register of Abuja's business directory has 255 construction firms registered business addresses. This makes up the population size for the study.

3.3 Sample frame

The sample frame of this study includes construction firms with active construction sites in Abuja, as data was sourced from site managers working on the construction sites. This is because the site managers are more informed about the site operations and workers in a construction project.

3.4 Sample size

A sample size whose characteristics represent the entire population is selected from the population using sampling techniques. Wimmer and Dominick (2011), opines that "larger populations permit a smaller sampling ratio for an equally good sample because as the population size grows, the returns in accuracy for sample size shrink." These proportions

are ideal and reasonable because no fixed percentage is ideal; rather, sample size is determined by the circumstances surrounding the study situation (Uji, 2009).

The sample size for the study was 155, based on the Krejcie and Morgan (1970) Table. On Krejcie and Morgan (1970) table, the representative sample size for a population of 255 is 155. Since the population size of 250 is the nearest number to 255 on the Krejcie and Morgan (1970) Table shown in Appendix 1, then the sample size for this population size (155) was adopted for this study.

3.5 Sampling Techniques

The goal of sampling is to provide a realistic means of enabling the data collection and processing component of research to be carried out. Therefore, convenience sampling technique was adopted for this study. Giving its efficient, proximity, willingness of participation in the survey, available time and the simplicity in implementation.

3.6 Instrument for data collection

3.6.1 Questionnaire

The instrument used for data collection in this study is a questionnaire, which was designed by the researcher. It was used to extract information from the respondents on the major causes of health and safety deviance normalization, evaluate the level of application of health and safety practices by construction companies and find solutions to eliminate health and safety deviance normalization. The questionnaire was divided into parts, namely sections A and B. Section A extracts information on the personal data of the respondent, while Section B contains items directly related to the research questions of the study. The questionnaire was administered on labourers who were actively working on the construction sites.

3.6.2 Observation

The observation schedule was also being prepared, basically to record observations made by the researcher during the field work.

3.7 Method of data presentation

Descriptive Analysis: under which tables, charts, and figures were used to analyse the data collected from the field survey? This study employs the use of descriptive and inferential statistics. Objectives one, two, and four were analysed using descriptive statistics using frequency, percentage, and relative index of importance. Objective three was analysed using spearman rank correlation to show the relationship between the causes of health and safety deviance normalisation and labour performance. Table 3.1 shows the summary of methods of data analysis.

Table 3.1: Summary of Method of Data Analysis

S/N	Objectives	Data Collection Instrument	Method of Analysis
i.	Identify the major causes of health and safety deviance normalisation	Questionnaire	Relative Importance Index (RII)
ii.	Evaluate the level of application of health and safety practices in construction projects	Questionnaire	RII
iii.	Determine the relationship between the causes of health and safety deviance normalisation and labour performance; and	Questionnaire/Interview	Spearman's Rank Correlation
iv.	To suggest strategies for eliminating health and safety deviance normalisation	Questionnaire	RII

Source: Researcher's Survey (2021)

3.8 Tools for data analysis

Percentiles: These are ratio used in rating a number of factors according to the degree of occurrence attached to them. The higher the percentage rating, the higher the importance or significance attached to such factors. Percentiles helps to allocate values between 0 and 100.

Therefore, P= (n ×100)/N Where P

=percentage of factors n=size of the

factor under consideration

N=total size or population

The formula for Relative Important Index is written as

$$Relative\ Important\ Index\ (RII) = \frac{\sum P_i\ U_i}{A\ x\ N}$$ **Decision Rule for Spearman Rank Correlation Analysis**

This is a non-parametric test that is used to measure the degree of association between two variables. The following formula is used to calculate the spearman rank correlation.

$$\rho = 1 - \frac{6\sum_i^{d^2}}{n(n^2-1)}$$

Where:

ρ = spearman rank correlation

di = the difference between the ranks of corresponding variables n

= number of observation

i. P test:

The decision rule here states that:

- If P value is < 0.05 significance level, then relationship is significant
- If P value is > 0.05 significance level, then relationship is not significant **ii.**

Coefficient of Correlation (R):

The decision rule here states that:

- If R ≥ 50% (0.5) then Correlation is strong.
- If R < 50% (0.5) then Correlation is weak.

CHAPTER FOUR

4.0 RESULTS AND DISCUSSION

4.1 Profiles of Respondents

Profiles of respondents in the study area are discussed below. Section 4.1 shows the results of profession, years of experience, staff strength, and type of construction handled, and average cost of construction undertaken, respectively.

4.1.1 Demographic characteristics of the respondents

The profession of the respondents, as shown in Table 4.1, reveals that a majority of 38% of the respondents are professionals.

Table 4.1: Demographics Characteristics of Respondents

Variables	Frequency	Percentage (%)

Profession of the Respondents	Professional	57	38.0
	Artisans	51	34.0
	Labourers	42	28.0
	Total	**150**	**100.0**
Years of experience	Less than 10 years	48	32.0
	10-20 years	60	40.0
	20 years and above	42	28.0
	Total	**150**	**100.0**
Staff strength	5- 10	18	12.0
	10- 15	63	42.0
	15- 20	39	26.0
	20 and above	30	20.0
	Total	**150**	**100.0**
Type of construction handle	Industrial construction	9	6.0
	Heavy civil construction	42	28.0
	Building construction	99	66.0
	Total	**150**	**100.0**
Average cost of construction	50 million	21	14.0
	100 million	84	56.0
	500 million	45	30.0
	Total	**150**	**100.0**

This category includes those who are architects, quantity surveyors, builders, and engineers. This was followed by 34%, who were artisans, and the remaining 28% accounted for the respondents who were labourers. This implies that this study cut across all the personnel involved in construction, both the skilled and unskilled labour. Table 4.1 shows the years of experience of the respondents. The findings revealed that a majority of the respondents (40%) had between 10–20 years of experience in their various professions, while 32% had less than five years of experience, and the remaining 28% had 20 years or more of experience. This implies the respondents have enough experience in the construction industry to understand the impact of health and safety deviance normalisation on labour performance in construction.

The staff strength of each of the sampled 150 construction firms shows that the majority (42%) of the firms had between 10 and 15 staff members, 26% had between 15 and 20 staff members, 20% had 20 or more members, and the remaining 12% (18) of the firms

had between 5 and 10 members (see Table 4.1). This implies that the majority of the sampled construction falls into the category of small and medium-scale enterprises. The type of construction handled by the sampled construction, as shown in Table 4.4, revealed that a majority of 66% of the firms handled building construction projects, 28% handled heavy civil construction, and the remaining 6.0% handled building construction projects. This implies that the majority of the sampled firms are into building construction. The findings from the field survey, as shown in Table 4.1, revealed the average cost of construction undertook by the sampled construction companies. The findings revealed that 56% of the companies undertake construction projects of 100-million-naira worth, 30% undertake construction projects of 500-million-naira worth, and 14% undertake projects of 50-million-naira worth.

4.2 Major Causes of Health and Safety Deviance Normalisation

The study identified fourteen (14) major causes of health and safety deviance normalisation. The result of the MIS on the major causes of health and safety deviance normalisation is presented in Table 4.2

Table 4.2 Major Causes of Health and Safety Deviance Normalisation

Causes of Health and Safety Deviance	Mean	Rank	Decision
Prioritization of production over safety at construction site	4.52	1st	Most important
Lack of training of labour	4.38	2nd	Very important
Employees attitude towards work	4.36	3rd	Very important
Inadequate manpower at construction site	4.28	4th	Very important
Planning issues during construction process	4.08	5th	Very important
Employees demands	3.80	6th	Very important

Lack of technical support to labour at site	3.60	7th	Very important
Not seeing benefits in prevention labour force	3.52	8th	Very important
Language barriers between employer and employee	3.50	9th	Very important
Defensiveness of employees, and low literacy among labour	3.40	10th	Important
Poor organisational health and safety culture	3.06	11th	Important
Insufficient resources at construction site	2.98	12th	Important
Focusing of monthly safety meetings on employees' attitudinal change towards safety	2.96	13th	Important
lack of management commitment to OHS	2.94	14th	Important
Average	*3.67*		*Very important*

The major causes of health and safety deviance normalisation were gauged through the use of Mean Score analysis. The results of the analysis revealed that the major causes of health and safety deviance normalisation in construction projects in Abuja are prioritisation of production over safety at construction sites, lack of training of labour, and employees' attitude towards work, which were ranked 1st, 2nd, and 3rd, with mean score values of 4.52, 4.38, and 4.36, respectively. Conversely, the least identified causes of health and safety deviance normalisation were insufficient resources at construction sites, the focussing of monthly safety meetings on employees' attitudinal change towards safety, and lack of management commitment to OHS, which were ranked 12th, 13th, and 14th with a mean value of 2.98, 2.96, and 2.94, respectively. It was observed that these factors were the major causes of health and safety deviance normalisation in construction projects; all fourteen causes had a mean score (MS) ranging between 4.52 and 2.94, with an average mean score of 3.67, which implies the identified causes are important.

4.3 Evaluate the level of application of health and safety practices in construction projects;

The study identified six (6) levels of application of health and safety practises in construction projects undertaken by the workers and management (average MIS = 3.85). The result of the MIS on the level of application of health and safety practices in construction projects is presented in Table 4.3.

Table 4.3: Level of application of health and safety practices in construction

Level of application	Mean	Rank	Decision
Poor safety communication among workers	4.54	1st	Very effective
Poor safety training among workers	4.52	2nd	Very effective
Poor worker's involvement in safety	3.80	3rd	Effective
Poor safety promotion policies for workers	3.74	4th	Effective
Poor safety rules and procedures for workers	3.58	5th	Effective
Poor entrepreneur's commitment to health and safety practices	2.96	6th	Moderately effective
Average	***3.85***		***Effective***

Table 4.3 shows the effectiveness of the application of health and safety practises in construction projects in the study area. The findings revealed that safety communication among workers was the most effective level of effectiveness in the application of health and safety practises (MIS = 4.54). followed by compliance. Safety training among workers ranked 2nd (MIS = 4.52) and workers' involvement in safety was ranked 3rd (MIS = 3.80). Safety rules and procedures for workers and entrepreneurs' commitment to health and safety practises were ranked 5th and 6th, with a mean value of (MIS = 3.94 and MIS =

3.76) as the least effective application of health and safety practises in construction projects.

4.4 Relationship between the Causes of Health and Safety Deviance Normalisation and Labour Performance

The analysis of the relationship between the causes of health and safety deviance normalisation and labour performance was carried out using Spearman's rank correlation analysis. The result of the findings revealed that there exists a positive, slightly strong and significant relationship between the causes of health and safety deviance normalisation and labour performance. However, the correlation result shows that there is a tendency for improved labour performance by applying the suggested strategies. There is therefore a need for construction firms to intensify their level of compliance with the identified strategies for eliminating health and safety deviation normalisation provisions on building construction sites. The result of the Spearman's rank correlation analysis is presented in Table 4.4. The rank correlation value was positive and slightly strong (0.567). The correlation was therefore found to be significant at the 5% (0.05) level of significance (p = 0.01).

Table 4.4: Results of Spearman's Rank Correlation Analysis

Analysis No.	Variables		Observations		Inferences	
	X	Y	R (%)	P VALUE	Strength of Relationship	Remark
1	causes of health and safety deviance normalisation	daily performance on the ongoing project	0.567	0.01	Strong	Significant

4.5 Strategies for Eliminating Health and Safety Deviance Normalisation The study identified six (6) strategies for eliminating health and safety deviance normalisation by the workers and management (average MIS = 4.09). The result of the MIS on the level of application of health and safety practices in construction projects is presented in Table 4.5.

Table 4.5: Strategies for eliminating health and safety deviance normalisation

Strategies	Mean	Rank	Decision
Transformation of information into knowledge by the workers	4.3400	1st	Effective
Compliance with health and safety standards by the workers	4.3200	2nd	Effective
Application of good process safety culture by the management	4.1200	3rd	Effective
Routine management review of metrics, and audit findings by the management	4.0600	4th	Effective
Implementation safe work practice by the management	3.9400	5th	Effective
Ensuring a period of organizational self reflection regarding process safety performance by management	3.7600	6th	Effective
Average	4.09		Effective

Table 4.10 shows the strategies for eliminating health and safety deviance normalisation in construction projects in the study area. The findings revealed that the transformation of information into knowledge by the workers was the most effective strategy for eliminating health and safety deviance normalisation (MIS = 4.34). Following that, compliance with health and safety standards by the workers was ranked 2nd (MIS = 4.32) and the application of a good process safety culture by the management was ranked 3rd (MIS = 4.12). Implementation of safe work practises by the management and ensuring a period of organisational self-reflection regarding process safety performance by management were

ranked 5th and 6th, with a mean value of (MIS = 3.94 and MIS = 3.76) as the least effective strategies for eliminating health and safety deviance normalisation.

4.6 Summary of Findings

Based on the results of data analyses undertaken in this study, the following are the major findings:

i. The findings revealed that majority 66% of sampled construction companies are into building construction projects.

ii. The findings revealed that over 50% of the sampled construction handled an estimated between 100million -500 million construction projects on yearly bases. iii. The study identified fourteen (14) major causes of health and safety deviance normalization. all fourteen causes had a mean score (MS) ranging between 4.52 and 2.94, with an average mean score of 3.67, which implies the identified causes are important.

iv. The study identified six (6) levels of application of health and safety practices in construction projects undertaken by the workers and management (average MIS = 3.85). The findings revealed that safety communication among workers was the most effective level of effectiveness in the application of health and safety practices (MIS = 4.54). followed by compliance. Safety training among workers ranked 2nd (MIS = 4.52). Entrepreneurs' commitment to health and safety practices was ranked 6th, with a mean value of (MIS = 3.76) as the least effective application of health and safety practices in construction projects.

v. The result of the Spearman's rank correlation analysis revealed that there exists a positive, fairly strong and significant relationship between the causes of health and

safety deviance normalisation and labour daily performance. 5% level of significance ($p = 0.01$; $r = 0.567$).

vi. The study identified six (6) strategies for eliminating health and safety deviance normalisation by the workers and management (average MIS = 4.09). The findings revealed that the transformation of information into knowledge by the workers was the most effective strategy for eliminating health and safety deviance normalisation (MIS = 4.34). Ensuring a period of organisational self-reflection regarding process safety performance by management was ranked 6th, with a mean value of (MIS = 3.9 MIS = 3.76) as the least effective strategies for eliminating health and safety deviance normalisation.

4.7 Discussion of Result

The findings revealed that a majority of 66% of the firms handled building construction projects, 28% handled heavy civil engineering construction, and the remaining 6.0% handled industrial construction projects. This implies that the majority of the sampled firms are into building construction. The results of the analysis revealed that the major causes of health and safety deviance normalization in construction projects in Abuja are prioritization of production over safety at construction sites, lack of training of labor, and employees' attitude towards work, which were ranked 1st, 2nd, and 3rd, respectively. The findings of this study corroborate the findings of Belayutham and Ibrahim (2019); Jaroenroy and Chompunth, (2019); Surienty, (2012) on various causes of health and safety deviation normalization. The findings revealed that safety communication among workers was the most effective level of effectiveness in the application of health and safety practices (MIS = 4.54). The findings of this study corroborate the findings of Zahoor *et al.* (2015) and Rizwan (2012) that reveal that the major contributors to health and safety deviance normalization are profit insatiability of contractors, the misconception that

investment in the impact project budget, ignorance of workers, poor site and organization management, the need to meet the project deadline, a lack of safety training, and inadequate safety experts. The findings revealed that the transformation of information into knowledge by the workers was the most effective strategy for eliminating health and safety deviation normalization (MIS = 4.34). The findings are in line with the findings of Randy (2017) and *Eze et al.* (2020) that suggested transformation of information into knowledge by the workers, compliance with health and safety standards by the workers, and application of a good process safety culture by the management as the most significant strategies for eliminating health and safety deviation normalization.

CHAPTER FIVE

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

Normalisation of Deviance (ND) is when a deviation from an agreed standard or working practice becomes incorporated into a routine. In view of this, the study assessed health and safety deviance normalisation of construction projects in Abuja, Nigeria, with the view of suggesting strategies for eliminating health and safety deviance normalisation. A total of 155 copies of the questionnaire were administered, and 150 copies were returned and used

for data analysis, with a response rate of 97%. The analysis of the data was carried out with the use of percentage, mean item score, and Spearman's rank correlation analysis. The results of the analysis carried out led to the conclusions made in this chapter.

Then the study identified the major causes of health and safety deviance normalization. The study was able to evaluate the level of application of health and safety practices in construction projects and also determine the relationship between the causes of health and safety deviance normalization and labor performance. The study concludes that there is a low level of occupational health and safety policy application and performance in the construction industry. This poor health and safety performance is caused by HS risk normalization promoted by factors such as prioritization of production over safety at construction sites, lack of training of labour, employees' attitude towards work, inadequate manpower at construction sites, planning issues during the construction process, employee demands, and lack of technical support to labour at the site.

5.2 Recommendations

As a result of the conclusions made in this study, the following were recommended:

i. Equally Prioritization of Health and Safety and also production at construction sites.
ii. Implore Construction companies to formally include Health and Safety training for all their employee quarterly.

iii. Safety awareness campaigns that target the construction industry's SMEs, who account for the bulk of construction enterprises, in order to allay their concerns and dispel their misunderstandings about the need of investing in safety.

iv. It is important to formalize and put into effect structured health and safety policies and programs.

v. Translate and provide pictorial representation of health and safety procedure and put up warning and hazards signs at the construction site to serve as reminder to workers.

vi. Do a comprehensive medical check -up for employee at site regularly.

5.3 Contribution to Knowledge

The study has made following significant contributions to the body of knowledge:

i. The study discovered that the most important Cause of Health and Safety Deviance Normalisation of Construction project in Abuja to be Prioritization of production over safety at construction site (MIS = 4.52).

ii. It was revealed that Safety Communication among workers and Safety training among workers are the most effective application of health and safety practices in construction iii. The result of the findings revealed that there exists a positive, slightly strong and significant relationship between the causes of health and safety deviance normalisation and labour performance. 95% confidence limit ($p = 0.01$; $r = 0.567$).

5.4 Areas for Further Studies

In the light of the limitations of this study, the following areas are suggested for further research:

i. A quantitative relationship between the characteristics of construction SMEs and health and safety performance needs investigation.

ii. Assessment of health and safety (H&S) risks normalization in the construction industry

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APPENDIX

APPENDIX I: Sample Size Determination Table

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

COVERING LETTER ON QUESTIONNAIRE SURVEY

Dear Sir/Madam,

Research on: ASSESSEMENT OF HEALTH AND SAFETY DEVIANCE NORMALIZATION OF CONSTRUCTION PROJECTS IN ABUJA, NIGERIA

I wish to request you to contribute to an M. Tech research, which aims at assessing the impact of health and safety deviance normalisation on labour performance of construction projects in Abuja, Nigeria. The research is being carried out at the Department of Quantity Surveying, Federal University of Technology, Minna, Niger State – Nigeria under the supervision of DR A. J. TSADO

As part of this research, a survey is conducted to achieve the following objectives:

i. Identify the major causes of health and safety deviance normalisation; ii. Evaluate the level of application of health and safety practices in construction projects;

iii. Determine the relationship between the causes of health and safety deviance normalisation and labour performance; and

iv. To suggest strategies for eliminating health and safety deviance normalization

It would be greatly appreciated if you would fill the questionnaire as soon as possible. I want you to also note that your responses will be treated confidentially.

Thanks.

Yours faithfully,

USMAN, ABDULLAHI (Researcher)
MTECH/SET/2019/9773
Tel:
Email:

APPENDIX II

Department of Quantity Surveying
Federal University of Technology
Minna – Nigeria

QUESTIONNAIRE SURVEY

ASSESSMENT OF HEALTH AND SAFETY DEVIANCE NORMALIZATION OF CONSTRUCTION PROJECTS IN ABUJA, NIGERIA

SECTION A: General Profile of Respondents

Please enter your name, position and the details of your organisation.

All responses will be confidential and will not be connected in any way to yourself or your organisation.

Name of organization:……..……

Profession:……

Years of Experience:……. ……

Staff strength of your company:…….

Type of construction projects handle by your firm (a) Industrial construction (b) Heavy civil construction (c) Building construction

What is the average cost of construction your company undertake? (a) Ten million (b) 50 million (c) 100 million (d) 500 million (e) 1 billion and above

Telephone:……

Postal Address:……

Email:……..

NOTE: Health and Safety Deviance Normalisation is a process where a clearly unsafe practice comes to be considered normal if it does not immediately cause a catastrophe: "a long incubation period [before a final disaster] with early warning signs that were either misinterpreted, ignored or missed completely

SECTION A – Identify the Major Causes of Health and Safety Deviance Normalisation

Q1. The study has identified the following as the major causes of health and safety deviance normalisation among construction workers. Please indicate by ticking in the blank spaces provided in the table below, the level of importance of these causes on a five-point scale in your opinion.

S/No.	Major Causes of Health and Safety Deviance Normalisation	5 Most Important	4 Very Important	3 Important	2 Less Important	1 Least Important
1	Lack of training of labour					

2	Prioritization of production over safety at construction site					
3	Inadequate manpower at construction site					
4	Employees attitude towards work					
5	Planning issues during construction process					
6	Employees demands					
7	Not seeing benefits in prevention labour force					
8	Defensiveness of employees, and low literacy among labour					
9	Language barriers between employer and employee					
10	lack of management commitment to OHS					
11	Insufficient resources at construction site,					
12	Poor organisational health and safety culture					
13	Focusing of monthly safety meetings on employees' attitudinal change towards safety					
14	Lack of technical support to labour at site					

14. Can you kindly rate your daily performance on the going project (a) High (b) average (c) low?

SECTION B – level of application of health and safety practices in construction projects Q2: Listed below are statements related to the effectiveness of application of health and safety practices in construction projects. Kindly use the five-point scale provided to rate the extent of your understanding of the various statements:

Effectiveness rating scale:
5 (VE) = Very effective; 4 (E) = Effective; 3 (ME) = Moderately Effective; 2 (LE) = Less Effective 1 (NE) = Not Effective

	HEALTH AND SAFETY PRACTICES	**1**	**2**	**3**	**4**	**5**
		VE	**E**	**ME**	**LE**	**NE**
1	Entrepreneur's commitment to health and safety practices					
2	Safety training among workers					
3	Worker's involvement in safety					
4	Safety communication among workers					
5	Safety rules and procedures for workers					
6	Safety promotion policies for workers					

Section C: Strategies for Eliminating Health and Safety Deviance Normalisation Q3. Listed below are statements related to the strategies for eliminating health and safety deviance normalisation. Kindly use the five-point scale provided to rate the extent of your understanding of the various statements:

Effectiveness rating scale:
5 (VE) = Very effective; 4 (E) = Effective; 3 (ME) = Moderately Effective; 2 (LE) = Less Effective 1 (NE) = Not Effective

	Strategies for Eliminating Health and Safety Deviance Normalisation	**1**	**2**	**3**	**4**	**5**
		VE	**E**	**ME**	**LE**	**NE**
1	Compliance with health and safety standards by the workers					
2	Transformation of information into knowledge by the workers					
3	Implementation safe work practice by the management					
4	Routine management review of metrics, and audit findings by the management					
5	Ensuring a period of organizational self- reflection regarding process safety performance by management					

6	Application of good process safety culture by the management					