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Exploration of Safety Climate in Nigeria: A Study of Organizations
in Onne Oil and Gas Free Zone

by

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Abstract

Background: In Nigeria, issues of occupational safety and health (OSH) practice are still in early infancy and hence, apparently poor OSH behaviours are common coupled with an underlying varying safety climate. Work-related accidents and death rate in Nigeria are reported to be among the highest in the world, with Onne Oil and Gas Free Zone (OGFZ)hosting most of the organizations with high-risk operations. This critical safety climate is affected by a range of internal and external factors. This study seeks to understand the nature of the safety climate, within the Nigerian context, through an exploration of the Onne Oil and Gas Free Zone, which is the largest conglomerate of multinational companies in Nigeria and a host to 170 oil and gas companies together with construction companies. The nature of work within this site is recognised as being high-risk and therefore the underlying safety climate has increased criticality. More so, there is no known safety climate study on the organisations, thus the study would help close the gap of limited or lack of data on workplace safety, and guide safety policy decisions which are needful and vital for building a good safety climate profile for organizations in the OGFZ, and other organisations in Nigeria.

Aim: The study aimed to identify internal and external factors that influence the safety climate and in so doing explore the overarching climate of the OGFZ.

Methods: Organizations were selected from the 170 companies operating within the OGFZ based on past and current health, safety and environment(HSE) performance data; and were divided into 2 distinct groups of peak and low performing companies. The companies were identified using the OGFZ annual safety assessment reports. A qualitative methodology was employed involving focus group discussion and in-depth interview techniques with employees drawn from twelve (12) companies comprising six (6) good and six (6) poor safety performers. The qualitative data for the study, mainly data from focus group and interviews, were analysed using thematic analysis procedures. The thematic analysis involves identification of key concepts or themes, grouping or categorization of similar concepts or comments, and coding of identified themes or concepts. Data were analysed using NVivo software, which enabled coding of texts and identification of themes in the data from participants' responses. Results of the thematic analysis are presented in tables and appendices showing identified themes and participant responses from which the themes emanate.

Results/Findings: The study found that compliance to safety rules and procedures, employee (personal) commitment and competence are among the factors that keep employees safety at
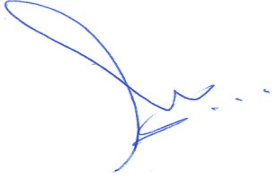
work. Major causes of workplace safety risks and injuries were found to include employee-specific factors such as poor communication of safety information among workers and negligence; management-specific factor such as poor staff training, poor supervision, and provision of inadequate safety equipment and work materials; job-specific factors such as unsafe mechanical and physical conditions and equipment failure; natural factors such as unfavourable weather or climatic conditions.

The findings indicate major internal factors that characterize workplace risks and injury within an organization; such as ineffective safety management in the study area, particularly, poor management commitment to safety standards, especially when involving organization's finances or other resources; and identify negligence or conscious violation of safety standards by organizations' management, employee attitude to safety directives and equipment failure. With highlight on cultural issues, poor motivation or incentives, job insecurity and employee attitude as one of the critical factors that directly influence organizational safety climate and safety performance; the study also identified various factors that influence employee attitude to include: management factor, employee decisions, welfare, experience, belief system, family concerns and health condition of employees. The findings also show that client pressure, economic situation, government policies, insecurity, community influence and family issues are among the most prominent external factors influencing safety climate in the organizations under study. The organizational characteristics affecting safety climate in the study area include management commitment, finance, supervision, disciplinary measures and incentives. However, factors identified as part of the measures taken by organizations to keep people safe at work included training, safety management systems and standard operational procedures and communication as well as motivation, supervision, monitoring, incentives for work performance and policy enforcement.

Conclusion: This study has identified that safety issues in the OGFZ, and by extension, Nigerian organizations, are influenced by local "Nigerian Factors", especially culture and belief system, as well as various internal and external factors that shape the behavioral pattern of their workers. The possible ways to improve the existing safety climate in the OGFZ are thus suggested to include broadly improved management commitment towards safety; employees proper management of stress factors and adherence to laid down safety policies, regulations and procedures; government improved oversight function of ensuring compliance with standard safety regulations by organizations; and non-interference of host communities with organization's safety climate.

Declaration

I confirm that this is my own work and the use of all materials from other sources has been properly and fully acknowledged.

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Emmanuel Effiong Ukpong-Udo

Dedication

To my dear wife, Mrs. Kuseme Emmanuel Ukpong-Udoand children, Michelle, Macaire and Marcella. A special dedication to my father, Apostle Effiong Ukpong-Udo, my sisters (Blessing, Esther, Jacqueline, Utibe, Etieno) and my brother, Kufre Effiong Ukpong-Udo

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CHAPTER ONE

1.0   Introduction

1.1   Overview

Workplace safety remains a global concern. International Labour Organization data estimate that 6,300 people die each day from accidents at work and work place diseases and that there are between 313 and 317 million accidents at work annually (ILO, 2017). These figures however are estimated as many countries have a poor recording history and thus such figures are extrapolated from a myriad of data sets. Irrespective of the accuracy of this data set the figures still highlight a demonstrable need to intervene. One can contend that industrialization, whether by the creation of newer high-risk jobs such as oil and gas extraction or by mechanization of existing roles and provision of high risk equipment, such as used in agriculture and forestry, has exacerbated the situation (Amponsah-Tawiah & Dartey-Baah, 2011).

Okoye *et al*., (2017) suggest that despite the employment of a range of strategic safety interventions, they have failed to yield systemic safety improvement. Whilst their research was focused primarily on construction, the argument holds true for many sectors. According to Dyreborg *et al*., (2015), there is paucity of knowledge of such interventions and programmes that are most efficient in minimizing workplace accidents. Yet it is widely considered that no single safety intervention measure could yield desired results in accident reduction (Adebiyi, 2013); much as there is no standard intervention approach suitable for all contexts and countries (Mohan *et al*., 2006). Despite the observations surrounding the efficacy of programmes, Okoye *et al*., (2017) show that within the last four decades, there has been a convergence of opinions on the integration of different approaches to safety interventions for a high level of workplace safety to be realizable (Mohan *et al*., 2006; Peden *et al*., 2004; Guastello, 1993; Adebiyi & Ajayeoba, 2015). Besides the controversy in what could be the best concept, interventions or measurement of safety within an organization, measuring safety climate is thought to be one of the options to aid understanding of safety in an organization (Vijalapura *et al*, 2018). This fact will be fully explored within the literature review.

A brief history of analysis and intervention

Much of the original works in safety management focused on the accident process and accident causation. The first scientific approach to this was proposed by H. W. Heinrich and has been the basic approach in accident prevention since its publication in 1931 (Wang & Yan, 2019). Heinrich's accident causation model, also called the Domino theory, considered accidents as a sequential process leading to an injury. The factors identified were: Social environment & Ancestry - Fault of the person – Unsafe act or condition – Accident – Injury. The key focus within this model is that accidents were the fault of employees caused either by their knowledge, capacity, education etc or through mishaps, lapses and violations at an individual or group level. This of course neglected the role of environment, management and context in the actions and decision making of the employees.

The traditional approach to accident causality dwelt on technical aspects and design of jobs, legal or human factors; with a path analysis that assumed that compliance with procedures and norms would protect the system from accidents, and that accidents are caused by faulty behavior of workers (Mars, 1996; Zolar, 2003; Mullen, 2004; Almeida, 2006; Dahlen & White, 2006; Okoye *et al*., 2017). This entailed normative approach of safety intervention, which, according to Farooqui (2011), ignored how individual characteristics, groups, and production system process(es) influences workers behavior and possibilities of errors and accident. The approach also fails to consider factors which shape the work environment, such as individual commitments, cultural norms, attitudes, and perceptions of an individual and group (Farooqui, 2011).

The dominoes in the Heinrich model were rephrased and extended by Bird and Loftus in 1976 and referred to as the International Loss Control Institute model to include: lack of control by management: permitting the origins of basic causes (personal and job factors); creating immediate causes of the accident; leading to the direct causes; resulting in loss (Bird & Germain, 1986). What this model pointed to was that there were often latent antecedents to accidents resultant from management failings. Hence rather than focusing entirely on the three 'Es' (engineering, education, enforcement) companies were required to look to systems and management practice.

The above has been supported by a considerable range of emergent accident causation models including the following outlined in Table 1.

Table 1: Summary of accident causation theories

Title	Scope
Human factors theory	Human errors as cause of accidents: Errors categorized as overload, whereby the task is beyond the capability of the worker; inappropriate worker response and inappropriate activities.
Accident/Incident Theory	Extension of human factor theory, in addition to ergonomic traps (i.e. incompatible work stations considered as management failure), decision to err (considered as personal failure) and system failure (considered as management failure in policy, training, etc).
Epidemiological theory	Includes two key components, which, together can cause or prevent accidents, namely; predisposition characteristics (tendencies) and Situational characteristics (peer pressure, poor attitude, risk taking).
Systems theory	Accidents arise from interactions among humans, machines and the environment. This views accidents as a control problem.
Behavioral theory	Often considered as behavior-based safety; with 7 basic principles: intervention; identification of internal factors; motivation to behave in desired manner; focus on positive consequences of appropriate behavior; application of the scientific method; integration of information; planned interventions.
Combination theory	Accidents may not fall under any one model; accident results from factors in several models; one model cannot be applied to all accidents.

Source: Adapted from (CSU, 2011: Section 3)

It is important to note that Table 1 presents only a summary of accident causation theories and does not cover all theories, for example where safety practice is flouted; socio-economic theory, among others.

1.2   Safety Complexity

Creating safe working environment is complex with a myriad of competing, overlapping and conjoined impacts some of which include the role of intuition, individual, group and national identity and culture, workforce demographics, belief and norms, safety antecedents (past practice, serious accidents, leadership), some of which are explored below.

Intuition, which pertains to knowledge without conscious reasoning, is defined by Merriam-Webster (2017) as the power or faculty of attaining to direct knowledge or cognition without evident rational thought and inference. Intuition has been conceptualized in a variety of frameworks and evidence of its practical application within professional environments has been studied (Rosanoff, 1999). In the context of occupational health and safety this can be seen as the anticipation phase in the allied approach used in occupational hygiene in which anticipation is part of anticipate, recognize, evaluate and control (AREC) (OSHA, 1998).   Whilst anticipation can be a planned activity, if is extended to "anticipation" of unforeseen or unknowns then the role of intuition becomes clearer.

The importance of intuition alongside evidence-based therapy in occupational medicine as well as general medicine practice has been increasingly explored; whereby intuition is recognized as a clinical skill and a part of the diagnostic and therapeutic process (Philipp *et al*., 1999). The importance of intuition in safety is widely acknowledged in the literature (Melin-Johansson *et al*., 2017); the favoured impression being that it can guide people to act safely both at the individual and organizational level.

What the above expounds is that safety involves both the organization; its leaders and managers, and employee safety-related attitudes and practices and that this response is not time bounded requiring adaptive responses to changes to operational context, which in turn are influenced by external factors, life cycle of organizations, and other organizational factors etc; which will be explored in chapter 2. What is critical to understand is that such safety-related behavior may be influenced by cultures, beliefs and norms outside the direct control of organizational management (Noort *et al*., 2016).

Occupational safety behaviors can also be influenced by employees' cultural profiles.These culture, beliefs, norms, and ethical issues have a significant and substantial impact on both organizational and individual behavioural intentions and ethical decision making (Robin *et al*., 1996). Different people exhibit different behavioural patterns; and these are influenced by their personal attitudes and diversity in cultural backgrounds or societal norms (Seymen, 2006).

Research shows concurring opinions that people's behavioural patterns are different; and influenced by their personal attitudes and diversity in cultural backgrounds or societal norms (Lee & Green, 1991; Spector *et al*., 2001; Miroshnizk, 2002; Seymen, 2006). Nigeria for instance, is one of the most diverse nations with various ethnic groups distinguished by multicultural backgrounds, religion and diverse belief systems (Aregheore, 2009). This diversity, influenced by various norms and cultures, affects people's behaviours, attitude and perceptions in the country. Whilst Heinrich (ibid) pointed to social ancestry as a factor in accident causation; this in turn has been explored by Hofstede (1980, 1983, 1984, 1991, 1998, 2002, 2005, 2010) and Hofstede *et al.,* (1990). Whilst not without its critics, including Spector *et al*., (2001), McSweeney (2002) and Baskerville (2003), Hofstede suggested that cultural attitudes may naturally influence people's perception at the workplace, especially where there is no established strong safety culture to offset their existing cultural norms as would exist in Nigeria. The theory is expounded in the *Hofstede cultural dimension theory* (Hofstede & McCrae, 2004:61-63). According to Hofstede, *culture is the collective programming of the mind that distinguishes the members of one group or category of people from others;* referring to national culture as concerning the value differences between groups of nations or regions, while organizational culture pertains to differences in practices between organizations and/or parts within the same organization (Hofstede, 2017). Despite the critiques of his model for inadequate empirical description of data and limited characterization of culture (McSweeney, 2002), Hofstede's work has been widely used by researchers to examine cultural differences in organizations (Burke *et al*., 2008; Blanchard & Frasson, 2005; Mearns & Yule, 2009). The provisions of this theory shall be explored in this study considering the constitution and occupational provisions of the OGFZ, which feature different (individual) organizations and comprising nationals from different cultures but which are operating in a national and international context.

Likewise, occupational safety behaviours can be influenced by the organizational safety system, practices and culture. Petitta *et al.* (2017) identified a relationship between safety climate and organizational safety culture. These suggest that workplace safety has a strong relationship with employee's attitude and management dimensions or organizational safety systems (Fogarty *et al.* 2017; Li *et al.*, 2017).

Organizational management practices, technical communication, poor foresight/intuition etc, are principal factors in safety management. Lessons from the March 23, 2005 BP Texas City Refinery accident (CSB, 2007) provide a relevant scenario to explain these views. Investigation reports on the accident implicated deficiencies in technical, personnel and organizational issues amongst the key findings. Investigation identified, among other technical issues, false indications from critical alarms and control instrumentations; lack of supervisory oversight, poor communication, and inadequate operator training program as well as numerous operational lapses that border on organizational safety culture. The report advocated process safety; hence among key recommendations was the examination of the organization's corporate safety management systems and safety culture (CSB, 2007).

Mearns & Yule (2009) posited that the relationship between the workforce safety behaviour and organization's safety climate may be reciprocal, with safer behaviours enhancing a more positive safety culture. Thus, it is not just organizations but big picture national cultures as well as internal cultures and even personal cultures, beliefs and norms.

In studying workplace safety, safety climate has been adjudged one of the useful tools for measuring organizational safety issues (Cooper & Philips, 2004). Safety climate study allows the possibilities of identifying causes of occupational safety issues, and possible measures of preventing workplace injuries. Fogarty *et al.,* (2017) noted that safety climate surveys are important tools for monitoring safety standards; and that workplace errors via both compliance and wellbeing paths are also associated with safety climate.

While management practices influence employees' perception of safety climate, perception of the climate can actually impact on compliant behavior (Chan *et al.,* 2014). Despite investment in occupational safety to enhance the quality of work environment by most organizations, employee-related issues such as perceptions and fear for job security also influence workplace safety, thus raising safety climate issues in most organizations (Amponsah-Tawiah & Dartey-

Baah, 2011:123). On the other hand, the link between management and safety climate and socio-economic factors plays a critical role in safety climate profile of an organization, for instance, management set the pace in an organization and where there is an overriding transactional management approach based on financial payments for high-risk jobs, efficiency incentives and bonuses, there is the incentive to flout safety standards (EU 2011; Health & Safety Laboratory, 2002). This interface could be much prominent in countries with loose safety policies and ineffective government involvement in monitoring of organizations' compliance to safety regulations. For instance, in Nigeria, there are reports of possible inadequacy of compliance monitoring and poor enforcement of safety laws, and reports of under-reporting of industrial or workplace safety issues such as accidents, injuries and death (Soyemi *et al.*, 2016).

1.3   The Nigerian Perspective

Recent studies show that in Nigeria, the issues of occupational safety and health (OSH) practice are still in early infancy (Adeogun & Okafor 2013) and hence, apparently poor OSH behaviours are common (Diugwu *et al.*, 2012; Okolie & Okoye, 2012). This owes in part, to ineffective enforcement of available OSH regulations (Idubor & Oisamoje, 2013) but also affected by individual and supervisor's management views of risks. With a record of work-related death rate among the world's highest (Hamalainen, 2009), these assertionstend to expose the unresponsiveness to responsibility by the stakeholders in the safety regulatory machinery in Nigeria, such as the Federal Ministry of Labour and Productivity, National Council for Occupational Safety and Health of Nigeria, inter alia.

How demographics influence safety attitudes might also be important to note in the Nigerian context, judging that the labour market from where the industries draw their workforce is made up of populations with various characteristics in terms of age, education, marital status and social affiliations. The demographic information such as marital status, number of children provided background knowledge of the demographic identity of the participants in that, by understanding the family responsibilities of participants, this may help to understand risks that they are prepared to take or tolerate. Studies with construction site workers have suggested that older workers exhibit more positive attitudes towards safety (Siu *et al.*, 2003). Masood & Choudhry (2011) outlined personal characteristics found to be related to safety climate perceptions, including age, marital status, presence of dependent family members, education

level, safety knowledge, drinking habits, direct or indirect employer, and breaking safety procedures or not. Fang *et al*. (2006) also reported a statistical relationship between safety climate and demographic characteristics such as marital status and number of family members to support.

A study on the safety culture, policies and practices in a typical Nigerian multinational oil and gas organization showed that the greatest percentage of the workforce were young men within the 31-40 years age bracket (56%) and those between 41 and 50 years of age (20%); with the majority, graduates at first degree/Higher National Diploma (HND) level (24%), and those with lower qualifications such as Ordinary National Diploma (OND) and National Certificate of Education (NCE), (21%), (Efiok *et al*., 2015). Although the study was not explicit on the influence of these demographic indices on safety attitudes, it however showed that workers had a high awareness of organisation's safety culture. The extent of non-compliance to safety policies and practices and the factors responsible for this in the organisation studied (inadequate staff strength, crew fatigue, poor wages, contract labour, inadequate safety training, complacency and high-risk tolerance) provides an understanding of the dimensions of safety climate in most Nigerian companies, especially the multinationals operating in the oil and gas industry (Efiok *et al*., 2015).

According to Noort *et al.* (2016), employee safety-related attitudes and practices may be influenced by national culture, a factor which is outside the direct control of organizational management. It thus raises concern mainly in most developing countries with poor safety facilities, loose safety policies and complex cultural identities, and political challenges that influence occupational health and safety climate (Muchiri, 2003; Nuwayhid, 2004). Like most African countries, Nigeria is a multicultural and widely diverse country, with a population of about 178.5 million people, inhabited by about 478 ethnic groups (World Bank, 2015; Aregheore, 2009). Based on this diversity, one might safely assume that there will be a wide variance in people's perception of safety in various parts of the country. On the other hand, Nigeria like other developing nations face the limitation to effective compliance to safety regulations as a result of poverty and other socioeconomic pressures which might jeopardise the willingness maintain a standard safety climate. This fact can also be deduced from the emphasis by Emetumah and Okoye (2018), which noted that there is no holistic regulatory framework on safety management; enforcement and compliance of safety regulations being

plagued by corruption and ineptitude.

Workers' involvement and beliefs and perceptions have been identified as the safety climate factors that mostly affected workers' attitudes and perceptions towards safety in the Nigerian construction industry (Okoye, 2010). A culture of loose and indifferent institutional management, which promotes poor infrastructural capacity, may be a major factor that influences attitudes and individual performance of the Nigerian worker. In a study that compared fire-fighting strategies of the Nigerian and United Kingdom fire-fighters, Okoli *et al*., (2016) attributed poor safety attitude and ineffectiveness of the Nigerian firemen to weak infrastructural and technological development in the fire service owing to gross neglect of the institution by the Nigerian government.

With a large number of multinational companies, Nigeria, offers a unique lens to explore safety climate. In particular the inter-relationship between imported systems, beliefs and norms, with may have significant longevity in development and operation in an international context, and the values and dogmata of the local workforce. According to Ezenwa (2002), there has been a record of an increase in annual case of fatality in Nigerian factories since 1987, with the coal-petroleum industry having the highest case fatality rate per injured worker. OGFZ, in particular, provides a focused locale to explore the concept of safety climate within a single conglomerate consisting of a large number of multinational companies. In addition, OGFZ has a number of companies involved in a range of potentially risky operations such as oil and gas exploration and extraction, building/construction, food/catering services, machines/heavy equipment operations, shipping and aviation services. These operations and services constitute eminent and potential safety climate concerns.

The overarching position of OGFZ is that it has a strong position on safety owing to its commitment to yearly HSE performance assessment (as highlighted in Section 3.2.1), but despite this strong message of safety at the strategic level, and a coordinated administration with regards to revenue collection, security coordination within the organization, at operational and individual level the position on safety may not necessarily be tacitly cemented into everyday behaviours.

Among the companies within OGFZ, there are multinational firms from various countries, continents and cultures including multinationals from America, Asia, Europe, Middle East,

Nigeria and other African nations(OGFZA HSE Consultative Committee Report, 2018).Based on internal audits within the OGFZ safety climate within Western Run businesses outperform those of their Nigerian counterparts (OGFZA HSE Performance Report, 2017). There are lessons to learn from these companies that can be employed and adapted to the Nigerian context.

Nigerian run business settings seem to have issues with safety climate settings in terms of shared perceptions and actual settings, perhaps as a result of diversity in cultures, economic reasons, porous monitoring of safety regulations and policies (OGFZA HSE Performance Report, 2017). Within the OGFZ, it is noted that the majority of the high risk (and associated high cost) jobs are undertaken by African organizations. Nigerian companies are often subcontracted, the market is highly competitive to get this subcontracted work; that profit margins are squeezed as a result; that management focus on this profit at the cost of provision of a strong safety focus. The position appears to create a 'porous' safety climate modified and affected by internal and external interference including an interplay of individual, organizational and external factors.

There is also a layered complexity arising from the diversity of cultures, having an agreed vision of safety with shared perceptions is more difficult. The cultural and religious diversity in Nigeria affect the arriving at a consensus on a variety of issues, including workplace safety climate in this case. As a developing economy with advances in technology, industrial revolution and various economic opportunities, the country witnesses an influx of multinational companies, people of various cultures and social backgrounds. Coupled with the multicultural and widely diverse religious and social systems in Nigeria, these realities pose complex limitations to achieving a common concept by different organizations in the country. Unfortunately, there seems to be no consensus on any formal legal and social construct that addresses workplace safety climate in the country. Unlike the United Kingdom for example where legal concepts are formed as a result of years of social agreement. In Nigeria, arguably legal system stems more from imposed concepts by other nations and thus one wonders if everyone subscribes to the values behind it. Despite an imposed system of doing things, individuals and organizations face complex constraints in implementing a unified concept towards achieving workplace cultures including safety. Thus, among the novel contributions to knowledge for this study will be to determine if a single safety climate can be measured in

organizations such as those situated in the OGFZ. There may be a benefit in considering a modified more focused ethnographic, group conversation rich approach in order to understand the life of employees.

In addition, considering the employment relationship in Nigeria, there is an influence of trade unions or recognised employee groups. However, there seems to be very negligible impacts due to political perspectives of these groups and the bureaucratic bottle-necks. It is important to note that among the factors that influence employees' safety climate and particularly employees attitude to workplace safety, an improvement in organizational structure and support of trade unions or employee groups for employees in terms of safety issues, would improve workplace safety climate and employees attitude to safety (Walters, 1996; Okun *et al*., 2017). It is, also, contended that if an employee is certain of strong support from the trade union, then the employee might be better encouraged to insist on a better safety climate. Unfortunately, among the major setbacks include the limitations from the legal and political perspectives, and perhaps poor commitment from employee groups towards the course of individual employee's workplace safety problems. On the other hand, where work place safety and individual safety are not deemed critical, or where belief and norm seem to suggest personal safety as a result of the 'grace of god', then it is not likely that the union would follow the social norm of society. Thus, the trade union faces a critical task to help advocate and ensure workplace safety and safety of employees with regards to standard protocol.

This suggests the seeming weakness, poor recognition and influence of trade unions within OGFZ; there is a need for employees to form and consolidate a strong trade union recognized by OGFZ management, and would be able to influence policies and employee behaviour towards ensuring compliance to safety standards by organizations, in order to keep employees safe at work.

This study attempts to identify what constitutes a good and bad safety climate by assessing the attributes of comparatively good and bad safety performing companies. Thus, the study will seek to identify the various internal and external factors influencing safety climate within OGFZ, with a view to suggesting application of a more unified safety climate profile in the study area. It would also be important to consider the influence of organization size on safety climate; for example, if the smaller firms or sub-sub-contractor companies have the poorest

safety record, this is however constrained by the limited scope of this study.

1.4 Historical Perspectives of the Oil and Gas Industry in Nigeria

The oil and gas industry is the prime economic domain for Nigeria, where the nation derives revenues accounting for 25% of GDP and about 90% of foreign exchange earnings. The originals of the oil extraction dates back to 1956, when Shell D'Arcy, a corporate interest of the Royal Dutch/Shell Group of Companies and the British Petroleum Group discovered crude oil in commercial quantity in Oloibiri, a village in the Niger Delta region of the country. Shell made its first oil export in 1958 from a daily production output of 5,100 barrels per day (Ukpong, 2012). The generation of oil revenue thus commenced as other major multinational oil companies joined, with the nation's interest represented by the Nigeria National Petroleum Corporation (NNPC), which has the controlling share under joint venture operations. The Nigerian economy is thus driven by the oil and gas industry, as the focus had since changed from other sources of revenue like groundnut and cocoa to crude oil and gas. Hence government places high premium on the activities in the industry.

The Oil and Gas Free Zone Authority (OGFZA) was established by the Federal Government of Nigeria Act No. 8 of 1996 and is Nigeria's investment promotion agency for hydrocarbon and related businesses into the free trade areas of the country. It has the responsibility of attracting Foreign Direct Investment, managing all the Oil and Gas Free Zones in the country, as well as other activities in the national hydrocarbon industry (Orlean Invest, 2013). The Onne Oil and Gas Free Zone was the first free trade area under the supervision of the Oil and Gas Free Zone Authority and has brought US$6 billion into the country since inception in 1997 (Commonwealth, 2013). An important sector in the Nigerian national economy, especially regarding its employment potential, it is one of the organizations with the largest community of workers, hosting 170 companies, with 6,000 employees operating within the OGFZ complex (Onne Oil &Gas, 2014). It harbours a substantial level of activity of multinational oil companies (MNOCs) in the Nigerian economy; mostly foreign organisations from Europe, as well as the USA, which import their health, safety and environment (HSE) laws to Nigeria.

1.5   Background and Problem Statement

As previously highlighted, the International Labour Organization (ILO) provides statistics of work-related accidents and deaths: An estimated 2.3 million people die annually from work-related accidents and diseases; 313 million non-fatal accidents occur annually, with the loss of over 4% of the world's annual GDP due to occupational accidents and diseases (ILO, 2015). The first study of accidental mortality factors in Nigeria reported 3,183 injuries, with 71 (2.2%) fatal cases and fatality rate of 2.23 per 100 injured workers; over a 10-year period, 1987-1996 (Ezenwa, 2002). This was corroborated by subsequent studies with data from the nation's Federal Ministry of Labour and Productivity Inspectorate Division, 2002-2012 (Umeokafor et al., 2014). Earlier review of 2003 data revealed that at 24 fatalities per 100,000 employees annually, work-related death rate in Nigeria was among the highest in the world (Hamalainen, 2009).

Despite being the largest conglomerate of multinational and high-risk companies, there is no known independent study focused on the OGFZ. The majority of the companies within OGFZ are oil and gas-related, construction firms and shipping companies, which are among high risk organizations (Worksafe, 2017; Park et al., 2018). As earlier noted, the oil and gas industries are among the principal industries in Nigeria, and the OGFZ is their major base. Thus, this study will be significant in providing information useful in determining the existing safety climate of the zone and benchmarking potential improvements over time. The study will provide useful information on factors affecting safety climate in the organizations. In particular, the study will identify internal and external factors affecting safety climate in the study area. The internal factors consist of factors relating to employees safety behaviour and organizational provisions that affect safety environment within the organization, while the external factors consists the interference from government and clients and culture of the people within which the organization operates. Again, it would also be useful to identify positive aspects to build upon, with regards to safety climate in the study area, nevertheless, the focus on constraints follows the limitations of the study and the need to specifically address the threats to occupational safety by identifying the prevailing safety climate constraints and the possible areas that need to be improved in order to enhance safety climate in the study area.

One notable deviation from the literature is the inclusion of qualitative evidence which is a core element of this study. It is notable that most of the safety climate studies in the literature applied quantitative methods utilising safety climate questionnaires. Whilst providing good empirical data, the results of such studies fail to determine the reasons behind these figures. This study employs a deep enquiry through a qualitative methodology within the organisations in the study area. Procedures, applications and significance of the qualitative methodology are discussed in subsequent sections.

1.6   Research Questions

What constitutes organizational safety climate characteristics and what are the constraints affecting safety climate within the OGFZ?

1.7   Research Aim and Objectives

The study is aimed at exploring the internal and external factors that influence safety climate in Nigeria, using the Onne Oil and Gas Free Zone (OGFZ) as a case study. Considering the peak and low safety performance of the organisations, (best and worst safety performers), established by the OGFZ annual safety assessment reports, the study aims to establish the extent to which a variety of factors operating at three layer; macro factors including but not limited to trading environment, government policy, regulation and enforcement, operational level including, but not limited to internal safety leadership, governance, systems, support and involvement of staff, etc, and the employee level including attitudes, beliefs and norms, influence safety climate in the OGFZ.

The specific objectives of this study include the following:
   a) To explore organizational safety climate characteristics and constraints within the OGFZ.
   b) To evaluate internal and external factors affecting organizational safety climate within the OGFZ.
   c) To identify measures taken by employees and organizations to reduce workplace accidents within OGFZ.
   d) To suggest possible ways to improve the existing safety climate in the OGFZ.

1.8   Significance of the study

Onne Oil and Gas Free Zone (OGFZ) is the largest conglomerate of multinational companies in Nigeria. As stated above, OGFZ plays host to over 170 oil and gas, as well as construction firms. Considering the nature of job tasks in these industries, issues of workplace safety become significantly relevant. Unfortunately, there is no known safety climate study on OGFZ, thus this study will close the gap of limited or lack of data on workplace safety in the organizations and would remain an important literary compendium for reference and safety policy decisions. Also, this study will provide information useful for building a good safety climate profile for organizations in the OGFZ, which would be applicable in other organisations in Nigeria.

The findings of this research shall provide further insights into the organizational and individual factors that influence safety climate in Nigeria, using the OGFZ as a case study. Key factors to watch for shall include how the culture of organizations within the OGFZ shapes the attitudes and behaviour towards safety; it shall also help to establish a link between safety climate and safety behaviour within the OGFZ.

The study shall also help to underline the importance of adopting what might be a more adaptive safety approach among Health, Safety and Environment (HSE) organizations within Nigeria, and suggest ways to better communicate and improve safety culture in the country; while contributing to build a stronger safety culture within the OGFZ. A summary of all data collected and analyzed in this study, including historical data, shall be useful in constructing a Safety Climate Profile of the OGFZ. In other words, it is expected that the outcomes of the study would also encourage improved employee's attitude toward preventing workplace accidents. Also, it could contribute to a move away from unitarist management hegemony towards a more pluralist approach to industrial relations at the local and national levels (Fox, 1974).

This would significantly form a basis for the creation of a viable safety climate profile of the OGFZ that could be applied in other organisational settings in the country. A review of relevant literature and theoretical framework of the study forms the subject of the next chapter.

CHAPTER TWO

2.0   Literature Review and Theoretical Framework

This chapter presents a review of relevant literature, and theoretical framework of the study. Areas of literature coverage include, but not limited to, concepts of safety culture, safety behaviour and safety climate, dimensions and measurement of safety climate, factors influencing safety climate and safety climate studies in various industries, national culture, individual beliefs, norms and behaviours.

2.1   Literature Review

2.1.1 Safety Culture, Safety Climate and Safety Behaviour

Safety is the condition or perception of being safe from undergoing or causing hurt, injury or loss (Merriam–Webster, 2015). It can be seen as "*a set of practices constituted by competencies that a person learns through engagement and participation in daily activities*" (Baarts, 2009; Zou *et al.*, 2014: 949). It can also be seen as the management of good design, engineering and operating practice, referred to as process safety (AIChE, 2017). Thus, workplace safety is influenced by a number of factors including design and planning, appropriate installation and engineering controls, organizational provisions to promote safety within an organization and safety behaviour of workers (Zohar & Luria, 2003).

Safety culture and climate: the debate

Since the term *safety climate* was first highlighted by Zohar (1980), there has been decades of growing debate over its definition and concept; yet there is no consensus on a generally acceptable definition (Wiegmann *et al.,* 2002). In the 1990s, safety climate was related to employees' perceptions of safety and management commitment to safety, and workers involvement towards maintaining safety within the workplace (Dedobbeleer & Beland, 1991; Hofmann & Stezer, 1996). Almost a decade after, the definition of safety climate seemed to focus mainly on employees' (workforce's) attitude and perceptions of safety within the organization (Griffin & Neal, 2000; Flin *et al*., 2000; Mearns *et al*., 2000).

Wiegmann *et al* (2002) introduced the concept of safety culture, and viewed safety climate as:

> *"a temporal state measure of safety culture subject to commonalities among individual perceptions of the organization as perceived state of safety at a particular place at a particular time"* (Wiegmann *et al*.,2002:8).

Other studies also view safety climate as a component of safety culture (Choudhry *et al*., 2007; Mohammed, 2003). The Occupational Safety and Health Council (OSHC) (2001) advocated that one of the indicators of a positive safety culture is a good safety climate.

Further literature suggested that the two concepts are distinct, although inextricably linked as argued by Cooper, who stated that: *'safety culture and climate are not reflective of a unitary concept; rather, they are complementary independent concepts'* (Cooper, 2000: 126). Other comparisons include:

- Safety culture being viewed as a much broader concept than safety climate, but a sub facet of organizational culture (Saidin *et al*., 2008).
- Safety climate referred to as people's perceptions of, and attitudes towards safety (OSHC, 2001); and also, as a product of safety culture as evident in employee behaviour and attitudes, (Cox & Flin, 1998).
- Safety climate regarded as the surface feature of the underlying safety culture that assesses work force perception and behavior of the safety procedures in an organization, while safety culture indicates the attitude of individuals or groups that determines their commitment to organization's safety management (Flin *et al.*, 2000).

Despite the contested views, safety climate is shown to share almost the same indicators or dimensions with safety culture (Flin *et al*., 2000: 185-187; Wiegmann *et al*., 2002; 11-12; Abdullah *et al*., 2009: 121). The summary of these views points to safety climate as being strongly defined by two major extremes involving management at one end and employees at the other end; hence, the importance of management commitment and employees' perceptions, as major dimensions of safety climate. According to Choudhry *et al*. (2009), management commitment and inappropriate safety procedures and work practice are significant predictors of workers' perceptions of safety performance. Stated like this, understanding the safety climate of an organization should be relatively easy. However, as stated in chapter one, the determination of any safety climate is affected by safety complexity at the organizational, operational, managerial and personnel level.

Acknowledging the lack of a universal consensus over the use of the terms *culture* and *climate* in the literature, the HSE review drew a distinction that provides clarity, based on Cooper, (2000), that safety culture refers to the behavioural aspects and the situational aspects of the organization; that is, what people do and what the organization has, respectively; while safety climate rather refers to the psychological characteristics of employees (how people feel), which corresponds to the values, attitudes, and perceptions of employees regarding safety within the organization (HSE, 2005). Guldenmund *et al.*, (2009) examined the use and utility of the safety culture and climate constructs, while reviewing various safety climate and safety culture research studies; and inferred that the measurement of safety climate could be considered an alternative safety performance indicator, through accessing informal/tacit understanding of individuals; while assessing safety culture would provide more insight into the particular, more formal attitudes founded upon policies and procedures. Furthermore, a good safety climate should have a laid down safety culture in terms of procedures, environment and implementation and supervision. In other words, employees would learn more from a culture of good safety performance rather than imposed commands that most times would jeopardize workplace safety and safety of individual employees. Informal learning arising from a culture of safety practice in the work place should therefore not be taken for granted. The study by Eraut (2004) found that most workplace learning occurs on the job rather than off the job.

Okoye (2010), stated that safety climate is not synonymous with safety culture, but both have formed the nucleus of organizational climate and culture respectively; while Bergh *et al.* (2013) emphasized that safety culture and safety climate are concepts that receive global attention across industry because good safety culture and safety climate are important in achieving safety in a work place. Fray *et al.,* (2015) later noted that safety climate describes attitudes to safety within an organization, and differs from the safety culture which denotes a strong conviction or dogma that underlies safety attitudes. Despite the lack of consistent distinctions between organizational culture and organizational climate in the literature, there is evidence of concordance that safety climate and safety culture are related but different terms (Hecker & Goldenhar, 2014); but with definitional ambiguity.

Safety Climate
Safety climate had been described as one of the climates that an organization creates (Zohar,

1980). According to Choudhry *et al*., (2009: 891), safety climate is derived from organizational climate, and refers to "*perceptions of policies procedures and practices relating to safety in the work place*" (Choudhry *et al*., 2009: 891). Safety climate research has grown since 1980 (Zohar, 1980); and has over the decades amassed evidence that safety climate is fundamental to improving workplace safety (Glendon & Evans, 2007). Some of the clear-cut definitions of safety climate are those provided by Zohar as "*a summary of molar perceptions that employees share about their work environment*" (Zohar, 1980: 96); or "the shared perceptions with regard to safety policies, procedures and practices" (Zohar, 2003:125); and that from Mearns and co-workers as "*the manifestation of the underlying safety culture in safety related behaviours of employees and in employees' expressed attitudes*" (Mearns *et al*., 2001: 771). It is also termed as a summary concept describing the safety ethic in an organization or workplace which is reflected in employees' belief about safety (Williamson *et al*., 1997). Wills *et al*., (2009) stated that it is the psychological manifestation of safety culture, representing workers' perception of how safety is treated within and by the organization.

Safety climate refers to the degree to which employees believe true priority is given to organizational safety performance, and its measurement is thought to provide an early warning to potential safety system failure (Cooper, 2000). Thus, safety climate becomes a useful tool for ascertaining employee's perceptions of the way that safety is being operationalized. In other words, an employee's safety behaviour in the workplace can be influenced by the way the employee perceives the organizational safety system in terms of safety provisions such as safety training, supervision, support etc. Ausserhofer *et al.,* (2013) opined that safety climate is an important work environment factor that determines safety, although their model failed to confirm this. Despite the argument about the credibility of safety climate as a meaningful social construct, modern research supports safety climate as a viable construct as a predictive indicator of safety related outcomes (Johnson, 2007). Aisley *et al.* (2017), noted that safety climate is associated with the odds for experiencing accidents, thus occupational safety climate is important for measuring risks of accidents and injuries in the work place. Petitta *et al.,* (2017), stated that an understanding of safety climate and culture is important for predicting safety compliance.

Safety climate provides a link between attributes occurring at the individual (employees) level and the organizational level and may be induced by the policies and practices that organizations

impose upon their employees, (Niskanem, 1994). Therefore, safety climate involves safety management systems that incorporate organization's safety approach, workers engagement and improved safety performance toward accident prevention and reduction in workplace injury (Wachter & Yorio, 2014). As noted by Ma & Yuan (2009), there has been evidence through research that lower workplace accident rates were associated with improved safety climates. These opinions are held by others, (Neal *et al.,* 2000), who stated that the safety climate concept appears to have a relationship with safety performance. According to Neal and co-workers, safety climate mediates the effects of organizational climate on safety performance, as measured by self-reports of compliance with safety regulations and procedures, as well as participation in safety-related activities, which were also mediated by employee's safety knowledge and motivation.

Safety Behaviour

Safety behaviour as a concept is thought to be *'affected by the availability and quality of policies, job plans, materials, equipment and manpower as these trigger people's behaviour 'on the job'*, (BSMS, 2014: online). Employees' safety behaviour is believed to be shaped by organizational safety culture (Berends, 1996). These give an insight to the possible correlation between safety culture and minimizing exposure of individuals to injury. Safety culture has a great influence on the attitudes and behaviour of workers (employees), with respect to an organization's safety performance (Cooper, 2000). Hence, to reduce work place accidents and improve safety performance within an organization, it is important to develop a good safety culture at the organizational level that is instilled within employees or workers within the organization (Choudhry *et al*., 2007). This is indicative that the behavioural pattern of workers may be directly influenced by the management policies of an organization. As an example, Aluko *et al*., (2016) reported that a high level of knowledge of safety among Nigerian healthcare workers was at variance with practice; an attitude noted to be largely due to the lack of basic safety equipment. That said, this position is two-way, that is, people would respond to available (or otherwise) safety procedures at the workplace, while safety behaviour of the company could also be affected by employees' behaviour; and this may have implications on the overall safety performance of an organization (Hedlund, 2000).

This two-way interplay between organization and workforce is underscored by Okolie & Okoye (2012) who posit a positive correlation between workers' safe behaviour and safety

climate in a construction site environment; this view further states that workers' safety attitudes are influenced by their risk perceptions, cultural background, risk management, safety rules, and procedures. Thus, adherence to safety behaviours is vital for injury prevention at any risk prone environment (Sumner *et al.,* 2014). According to Luther *et al.* (2008), within the Occupational Safety Council of America (OSCA) process, an element called the CAS (competence assurance solutions) Culture Management Model (CMM) is reported to describe the relationship between an organization's cultural goals and aspirations (Culture), staff attitudes and beliefs (Climate), as well as observational effects (Behaviour and Performance). These debates accentuate the argument developed in chapter 1 surrounding safety complexity.

2.1.2 Dimensions of Safety Climate

Studies on safety climate have shown an imprecise line of agreement or disputes over the dimensionality, factor structure and measures of safety climate across industries (Bosak*et al*., 2013; Glendon & Evans 2007). Reviewing the literature on dimensionality of safety climate, Bosak *et al*., (2013) acknowledged the two school of thoughts of safety climate as a uni-dimensional latent variable (Neal *et al*., 2000) and as multidimensional (Cooper & Phillips, 2004; Zohar & Luria, 2005).The work of Dov Zohar in 1980 was the first publication on safety climate study, which developed a model for its assessment. In his studies across various Israeli industries, Zohar developed a set of measurable factors that reveal shared perceptions of the organization's safety climate, to include; importance of safety training, effects of required work pace on safety, status of safety committee, status of safety officer, effects of safe conduct on promotion, level of risk at work place, management attitudes toward safety, and effect of safe conduct on social status (Zohar, 1980; Hecker & Goldenhar, 2014).

Hecker & Goldenhar (2014) noted that literature on safety climate studies have apparent inconsistency in definitions and core set of safety climate factors. Indeed, it is suggested that the factor structure cannot be reproduced across industry lines; and various measures have been developed after Zohar (Dedobbeler & Beland, 1991; Brown and Holmes, 1996; Cox & Cheyne, 2000). Hence Christian *et al*., (2009) averred the inexistence of a universal model or definition and conceptualization of safety climate and its underlying key dimensions. Glendon & Evans (2007) agreed that there is yet no consistent factor structure; and this, according to Seo *et al*.,

(2004) is due to failure to specify the influence of two critical safety dimensions, namely, management commitment and supervisor support.

A review of research on safety climate dimensions by Glendon & Litherland (2001) identified six factors namely: communication and support, adequacy of procedures, work pressure, personal protective equipment, relationships, and safety rules. Mohamed (2002) projected nine factors: management commitment, communication, safety rules and procedures, supportive environment, workers' involvement, personal risk appreciation, appraisal of work hazards, work pressure, and competence; while Fang *et al*., (2006) listed ten dimensions: safety attitudes and management commitment, safety consultation and safety training, supervisor's role and work-mates' role, risk taking behavior, safety resources, appraisal of safety procedure and work risk, improper safety procedure, worker's involvement, workmate's influence, and competence. Flin *et al*., (2006) listed the most common safety climate features in the industry as *Management/supervisors, safety systems, risks, work pressure, competence, and procedures/rules*. Some studies showing these commonalities and inconsistency in safety climate features were listed by Abdullah *et al*., (2009); Table 2(page 35).

In their safety climate study on construction site workers, Choudhry *et al*., (2009), by factor analysis extracted two factors; which were confirmed by Multiple Regression to be significant predictors of workers' perceptions of safety performance: *management commitment and employees' involvement, and inappropriate safety procedures and work practices* (Masood & Choudhry 2011: page 3). Flin *et al*., (2004) identified four dimensions in the healthcare sector to include factors related to Management's commitment to safety, supervisor's commitment to safety, job demands and safety systems. Yet the most common safety climate features in health care are Management/supervisors, safety systems, risk perception, job demands, reporting/speaking up, safety attitudes/behaviors, communication/feedback, teamwork, personal resources (e.g. stress), and organizational factors (Flin *et al*., 2006).

Table 2: Summary of Dimensions of safety climate from various studies

Studies	Safety Climate Dimensions
Zohar (1980)	Importance of safety training programs, management attitudes toward safety, effects of safe conduct on promotion, level of risk at workplace, effects of required work pace on safety, status of safety officer, effects of safe conduct on social status, status of safety committee.

Brown & Holmes (1996)	Management concern, management activity, risk perception.
Cox & Cox (1991)	Personal skepticism, individual responsibility, work environment, safety arrangements, personal immunity.
Dedobbeleer&Beland (1991)	Management commitment, worker involvement
Cooper (1995)	Management commitment, management actions, personal safety commitment, perceived risks level, effects of work pace, belief about accident causation, effects of job induced stress, safety training, role of safety representatives.
Budworth (1997)	Management commitment, supervisor support, safety systems, safety attitudes, safety representatives.
Williamson et al., (1997)	Personal motivation for safe behavior, positive safety practice, risk justification, fatalism/optimism.
Cox &Cheyne (2000)	Management commitment, priority of safety, communication, safety rules, supportive environment, involvement in safety, personal priorities and need for safety, personal appreciation of risk, work environment.
Cheyne et al., (2002)	Communication, individual responsibility, safety standards and goals, personal involvement, workplace hazards, physical work environment.
Salminen&Seppala (2005)	Organizational responsibility, workers' concern about safety, workers' indifference in regards to safety, level of safety actions
Huang et al., (2006)	Management commitment, return-to-work policies, post-injury administration, safety training.
Hsu et al., (2007)	Organizational level: top management commitment, reward system, reporting system, resource allocation. Management level: safety training, safety activities, safety management. Team level: communication, coordination, cooperation in a work team. Individual level: Safety performance such as safety awareness, safety attitude and safety behavior.
Lyu et al., (2018)	Safety management commitment, safety resources, and safety communication; Employee involvement and workmate's influence; and Safety rules, procedures and risks.

However, in the midst of the seemingly dissenting views there are points of consensus among the individual researchers in the industries. Seoet al., (2004), had earlier asserted that the differing tones in subsequent literatures were not significantly different from Zohar's posits; as they clustered into five core factors namely; management commitment to safety, supervisory safety support, co-worker (safety) support, employee (safety) participation, and competence level. Notably, some themes are commonly assessed by different studies. In a review of 18 pieces of research carried out in the industrial sector, Flin et al., (2000) identified five most common themes assessed in safety climate questionnaires as: Management / supervision, safety

system, risk, work pressure and competence. However, this review excluded studies from non-industrial sectors, such as retail, clerical, and health.

Similarly, Bosak *et al*., (2013) noted that three safety climate dimensions have high frequency and regularity in safety climate studies: management commitment to safety, perceptions of the priority to safety in the workplace, and pressure for production (Mearns *et al*., 1998; Zohar, 2002; Cooper & Phillips, 2004). These dimensions, according to Bosak *et al*., (2013), capture competing organizational domains and consistency between policy and practice and are predictive of unsafe behaviour. The researchers employed a modification of the Offshore Safety Questionnaire (OSQ) (Mearns *et al*., 1993; Fleming, 2001) to examine the interactive relationship between the three dimensions of safety climate and their impact on risk behaviour reported by employees of a South African chemical manufacturing organization. All dimensions and risk behaviour were measured and analyzed at the individual level. The study demonstrated the direct and interactive effects of safety climate dimensions on risk behaviour. The study was however limited in that it considered only three dimensions of safety climate and only one measure of unsafe behaviour.

2.1.3 Measurement of Safety Climate

Earlier approach to safety measurement were based on retrospective data, also termed "lagging indicators", such as fatalities, lost time accident rates and incidents, used especially by high risk industries. However, with improvement in safety and reduced rate of mishaps, especially in high reliability organizations (HRO's), recent studies are focusing on predictive measures based on "leading indicators", such as safety audits or safety climate measurements, which, are thought, could monitor safety conditions and reduce accidents (Flin *et al*., 2000; Mohamed, 2002; Ma & Yuan, 2009; O Connor *et al*., 2011). There of course is a moral argument that leading indicators seek to prevent incidents, whereas lagging indicators have to await the negative outcome of such an incident.   Many researchers agree that safety climate investigations are more sensitive and proactive basis for developing safety, rather than reactive information from accident rates and accident/incident reports (Seo *et al*., 2004; Kines *et al*., 2009).

A variety of options are available for measuring safety climate, yet the main approach is by means of standardized questionnaires (Gehring *et al*., 2015). The typical approach, as stated by Masood & Choudhry (2011), is the use of factor analysis (FA) to identify an underlying

structure for questionnaire items, and a cluster of obtained factors is interpreted as scales, factors or dimensions of safety climate. A survey approach is often used; this is known to be the most common evaluation technique for safety-critical factors, with anonymous participants (Abdullah *et al*., 2009).

Different instruments have been developed and applied in different industrial settings. However, the validity of the instrument is an important index to consider; and this includes construct validity and discriminate validity. Construct validity is said to be the extent to which the questionnaire measures what it is designed to measure, while discriminate validity has to do with the ability of the tool to differentiate between organizations or personnel with different level of safety performance (O'Connor *et al*., 2011). Studies on safety climate measurement have documented general inconsistency in factor labeling and item contents (Flin *et al*., 2000; Seo *et al*., 2004). Kines *et al*., (2011) noted the lack of safety climate instruments that could be validated in different contexts. Abdullah *et al*., (2009) reported acceptable internal consistency reliability, content validity, construct validity and concurrent validity for the Safety Climate Assessment Scale (SCAS) for the healthcare sector. Flin *et al*., (2006) examined some instruments used in measuring safety climate in the health care sector, for content validity, factor structure and internal reliability, and criterion-related validity; and noted the lack of explicit theoretical underpinning in most instruments and absence of standard psychometric criteria in some. They suggested more consideration of psychometric factors in the design of healthcare safety climate instruments. O'Connor *et al*., (2011) in a review of safety climate studies in the aviation industry showed that the available aviation safety climate instruments had some construct validity, but their discriminate validity could not be established. The researchers thus recommended focus on establishing the construct and discriminate validity of existing safety climate questionnaires rather than constructing more of such. This corroborates an earlier view by Guldenmund (2000) who posited that rather than develop new safety climate measuring instruments, focus should be on validity of the construct and its suitability to indicate an organization's safety performance.

While the use of a global measure of safety climate has been suggested (Griffin & Neal, 2000), some recent studies have employed factor structure replication across different industries, whereby the existence of some generic features of safety climate could be ascertained (Cheyne

et al., 1998; Torner *et al.*, 2002; Seo *et al.*, 2004; Pousette *et al.*, 2008). However, it has been opined that despite the overabundance of instruments to measure safety climate or culture, there is need to further refine climate scales and items (Glendon (2008).

Masood & Choudhry employed a 40-item questionnaire to investigate the safety climate on Pakistani construction sites, through a survey around 36 diversified project sites. The study identified underlying factors which affect safety climate using factor analysis technique; and safety performance and safety climate factors were studied using multiple linear regression analysis. The researchers identified two critical safety climate factors affecting respondents' perceptions of safety performance on construction sites as management dedication and employee's involvement, as potential dimensions.

In healthcare, safety climate measurement provides a guide to improve initiatives and conduct quality assessments, as it is assumed that a high level of safety climate builds the basis for the provision of safe care to patients (Gehring *et al.*, 2015). It has been suggested that safety climate questionnaires should achieve a high standard of measurement to enable healthcare managers use the resulting data to design effective management systems and interventions (Flin *et al.*, 2006). Some of the applicable instruments available are Safety Attitudes Questionnaire (SAQ), (Sexton *et al.*, 2006), Safety Climate Survey (SCS), (Sexton & Thomas, 2003; Shteynberg *et al.*, 2005). Gehring *et al.*, (2015) remarked that HSoPS and SAQ are probably the most frequently used questionnaires on an international level; while the SCS, being the shortest in length, provides the advantage of time saving during completion and is a one-dimensional scale unlike others, a factor that makes it useful for purpose of cross-cultural transfer (Perneger *et al.*, 2014; Pfeiffer &Manser, 2010). The SCS would enable organizations gain information about the perceptions of frontline clinical staff about safety in their clinical area and management's commitment to safety (IHI, 2017). Using the SCS in a sample of healthcare professionals for the first time in Switzerland, (Gehring *et al.*, 2015) noted that it was a valuable measurement instrument of safety climate in Swiss hospital units.

Another measuring instrument is the Nordic Safety Climate Questionnaire, NOSACQ-50, (Kines *et al.*, 2011), a multi-level, multifaceted instrument which consists of 50 items across 7 shared perceptions, including; management safety priority, commitment and competence;

management safety empowerment; management safety justice; workers' safety commitment; workers' safety priority and risk non-acceptance; safety communication, learning, and trust in co-workers' safety competence; workers' trust in the efficacy of safety systems. NOSACQ-50 is said to be valid for predicting safety motivation, perceived safety level, and self-rated safety behavior; with ability to distinguish between organizational units through significant differences in safety climate. Its results can be useful in cross-sectional studies for benchmarking within and between countries, multinational organizations, companies, departments and groups; and in longitudinal studies such as evaluation of effects of safety climate interventions (Kines *et al.*, 2011).

A study employed a modified instrument with 21 items (Lin *et al*., 2008) to explore the level of safety climate in Chinese manufacturing enterprises using 144 enterprises (34 large enterprises and 110 Small and Medium Enterprises, SME's (Ma & Yuan, 2009). The researchers developed a 6-factor structure model, classifying Lin *et al*'s 21 items into: Employees' safety, management support, risk judgment, safety communication, employees' safety competency, and safety training. The study, which identified weak safety climate in China's manufacturing enterprises also reported results of a one-way ANOVA showing lower mean of the safety climate scores of SME's (3.48 against 3.74) and indicating significantly worse safety climate of SME's than that in large enterprises, with a mean score of population safety climate of 3.60. The results also showed that employees had strong perceptions of employees' safety competency and employees' safety commitment, but weak perceptions of safety communication and safety training.

Studies on safety climate in aviation, railway and the road transport sectors have also demonstrated the validity of some instruments. Wills *et al*., (2009) employed various instruments to investigate the relative influence of safety climate upon the driver safety in the organizational fleet setting; including a modified version of the Safety Climate Questionnaire (Glendon & Litherland, 2001), Safety Climate Questionnaire-Modified for Drivers (SCQ-MD), used to measure safety. The SCQ-MD contained 35 items on a 5-point Likert Scale (from 'Never / 'Not at all' to 'always') representing six safety climate factors; communication, work pressures, relationships, driver training, management commitment and safety rules. They used Driver Behaviour Questionnaire (DBQ) (Lawton *et al*., 1997), to measure work-related driver

behavior and intention. The DBQ consisted of 29 items, which were measured using a 6-point Likert Scale (from 'Never' to 'Nearly all the time'). Higher scores on any of the items indicated safer behavior. Glendon and Evans (2007) discussed the use of 34-item questionnaire, measured on a 5-point scale, for a survey towards developing a rail safety climate measure in Australian Railways. Some of the popularly used safety climate instruments in the aviation industry include the Command Safety Assessment Survey (CSAS) (61-item), Baker (1998) revised survey (35-item), and Patankar (2003) survey (50-item) (O'Connor *et al*., 2011).

Most recent studies still point to the fact that safety climate does not have a consensus parameter for its measurement. Safety climate has been measured by a number of indices including perceptions, values, belief system, management factor, intuition, etc. In Nigeria a lot of the evidence of safety concepts including safety climate is based on western practices. Having been colonized by Britain, a lot of organizational procedures were developed based on western protocols. With recourse to the various intervening factors affecting safety climate in Nigeria due to the country's multicultural diversity, this study will help to highlight if this impacts differently to current body of knowledge.

Practically, safety climate has been developed in Western run business settings and it needs adapting for Africa or more particularly Nigeria. Nigeria offers a unique lens to explore safety climate. As a developing country, Nigeria compared to western nations lacks legal, cultural and political concepts to promote safety climate in the workplace. Unlike most advanced countries, Nigeria has poor safety records culture, including the maintenance of accident records, and a poor culture of reporting safety incidents (Afolabi *et al*, 2016; Agwu & Olele, 2014). Ishola (2017) also identified lack of accurate records, and poor regulations and control among workplace management issues in Nigeria. In the study of fatalities in the Nigerian construction industry, Agwu & Olele (2014), noted that safety situation is worse in Nigeria in terms of fatal industrial accidents, compared to the European Union (EU), USA, Japan, UK and Ireland. Specifically, OGFZ with a large number of organizations records varying safety standards with obvious worrisome poor safety performance indications by a significant number of organizations. The safety indicator scores for OGFZ are presented in Table 3: Section 3.2.1 and Appendix 8. Organizations in Nigeria are faced with various intervening factors affecting safety climate and other safety concepts. These include internal and external factors, institutional and intuitional, belief system, cultural norms, etc.

Different studies have used different approaches and frameworks in the study of safety climate. For instance, Dedobbeleer & Beland (1991) tested three safety climate models with particular emphasis on management and workers' involvement in safety matters. Soh *et al*., (2016), applied the Safety Attitudes Questionnaire (SAQ) short form was used to quantify nurses' perceptions of safety climate and benchmarked against international data, and generalized linear mixed models were used to explore factors that may influence safety climate.

According to Flin *et al.,* 2000, there has been a movement away from 'lagging' measures of safety based on retrospective data, such as lost time accidents and incidents, towards 'leading' or predictive assessments of the safety climate of the organization or worksite. A number of different instruments have been developed by industrial psychologists for this purpose, resulting in a proliferation of scales with distinct developmental histories.

Curran *et al.,* 2018 emphasized that safety climate measurement is a common and feasible method of proactive safety assessment, but there is no consensus on which instrument is the best to use. Zhang *et al*., (2018) in their Traffic safety climate study used exploratory factor analysis and confirmatory factor analysis to confirm a three-factor (external affective demands, internal requirements and functionality) solution of the traffic climate scale. Avramchuk & McGuire (2018) in their patient safety climate (PSC) study used developed a model with four distinct, reliable factors: Assistance from others and the organization, leadership messages of support in policy and behaviour, resources and work environment, and error reporting behaviour, with a PSC score, ranging from 0 to 100, was generated for each organization. Cheng *et al*., (2018) applied a multi-level safety climate survey in their study of a Taiwanese steel industry, where group-level safety climate scores were correlated to occupational accident rates. vanMelle *et al.,* (2018), adopted the Transitional patient safety Climate Evaluation (TRACE) questionnaire by adjusted existing questionnaires on patient safety culture.

A conceptual framework can also be derived from empirical observation and intuition (inductive). According to Gehring *et al.,* 2015, there are different ways of measuring safety climate which includes qualitative approach (e.g. interviewing, observation) and by means of standardized questionnaires (qualitative approach). So rather than just setting up the use of

safety climate tools and concepts, to which for Nigeria and Onne specifically may not pick up all the issues, this study seeks to apply a different position, approach and framework to the determination of safety climate in Nigeria/Onne. Most studies reviewed in literature focused on individual organizations or various companies at different locations, and in different cultural backgrounds from Nigeria. Also, they employ quantitative approach using already available safety climate tools; and notably, there has been limited application of these to the oil and gas industry. There is paucity of safety climate research in the Nigerian context. The present research which focuses on a major industrial cluster, that the OGFZ is, sets to fill these gaps.

Thus, this study is designed to focus mainly on a three-step framework including evaluating how internal and external factors influence safety climate in Nigeria using OGFZ as a case study; identifying what constitute organizational safety climate characteristics; and identifying constraints affecting safety climate profiles within the OGFZ. These frameworks would involve qualitative approaches as already stated.

2.1.4 Factors influencing Safety Climate

Safety climate is influenced by various factors. In this study, emphases are focused on two major categories of factors, which are internal and external factors. The internal factors consists factors related to the employee and the organization; that influence safety climate or shape the perception of safety or safety performance within the organization (Chinda, 2014). Li *et al.* (2019), highlighted these factors to include safety attitude, management safety commitment and job stress; and recommended that managers should reinforce safety commitment; provide adequate safety equipment to prevent accident in the organization. The organizational influence on safety climate will differ in terms of attitude and commitment to safety, safety policies, response to safety issues and measures taken to influence safety within the organization. These differences also depend on the structure of the organization and the targets of the organization (Amponsah-Tawiah & Mensah, 2015).

On the other hand, the external factors have great influence on the organization, which affects both employees and organizational behaviour and actual safety practice (Adeleke *et al.,* 2018). The external factors include legislation, public or client influence, trade unions, financial institutions, insurance firms, economic and commercial stakeholders (Hughes & Ferrett, 2009).

Nevertheless, whether internal or external factors, the two main outcomes of these factors are; either positive or negative, for instance, workers' unsafe action can cause work accident, while their positive attitude to safety can promote safety in the work place (Berek *et al.,* 2019; Wang *et al.,* 2019). These factors can be portrayed differently and have varying magnitude of impact on safety climate.

Employee attitude are among the vital indices of safety climate (Cox & Cox, 1991). In many industry sectors around the world, it is widely acknowledged that one major cause of accidents can be attributed to human error; experts have attributed about 90% of industrial accidents to human error (Shotwell, 2013). However, it is notable that the term human factor is not limited to employee failings and encompasses the latent reasons behind the human errors including management practice, resources, culture and leadership amongst many others. According to Reason (1990) error encompasses all those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome, and these failures cannot be attributed to the intervention of some chance agency. The traditional viewpoint on human error considers it as a cause of failure or accident, while the modern view, which is a philosophical approach, considers human error as a symptom of failure, which is a reflection of the deeper problem existing in the system; and it has been shown that organizational factors, such as penalizing human error, can influence employees' behavior causing them to make errors (Chikudate, 2009); Salminen, 2017). Accidents caused by human error can be reduced by redesigning the job to make it simple; improving the equipment design, and redesigning the procedures to make them clear, concise and easily understood (Brazier, 2017).

Dejoy *et al*., (2003) recorded among the factors that influence organizational safety climate to include environmental conditions, safety related policies (safety policies), programmes and general organizational climate (communication and organizational support). According to Zohar & Luria (2003), supervisory safety-oriented interaction also affects employee's safety behavior and safety climate scores. With regards to organizational factors affecting safety climate, Heffernan (2011), identified negligence or 'wilful blindness' as a common corporate issue with managers of organizations, especially within those in senior management positions. It has been noted that safety training influences safety climate in an organization. Jafari *et al*., (2014) used the guide to safety climate tool recommended by the UK Health and Safety Executive (HSE) in a cross-sectional study to assess the safety climate at two construction sites; and noted that safety training can improve the level of safety climate and its relevant factors.

Increase in safety climate scores among the two sites after safety training and safety climate promotion caused by safety training were recorded. The significant increase in mean scores of the following safety climate factors were noted: management commitment, safety training, and safety communication, employee involvement in safety, permit system, safety rules and rule breaking. The results corroborated earlier studies which proved that effective safety programs can change workers' unsafe behavior (DePasquale & Geller, 2000; Cooper & Phillips, 2004).

A study by Luria *et al.,* (2008), identified visibility as an important moderator in supervisory-based safety intervention, which can increase workplace safety. Zohar (2015) found that safety motivation is capable of reducing workplace injuries. In a study to assess how workplace intervention could enhance the workgroup safety climate and workers' safety behavior in the healthcare system, Leiter (2010) showed that interventions could influence the attitudes and behaviours of participants. The author used the Creating a Safety Climate (CSC) Intervention, which includes a series of meetings where ways of enhancing the safety climate in individual /respective units were discussed by employees; identifying issues and setting goals for improving the safety climate in their unit.

The effect of safety climate can also depend on its complementary climate identified as work-ownership climate, and distant leadership style (Zohar, 2008; Zohar, 2014). McFadden *et al.* (2015), recorded that safety climate is directly related to improved safety outcomes. Wills *et al.*, (2009) investigated the relative impact of safety climate upon self-reported measures of work-related driver safety including; current work-related driver behavior, future work-related driving intentions, and past crash involvement while driving for work. The study identified a moderate relationship between safety climate perceptions and the safety of current driver behavior at work and also with the safety of future driving intentions. The researchers also reported the significance of safety climate as a predictor of current driver behavior and of future driving intentions as well.

Li *et al.,* (2017) reported that safety management and safety personnel support significantly influence safety climate, highlighting safety procedure and policy as the most important safety climate indicators. According to Mullen *et al.,* (2017), leadership serves as a moderating variable for achieving workplace safety; in particular, employer safety obligation positively

associates with employee's safety outcomes. Alternatively, as recorded by Fogarty *et al.* (2017), safety climate has both direct and indirect association with reporting employee's behavior. Petitta *et al.,* (2017) noted that safety climate is bounded by certain safety culture, identifying a complex relationship between safety climate and organizational safety culture, such that organizations with particular safety cultures have the likelihood to develop more (or less) positive safety climates. There is an indication that adequate communication of safety knowledge and policy in an organization will enhance employees' safety behavior (OSHC, 2000:7). These suggest that safety climate can also be affected by management dimensions.

It is evident in literature that safety climate can be influenced by different individual and organizational factors, including environmental conditions. On the other hand, so much has been recorded about employee and management related factors which in a broader perspective constitute internal factors affecting safety climate, but there is scarce information on external factors or what constitute external factors capable of influencing safety climate to which this study also seeks to identify. The research studies cited here were conducted in the developed or developing nations where a lot of indices such as culture, social and economic factors are different from what is obtainable in the Nigerian society. The current research shall identify such possible outcomes with reference to the Nigerian context.

2.2   Theoretical Framework

In order to analyze the internal and external factors affecting safety climate within organizations it is necessary to set out the theoretical model employed in selection of the companies to be involved in the study. In particular it is critical to gain insight into the safety climate in a range of good and poor performing organizations. This requires a clear determination of what constitutes "good" and "poor" performing companies. To achieve the aim of this research, which includes highlighting what constitutes a good or bad safety climate within the OGFZ, the study considered key safety performance indicators in selecting "good" and "poor" performing companies including the following; lost time injuries (LTIs), fatalities, medical treatment case, first aid case, restricted work case, fire, spill/pollution, and road traffic accident. It follows that companies with indicator scores of zero (0); indicating no safety-related incidents; such as absence of LTIs or fatalities for the three-year period under review are considered as good performing companies, while those with comparatively high scores;

indicating high total recordable and undesirable safety incidents were considered as poor performing companies. The distribution of companies based on HSE performance scores is presented in Table 3; Section 3.2.1.

2.2.1 Research Approach

To achieve the objectives of thisresearch, the study focused on the qualitative methods in order to explore and respond to the research questions. Qualitative methods involve utilizing multiple methods, such as in-depth interviews, case studies, focus groups and the grounded theory (Creswell *et al*., 2007; Ritchie & Lewis, 2012). Kho *et al*., (2005), also highlighted that different methods may be employed to achieve goal of safety climate survey, for instance, in-depth individual interviews and focus groups provide detailed insights about individual and collective perceptions, although these methods are time-consuming and resource-intensive, while self-administered surveys can also help to understand institutional perceptions of safety culture. The methods of data collection are discussed in Section 3.3 and 3.4.

2.2 Qualitative Approaches

The qualitative research approach involves exploring the contextual meanings ascribed by an individual or group to issues, such as human problems, environmental issues, social problems, policies and concepts (Creswell, 2014). The qualitative approach employs data collection tools including focus group discussion, interviews, conferences and analysis of company and other documents, and allows the researcher the opportunity and freedom in providing or assigning personal meanings and interpretations to people's comments and texts, (Ritchie & Lewis, 2012; 220). The methodology for this research is guided by this theoretical framework to afford the retrieval of objective and unbiased views, perceptions and concerns of the respondents (participating employees) on the subject of interest. The analytical procedures are presented under the research methodology.

2.2.3 Grounded Theory and Thematic Analysis

Grounded theory forms part of the underlying theory for the qualitative approach of this study, to enable the application of a systematic set of procedures to arrive at a conclusion or inferential

theory about the subject matter. The concepts of the grounded theory explore the application of thematic analysis, and involve identification of important themes (and sub-themes) from data collected from a survey which covers people's opinion, or experiences about a particular issue (Saldana, 2013: 51). Grounded theory methods consist of systematic, yet flexible guidelines for collecting and analyzing qualitative data to construct theories 'grounded' in the data themselves (Charmaz, 2006:3).

Thematic analysis is based on the concepts of the grounded theory, and involves drawing themes and categorizing qualitative data towards developing key concepts and in most cases sub-themes that represent people's opinions, beliefs and preferences, often presented using a thematic chart (Saldana, 2013:175; Ritchie & Lewis, 2012: 222). According to Braun and Clarke (2006), 'thematic analysis method involves identifying, analyzing, and reporting patterns (themes) within data. A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set'. To arrive at these themes or categorization, comments or texts are often coded either manually using the MSWord Excel or using the computer-aided qualitative data analysis (CAQDA), which enhances the coding process using computer software such as NVivo and MSExcel programme (Saldana, 2013). This study uses the NVivo to identify the prevalence of themes from the qualitative data, as stated in the subsequent section.

CHAPTER THREE

3.0   Research Methodology

The study was carried out within Onne Oil and Gas Free Zone (OGFZ) in Onne, Rivers State, Nigeria. The study focused on organisations and particularly assessed (based on international OSH good practice) the safety climate within the OGFZ, using a variety of tools and methods as discussed in the subsequent section.

In the course of this research, a number of factors would have been established as being either internal or external to the OGFZ, with the same being analyzed from a hypothetical approach against safety practices to attempt to determine if there are any influences of these factors on the attitudes and safety behaviours for employees of companies operating within the OGFZ. The research seeks to understand how stakeholders construct their knowledge and understanding of health and safety, and how this influences practice in the OGFZ.

This study employs a combination of different approaches. It involves qualitative procedures constructed based on underlying theories that would enable basic analysis of the data. The analytical framework for the qualitative data is based on the grounded theory, which would enable critical interpretation of people's opinion, and identification of important themes from the data (Alvesson & Skoldberge, 2000; Saldana, 2013: 51), as explained in Sections 3.3. Data, including socioeconomic and demographic statistics of the respondents were analyzed and presented using basic descriptive statistics (including percentages, tables, graphs and charts).

3.1   Study Area

The study was carried out within Onne Oil and Gas Free Zone (OGFZ) in Onne, Rivers State, Southern Nigeria. There are 170 companies, with 6,000 employees operating within the OGFZ complex (Onne Oil & Gas, 2014). The companies are in various areas of operation within the oil and gas/maritime sector; including oil and gas production, oil and gas servicing (including cementing services, tubular services, drilling, subsea services), logistics and freight, shipping, pipe coating, environmental waste management, engineering services (civil construction, fabrication) and tank farm storage. A list of the companies is attached as Appendix 1.

3.2   Population and Sample Size

The study aimed to explore the beliefs, experiences, perceptions and practices of the workforce of the various OGFZ stakeholders and organizations operating within the Free Zone, and focused particularly on assessing the safety culture and climate within the OGFZ. The population of the study included employees of the various companies within the OGFZ. The 170 companies operating in the OGFZ were appraised in terms of past safety performance and from this peak performing and low performing companies were identified. The companies were identified using the OGFZ annual safety assessment reports. Twelve (12) companies comprising six (6) good and six (6) bad safety performers were involved, from where study samples for the in-depth interview and focus groups were drawn.

3.2.1   Selection of Companies

Selection of companies for this study involved use of quantitative data (secondary data), which include HSE performance data of all companies within Onne Oil and Gas Free Zone Authority (OGFZA). The companies were selected from different sectors, consisting construction companies, food processing companies and the oil and gas companies. The companies were all multinational companies, consisting both Nigerian owned companies and foreign multinational companies. The list of companies in the OGFZ is attached as Appendix 1.

The HSE performance data was presented by OGFZA HSE Consultative Committee with the title; *HSE Committee Report on Analysis of key performance indicators (KPI) for the 2013-2017* (Appendix 7).

The report consists of eight (8) key performance indicators including the following; lost-time injury (LTI), fatality, medical treatment case, first aid case, restricted work case, fire, spill/pollution, and road traffic accident. Performance scores are assigned to each indicator, with total yearly scores for each company. Companies were selected using the total yearly HSE performance scores as presented in the report. As indicated in Table 1 and Figure 1, twelve (12) companies were selected for this study using the OGFZA HSE performance scores. These consist of six (6) good safety performing companies and six (6) bad safety performing companies. The criteria for selection of good and bad safety performing companies were

guided by the HSE performance indicators scores within a three-year period (2015, 2016 and 2017). Thus, companies with comparatively higher safety performance scores (number of safety incidents) for a period of three years under review were considered bad safety performing companies. On the other hand, companies with indicator scores of zero (0) for the three-year period were considered as good safety performing companies. Zero HSE performance score indicates that the company recorded no safety related case under the eight safety indicators assessed. Based on these criteria, the following companies were selected for the study, as presented in Table 3 below.

Table 3: Distribution of Companies based on HSE Performance Scores from Total Recordable and Undesirable Incidents (2015 – 2017)

S/N	Company name	Performance Indicators Score			Average Score
		2015	2016	2017	
A. Good Safety Performing Companies					
1	Company A1	0	0	0	**0**
2	CompanyA2	0	0	0	**0**
3	Company A3	0	0	0	**0**
4	Company A4	0	0	0	**0**
5	Company A5	0	0	0	**0**
6	Company A6	0	0	0	**0**
B. Poor Safety Performing Companies					
7	Company B1	47	54	33	**45**
8	Company B2	45	33	33	**37**
9	Company B3	41	30	30	**34**
10	Company B4	33	30	32	**32**
11	Company B5	31	19	19	**23**
12	Company B6	17	17	27	**20**

Source: Computed from OGFZA HSE Consultative Committee Report, 2018.
Note: Alphanumeric pseudonyms were used for company names as the OGFZA HSE report 2018 is yet to be in public domain.

3.3   Methods of Data Collection

Data collection procedures for this study involved collection of qualitative data. The rationale for the methods chosen for this study is discussed under the respective methods as presented in the subsequent subsections below. The framework showing data collection procedures is presented below.
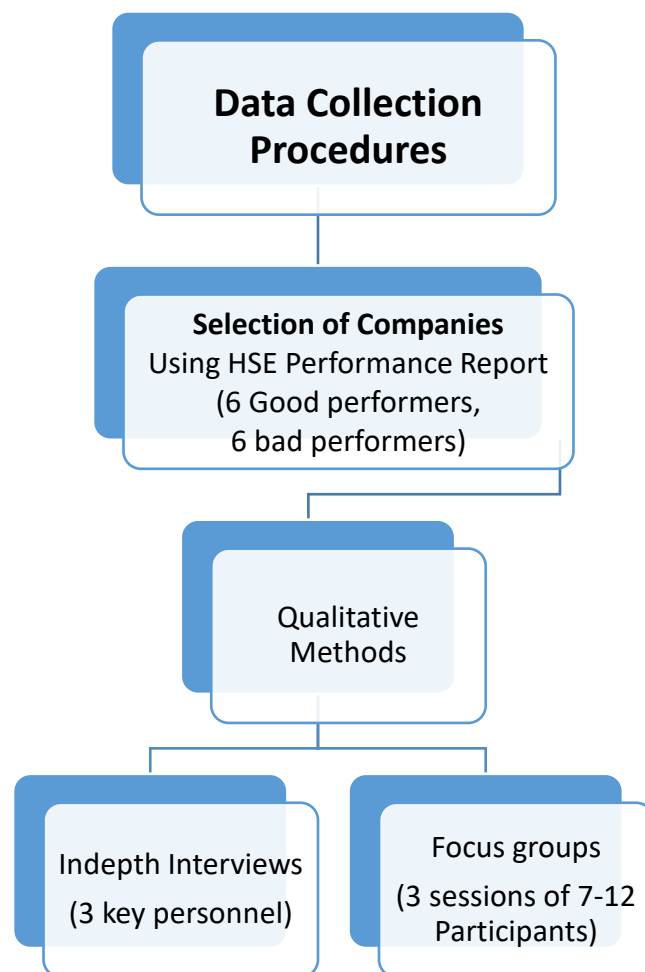
Figure 1 Framework showing data collection procedures

3.3.1 Qualitative Data Collection Method

The qualitative data collection involved focus groups and interviews (in-depth interviews, with company personnel at a range of organisation levels). Focus group and in-depth interview questions were guided by the objectives of the study and quantitative research in the literature. The focus groups helped to highlight workplace safety risks and factors affecting workers' safety performance and attitude to organizational safety climate within the OGFZ. The in-depth interviews helped to highlight safety rules, safety climate constraints and supervisory dimensions of individual organizations selected for this study.

The qualitative survey enabled collection of first-hand professional information through face-to-face interviews (such as in-depth interviews) and focus group discussion, which encouraged a participatory group discussion(Saldana, 2013).Ritchie & Lewis (2012) explained that the qualitative research approach involves data collection procedures including focus groups, interviews (such as personal interviews and in-depth interviews), and conferences, which provide meanings and interpretations to people's responses, comments or texts. It is obvious that the quantitative surveys involved mainly already tested/validated assessment tools, thus a field result from the qualitative methodology would strengthen discourse and overall understanding of the safety climate in the study area. Semi-structured interview schedules with open-ended research questions were the instruments for this survey as presented in Appendices 4 and 5. Unlike a quantitative survey, where respondents are most times almost completely limited to closed questions as indicated on the assessment tools, the qualitative survey using unstructured questionnaires, provides respondents the opportunity to express their views beyond what may be captured within the Safety Climate Questionnaire (SCQ). Also, it is expected that the qualitative survey would allow for respondents to suggest possible solutions to certain issues, which would guide policy recommendations of the study. The questions used for the in-depth and focus groups were developed based on the specific objectives of the study, as listed in Sections 1.7.

Interviews (In-depth Interviews)

A number of authors have indicated the importance of interviews as a method of data collection (for example; Silverman, 2006:18; Taylor *et al*., 2015:102). The in-depth interviews in this study involved key personnel from the top management and the leadership of labour unions in the selected companies. A total of 3 key personnel interviews were conducted; 1 each from a high safety performers group, low safety performers group and a labour union (Table 13). A letter of invitation, including a participant information sheet and consent form was sent to each of the staff to arrange for the interview at their convenience (Appendix 2, 3).

Selection of workers was guided bya purposive sampling technique enabling the sampling process to allow for the people to be selected according to their roles in the organizations (as indicated in Table 4),in order to avoid a bias selection where only people of similar ranks and units would have been selected, and took into consideration the need to avoid gender bias. Within each job role/level all employees received equal chances of being selected for the survey. Workplace safety affects every worker in the organization and to avoid information bias, the random sampling technique was adopted to enhance the likelihood of every member of the population having equal chances of being sampled. This viewpoint corroborates that of Homp *et al*. (2021), that a sampling method is biased if every member of the population does not have equal likelihood of being in the sample.

The workers were identified and selected using the organization's workers staff list. The staff lists indicate names, qualifications, ranks, job description, units and contact phone numbers of all staff, from which the participants were identified, contacted and given the participant's invitation/consent form. In consideration of ethical implications of this exercise, and to protect identities of participating workers, selecting who goes on the list for the survey was done by the researcher and such details were not communicated with management of the various organizations.

The workers staff list usually consists of the job description and units of the workers which were explored in the selection process. The letter indicated ethical issues, including issues of anonymity and confidentiality; it also indicated the freedom to withdraw from the interview at any time without being obligated to give reasons for withdrawal. The study considered

limitations of withdrawal as in most cases, it could be difficult to withdraw after the data had been collected, analysed and amalgamated into the research study, nevertheless, it was not impossible to separate data collected from individuals who might choose to withdraw from the survey as all data were collected and recorded in discrete data forms. In the truest sense, the study ensured absolute guarantee of confidentiality and anonymity of participants.

As also applicable to the focus groups, the location of the focus groups and interviews were based on logistics and convenience of the participants, as the participants needed to be contacted or made to gather where it was convenient and safe for them.

Each participant was assigned a participant number which was alphanumerically coded, alongside a pseudonym instead of using the person's personal details and name (as applied in Appendix 7: Table 1).

Each interview session lasted for around 45 minutes, and feedback recorded using an audio recorder, in addition to note taking. The result of the field survey is reported in Section 4.1.

Focus Groups

The focus groups involve an organized session of discussion (in a relaxed and comfortable environment); comprising a purposively selected group of individuals with the aim of collecting qualitative data which represents people's perceptions, experiences, attitudes or opinion in relation to safety culture and risk perceptions (Kitzinger, 1994; Ritchie & Lewis, 2012: 170; Saldana, 2013:175).

This study was designed to involve three (3) focus group discussion (FGD) sessions comprising 7 - 12 participants, as reported in Section 4.1. Participants of each focus group session were selected from workers across the 12selectedcompanies within OGFZ using the companies' nominal roll (staff list). The procedures for the focus groups and number of participants for each focus group session were guided by previous research as reported by Cameron (2000); Wong (2008); Ritchie & Lewis (2012) and Saldana (2013). The participants were made to sit according to the alphanumeric numbers assigned to them from left to right and facing the researcher, for easy identification during the discussion.Each focus group was homogeneous

in these regards (for homogeneity each focus group consisted of employees of a similar rank, and other aspects of homogeneity; age, gender). As stated in Section 3.3.1 above, focus group participants were also selected using company staff lists from which the participants were identified, contacted and given the participants invitation/consent form to indicate agreement to participate in focus group discussion. At least two persons in the same unit were contacted, from which at least one participant was selected.

Again, in consideration of confidentiality, selection of participants was done discretely by the researcher using the staff list and independent of management of the organization. Selection of participants was not entirely random or systematic as other factors such as gender, educational level and availability were also considered in the selection process. Participants therefore comprised a representative sample of workers selected from different shifts, units, gender, age, length of service and major tasks. Each group discussion was carried out by job level to project anonymity. Focus group and interviews, like other forms of research methods, are also affected by ethical issues in research which have been discussed in Section 3.4.

Focus group questions were constructed in line with the objectives; findings from the focus group and interviews will enhance comparison with quantitative surveys in the literature. A participant identification form (including demographic information) was used to document participants details at the focus group venue; the form indicates spaces for identification number, gender, years of experience, age, and occupational details such as units and shift, education, marital status, number of children, any OSH training provided in the past, etc. Two field assistants were employed to assist during each focus group session; one of the assistants helped in note takings while the other helped in audio-recording. The field assistants were recruited from outside the organizations; they had no knowledge of participants' identity and were informed of the ethical implications of the survey. The audio recordings served as back-up to foreclose loss or misunderstanding of information. To guard against any breach of confidentiality, field assistants for the focus group were not involved in participants' selection and had no access to participants' personal details, such as names and ranks and company information. During note-taking, reference to participants was made using the alphanumeric pseudonyms that were assigned on their demographic forms. Each focus group session lasted for an average of one hour.

The focus group sessions were managed in such a way that all participants had a chance to speak and at least every participant spoke at every session.

Three focus group sessions have been conducted in the course of this study as reported in Section 4.1. Issues in the survey process are highlighted as limitations of the field survey in Section 3.6.

3.4   Methods of Data Analysis

Data analysis involved various approaches and techniques based on the type of data as described in Sections 3.4.1 below.

3.4.1   Qualitative Data Analysis

The qualitative data for the study, mainly data from focus group and interviews, were analysed using thematic analysis procedures. The thematic analysis involves identification of key concepts or themes, grouping or categorization of similar concepts or comments, and coding of identified themes or concepts. The descriptive statistics were also used to analyse the qualitative data, which were presented using percentages, charts and tables.

The NVivo statistical software was used for the qualitative data analysis. The software enabled coding and identification of themes in the data from participants' responses, as described in Section 3.4.2. Results of the thematic analysis, using NVivo, are presented in tables showing identified themes and corresponding references (number of words/text that makes up a given/particular theme). Lists of interview questions/survey questionnaires are presented in the appendices (Appendix 4, 5).

3.4.2   Selection of themes and Coding process

Theme selection and coding process adopted in this study was guided by the seven (7) steps strategy for thematic analysis highlighted by Braun and Clarke (2013), and SAGE (2019), which involve: transcription, reading and familiarization, coding, searching for themes, reviewing themes, defining and naming themes, and finalizing the analysis.Also, a video by Ann Blandford(2020, January 24), also provided a practical guide to the process.

The identification of themes and Coding process using the NVivo involves coding of related 'nodes' (themes) from text consisting transcribed responses. In summary, the process involves the following steps:

- Audio responses from participants were transcribed into text.
- Texts were arranged based on questions such that all responses on a particular question are arranged as a single text document and Each question is saved as a Word document, using file names such as Question 1, Question 2, etc. (See text documents attached). All responses from the three Focus groups were merged based on related questions.
- The documents indicated as 'text' which contains responses to specific questions were then uploaded into NVivo and saved as a 'file',
- From each text (document), prominent words or sentences were identified with respect to the questions.
- Sub-themes and themes were manually identified.
- Words/sentences identified were scrutinized and grouped based on related 'sub-themes'. This process involves series of grouping and re-grouping of related words and texts to arrive at a given theme.
- After identifying related words/text, which represents sub-themes/themes, the word/text were then highlighted and coded into 'Nodes' by NVivo which represent the themes.
- As coding is done, NVivo records the text identified and generates corresponding 'references'; which indicates the words/text highlighted and coded as themes (Nodes).
- NVivo then arranges the themes indicated as 'Nodes' in alphabetical order and records the number of 'References' (words/text count frequencies) that make up a particular theme. The 'References' are attached as Appendix 8.

3.5   Ethical Issues in Research

Privacy, informed consent and confidentiality are among the basic ethical issues in research. Early publications have evidence of ethical concerns about the right and welfare of human subjects participating in research, which had prompted calls for government policies and involvement of other regulating bodies to ensure protection of people's rights and privacy (Wolfensberger, 1967: 47; National Bioethics Advisory Commission, 2001).

Qualitative research methodology raises high ethical concerns especially when the results of the study needs to be documented or published in public domains such as the internet, which is highly vulnerable to ethical violations. Eysenbach & Till (2001: 1103) noted that qualitative

materials published and communicated on the internet raises issues in research including privacy of research subject and informed consent. It is obvious that in today's internet/social media-driven society, information management has been difficult. This is because of the speed of information dissemination across various media. Thus, qualitative research with high ethical concerns needs to be conducted within the bounds of established ethical provisions/guidelines, such as those stipulated by the government, research institutions and other organizations such as the university. There is no doubt that most students' studies are often published in public domains such as the internet, thus the need to ensure adequate coding of sensitive facts that could raise ethical concerns. Therefore, the consciousness of ethical considerations in many aspects of the research process should guide researchers in deciding whether a particular research is ethically acceptable; and indeed, necessary permissions should be obtained. To overemphasize the importance of ethical concerns in modern research, financing a particular research by most organizations is highly unlikely if the research is not morally and ethically acceptable (Behi & Nolan 1995).

According to Behi & Nolan (1995), most ethical guidelines for research involving human subjects require that anonymity/confidentiality be guaranteed, consent informed and dignity maintained; and on balance individual and society receive benefits not harm (Punch, 1994). Ethical issues are thus built around the background of human rights. Behi & Nolan (1995) confirmed that every human being has the right to privacy.

The present study was designed to address possible ethical issues and privacy concerns; and followed the risk assessment guidelines of Middlesex University. The study sought ethics approval through the School of Science and Technology, Natural Sciences Ethics Committee; all research instruments, procedures and research design have been clearly detailed and presented for assessment and approval by the Committee.

The researcher sought and obtained approval from the management and public relations units of the companies within OGFZ selected as case study in the research, to use the organizations for the study; by which necessary ethical issues were identified, addressed and incorporated into the research design. Ethical issues noted by the organizations and the University were

useful to modify the research design. The process aimed to address issues of organizations' concerns, job ethics, privacy, confidentiality and anonymity of the participants.

As part of the measures to address possible ethical concerns in the course of the study, participants of the focus groups and interviews were given a participant information sheet and consent form which clearly indicated and specified assurance of confidentiality and anonymity of participants. Each participant was identified using a Participant Identification Number, which was alphanumerically coded, instead of using the participants' names. A demographic form was provided to the participants to enable collection of socioeconomic and occupational details which were processed based on the ethical and confidentiality provisions. The demographic form was designated with the corresponding participant identification number (Appendix 6).

To further adhere to ethical provisions of this survey, information/data collected in the course of this survey are not stored in the public domain, or company computers, or any storage facility that might be accessible to company employees or management. All documents related to this survey are stored in personal facilities which can be accessed only by the researcher on provision of a personalized password. It is also important to note that the management of OGFZ has been made to understand that the survey was strictly confidential and must follow ethical provisions as stipulated by the University. Thus, the management is not expected to request any information or document related to this survey other than what would be deemed ethically suitable for publication for public consumption at the end of the study. As also noted in the ethical form provided by the University; participants were not being paid or given any other benefits for taking part in the study. As part of the measures to ensure data protection, data collected for this study are not stored in public computers, company computers, emails or social storage domain. All data are stored in personal storage facilities such as computers, laptops, hard disks and flash drives.

As an employee of OGFZ it is necessary to consider the role of insider-researcher. Being an insider-researcher involves issues ranging from concerns about confidentiality, to participants

attitude toward the research, as well as potential biases arising from making presumptions, having internal knowledge not available to independent researchers and building conclusion desired rather than what is found. In a bid to address these issues, Costley *et al*. (2010: 25), emphasized the need for strict compliance to University ethical provisions for research and assurances of participants confidentiality. On the other hand, Gibbs (2008: 55) suggested that *"the work place researcher might conceptualize the contributions of participants as benefits and/or gifts to which appropriate response is gratitude"*. As already stated above; participants in this study were presented with a comprehensive consent form in compliance with the University ethical provisions. The consent form states clearly and in details the assurances of participants' confidentiality and anonymity of responses. In furtherance of the assurances of confidentiality with a bid to ensure participants confidence and openhearted participation, participants were verbally assured that information relating their responses and identity will be stored safely. Thus, the information will not be stored in company computers, emails or files, and will not in any way be shared with management. Participants were also assured that the study will not be used as a part of their job assessment or promotion, thus sincere contributions were solicited. There is however the issue of safeguard which might affect the security and safety of participants if information during discussions or interviews is not properly managed, for instance, in one of the focus groups, there was discussion around how a badly treated and disgruntled employee came onto site with a gun. It is possible that participants may decide to withhold useful information if there is any doubt about anonymity or identity protection.

3.6   Limitations of Interpreting Interview Data

Interview provides an opportunity for people to express their opinions in their own words, in detail and at their own convenience. Like other qualitative research, interviews are subject to various limitations. Alshenqeeti (2014), noted that interviews have the potential for subconscious bias and inconsistencies; and interview data analyses are also not completely anonymous, thus questioning the assurances of confidentiality and anonymity of participants. Anderson (2010) indicated the following limitations:

- Research quality is heavily dependent on the individual skills of the researcher and more easily influenced by the researcher's personal biases and idiosyncrasies.
- Rigor is more difficult to maintain, assess, and demonstrate.

- Interview data analysis is time consuming: The volume of data makes analysis and interpretation time consuming. In particular, the coding of answers to open-ended questions also takes time.

- The researcher's presence during data gathering, which is often unavoidable in qualitative research, can affect participants' responses.

- Issues of anonymity and confidentiality can present problems when presenting findings

- Findings can be more difficult and time consuming to characterize in a visual way

- There is a tendency for authors to overuse quotes and for papers to be dominated by a series of long quotes with little analysis or discussion. This should be avoided.

- Participants do not always state the truth and may say what they think the interviewer wishes to hear.

- Some respondents can be long-winded and wander off the topic. The interviewer needs to politely move them back to the matter at hand. However, there is a need to be attuned to listening out for cues that may indicate relevance to organization safety climate, thus, time pressures to accommodate participants who go off the topic could also be seen as a limitation.

Although no research method is absolutely free of bias, the interviews seem more open to bias than most other research methods. Also, interviewers may unintentionally encourage or discourage the expression of particular facts and opinions. Besides the consent form, assurances of confidentiality in terms of participants' identity and responses were reiterated by the Researcher. Participants were made to see the study as an academic study rather than a job appraisal or an investigation sponsored by the management. Participants were also made to understand that their contributions would help to improve safety climate and general work environment within the OGFZ.

3.7   Limitations of the field survey

The qualitative field survey had noticeable limitations and constraints, which could influence the objective of this study. They include:

(i)   Difficulty in deciphering all the words uttered, probably due to the proximity of the audio recorder to the speakers. In a bid to manage this challenge, participants were

often given the signal to be audible, and in most cases the audio recorder readjusted to closer proximity to participants.

(ii) Overemphasis on questions by researcher. It is acknowledged that few of the interview/focus group questions seemed a bit complex thus prompting the researcher to overemphasize or attempt to explain the questions.

(iii) Time constraint: the survey, both interviews and focus groups were constrained by time, which prompted cases where the researcher had to give instructions for brief contributions instead of detailed discussion among the participants as the case may be. This also prompted the researcher, asking back some points noted by previous session that were not mentioned in the subsequent sessions. It was also noticed that much time was spent in discussing the teaser question which also affected the time for discussion on the main questions.

(iv) Duplication of questions. There were cases where questions were duplicated on the questionnaires. Also, there seemed to be too many questions for each session, which made it difficult to allow for more detailed discussion as applicable in focus group and in-depth interviews. This also deprived certain participants from engaging in certain discussion.

(v) There were also issues with understanding of some questions by some participants, which prompted the researcher to either over-emphasize a particular question or attempt to rephrase the questions.

(vi) In many instances, especially during in-depth interview sessions, the researcher asked some questions, which were not part of the interview questions; which consumed more time than expected and of course deviated from the main focus of the study objectives.

(vii) The classification of companies for this study was based on the HSE performance report; nevertheless, there could be other reasons to explore to further strengthen the reasons for the safety performance classification, to guide selection of the companies.

CHAPTER FOUR

4.0   FINDINGS

This chapter presents a summary of the findings of the field work, which was wholly a qualitative survey. This includes results of the focus group discussion and in-depth interviews. The first section presents the results of the focus groups with employees selected from different organizations within the OGFZ, while the second section presents result of the in-depth interviews involving three management staff of three companies within the OGFZ. Analysis of the qualitative data involved the use of NVivo statistical software to enable coding and identification of themes in the data, as highlighted in Section 3.4.2. This method has also been used by Deliens *et al.*, (2014:5-6).

4.1   Results of Focus Group discussion

Three focus group sessions were conducted, involving twenty-nine (29) employees selected from different organizations within OGFZ. Data gathered from focus group discussion were analysed using the NVivo statistical software, as discussed above.

4.1.1   Socio-Demographic Characteristics of Focus Group Participants

Summary of socio-demographic characteristics of the participants are presented in Table 4 below.

Table 4: Summary of Socio-Demographic Characteristics of Focus Group Participants (N =29)

Participant	Gender	Experience	Rank
Focus Group 1 (n = 12 people)			
FG01 (Robert)	Male	10-14	Senior manager
FG02 (Jane)	Female	10-14	Supervisor
FG03 (Phillip)	Male	1-4	Supervisor
FG04 (Etim)	Male	10-14	Operator

FG05 (Chinyene)	Female	5-9	Middle manager
FG06 (Paul)	Male	5-10	Principal Supervisor
FG07 (Vincent)	Male	10-12	HSE Coordinator
FG08 (James)	Male	10-14	QHSE Coordinator
FG09 (Akpan)	Male	15-19	Assistant Supervisor
FG10 (Peter)	Male	15-19	Equipment Operator
FG11 (David)	Male	10-14	Supervisor
FG12 (Ibrahim)	Male	5-9	Asst. Operations Supervision
Focus Group 2 (n = 10 people)			
FG13 (Kelvin)	Male	15-19	Assistant Project Manager
FG14 (Stephen)	Male	1-4	Supervisor
FG15 (Dominic)	Male	5-9	Supervisor
FG16 (Anthony)	Male	5-9	Supervisor
FG17 (Frank)	Male	10-14	Operations Supervisor
FG18 (Emmanuel)	Male	20-24	General Supervisor
FG19 (Moses)	Male	15-19	Supervisor
FG20 (Pius)	Male	5-10	Laboratory Technician
FG21 (Sampson)	Male	5-10	Civil Engineer
FG22 (Denson)	Male	5-10	Project Engineer
Focus Group 3 (n = 7 people)			
FG23 (Grace)	Female	5-10	HSE Officer

FG24 (Helen)	Female	1-4	Supervisor
FG25 (Michael)	Male	5-10	Logistic Officer
FG26 (Augustine)	Male	1-4	Work Order Planner
FG27 (Mercy)	Female	15-19	Superintendent
FG28 (Rose)	Female	15-19	Services data analyst
FG29 (Victor)	Male	15-19	Shop Supervisor

NB: All participants were Nigerians and were assigned pseudonyms. Total number of participants (N) = 29 persons.

Despite the comparatively low ratio of females to male in the organisations, it is important to note the low response from female employees contacted to participate the survey. Almost equal number of females and males were contacted to participate in the survey but was observed that only a limited number of females indicated readiness to participate in the survey. It is unclear to the reasons for this limited participation, which may be a result of culture, perceived position and power or fear of anonymity or lack of confidence in the assurance of anonymity indicated in the invitation form. It can also be traced to issue of safeguarding bordering on ineffective security arrangement within the organisation to which female employees might feel vulnerable and could possibly prompt participants to choose to withdraw from the survey or withhold information due to security reasons.

4.1.2 Feedback on focus group questions

Responses (feedback) from focus group discussion were used to generate themes using the NVivo statistical software. Procedures for theme selection and coding process are highlighted in Section 3.4.2. The themes are presented in tabular forms with corresponding text references (word/text frequencies) and words used by participants. The tables present a summary of identified themes, description of the themes, and text references. The themes emerged from codes indicating the words or expressions used by participants which were transcribed into texts under the respective subject matter. The text/word codes and the corresponding themes were generated using NVivo software. The results of the coding process are presented under the respective sub-heads in Appendix 8 (NVivo_Code Ref_Q1-Q8). Themes emanate from words or comments made by participants, and only words or texts related to the themes are indicated on the NVivo-generated results. The text references are indicated in the results to show words or text from which the themes are extracted. For simplicity of presentation, only the themes coded using NVivo are presented in the results section. The themes are presented in tables; reference to the themes and the respective words/texts are presented in Appendix 8.

1. What keeps people safe at work

Table 5 presents a summary of feedback on what keeps people safe at work. Participants' comments were grouped into themes as described in the table below.

Table 5: Summary of feedback on what keeps people safe at work

Serial number	Emergent themes
1	Compliance
2	Personal commitment to safety
3	Competence
4	Management commitment
5	Welfare
6	Work environment

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q1).

From the result, compliance to safety rules and procedures; personal commitment (employee commitment to safety), appeared most prominent with comparatively high text reference scores among factors that keep people safe at work.

Other prominent themes include competence, and management commitment, welfare, and work environment (safe system of work). With the majority of the participants emphasizing personal commitment to personal safety and safety of others, and compliance to safety rules, a participant noted: *"there is a slogan we usually say around here 'safety first'. So, what actually keeps somebody safe at work is just having that mind-set of obeying safety policies" (Emmanuel, Supervisor).*

This emphasized the importance of workers being conscious and adhering to safety rules and policies of the organization. According to another participant;

"Working safe is a personal obligation. So, I want to work safe so I can stay alive to work the next day. And also, working safe because my action can affect the next person, so I work safe to keep all of us as a team alive and to do the work the next time" (Michael, Logistic Officer).

With regards to management commitment, a participant noted that:

"There has to be management commitment, management must be seen as being totally committed to safety in terms of providing safety environment, safe equipment and safe person (safe personnel), so management must really show commitment in ensuring that all operations are safe, all personnel are safe" (Paul, Principal Supervisor).

As highlighted above, such commitments would help to address issues of safeguarding and insecurity which seem to be a concern within the organization, for instance, as in the case of a supposed badly treated and disgruntled employee said to have gone to site with a gun. It might be interesting to try to dig a little deeper in the data for more meaning; in the focus group interview, as indicated in the text, an instance was noted where the gun incident was mentioned, and there was also mention of coercion of employees to do what their supervisor told them to do and not to question anything (to blindly obey). This alludes to a transactional form of

leadership within the organization. Surely, in order to have a workforce engaged in good health and safety practice, there would need to be a more transformational leadership style in existence. This situation reiterates the reminds me of a seminal study by Fox (1974) on industrial relations and the difference in organization effectiveness of a pluralist approach to management leadership in contrast to a more ineffective unitarist management approach. A gauge to this might be in recognition and involvement of employee representation (for example through trade unions).

2. Major causes of work place safety risks and injuries

The result in Table 6 shows that Employee-specific factors (such as negligence, poor communication, employee attitude); and job-specific factors including equipment failure, are the most prominent factors that could lead to workplace safety risks and injuries within an organization. Other factors include management-specific factors such as provision of inadequate safety materials and poor supervision; and natural factors such as unfavourable changes in climate. With regards to communication, it is important to note that communication is a two-way factor, not just an employee factor, thus effective communications from management are incredibly important.

Table 6: Summary of feedback on major causes of work place safety risks and injuries

S/N	Emergent themes
1	Employee-specific factors
2	Management-specific factors
3	Job-specific factors
4	Natural factors

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q2).

Table 6, shows emergent themes indicating major causes of workplace safety risks and injuries. The reference texts from which the themes emerged are presented as Appendix 8. As indicated in the texts, poor communication of safety information between employees and negligence are among the employee-specific factors that could lead to workplace safety risks and injuries within an organization. Employees need to share details of safety situation relating to a job task

to help others prevent accident (McGonagle *et al*., 2016), and on the other hand, negligence can cause enormous damage and suffering, hence employees need to take control of safety situations by not overlooking risky situations at work (Williams, 2019). A participant, also noted that *"lack of communication is also responsible for such (safety risks and injuries)" (Stephen, Supervisor),* while another participant, emphasized on negligence as one of the factors responsible for workplace safety risks and injuries, noting that; *"I'll say negligence in the part of the workers can also be a factor that can cause hazard and accidents" (Frank, Supervisor).* The issue of work force competency and negligence is picked up further in Table 14.

Management specific factors consist of poor supervision, provision of inappropriate safety equipment and worn-out work materials, poor training of staff by the organization.

Also, the result indicates that while natural factors such as unfavourable climatic conditions could result in risky situations, there are instances where employees are subjected to use obsolete equipment or work without necessary safety materials, as well as likely cases of employee's willful violation of safety procedures which could pose a risk or lead to injuries. Unsafe mechanical and physical conditions, equipment failure and failure to use safe equipment; are among the job-specific factors that could lead to workplace safety risks and injuries (Sharma, 2019).

3. Measures taken by organizations to keep people safe at work

The result presented in Table 7 shows themes indicating respondents' views on measures taken by organizations to keep people safe at work.

Table 7: Summary of feedback on measures taken by organizations to keep people safe at work

S/N	Emergent themes
1	Incentive
2	Safe system
3	Training

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q3).

The result shows theme such as *safe system* and *training* appearing most prominent as indicated in the high text reference counts, followed by *incentive*. According to a participant;

"constant training and retraining of the staff and of course ensuring that we have a fit for purpose equipment. And also provision of a fit for purpose personal protective equipment (PPE), are among the measures taken by management to keep people safe at work" (Robert, Senior Manager).

Majority of the responses indicates that safety training, provision of a safe system of work in different organizations, adequate supervision, and provision of incentives and motivation to employees are among measures taken by management to keep people safe at work.

4. Organizational characteristics affecting safety climate

This Section presents organizational characteristics affecting safety climate in OGFZ. These include factors related to the working environment or organizational features most of which are management specific factors or factors mainly under the control of management, with influence on organizational safety climate. These characteristics are also referred to as organizational dimensions of safety climate (Lundstrom *et al.*, 2002:100).

Table 8: Summary of feedback on organizational characteristics affecting safety climate

S/N	Emergent themes
1	Communication
2	Finance
3	Management-employees relationship
4	Policies
5	Punitive measures

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q4).

The result in Table 8, presents a theme of organizational characteristics affecting safety climate in OGFZ as identified by focus group participants. Most prominent among the

characteristics are management-employee relationship, policy framework and finance. Other themes include punitive (disciplinary) measures and communication.

Commenting on finance, a participant, opined as follows; *"I think management has to value safety more by allocating more resources in terms of by finances, then resources needed for all the operations" (Etim, Operator)*. Another participant also emphasized poor management commitment to safety, and noted that management sometimes consider cost of investing in safety over ensuring adequate provision for enabling safety climate.

"In my organization, one thing I have noticed in these few years is the issue of the cost of safety, they (management) seem not to consider the total cost of working safe into the cost of every project, ... irrespective of the unsafe situation that this man (a worker) is going to face, they (management) would look at cost" (Kelvin, Project Manager).

Improved workers' welfare also featured prominently among management-employee relationship aimed to improve safety climate, which otherwise could affect workplace safety. A participant, commented that; *"poor welfare amenities, something should be done about it" (Rose, Data Analyst)*. Other responses suggest that management display willful blindness to issues of safety, perhaps to avoid cost associated with adherence to workplace safety. In the real sense, where there is an accident, organizations face far more expensive penalties when someone is injured at work, in addition to welfare support for an injured employee. Thus, paying welfare benefit for an injured worker is definitely not a cheaper option than buying new and safe equipment. Nevertheless, as also indicated by a few participants, the organizations have some levels of compensation by law, to pay for serious workplace injuries and have sufficient legal protection for the workers, as well as appropriate regulations of health and safety practice in the workplace by the government. These provisions need to be facilitated through proper regulatory process so as to enforce compliance towards achieving an improved safety climate within OGFZ.

5. Constraints affecting organizational safety climate

The result shows Organizational factor as the most prominent theme indicating constraints affecting organizational safety climate. This include factors related to the organizations in terms of provision of safety equipment, welfare packages to employees, implementation of safety regulations, and assurance of job security, organization's finances or resources, management commitment to safety. Other constraints include employee factor which consists of workers' attitude to safety, workers perception of work environment; and external factor which consists of family pressure, government policy and legislations, national economic situation, international standards on safety. According to Obrenovic *et al*. (2020), work-family conflict is a psychological imbalance between work and family; as a worker tries to manage multiple roles of allocating their resources between work and family, and could result to stress when the demand in one domain hinders the performance in the other. Family pressure can come from the need to meet family financial responsibility, family conflict, etc., which could negatively impact on the psychology of the worker, while the consciousness of family love and affection would trigger safety consciousness at work, as a worker would want to work safely so as to return safe to his/her family. On the other hand, government has the obligation to regulate or enforce safety regulations and standards, to ensure a safe work environment for the employees, but where this is compromised, the worker faces the risk of having to work in an unsafe environment without any reliable legal framework. Adaeze (2021), reported that in spite of the legislative provisions and laws to promote workers' safety, health and welfare, the rate of accidents at workplaces is increasing, due to reasons perceived to be that the institutional agencies were not doing enough to regularly engage firms by enforcing corrective and punitive measures to erring firms.

Prominently, findings suggest obviously poor management commitment to established safety rules and standards, as well as constraints posed by organization's finances and other resources. With regards to organizational factor, a case of negligence or 'wilful blindness' can be inferred, which has been reported as a common corporate issue with managers of organizations, especially senior managers (Heffernan, 2011). Thus, the final analysis and results are expected to be more distinctive in highlighting most of these important factors.

Table 9: Summary of Feedback on constraints affecting organizational safety climate

S/N	Emergent themes
1	Employee factor
2	External factor
3	Organizational factor

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q5).

With regards to 'welfare' (described under organizational factor), a participant noted that; *"On my own I would start with welfare, management has to improve on it"* *(Akpan, Assistant Supervisor).*

Besides majority views, a few participants emphasized on the effect of government policies on organizational safety climate, for instance, a participant noted as follows;

"They would believe in the training and retraining of their workers safety wise and other areas technically. But when the government policy is not favouring them, you see them derailing in certain areas" (Dominic, Supervisor).

Commenting on attitude of personnel, workers attitude and welfare package, a participant opined as follows

"it depends on the department or personnel involved, some might have, should we say attitude problem or they are not comfortable with what they take home. So, all these ones might have effect on the way they act during their tasks" (Grace, HSE Supervisor).

On the other hand, another participant noted cases of negligence on the part of management, *"in my company, safety is very very strong, safety practices is very strong. But one of the constraints is also the management decisions during emergency, they want to decide on a job and they think that job is very very urgent, sometimes they violate safety procedures" (Anthony, Supervisor).*

The OGFZ has a stop work policy where workers are obligated to stop work when there is a potential hazard. In addition, Nigeria has a 'whistle blowing' policy, where workers are advised to report poor or illegal Health and Safety practices at work although most workers may fail to adhere perhaps for fear of maltreatment by management. Information on whistle blowing policy are highly confidentially recorded, and has to do with a substantial or specific danger to public health or safety, or omission that involves the risk of injury to the public health or prejudices public safety (Anya & Iwanger, 2019). On the other hand, there are also the 'stop work' policy initiatives which reports are also made confidential and uncommon to public domain, by different organizations. The stop work policy gives the worker the legal right to stop work or refuse to continue to work, if the job task is unsafe or under an unsafe condition. This right takes its background as one of the fundamental principles of human rights, and the right of a worker to a safe and healthy working environment and principle of right to personal integrity (Andrew-Jaja & Orugbani, 2021).

6. External factors affecting organizational safety climate

The result shows that *third party influence*, socioeconomic factors, insecurity, and government policies appear most prominent among external factors influencing safety climate in the organizations under study. The breakdown of indices that make up the various factors is presented in Table 10.

Table 10: Summary of feedback on external factors influencing safety climate

S/N	Emergent themes
1	Government factor
2	Insecurity
3	Socioeconomic factor
4	Third party influence

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q6).

The majority of the participants commented on pressure from clients as against organizational safety climate. According to a Participant,

"One of the key things I would say is client pressure on the workers, most time most of our workers understand the processes, they know that safety (safety department) has put this in place, but sometimes you go to client facilities client want them to take short cuts to do things that are not right, so clients need to comply with the standards that have been put in place in the company" (Robert, Senior Manager).

Another participant also noted that *"Economic recession is really biting hard, but our clients, they are also making us to cut corners… that's one of the challenges we are having as external pressure on our safe systems of work" (Chinyene, Supervisor).*

Emphasizing on government policies, one of the participants commented as follows;

"Well, external factors, I want to mention, I want to point out government. Government policies first. In the sense that the external factors also have a bearing with the government policies,… So, government has to make those policies in place to assist individual company to operate, to create that environment, I mean good weather for companies to operate. So, government policy is something we have to look at" (Kelvin, Manager).

Another participant highlighted family problem as part of the external factors affecting safety climate, and opined that:

"Family problem, I think is also a problem, it's also a factor, an external factor that could affect safety in our work place. If you carry family problem from your house to your work place without settling them, it could also have an impact to make you deviate from safety policies" (Anthony, Supervisor).

In addition, a majority of the participants also emphasized issues of insecurity involving militancy, communal crisis, political violence, and community influence on employment, while others noted the influence of the prevailing economic situation in the country as a result of recession. A participant commented that:

"I want to talk about community influence, a lot of times, the MOUs (memorandum of understanding) between the corporate organizations and the host communities does not cover safety of the same workers, ... So the communities should look into safety when they are having an understanding with the corporate bodies" (Dominic, Supervisor).

On the other hand, another participant noted that;

"I don't have any other thing to say, it still boils down to recession because it affects your mind-set" (Grace, HSE Officer).

According to another participant *"When you say the external effect, then the economic recession, the economic recession is a big stress on the staff" (Michael, Logistics Officer).*

The results suggest undeniable influence of external factors on safety climate in the OGFZ, which need to be regulated to achieve an improved safety climate. Thus, management of these factors require proper training of workers; where all stakeholders should be involved, and a functional legal framework to strengthen organizations' effort to enhance improved safety climate. For instance, Igbinedion *et al.* (2016), identified lack of government involvement in most organizational safety practices such as training and retraining of staff; which could bring to naught all other efforts made to institute safety management in the organization.

7. Factors that influence employee attitude to organizational safety

Table 11 presents a summary of feedback on factors that influence employee attitude to organizational safety climate. The result indicates six themes with management factor as the most prominent factor that influences employee attitude to organizational safety.

Table 11: Summary of feedback on factors that influence employee attitude to organizational safety climate

S/N	Emergent themes
1	Belief system
2	Employee decision
3	Experience
4	Family concerns
5	Health condition
6	Management factor

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q7).

With management factor having comparatively highest text reference score of 20, other factors include employee attitude consisting negligence and wilful violation of safety procedures, experience, belief system, family concerns and health condition of employees.

With regards to management factor, a participant emphasizing motivation commented as follows; *"Intrinsic motivation, the way my managers commend me when I work" (James, Safety Coordinator)*. Another participant noted that;*"I think motivation is a key to it, because one, you motivate them by giving them their take home package, the safety PPE is provided to them as at when due" (Frank, Supervisor).* Besides management factor and motivation, a few participants emphasized religious values as an important factor that influences organizational safety. A participant responded as follows; *"I'll say religious values. Religious values is something that influences our mind set and attitude to work" (Etim, Operator).*

With regards to belief system, this tends to suggest a situation where employees would rely on religious/cultural beliefs, personal conviction, traditional norms, custom or superstition for safety, rather than compliance to safety provisions. This issue needs to be addressed through orientation workshops, trainings or induction sessions.

8. Personal reason affecting employee attitude to organizational safety

Table 12 presents a summary of feedback on personal reason affecting employee attitude to organizational safety.

Table 12: Summary of feedback on personal reasons affecting employee attitude to organizational safety rules

S/N	Emergent themes
1	Bias system
2	Family concern
3	Health concern
4	Job related factors
5	Welfare

Note: Total number of participants (N): 29 people. Themes emanate from text/words used by participants as indicated under text references in the NVivo coding results attached as Appendix 8 (NVivo_Code Ref_Q8).

The result indicates bias system as the most prominent theme among personal reasons affecting employee attitude to organizational safety. Referring to the issues of bias system, a participant noted that:

*"The appraisal system of the organization is not based on merit. You can see a situation whereby somebody at lower qualification is controlling somebody at higher whatever, everything is mixed up" (Alice, HSE Office*r)*.

Other themes include welfare, job-related factors, health care and family concern. Summary description of the themes is presented in Table 12.

Another participant responded as follows; *"my own take is job insecurity" (Paul)*. Other participants lamented the disparity in provision of safety materials between expatriate workers and national workers, explaining that good quality safety materials are often provided to foreign workers (expatriate workers) while national workers get substandard materials. A participant commented that:

"there is a level of marginalization, what I mean by that is that there is a kind of disparity between, for example simple things like simple protective equipment, the ones issued to expatriates, you can't compare the quality to the ones issued to national workers. And sometimes I wonder the fatality, when an accident happens, is it going to differentiate who an expatriate is or who a national staff is" (Kelvin, Project Manager).

Also referring to the case of expatriates, a participant stated as follows;
"Mine is about discrimination" (Sampson, Civil Engineer).

So, this seems to be a power dynamic where workers can see inequality (in terms of safety equipment provision), though there seems to be no voice for the workers. No expatriate worker was a part of the survey due to logistical constraints, it was expected that expatriate workers would be able to participate in the survey, as it would be interesting to also know their opinion. It would also be interesting to identify the number of expatriate workers employed in the organizations involved in the study, and what proportion of expatriate workers are employed in the better and worst performing organizations in investigated in the study.

Besides the issue of expatriates, a participant noted that: *"if you have a bullying supervisor, or somebody you cannot, no matter what you do, you hardly satisfy him, definitely it'll affect the way you work" (Michael, Logistic Officer).*

4.2   Results of In-depth Interviews

Data collected through in-depth interviews were also analysed using the NVivo statistical software which enabled further streamlining and identification of themes from participants' responses. Summary of the highlighted themes are presented in this section under the respective subheadings. The socio-demographic characteristics of the interviewees are presented in Table 13 below. The coding/theme development process is highlighted in Section 3.4.2.

Table 13: Summary of Socio-demographic Characteristics of In-depth Interview. Respondents (N=3)

Participant Number	Gender	Experience	Unit	Rank	Organization	Membership of Union
R01 (Johnny)	Male	15	QHSE	Manager	A	Nil
R02 (Jacob)	Male	20	HSE	Manager	B	Nil
R03 (Rexon)	Male	21	QHSE	Manager	C	CESSA

NB: All participants were Nigerians. OGFZ: Onne Oil and Gas Free Zone. All participants have been assigned pseudo names and alphanumeric pseudonyms.

1. Responses on major workplace safety risks within the organization

Table 14: Responses on major workplace safety risks within the organization

S/N	Words used by participants	Emergent themes
1	Faulty equipment, obsolete equipment/safety materials, inappropriate safety materials	Faulty equipment
2	Unsafe nature of the job, risky tasks	Risky task
3	Health condition of employees	Health condition
4	Lack of information on safety among employees, and between management and employees, poor reporting of incidents, risky behavior or faulty equipment	Poor communication
5	Stress, family pressure, financial pressure	Personal issues
6	Carelessness, negligence, intentional violation of safety procedures	Negligence
7	Reliance on 'illusionary experience' rather than safety procedures, over confidence	Attitude

Table 14 presents a summary of responses and description of themes indicating major workplace safety risks within the organization. The themes are described by the subthemes listed as 'words used by the participants'; from which the themes emerged. The major themes identified as major workplace safety risks include the following; faulty equipment, risky task, health condition of employees, personal issues, negligence and attitude. Commenting on risky task involving unsafe nature of job, a participant noted that;

"Well safety risk in my organization, just like other organizations, some of them are peculiar to the nature of work that we do" (Jacob). Another participant noted that "*the major risk that we get in our business come from construction. And construction ranging from all types of civil works, we have building, port infrastructure, maintenance jobs, all these are high risk jobs especially in the industry, in the Onne oil and gas free zone"* (Johnny).

In addition, employees' attitude to laid-down safety procedures needs to be emphasized, as there are cases where workers prefer reliance on 'illusionary experience' rather than safety procedures, over confidence. A participant noted that:

"The major risks are when people refuse to follow safety procedures, when they assume ok we have done this before and we've been doing this for years and then they take things for granted, that's the major risk. Second risk is lack of information, when the proper information has not been passed down to the work force. Then, of course, carelessness, where you have spillages and not properly reported and you could have slip falls and basically, even equipment they are supposed to use for work are faulty and are not reported to be fixed appropriately, so, these are the major workplace safety that we have" (Rexon).

This points to how much workplace safety is affected by employee poor attitude to safety procedures.

2. Main causes of workplace injury within the organization

Holistically, the main causes of workplace injury within the organization can be classified into two major factors namely human factor and management factor. A participant stated,

"well, of course we know the major causes of work place injury is the human factor, majorly human factor, … then we come to management factors then human factors like supervision issues, and poor risk assessment as the case may be, but even at that, if we can get good management standing, I believe that these would go a long way, this is for me is a major workplace injury causation factors that we have" (Johnny, Manager).

In particular, the following themes were highlighted in the various responses as main causes of workplace injury within the organization, these include; deviation from procedures, lack of concentration, logistic chain (Faulty equipment), Poor risk assessments, Ineffective supervision, Employees' carelessness. Another participant stated that:
the *"main causes has to do with deviation from procedures, … and in addition to that, the logistic chain too, the main cause of work place injury when it comes to the logistic chain too has to do with the equipment, maintenance of the equipment" (Jacob, Safety manager).*

Also emphasizing carelessness of employees, it was noted that *"the main causes of workplace injury in my organization would be carelessness" (Rexon, Safety Manager).*
Considering the factors highlighted as main causes of workplace injuries, there is obvious indications of negligence of safety procedures and regulations both on the part of employees

and management. This echoes the importance of independent and impartial monitoring bodies, such as the IOSH in the United Kingdom. In the OGFZ, there is a prototype of the IOSH, known as Nigerian Factory Inspectors under the Ministry of Labour through the factories Act, which is probably ineffective, hence needs to be more proactive in monitoring of safety compliance by organizations to reduce avoidable workplace injuries caused by negligence and deliberate violation of safety standards by employees and the employers.

3. Measures taken by management to reduce work place safety risks

Table 15: Measures taken by management to reduce work place safety risks

S/N	Words used by participants	Emergent themes
1	Ensuring certified quality management systems, Provision of certified equipment and safety materials	Certification
2	Ensuring adequate safety systems, replacement of obsolete equipment and safety materials	Safety system
3	Ensuring proper safety policies and regulations are put in place to promote workplace safety	Safety policies
4	Supervision, Management audit, monitoring, ensuring compliance to safety regulations	Supervision
5	Training, regular safety training, Induction and engagement sessions for employees on work place safety risks	Training

Table 15 above, presents themes and description of the measures taken by management to reduce workplace safety risks in the study area, these include; certification, safety system, safety policies, supervision and training. Participants emphasized that provision of certified quality management system, adequate working equipment and safety materials, compliance with safety regulations, and adequate safety trainings are important measures taken by management to reduce workplace safety risks in their various organizations. One of the interviewees affirmed as follows, *"We've actually done something as I speak to you. We have been able to get our certification as a company which I was of the opinion would help the system" (Johnny).* According to another interviewee, *"Management is committed to reducing workplace safety risk by ensuring that our safety systems are in place and operational. Then, of course ensuring that we have the right policies in place and they are monitored to see that*

people stay within the norms" (Jacob). The third interviewee, stated that *"One of the measures taken by management to reduce workplace safety risk is the training, regular training, ... Then, we also have management response to request for replacement of worn materials, materials that are no longer usable according to safety standards, proper buildings, proper work materials, personal protective equipment (PPEs), as at when due. And we do our certifications also for the equipment, for the personnel as at when due with the appropriate inspection agencies" (Rexon)*. From the responses, there is high indication of safety trainings for the employees, indicating management commitment to workplace safety. This claim corroborates that of the focus group reported above (Table 7). Nonetheless, with most focus group participants decrying poor management commitment to workplace safety (Table 9), it raises the question as to if in practice; the workers are allowed to implement their training expertise. Also, adequacy of this training needs to be ascertained, perhaps by confirming if there is adequate record of training taking place within the various organizations.

4. Measures taken by management to promote work place safety

Responses on measures taken by management to promote workplace safety highlighted the following themes:

1) Provision of incentives
2) Culture of reporting hazards (Promoting culture of reporting hazards/potential hazards)
3) Assurance of job security
4) Training

Majority of the participants emphasized provision of incentives, as stated by an interviewee; *"Management does what we call incentives, we have safety awards, we have best employee, best worker of the month awards, incentives where you get some additional bonuses for being able to carry out the job safely" (Johnny)*. Another interviewee also emphasized on 'incentives and assurances of job security', among measures taken by management to promote workplace safety (Rexon).

It is thus obvious that an improvement in welfare packages including incentives and a policy to further consolidate job security would encourage employees toward promoting workplace safety.

5. Main constraints affecting achievement of good safety practices within the organization

Table 16: Main constraints affecting achievement of good safety practices within the organization

S/N	Words used by participants	Emergent themes
1	Poor management commitment to safety issues, Poor implementation of safety practices by management	Management commitment
2	Management obstructing safety process	Management interference
3	Budgetary constraints, poor implementation of budgets relating work place safety, Finance and budget	Budget
4	Community influence on recruitment of unskilled and inexperience workers, community crisis, youth protest, restiveness	Community issues
5	Poor Training/lack of skills, incompetence	Poor Training
6	Poor information management among employees and management	Poor communication
7	Employee attitude to safety	Employee attitude
8	Negligence on the part of the employees, carelessness, refusal to follow laid down safety rules	Negligence
9	Illiteracy level of employees	Illiteracy

Table 16 presents responses on the main constraints affecting achievement of good safety practices within the organization. The major themes highlighted include management commitment, management interference, budget, community issues, poor training, poor communication, employee attitude, negligence and illiteracy. According to an interviewee, *"If we have strong commitment from management, I'm very sure this would create and greatly enhance our culture, our business, our safety culture, our orientation" (Johnny)*. Another interviewee noted that *"Primarily, apart from finance, there is not so much that affect us because, already management has shown commitment to want to promote safety within the organization, so, there is management commitment already, but sometimes we also have issues with community" (Jacob)*. In his view, the third interviewee, Rexon, noted communication issues, employees attitude to safety procedures and negligence as major constraints, and stated that *"Thirdly, would be negligence on the part of the workers, it's a very big constraint to achieving good safety practices" (Rexon)*.

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Emphasizing the influence of these constraints towards achieving good safety practices within the organization, the respondent commented that *"these constraints have actually made me a bit helpless in some situations" (Johnny).* By inferences, there is an indication that there exist company policies that put employees and management staff in a somewhat difficult situation; constraining their willingness to either strictly adhere to, or enforce safety standards.

6. Themes on internal factors that affect workplace safety

Table 17: Themes on internal factors that affect workplace safety

S/N	Words used by participants	Emergent themes
1	Complex line of reporting	Line of reporting:
2	Differences in culture, norms and beliefs, multicultural issues, community influence	Cultural issues:
3	Budgeting is majorly an internal issue, which has impacted upon the organization's awareness programmes, poor budget	Budgetary issues
4	Differences in experts' views	Perceptions
5	Arrogant attitudes of different experts, expatriates not ready to take safety advice from other safety professionals	Attitude
6	Poor financial motivation such as minimal staff salaries mainly in the construction industry compared to those in the main oil and gas sectors	Motivation
7	Poor Management commitment, delays in provision of safety materials	Management commitment
8	Inadequate of training, poor experience of workers, incompetence	Training
9	Poor safety procedures, faulty safety system, unsafe work environment, inadequate staff and workload	Safety system
10	Concern about job insecurity, redundancy, retrenchment	Job insecurity

Table 17, presents a list and description of themes indicating internal factors that affect workplace safety. These include complex line of reporting, cultural issues, budgetary issues, training, and nature of safety system within the organization. Commenting on line of reporting, it was stated that:*"I will even like to tie this to the last question where I mentioned the line of reporting, this is really really a major internal crisis issue for them because it does impact on safety performance in the company" (Johnny)*. With regards to training of workers with low level of education and cultural/community influence, an interviewee commented that:

"Sometimes we do have certain individuals coming in that are not too learned but you have to take your time to train them, sometimes you have to make promises that you must comply with, irrespective of the challenges that you have to face with, and of course the communities, like I said earlier on, the communities are the major major part of those challenges that we are dealing with" (Jacob).

Another factor highlighted was the issues of budgeting. An interviewee noted that;
"Budgeting, and cost controlling, the provision of the materials not being prompt and the procedure of provision of the material in terms of the procurement, building up delays due to their own internal arrangement to buy materials" (Rexon). And noted that "when requisitions are made for safety materials, sometimes they do not come as at when due" *(Rexon)*.

7. External factors that affect workplace safety

The following themes were identified in the responses as external issues or factors that affect workplace safety.

- (i) Economic recession
- (ii) Insecurity (militancy, political crisis, piracy, kidnapping)
- (iii) Community/Tribal/ Ethnic influence
- (iv) Cultural beliefs
- (v) Tribal issues
- (vi) Government policies
- (vii) Corruption
- (viii) Political issues
- (ix) Influence of external regulators and partners, client influence

Commenting on external issues affecting workplace safety, an interviewee stated:

"because of the external issues that we are having, the insecurity issues, and the crude, loss of revenue in the crude sales, these have actually impacted on our business growth which is also impacting on our health and safety. And then of course you have community issues, a lot of places in which we work, we are being hampered by the community, the local community…" *(Johnny).*

Another interviewee emphasized issues of insecurity and economic recession, and commented that;

"like I said, you will deal with communities when you go to work, you will deal with equipment, you will deal with political issues, political interests, because we all come from different regions within the country and unfortunately everybody cannot agree on the same issues, so you definitely would be faced with that, you have to find a way to deal with that, and you also have to deal with the regulators, sometimes the regulators of the industry don't take into consideration what you as a company has to go through to be able to, to be able to meet up with their demands" *(Jacob).*

Another interviewee, also emphasized issues of security, community and political, as well as client interference which all together affect work place safety, and particularly noted that;

"So, well, we also have as you know in many situations especially in Nigeria, we have political issues, we have community issues, they want to, everybody want to come in there, they have, according to them they want jobs, we cannot employ beyond our capacity for the work" *(Rexon).*

Thus, economic situation in the country could be seen as providing a passive workforce that is unwilling to question poor practice through fear of losing jobs, especially as there are many others who would gladly take on those jobs.

8. Major factors that impact on employees' safety behaviour

Feedbacks on the major factors that impact on employees' safety behavior were grouped under the following themes (recall theme development process as highlighted in Section 3.4.2):

(i)   Low salaries

(ii)   Management's poor support to workers to enable adherence to safety procedures.

(iii)   Family issues

(iv)   Complex safety procedures

(v)   Poor supervision

(vi)   Job insecurity

(vii)   Stress: Workers' personal issues leading to stress and aggressiveness at work.

(viii) Lack of concentration which may be due to fatigue or long hours of work.

(ix)   Work pressure

(x)   Training

(xi)   Environmental situation

(xii)   Incentives

With high emphasis on family issues, low salaries and poor incentives, an interviewee commented as follows:

"A worker comes to work and earns as low as 20,000 naira in a month which is nothing commiserate to his normal total spendings, and he's got children in school, and he can't pay schools fees and then you come down here and say he needs to do this, and do safety and do that. So, some of these workers don't really see that as a main priority" (Johnny).

It is obvious that family pressure and low earnings also influence employees' safety behavior. According to Baum (2019), workers would find a work environment problematic if faced with conditions such as a precarious and exploitative work environment and a low salary; which could prevent them from balancing work, family duties and other elements necessary for their welfare. Family pressure creates a 'work-family' which influences a worker's psychology; which could impact on job or safety performance. Ajala (2017), reported a significant relationship between work-family conflict and work performance. Fotiadis *et al.* (2019), noted that the ability to balance both work and personal activities helps employees improve the quality of their wellbeing, and otherwise would impact on their work-life. Thus, despite

employee knowledge of safety procedures, the thought of low pay package, family issues, and inability to meet high family demands might still impact on the employee's safety behavior at workplace.

"You have issues where workers have to be aggressive over the slightest thing, arguments here and there, family worries, they complain to you, daughter is sick, wards need to go to school, can't afford to pay school fees. So workers are basically mainly occupied with so many personal issues, and of course like I mentioned, these also lead to a lot of aggressions at work. So, I mean, you know, these are major factors that thus impact on workers behaviours to say the least, yeah" (Rexon).

This situation may be mostly common among lower pay staff whose pay are not enough to take care of their most pressing needs (Baum, 2019). Referring to issues of job insecurity as one of the factors, an interviewer commented as follows: *"When an individual is thinking that his job is not secure, his emotion is not stable, it's a problem" (Jacob).*

Also, incentives, job protection (job security), environmental factors are part of the major factors affecting employees' safety behavior. As noted by another interviewee,

"The factor that impact on staff is, one, Job protection. They want to protect their job and as such they would go to any length to do everything that is required just to ensure that they don't run foul of the company safety policies… And then the incentives that are coming, of course I talked about those incentives and they know that the incentives are in place, and that if they carry out proper safety practices they would get to be rewarded for doing so" (Rexon).

Concerns about job insecurity and poor incentives are capable of distracting an individual from focusing on safety rules and regulations, hence, organizations need to redesign their job disengagement policies to restore a strong sense of job security among employees.

9. Personal views affecting Participants' attitude to organization's safety rules

Feedback on personal views affecting participants' attitude to organization's safety rules highlighted the following themes:

  (i) Organizational work culture

(ii) Poor management attitude to safety procedures and compliances

(iii) Poor motivation at work

(iv) Personal philosophy on safety

(v) Management commitment to safety systems (sometimes blamed on economic issues)

(vi) Professional ethics (Professional concerns)

(vii) Inadequate supervision/poor auditing by external auditors

(viii) Irregular incentives

Interviewees emphasized issues of organizational work culture as it sometimes deviates it reality from professional safety ethics. Every organization has its own peculiar work culture; to which workers would have to adjust their behaviour to accomplish the mission of the organization (Tsai, 2011). Among the major professional priorities of a worker should be; how to satisfactorily perform a job task, and doing so in the safest possible way. Nevertheless, organizational culture could pose a constraint or conflict of professional provisions especially as it relates to workplace safety, as such culture mostly influences workers' attitude, behaviour, job performance and satisfaction (Tsai, 2011). As also noted by Ademola & Olugbenga (2021), there is a positive correlation between safety culture and safety climate in Nigeria, also highlighting the importance of integrating both concepts through appropriate and relevant safety policies such as safety training and orientation, safety inspection policies and policies on safety materials, as well as safety requirement policies, safety communication, safety plan and safety-related decisions.

As also explained by one of the interviewees;

"you have issues where, you know, I really want to bring out my best to work but because of the culture here, work culture within the organization, you find out that this does impact on your overall performance and your dedication towards carrying out your job the way it should go" (Johnny, QHSE Manager).

Responses also indicate poor management commitment, an interviewee noted that;

"Personally, I like to do things right and my management has also given me the commitment but sometimes if I see that the commitment does not translate into the activity that is expected to take place, at times like that, I go back to management and I draw their attention back to the fact that they have given me that commitment, so that's where I have an issue, if I had their commitment to do something and I find that I'm having hitches achieving what I need to do for the overall safety of the organization" (Jacob, HSE Manager).

The claim of poor safety management and poor management commitments to employee safety in Nigeria has also been noted by Ewuzie & Ugoani (2016), who noted that 'the level of safety management in industries in Nigeria is largely inadequate.

Interviewees also emphasized on issues of poor supervision in terms of auditing and noted poor and irregular provision of incentives. According to one of the interviewees, *"The incentives we are talking about are not regular or more or less, sometimes, you are expecting and you don't receive them" (Rexon, QHSE Manager).*

This claim has also been confirmed by Ishola (2017), who reported that a significant proportion of Nigerians working in most firms such as the manufacturing firms; do not enjoy desirable level of wellbeing when it comes to safety and health.

This chapter has highlighted the findings of the focus group discussion involving employees selected from different organizations and in-depth interviews involving three management personnel of selected companies within the OGFZ. The findings identified major workplace safety risks, and measures taken by organizations to promote workplace safety, as well as internal and external factors affecting workplace safety in the OGFZ. The next chapter will present a discussion of the findings of the study.

CHAPTER FIVE

5.0 Discussion

5.1. Organizational safety climate characteristics and constraints within the OGFZ

The organisational safety climate within the OGFZ is characterized by a variety of management, employee and external related factors. Such Management-related characteristics include the commitment to provide safe work environment, which has been captured as a prominent factor in different studies in various industries (Flin *et al*., 2004, Flin *et al*., 2006, Bosak *et al*., 2013). This is expressed in policies and measures to reduce work place safety risks; including quality management certification, provision of adequate safety systems, policies and regulations and enforcements; supervision and training; and those aimed at promoting safety, such as provision of incentives, safety reporting culture, job security assurance as well as training. These measures are based on concepts and principles adopted from western protocols, which the foreign organizations apply to the country's occupational safety practice. This study has shown that the successful application of such organizational procedures is constrained by various intervening factors related to the Nigerian work environment influenced by culture, belief systems and attitudes, and economic status; and which affect safety climate in the OGFZ. Most of the factors have been identified in literature to include poor management of safety-related issues, organizational safety culture that conflicts safety standards and poor management of employees' welfare (Ademola & Olugbenga, 2021; Ewuzie & Ugoani, 2016; Ishola, 2017). These constraints are wont to reduce the commitment to mere principles or just documented guidelines. This suggests that expression of commitment does not suffice, but its implementation, enforcements and willingness to recognize and incorporate the indigenous factors into the organization's safety culture.

Factors related to employees that characterize the safety climate in the OGFZ include, their perception of safety from the viewpoint of belief system on the one hand and employer's commitment to safety on the other; and the bias system, including issues of marginalization, bias appraisal system and sentiments arising from the multi-ethnic nature of the workforce, as highlighted in Tables 11& 16. Others are welfare/salaries, issues with expatriates (disparity between expatriates and national workers, conspiracy issues against national workers, arrogant attitude of expatriate and discrimination), work pressure, job insecurity, injuries/fatalities as

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well as relationships, that is, the issue of strained employee-management/employee-employee relationships, as highlighted in Table 17. Most of these characteristics are peculiar to the study area and influenced by the cultural/behavioural norms in the country.

The contribution of external factors to the safety climate characteristics is majorly in the areas of the prevailing economy, community influence and government policies, which are different from known standards upon which widely known safety climate evaluations are made. Adeleke *et al.* (2018), also highlighted external factors as political, economic and technological factors; which have significant influence on the chances of risk occurrence in the workplace. The political factors involve influence of environmental variables such as safety, community perception, and legal acceptability, while economic factors are considered to include finance, labour and degree of demand, economic growth, as well as inflation in the economy (Adeleke *et al.*, 2018). On the other hand, changes in technology has an influence on safety climate, and defines to a large extent the level of risks in the workplace and nature of skilled manpower resources to be utilised in the organization (Ojo, 2010).

The organizational safety climate constraints also arise from factors of management, employee and external origin. The major management related factors include poor management commitment to safety issues, especially, poor implementation of safety practices; budget, poor training on safety and poor communication system within the organization and management hegemony (McGonagle *et al.*, 2016). This set of constraints has paramount influence on the system since they originate from the decision-making and operational driver of the organization, which management is. Hence, such constraints must be necessarily addressed in the view of a good safety climate in the OGFZ. It is important to recall that all of these factors were identified as critical particularly those related to budget, training, and commitment and this study aligns with the previous work. On the other hand, this study deviates with regards to emphasis on the influence of belief system and a theme about the safety culture at each layer of the organisation; perhaps, the layer in which the organisation works, that is, supplier to western led organisation plays a role. Thus there might be high commitment from the leadership but the supervisors are more worried by output targets, and so the safety commitment message is lost. This is certainly obvious in some of the comments from the supervisors who were quick to blame their staff, whereas many of the workforce are poorly educated and thus supervisors are left trying to train them in difficult circumstances.

Constraints connected with employees are mostly negligence, including, carelessness and refusal to follow laid down safety rules; and illiteracy, including lack of technical skills. This seems to reflect the view of employers, as articulated by supervisors interviewed; recall that the workers interviewed gave an impression of fear of losing their jobs if they complained of poor safety procedures. These views points to the fact that there is a body of work to be done on occupational health and safety (OHS) and poorly educated workforce, thus it would be interesting to consider the need to enhance the services of regulatory procedures and personnel to checkmate. Practically, it could be unrealistic to get to a point where investment in safety is seen as good for business, nevertheless, it is a norm that needs to be developed as a theme for Nigeria. Furthermore, enforcement and regulation on their own would not provide the solution, hence, as applicable in the UK, there is a need for Nigeria to provide a permissive system, that is, "do what you need to do to make people safe" compared to the prescriptive common approach of say occupational safety and health administration (OSHA) in which if something is missing it is deemed a non compliance. Above all, central to the whole study is the notion of safety culture; hence effort to achieve an improved safety climate in the OGFZ should be built around improving safety culture within the organizations. This is important because, there is a positive correlation between safety culture and safety climate (Ademola & Olugbenga, 2021), safety management practices of organizations have implications for employees' safety performance, wellbeing and productivity (Ishola, 2017).

These are amenable to compliance by strict implementation of policies and commitment to training. So, the responsibility falls back on management. The major constraints of external origin are community issues, including community influence on recruitment of unskilled and inexperience workers, community crisis, youth protest/restiveness; and government policies, such as policies on safety, and economic regulations that might affect organization's finance or jurisdiction to promote safety. However, strict enforcement of such instruments does not seem to be in place in the OGFZ. Thus, the managers of the OGFZ should take greater responsibility in ensuring that employees are safe; this might start with ensuring parity of safety processes, procedures and equipment for all workers (ex-pat and Nigerian). Enforcement of this responsibility would really impact on the corporate response and completely alter the way in which company directors prioritise occupational safety and health (OSH). There could be

fines that relate to business turnover; where organizations can get fined for OSH deaths or injury.

5.2   Internal and external factors affecting organizational safety climate within the OGFZ

Internal factors in the context of this study are those originating from the organisations/companies within the OGFZ system. These are factors contributed by the individual organisations, including the workforce, and the OGFZ authorities. This study has identified a variety of such factors that affect organisational safety climate within the OGFZ, as highlighted in Table 17, and main among them are the complex line of reporting/safety communication, which could influence employees' perception of safety/safety actions; cultural issues, which introduce influences on safety perception through the differences in culture, norms and beliefs; budgetary issues, which impact upon the organization's awareness programmes; and attitude, including arrogance of different experts where expatriates are not ready to take safety advice from other safety professionals; as well as motivation, e.g. poor financial motivation such as minimal staff salaries mainly in the construction industry compared to those in the main oil and gas sectors.

The wellbeing of employees is important in considering safety or job performance, and the reported inconsistencies in organizations' commitment and management of safety-related issues may have contributed to the poor safety performance in most organizations in Nigeria (Ishola, 2017; Ewuzie & Ugoani, 2016).

Others are management commitment, especially in response to safety provisions; training, including inadequacy of training that results in workers' poor experience and incompetence; job insecurity, whereby great concern about redundancy and retrenchment influence safety perceptions in the companies; as well as safety systems, with poor safety procedures, faulty safety system, generally unsafe work environment and inadequate manpower that translates to heavy workload. Other studies have recorded the influence of 'safety related policies, communication and environmental factors (Dejoy *et al*., 2003) and training (Jafari *et al*., 2014) on safety climate in organisations; which are also highlighted in this study but conspicuously differ in the emphasis on the influence of employee-related factors including influence of belief system and employee motivation, as well as influence of external factors, other than

environmental factors.

As much as their effect can go, these internal factors can be controlled by management commitment in the overall sense of it. These findings suggest that safety climate in the OGFZ depends on management commitment, which is determined by its organisational priorities. It has been opined that safety management and safety personnel support significantly influence safety climate (Li *et al.,* 2017).In the circumstances of negligence in the part of management, it might be necessary to consider penalties that could be put in place for managers and organisations who infringe the health and safety best practice, this could be enforced by government or authorised independent regulatory agencies. This fact reflects on the issue of safety performance of organizations in the OGFZ, as already been highlighted; where Western-run organizations with comparatively significant management commitment to safety, appear to be mainly among the good safety performers while mostly African or Nigerian owned companies appear to dominate list of poor safety performing organizations. In particular, the study indicates that besides external factors, poor management commitment appears to be a prominent internal factor contributing to bad safety performance of most organizations within the OGFZ.

However, the external factors are those originating and exerting their influence from outside the organisation/OGFZ. This study has identified such factors, chief of which are; third party influence(such as interference from community, private sector, family burden, client pressure, and influence from friends); socioeconomic factors including taxes, levies and regulations that affect the organisation's business plans, and which in turn influence attitudes and behaviours of staff towards safety; and insecurity, including political violence, communal crisis, militancy, piracy, kidnapping; as well as government policies(Table 10). These issues and societal vices are rife in the Niger Delta region where the OGFZ operates; and sufficiently affect the perception of workers towards safety, and indeed their behavior. This would also significantly influence the safety culture of the organizations. Others are tribal issues and community influence, which bring the issue of host community claims and exerts pressure on the system to employ unskilled and unqualified hands that would not add value to the safety performance of the organisation; the economic recession in the country, affecting attitudes and behaviours at work; poor social infrastructure such as bad roads and poor transport system, which impact directly of workers' attitudes; as well as client pressure, which sometimes conflict with laid

down safety procedures in the organisation. Corruption was also identified among the external factors, where clients and external regulators could circumvent procedures leading to skewed attitudes and perceptions and possible manipulation of health and safety(H&S) data on transgressions. Also identified was family issues; referring to individual employers' family burden as it impacts on work capacities and perceptions. Employee attitudes are identified among the vital indices of safety climate (Cox & Cox, 1991). This seems to be a common feature of life in developing countries, especially where there are too many workers pursuing too few jobs.

5.3   Factors that influence employee attitude to organizational safety climate

Every organization faces the responsibility of providing a safe work environment; and should, under obligation deploy all necessary measures to ensure workplace safety. This fact was also posited by Eskandari *et al.* (2017), highlighting that employers have a crucial role to play in preventing workplace accidents. Nevertheless, such enabling environment and standards need to be adhered to by employees who normally show different attitudes to such provisions. Thus, employee attitude is one of the critical factors to consider when assessing organizational safety. It directly influences workplace safety climate and safety performance (Gharibi *et al*., 2016; Torner, 2009). Other studies have identified employee personal attitude among factors that influence workers' safety behaviour in an organization Choi *et al.* (2017).Employee attitude influences the way the employee responds to workplace accidents and other safety or risky situations in the workplace (Gharibi *et al*., 2016) much as it affects the way the employee responds to workplace safety rules and procedures. Mullen *et al*. (2017), reported a stronger relationship between perceived employer safety obligations and employee safety attitudes. Conversely, employee attitude is in turn affected by various factors. As highlighted in Section 4.1.2: Table 11, this study identified several factors affecting employee attitude to organizational safety climate, to include management factor, employee decisions, experience, belief system, family concerns and health condition of employees.

As indicated in Table 11, management factor involves provision of safety equipment, motivation, and punitive measures adopted by management, as well as provision of welfare packages such as incentives, workers' welfare, awards, salaries. Obviously, this factor comprises both mandatory and reward-based measures, which must not be ignored by the

employee. Thus, employer commitment is key, but so too is the broader welfare package so that the employees have space and support to practice good safety, and are not distracted by other issues. There is also a culture of safety being the right thing to do, as well as promoting employee strict reliance on established safety culture to achieve workplace safety than dependence on superstitious belief systems.

The influence of management commitment and other management related factors on employee safety attitude and behaviour has also been elaborately emphasized by Li *et al.* (2019). Employee decisions or approach to safety consists of negligence, willful blindness or willful violation of safety procedures, refusal to take instructions, taking short cuts to tasks against safety procedures.

Ignorance or lack of experience can influence an employee attitude to safety. Simply put, if an employee lacks the basic safety training to identify or pre-empt a risky situation, the employee is likely to be exposed to an unsafe work situation. Thus, as identified by this study, experience is an important factor influencing employee attitude to organizational safety procedures and rules; which consists of training, and employee level of awareness of safety protocols. These facts also corroborate the finding by Gharibi *et al. (*2016), which indicated that accident experience could affect positively on changing workers' safety attitude, and also reported a significant correlation between education, exercise, accident experience and occupational safety attitude.

The belief system is a traditional factor that unarguably affects employee attitude to safety protocols. As a matter of fact, needless to say the least about the possibility of a great influence of individual belief system on the way the person responds, or trust laid down safety rules. This study identified belief system as one of the major thematic factors affecting employee attitude to work; highlighting its components such as religious/cultural beliefs, personal conviction, traditional norms, and custom. The issue of belief is one of the primary factors to consider or deal with while aiming to ensure effective safety system in an organization. According to Furst (2016), people's behaviour is driven by their underlying belief systems, which have a profound effect on safety issues such as hazard management, exposure assessment, and accident prevention.

As a matter of fact, the belief system plays a significant role in influencing employee safety attitude within an organization. Phuspa & Rudyarti (2017) reported a significant relationship between belief and workers' safety attitude. In a broader perspective, Andrei *et al.,* (2015) explained that safety beliefs influence safety outcomes. In particular, Gharibi *et al.,* (2016) reported a significant statistical correlation between belief and safety attitudes. In the context of this finding, belief system involves the confidence, thoughts and decisions derived from religious, cultural and superstitious beliefs or perhaps baseless confidence in personal conviction rather than safety procedures; these dimensions have been found to strongly influence employee attitude to safety. This fact corroborates the findings of a correlation between elements of religion such as observed belief in the supernatural, with workers' attitude towards health and safety issues (Umeokafor & Windapo, 2019). The reason is that, most Africans, and Nigerians in particular being widely diverse in terms of culture, religion and diverse belief systems (Aregheore, 2009) seem to be emotionally attached to their beliefs, which sometimes could influence their trust in laid down standard and instructions. Also, as already highlighted, Hofstede (2017) suggested that cultural attitudes may naturally influence people's perception at the workplace, especially where there is no established strong safety culture to offset their existing cultural norms, as would exist in Nigeria. In fact, as highlighted by one of the participants, there is a possibility that an employee would rather trust in his belief to stay safe than the protocol set out by the organizations. As broadly noted by Noort *et al.* (2016), safety-related behaviour may be influenced by cultures, beliefs and norms outside the direct control of organizational management.

As identified in this study, family concerns is among the themes of factors affecting employee attitude to organizational safety, and consists of factors such as concern about family issues, family love, etc. Family concern is a critical factor that impacts on the psychology of the employee as they carry out their tasks away from their family (Obrenovic *et al.,* 2020). In relation to workplace safety, the consciousness of family love and the expectation to return safely to meet the family, would encourage an employee to rather be more safety conscious to stay alive for his/her family. On the other hand, an employee who is facing family problems could at the same time be undergoing psychological stress which could directly affect his attitude to work and safety procedures at work. This factor is critical from the viewpoint of the Nigerian family system where people and their activities are strongly influenced by sentimental

attachment to relatives, more so, in an extended family system characterizing the typical African family.

Health condition was also identified among the themes representing factors that affect employee attitude to organizational safety; and includes mental stress, health condition of employee, and employee mindset. Of a fact, the consciousness of fatalities, accidents and possibility of death or other health risks can shape an employee attitude and behaviour towards safety procedures at work (Li *et al.,* 2019). Health related factors, as determinant of employee attitude to organizational safety climate, have also been highlighted by Idrees *et al.* (2017). This will be further explained under personal reasons affecting employee attitude to safety.

The strong point of these findings is the fact that a negative attitude to safety is dangerous to achievement of a good safety climate in the organization; which is beneficial to both the employees and the organization. Thus, it is important that organizations in their quest to ensure a good safety climate should also aim at promoting or encouraging a good employee attitude to safety.

Besides all other factors, employee attitude to organizational safety protocols is also primarily influenced by the employee personal reason or factors. This study (Section 4.1.2: Table 12), identified most of these factors and summarized into the following major themes; bias system, family concern, health concern, job related factors and welfare.

In particular, bias system, as highlighted in the study indicates factors such as issues of marginalization, bias appraisal system, sentiments involving expatriates (disparity between expatriates and national workers, conspiracy issues against national workers, arrogant attitude of expatriate, discrimination; bullying by supervisor).

The theme; family concern is further captured under respondents' concern about missing the family, worries about family issues and problems, marital problems and family wellbeing. These issues can culminate into psychological stress at work which could affect the employee's work performance and in this context, attitude towards safety directives. This finding is similar to that of Brough & O'Driscoll (2005), and Obrenovic *et al.* *(*2020), already noted above.

Health concern as already discussed above, comprises employee fear of death, injuries, accidents in the workplace and the desire to stay safe at work. To re-emphasize, the consciousness of possible accidents, injury or death as a result of risky job task could catalyze employee's positive attitude or adherence to organizational safety protocols. In other words, health-conscious employees would want to follow safety procedures to stay safe and healthy at work.

Factors related to job tasks and conditions are also among major influences on employee attitude to safety within an organization. In this study, the theme; job related factors was identified to include work stress, work load, and limited workers per job. In essence, where an employee feels stressed at work or over-worked by lots of job tasks, the employee could resort to cutting corners or attempting unsafe approaches to work. This assertion has also been emphasized by Idrees *et al.* (2017), which listed workload, organizational relationships, mental stress, job security, and job satisfaction as psychological factors that significantly affect workers' safety within an organization.

Employee personal welfare is a critical factor that influences employee attitude to safety. This fact has been confirmed by responses from Focus group participants. As indicated in Table 12, the theme; welfare is explained by factors including provision of incentives, bonuses, awards, promotions, and monetary benefits. Indeed, the welfare of employee can influence the employee's attitude towards adhering strictly to organizational safety standards. As explained by Srivastava (2004), welfare activities/facilities affect the workers' attitudes towards management and job satisfaction; and if workers are satisfied their attitudes are pro and positive attitudes towards organizational development. As also explained by Chatterjee *et al.,* 2018), employee welfare is an extremely essential factor that enhances employee motivation, loyalty and trust. Thus, improved employee welfare would impact positively on their attitude to work, job performance and attitude to organizational safety standards. Such positive attitude will include adherence to organizational directives on job delivery, performance, as well as health and safety rules. In other words, while an employee might be conscious of health implications of risky behaviours, certain enticing welfare packages can encourage the decision to stringently follow the safety rules as provided by the organization. Suffice it to say that an employee may

decide to follow safety rules with the aim or expectation of being rewarded or receiving accompanying bonuses from the organization.

5.4 Measures taken by employees and organizations to reduce workplace accidents within OGFZ

This study has identified measures taken by both employees and the organisations in the OGFZ to reduce workplace accidents. Such employee measures included personal commitment to safety, which concerns the individual's resolve to work safe; training; compliance to safety procedures and concentration at work. Individual workers do understand the need to work safe, which sometimes informs the decision to improvise at certain points or stop work at others rather than dwell on the exigency of duty to carry out unsafe acts. On the other hand, the organisations engage the following measures to reduce workplace accidents: monitoring and supervision, equipment inspection, effective safety communication and safety reporting, cognate training, provision of incentives and motivation, provision of safety policies/regulations, enforcement of safety procedures, rules, regulation, disciplinary measures, and provision of adequate safety materials, safe personnel and safe work environment. The actual implementation of these measures cannot be fully vouched for. The reason is that, among the companies sampled, some were high safety performers while others were low safety performers. Organizations that implement above mentioned measures would most likely have impressive safety performance, which would also likely support a good safety climate. Specifically, this study did not analyze findings based on safety performance of the respondents' organizations; this would be an important objective for further studies to determine the impact of low and high safety performance on safety climate. This would help to identify possible similarities and differences in the responses from workers in good and bad performing companies.

5.5 Possible ways to improve the existing safety climate in the OGFZ

This study has noted that safety issues in the OGFZ, and by extension, Nigerian organizations, are influenced by factors such as culture and belief system, as well as various internal and external factors that shape the behavioural pattern of their workers. It was reported that a high level of knowledge of safety among Nigerian healthcare workers was at variance with practice; an attitude noted to be largely due to the lack of basic safety equipment (Aluko *et al*., 2016).

This was a behavioral response influenced by management factors. It is thus understandable that improvement in safety climate would also depend on the safety performance and safety culture of organizations, among any other factors.

Also, the study identified impressive expression of positive safety measures that suggest very fair safety culture and high safety performance by the organizations; but with indications that expressed measures were not actually implemented. Hence improvement is required at both organizational and employee levels. It is important to emphasize the reality of the terrible disadvantage that employees work within; a weak whistle blowing policy and practice; and weak employee representation and loose legislation in place, which works to confound health and safety (H&S) good practice.

CHAPTER SIX

6.0   Conclusion and Recommendations

This study assessed safety climate in the OGFZ using the qualitative methods of focus group discussion and interviews with participation from purposively selected companies based on safety profile and performance. The choice of approach followed the need to address the issue with specific reference to the Nigerian situation, where strong indigenous institutional frameworks on safety are lacking and issues of workplace safety are influenced by peculiar culture, social and economic factors; to deviate from the seemingly conventional approach of quantitative methods with already existing tools like SCQs applied in western organizations in different cultures with developed safety institutions and improved organizational safety culture.

This study has identified the perceptions of employees in relation to safety, which provide an understanding of the safety climate in the OGFZ. The findings on their shared perceptions with regard to safety policies, procedures and practices generally compare with those from various previous studies which identified measurable factors in safety climate dimensions in other climes.

The study also provides answers to the research questions which mainly sought to identify what constitutes organizational safety climate characteristics and the constraints affecting safety climate within the OGFZ. Findings indicate factors such as management commitment, finance, supervision, incentives, disciplinary measures, management-employees relationship, communication gap, line of reporting and policies among what constitute organizational safety climate. The findings also identify among the constraints affecting safety climate within the OGFZto include; poor employee welfare, poor management commitment to safety, negligence, job insecurity, communication lapses, and ineffective or lack of appropriate government policies and legislation around employee protection and workplace safety. These further reiterate the need for proactive supervision by regulatory agencies to regulate and enforce safety compliance by employees and management. The activities of the regulatory agencies

should be backed and empowered by standard safety Acts and legislations as applicable in the United Kingdom with the UK Factories Act and other relevant legislations.

6. 1   Recommendations to stakeholders

The possible ways to improve the existing safety climate in OGFZ are thus suggested:

A. *Recommendation to* the organization and OGFZ management

The study recommends an improved management commitment towards safety, which encompasses the organization's approach to policies and their implementation of safety regulations; including training, provision of safe work environment and strict compliance to existing national regulations. As already been emphasized, poor management commitment appears to be a major setback to good safety performance in the OGFZ, thus a critical internal factor to be considered towards improving safety climate in the OGFZ.

Organizations and in particular, the OGFZ management should consider and apply the suitable indigenous factors with the Nigerian environment, and as applicable in other developing world economies, in designing and implementing their safety operations in order to achieve good performance, rather than dwell completely on the principles and practices imported from Western operations.

Faulty external influences on safety issues must be prevented through strict compliance with regular principles by organizations. In other words, organizations should not allow undue and defective interferences by external factors that would compromise workplace safety, thus, compliance to laid-down safety standards should be maintained and managed by the OGFZ management, under the monitoring by independent regulatory bodies.

Organizations should enhance improvement of employees' welfare, ensures job security and improve communication procedures to make it easier for effective information flow between management and employees.

Organizations should ensure adequate training of employees to develop a culture of always following laid down safety policies, regulations and procedures. Thus, the study encourages organizations to develop more effective workers councils so that they are actively engaged in

the H&S process that would be more transformational rather than a transactional process of simply obeying rules set by managers.

Importantly, the OGFZ management as one of the most important stakeholders for this research needs to impose much greater processes of overall management of organizations within the OGFZ such that organizations are compelled to introduce more transactional processes of embedding H & S processes through organization transformation. This could include radical change in terms of employee representation and control of H & S in the workplace. Such type of change would have the potential of helping to impose a culture of safety compliance based on global best practice. So there could be a need for training for OGFZ management in developing an effective change strategy in order to redesign the process of trade and H & S management standards expected, with clear penalties for all transgressions.

B. The Employees and employee representatives (Trade Unions)

It is important that employees are encouraged to manage their stress factors so as not to bring a left over to work, such employees undergoing stress need to seek urgent help from experts.

Employees should always adhere to laid down safety policies, regulations and procedures.

Employees need not follow a culture or belief system that would jeopardize their safety at work. In addition, groups or unions that represent employees (for example trade unions) should be integrated into the regulatory process for monitoring H&S in the organization. The study emphasizes the need to consider transformational changes rather than transactional processes of blindly following rules and regulations.

Furthermore, combining the force of many Trade Unions could possibly increase pressure towards achieving workplace safety thus, the study also recommends the need to protect and defend a worker's right to join a Trade Union. This further reiterates the important role of trade unions in helping to promote safety climate in the workplace, as already discussed.

Also, there could be a central management role for OGFZ to offer training and development for a H & S officer at every single organisation operating within the OGFZ; this would involve to develop a named person within each organisation in order to disseminate appropriate

standards to all organisations (this could be managed in cooperation with relevant Trade Unions).

C. The Government

The government should improve upon its oversight function of ensuring that organizations comply with standard safety regulations, this should include unscheduled visits to companies; assessing company health and safety records, casualty and accident records and independent investigation on companies' safety profiles.

The government should ensure that a penalty is imposed against defaulting organizations, or companies that compromise laid down standard safety regulations. This may include suspending operational licenses of defaulting companies or imposing a fine on defaulting companies. Practically, to achieve this, the responsibility for suggesting and promoting such changes in policy could be more heavily reinforced and promoted by the OGFZ mangers.

D. The Community

Rural communities from which most of the employees are recruited and companies operate, are largely influenced by societal norms and cultures. Most of these norms and cultures are superstitious and sometimes could interfere with modern standard safety cultures and procedures. Thus, it is important that host communities within which the companies operate do not impose or interfere with organization's safety climate. This can be achieved by a proper orientation of community stakeholders on the dangers or implications of such interference on the wellbeing of employees and company safety reputation. This initiative could be led by the OGFZ managers along with representation from each of the contractor/sub-contractor organizations. The study also suggests the need for the Community to involve International Groups where possible, for example Environmental Groups, International Labour Organisation, etc.

6.2   Reflections on the Research Process

Overall, my experience of undertaking this research was marred by lots of mixed feelings. On one hand, it was exciting to be able to carry out survey on the subject matter in OGFZ, and on

the other hand, surprises having to listened to in-depth narratives of the porous safety climate and poor safety working conditions in the organization. For instance, it was shocking to hear of some of the injustices on which data were collected and how bad the situation is for the ground floor employees. If this research was to be undertaken again, perhaps a quantitative perspective of the study would have been considered for comparison purposes. There was also suspected limitation difficulties encountered playing an insider researcher role and that of being a member of the OGFZ management, although assurance of anonymity and confidentiality of participants seemed to have emboldened the participants.

It is also important to note that the study does not completely missed the OGFZ management as main stakeholders in this study, although it relied on the testimonies of participant employees, and their boldness in expressing their thoughts, knowing quite well of the researcher's role in the OGFZ management, further strengthens the reliability of the information given. With the enormity of the findings of this study, which reveals very in-depth lapses in safety profile of the OGFZ, with the bulk of the blame pointing towards management ineptitude to contain with external interference, national economic changes and company policies with regards to strict safety compliance, it is expected that there would be an appetite for the type of change that the study is proposing on the part of the OGFZ management. On the part of employees, the overwhelming concern to improve workplace safety, it is also expected that majority of employees would willingly support policies that would improve safety climate and other safety variables in the OGFZ. Despite efforts to protect the identity and confidentiality of all stakeholders in the study, in consideration of possible difficulties that the outcomes of this project might cause the researcher and participant employees, the study considered measures that might further protect the researched and the researcher, for example by requesting that the project report remains as confidential on the MU e-repository, for a number of years. In this way, anyone who wanted to see your report would need to contact you first. Nevertheless, while any ill treatment is not envisaged, I think the management of OGFZ would appreciate to have access to the report of this study as it would go a long way towards helping them to improve on safety in the organization. Detailed limitations and other relevant observations in the course of the survey are highlighted in Section 3.6.

6.3   Contribution to Practice and Dissemination.

The relevance of a research is in its contribution to knowledge and in helping to solve emerging problems of the society. The strength of this study is in its firsthand findings which inform the call for revision and improvement in safety climate and general safety profile in the OGFZ. This section aims to reinforce the outcomes of this project and realistically explore what might be achieved in terms of sustainable change in the short and long term. In line with the aim of this study, it is important that the outcome of this study be explored by the various stakeholders to help in restructuring safety profile in the OGFZ. As one of the rare studies on safety relating the OGFZ, it is important that the recommendations of this study are given keen consideration by all stakeholders to promote a good safety climate and ensure safety of workers in the organization. In view of the foregoing, it is expected that a paper would be written with my supervisors for publication in an open access referred journal; while also proposing presenting the outcomes of the study at any relevant conferences. Participations in safety workshops and training sessions are also considered where the research would be used as a basis for training and contributions to policy formulation and adjustment toward promoting workplace safety in the OGFZ and other high-risk organizations in Nigeria.

References

Adaeze, C. P. (2021). Safety, Health and Welfare of Nigerian Workers as entrenched under the factories Act of 2004. *New Challenges to Education: Lessons from around the World, BCES Conference Books*, 19, 246-252. Sofia: Bulgarian Comparative Education Society [Online].

Abdullah, N. A. C., Spicket, J. T., Rumchev, K. B. and Dhaliwal, S. S. (2009).Validity and Reliability of the safety climate measurement in Malaysia. *International Review of Business Research Papers,* 5(3), 111-141.

Adebiyi, K. A. (2013). A combinatorial approach to planning manufacturing safety programme. World Academic of Science, Engineering and technology, 74, 285-290.

Adebiyi, K. A. &Ajayeoba, A. O. (2015).Integrated modeling of manufacturing safety interventions planning and management. *Proceedings of the International Conference on Aeronautical and Manufacturing Engineering, (ICAAME '15)*, Dubai, UAE, March, 46-50.

Adeleke, A. Q., Bahaudin, A. Y., Kamaruddeen, A. M., Bamgbade, J. A., Salimon, M. G., Khan, M. W. A. and Sorooshian (2018). The influence of organizational external factors on construction risk management among Nigerian Construction Companies. *Safety and Health at work,* 9(1): 115-124. DOI: 10.1016/j.shaw.2017.05.004.

Ademola, A. J. & Olugbenga, A. O. (2021). Safety Climate and Safety Culture Policies of Construction Organization in Nigeria.*American Journal of Engineering Research,* 10(2), 82-95.

Adeogun, B. K., & Okafor, C. C. (2013).Occupational Health, Safety and Environment (HSE) Trend in Nigeria. International Journal of Environmental Science, Management and Engineering Research, 2 (1), pp 24-29.

Afolabi, A. O., Tunji-Olayeni, P. F., Amusa, L. M., Omuh, I. O., Ojelabi, R. A. and Oyeyipo, O. O. (2016). Safety cultured industry through the integration of Occupation Health and Safety (OHS) courses in the Built Environment curriculum. *Proceedings of INTED2016 Conference*, 7-9th March, 2016. Valencia, Spain.

Agwu, M. O.& Olele, H. E. (2014). Fatalities in the Nigerian Construction Industry: A Case of poor Safety Culture. *British Journal of Economics, Management & Trade,* 4(3)431-452.

Ajslev, J., Dastjerdi, E. L., Dyreborg, J., Kines, P., Jeschke, K. C., Sundstrup, E., & Andersen, L. L. (2017). Safety climate and accidents at work: Cross-sectional study among 15,000 workers of the general working population. *Safety Science*, *91*, 320-325.

Almeida, I. M. (2006). The path of accident analysis: the traditional paradigm and extending the origins of the expansion of analysis. *Interface – ComunicaoSaude, Educacao,* 10 (19), 185-202. http:dx.doi.org/10.1590/S1414-32006000100013.

Aluko, O. O., Adebayo, A. E., Adebisi, T. F., Ewegbemi, M. K., Abidoye, A. T. &Popoola, B. F. (2016). Knowledge, attitudes and perceptions of occupational hazards and safety practices in Nigerian healthcare workers.*BMC Research Notes*, 9(71).

Alshenqeeti, H. (2014). Interviewing as a data collection method: A critical review. *English Linguistics Research*, *3*(1), 39.

Alvesson, M. &Skoldberg, K. (2000).*Reflexive methodology*, London: SAGE.

Amponsah-Tawiah, K., &Dartey-Baah, K. (2011). Occupational health and safety: Key issues and concerns in Ghana. *International Journal of Business and Social Science*, *2*(14), 119-126.

Amponsah-Tawiah & Mensah (2015). Occupational Health and Safety and Organizational commitment: Evidence from the Ghanaian Mining Industry. *Safety and Health at work*, 7(3)225-230.

Anderson, C. (2010). Presenting and evaluating qualitative research. *American journal of pharmaceutical education*, *74*(8), 141.

Andrei, D., Griffin, M., Cham, B., Opacic, J., Diaz, R. & Ochoa-Pacheo, P. J.(2015). The Role of Safety Beliefs in influencing Safety Outcomes in the Mining Sector in South American Countries. *Action Research Report, International Mining for Development Centre*. Available at: https://www.im4dc.org.

Andrew-Jaja, J. A. A.& Orugbani, Y. M.(2021). Towards ensuring Industrial Safety in Nigeria: A Legal Framework. *International Journal of Innovative Legal & Political Studies*, 9(1), 104-112.

Ann Blandford (2020, January 24). How to do a Thematic Analysis of User Interviews. Retrieved from: https://www.interaction-design.org/literature/article/how-to-do-a-thematic-analysis-of-user-interviews.

Anya, S. & Iwanger, G. (2019). The Role of Whistle Blowing Policy as an Anti-Corruption Tool in Nigeria. *Journal of Law and Criminal Justice,* 7(1), 35-50.

Aregheore, E. M. (2009). Country Pasture/Forage Resource Profiles: Nigeria. Food and Agriculture Organization of the United Nations (FAO). Available at: http://www.fao.org/ag/AGP/AGPC/doc/counprof/PDF%20files/Nigeria.pdf. [Accessed: 23 July, 2015].

Ausserhofer, D., Schubert, M., Desmedt, M., Blegen, M. A., De Geest, S., &Schwendimann, R. (2013). The association of patient safety climate and nurse-related organizational factors with selected patient outcomes: a cross-sectional survey. *International Journal of Nursing Studies*, *50*(2), 240-252.

Avramchuk, A. S., McGuire, S. J. J. (2018). Patient Safety Climate: A Study of Southern California Healthcare Organizations, Journal of Healthcare Management, 63(3): 175–192. doi: 10.1097/JHM-D-16-00004.

Baarts, C. (2009). Collective Individualism: the Informal emergent dynamics of practicing safety in a high-risk work Environment, *Construction Management and Economics*, 27 (10) 949-957.

Baker, R. (1998). Climate survey analysis for aviation maintenance safety.Master's thesis, Naval Postgraduate School, Monterey, CA.

Barszcz, R. (2015). How technology is creating safer construction sites. Real Estate Journal, September 2015. www.rejournals.com. Accessed 8/4/2017.

Baum, T. (2019). In:Fotiadis, A. Abdulrahman, K. & Spyridou, A. (2019). The mediating roles of psychological autonomy, competence and relatedness on work-life balance and well-being. *Front. Psychol*., 10:1267. DOI: 10:3389/fpsyg.2019.01267.

Behi, R., & Nolan, M. (1995).Ethical issues in research. *British Journal of Nursing*, *4*(12), 712-716.

Berends, J. J. (1996). On the Measurement of Safety Culture (Unpublished graduation report).Eindhoven University of Technology, Eindhoven (in Guldenmund, 2000).

Berek, N. C., Suwandi, T. and Purnomo, W. (2019). Internal Factors that influence unsafe acts on construction workers. *Finance & Management Engineering Journal of Africa*, 1(4), 34-38.

Bergh, M., Shahriari, M. &Kines, P. (2013). Occupational Safety Climate and Shift Work, Chemical Engineering Transactions, 31, 1-6.

Blaikie, N. (2007). Approaches to Social Enquiry (2nd Ed), Cambridge: Policy Press.

Blanchard, E. & Frasson, C. (2005). "Making Intelligent Tutoring Systems Culturally Aware: The Use of Hofstede's Cultural Dimensions.", Paper presented at the International Conference in Artificial Intelligence (ICAI), Las Vegas, USA.

Bosak, J., Coetsee, W. J. & Cullinane, S. (2013). Safety climate dimensions as predictors for risk behavior. *Accident Analysis and Prevention*, 55, 256-264.

Braun, V. & Clarke, V. (2006).Using thematic analysis in psychology. Qualitative Research in Psychology, 3 (2), 77-101.

Braun, V. & Clarke, V. (2013). Successful qualitative research: A Practical guide for beginners. London, Uk: SAGE.

Brough, P. & O'Driscoll, M. (2005). Managing work-family conflict: Exploring individual and organizational options. *NZJHRM (Special Issue: Work family & Gender),* 9(3), 200-215.

Brown, R. L., & Holmes, H. (1996).The use of a factor analytic procedure for assessing the validity of an employee safety climate model. *Accident Analysis and Prevention*, 18, 445-470.

BSMS (2014).*Safety Behaviour*. [ONLINE] Available at: http://www.behavioral-safety.com/b-safe-management-solutions/our-approach/safety-behaviour [Accessed 18 March 2014].

Burke, M. J.; Chan-Serafin, S., Salvador, R., Smith, A. & Sarpy, S. A. (2008). "The Role of National Culture and Organizational Climate in Safety Training Effectiveness.", European Journal of Work and Organizational Psychology 17, no: 1: 133-152.

Cameron, J. (2000). Focussing on the focus group. *Qualitative research methods in human geography*, 83-102.

Chinda, T. (2014). Organizational factors affecting safety implementation in Food companies in Thailand. *International Journal of Occupational safety and Ergonomics,* 20(2), 213-225.

Celis, A. (2011). Principles of evaluation of safety interventions for motorcycle injuries.*Proceedings of the WHO-RTIRN Regional Workshop on Public Health Research on Road Traffic Injuries*. www.rtirn.net.

Chan, M. Woon, I. &Kankanhalli, A. (2014). Perceptions of Information Security in the workplace: linking Information security climate to compliant behavior. Journal of information Privacy and Security, 1(3), 18-41.

Charmaz, K. (2006). Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis. Sage Publications Limited: London.

Chatterjee, S., Wadhwa, M. & Patel, D. (2018). A Study on employee welfare and its impact on their performance at private hospital and its research centre-cross sectional descriptive study. *International Journal of Research and Analytical Review,* 5(12), 504-536.

Chen, Y., Liu, K. &Chang, C. (2018). Practical application of safety climate: A case study in the Taiwanese steel industry. International Journal of Industrial Ergonomics, 67: 67-72. https://doi.org/10.1016/j.ergon.2018.04.010.

Cheyne, A., Cox, S., Oliver, A. & Tomas, J. M. (1998). Modelling safety climate in the prediction of levels of safety activity. *Work and Stress*, 12(3), 255-271.

Chikudate, N. (2009). If human errors are assumed as crimes in a safety culture: A lifeworld analysis of a rail crash. *Human Relations*, 62, 1267-1287.

Choi, B., Ahn, S. & Lee, S. (2017). Role of social norms and social identifications in safety behaviour of construction workers: Theoretical model of safety behaviour under social influence. *Journal of construction engineering and management*, 143(5), 04016124.

Choudhry, R. M., Fang, D. & Lingard, H. (2009).Measuring safety climate of a construction company. Journal of Construction Engineering and Management, 135(9), 890-899.

Choudhry, R. M., Fang, D. & Mohamed, S. (2007). The nature of safety culture: A survey of the state-of-the -art. *Safety Science*, 45 (10), 993-1012.

Christian, M. S., Bradley, J. C., Wallace, J. C. & Burke, M. J. (2009). Workplace safety: A meta-analysis of the roles of person and situation factors. *Journal of Applied Psychology*, 94, 1103-1127.

Commonwealth (2013). Nigeria: Gateway to Sub-Saharan Oil and Gas Industry. The Commonwealth Yearbook. Available at: http://www.commonwealthofnations.org/wp-content/uploads/2013/08/CYB13-Nigeria-with-ads.pdf. [Accessed: 23 July, 2015].

Cooper, M. D. (2000). Towards a Model of Safety Culture. *Safety Science*, 36(2)111-136.

Cooper, M. D., & Phillips, R. A. (2004).Exploratory analysis of the safety climate and safety behaviour relationship. *Journal of safety research*, *35*(5), 497-512.

Costley, C., Elliott, G. C., & Gibbs, P. (2010). *Doing work-based research: Approaches to enquiry for insider-researchers*. Sage.

Cox, S. & Cox, T. (1991).The structure of employee attitudes to safety; a European example. *Work& Stress*, 5, 93-106.

Cox, S. J. & Cheyne, A. J. T. (2000).Assessing safety culture in offshore environments. *Safety Science*, 34, 111-129.

Cox, S. & Flin, R. (1998). Safety Climate: Philosopher's Stone or Man of Straw? *Work and Stress*, 121, pp. 189-201.

Creswell, J. (2014). Research Design: Qualitative, quantitative and mixed methods (4thEd.), Thousand Oaks: Sage.

CSB (2007).BP Texas City Investigation report, Refinery explosion and fire. U.S. Chemical Safety and Hazard Investigation Board. Report No. 2005-04-1-TX. 341pp. www.csb.gov. Accessed 28/4/17.

CSU (2011). Theories of accident causation. Cleveland State University. Work zone safety and efficient transportation center. http://academic.csuohio.edu/duffy_s/Section_03.pdf. Accessed 1/5/17.

Curran, C.; Lydon, S., Kelly, M., Murphy, A., Walsh, C., O'Connor, P. (2018). A Systematic Review of Primary Care Safety Climate Survey Instruments: Their Origins, Psychometric Properties, Quality, and Usage. Journal of Patient Safety, 14(2): 9-18. doi: 10.1097/PTS.0000000000000393.

Dedobbeleer, N. & Beland, F. (1991).A safety climate measure for construction sites. *Journal of Safety Research*, 22, 97-103.

DeJoy, D. M., Schaffer, B. S., Wilson, M. G., Vandenberg, R. J., & Butts, M. M. (2004). Creating safer workplaces: assessing the determinants and role of safety climate. *Journal of Safety Research*, *35*(1), 81-90.

Deliens, T., Clarys, P., De Bourdeaudhuij, I., & Deforche, B. (2014). Determinants of eating behaviour in university students: a qualitative study using focus group discussions. *BMC public health*, *14*(1), 53.

DePasquale, J. P. & Geller, E. S. (2000). Critical success factors for behavior-based safety: A study of twenty industry-wide applications. *Journal of Safety Research*, 30(4), 237-249.

Diugwu, I. A., Baba, D. L., & Egila, A. E. (2012). Effective Regulation and Level of Awareness: An Expose of the Nigeria's Construction Industry. Open Journal of Safety Science and Technology, 2012. Vol. 2, pp 140-146.

Dyreborg, J., Lipscomb, H. J., Olsen, O. *et al.* (2015). Safety interventions for the prevention of accidents at work. ID SW2010-05, The Campbell Collaboration. www.campbellcollaboration.org.

Efiok, J. N., Oluseye, O., Uduak, T. & Olalekan, R. (2015). Safety culture, policies and practices in Nigerian maritime industry: The Exxon-Mobil experience. *Open Journal of Safety Science and Technology*, 5, 69-76.

Emetumah, F. & Okoye, A. (2018). Role of Government in ensuring Safety consciousness during Mineral Mining activities in Nigeria. European Scientific Journal, 14, 165-184. DOI: 10.19044/esj.2018.v14n20p165.

Eraut, M. (2004). Informal learning in the workplace. Studies in Continuing Education, 26(2), 247-272.

Eskandari, D., Jafari, M. J., Mehrabi, Y., Kian, M. P., Charkhand, H. & Mirghotbi, M. (2017). A Qualitative Study on Organizational Factors affecting Occupational Accidents. *Iranian Journal of Public Health*, 46(3), 380-388.

Ewuzie, M. A.& Ugoani, J. N. N. (2016). Health and Safety Education needs in the Bottling Industry in Nigeria: A Study of Nigerian Bottling Company ltd. In South-East Nigeria. American Journal of Educational Science, 2(1), 1-7.

Eysenbach, G., & Till, J. E. (2001).Ethical issues in qualitative research on internet communities. *British Medical Journal*, *323*(7321), 1103-1105.

Ezenwa, A.O. (2002). A Study of Fatal injuries in Nigerian Factories. Occupational Medicine (Oxford, England), 51(8): 485-9. DOI: 10.1093/occmed/51.8.485.

Fang, D. P., Chen, Y. & Louisa W. (2006). Safety climate in construction industry: A case study in Hong Kong. *Journal of Construction Engineering and management*, 132(06), 573-584.

Farooqui, R. U. (2011). Achieving zero accidents – a strategic framework for continuous safety improvement in the construction industry (FIU Electronic Theses and Dissertations), Florida International University, Miami, Fla, USA, Paper 392. www.digitalcommons.fiu.edu/etd/392.

Fleming, M. (2001).Safety culture maturity model. Offshore Technology Report 049. HSE Books.

Flin, R., Burns, C., Mearns, K., Yule, S. & Robertson, E. M. (2006).Measuring safety climate in health care. *Quality and Safety in Health Care*, 15(2), 109-115.

Flin, R., Mearns, K. & Burns, C. (2004).'Hospital safety climate scale', University of Aberdeen.

Flin, R., Mearns, K., O'Connor, P., & Bryden, R. (2000). Measuring safety climate: identifying the common features. *Safety science*, *34*(1), 177-192.

Fogarty, G. J., Murphy, P. J., & Perera, H. N. (2017). Safety climate in defense explosive ordnance: survey development and model testing. *Safety Science*, *93*, 62-69.

Fotiadis, A. Abdulrahman, K. & Spyridou, A. (2019). The mediating roles of psychological autonomy, competence and relatedness on work-life balance and well-being. *Front. Psychol*., 10:1267. DOI: 10:3389/fpsyg.2019.01267.

Fox, S. J. (1974). The Reform of Juvenile Justice: The Child's Right to Punishment. Wiley Online Library. https://doi.org/10.1111/j.1755-6988.1974.tb01058.x.

Friedland, R. & Alford, R. R. (1991). Bringing Society Back in: Symbols, Practices, and Institutional Contradictions. pp. 232–266 in The New Institutionalism in Organizational Analysis, edited by Walter W. Powell and Paul J. DiMaggio. Chicago: University of Chicago Press.

Furst, P. G. (2016). The Role of Beliefs in Safety. Available at: https://www.irmi.com.

Gharibi, V., Mortazavi, S. B, Jafari, A. J, Malakouti, J. & Abadi, M. B. H. (2016). The Relationship between Workers' Attitude towards Safety and Occupational Accidents Experience, *International Journal of Occupational Hygiene,* IJOH 8: *145-150.*

Gehring, K., Mascherek, A. C., Bezzola, P. & Schwappach, D. L. B. (2015). Safety climate in Swiss hospital units: Swiss version of the Safety Climate Survey. *Journal of Evaluation in Clinical Practice*, 21; 332-338.

Gibbs, P. (2009). Gratitude in workplace research: A Rossian approach. *Journal of Education and Work*, *22*(1), 55-66.

Glendon, I. (2008). Safety culture and safety climate: how far have we come and where could we be heading? *Journal of Occupational Health and Safety – Australia and New Zealand*, 24(3), 249-271.

Glendon, A. I. & Evans, B. (2007).Safety climate in Australian railways. In J. W. Beverley Norris, Theresa Clarke and Ann Mills (Ed.), *People and Rail Systems: Human factors at the heart of the railway* (pp. 409-417), United Kingdom: Ashgate.

Glendon, A. & Litherland, D. (2001).Safety climate factors, group differences and safety behaviour in road construction. *Safety Science*, 39, 157-188.

Glendon, A. I. & McKenna, E. F. (1995).Human Safety and Risk Management, Chapman and Hall, London.

Gomm, R., Hammerley, M. & Foster, P. (2000). Case Study Method, 98-115. Sage Publications Limited, London.

Griffin, M. A. & Neal, A. (2000). Perceptions of safety at work: a framework for linking for linking safety climate to safety performance, knowledge and motivation. *Journal of Occupational Health Psychology*, 5(3), 347-358.

Guastalo, S. J. (1993). Do we really know how well our occupational accident prevention programs work? *Safety Science*, 16(3), 445-463.

Guldenmund, F. W. (2000). The nature of safety culture: a review of theory and research. *Safety Science*, 34: 215-257.

Hale, A. R., Heming, B. H. J., Carthey, J. & Black, W. C. (1997). Modelling of safety management systems. *Safety Science*, 26(1/2), 121-140.

Hamalainen, P., Leena Saarela, K. &Takala, J. (2009).Global trend according to estimated number of occupational accidents and fatal work-related diseases at region and country level. *Journal of Safety Research*, 40(2), 125-139.

Huang, Y. H., Ho, M., Smith, G. S., & Chen, P. Y. (2006). Safety climate and self-reported injury: assessing the mediating role of employee safety control. *Accident Analysis and Prevention,* 38, 425-433.

Hedlund, J. (2000). Risky business: safety regulations, risk compensation, and individual behavior. *Injury Prevention*, *6*(2), 82-89.

Heffernan, M. (2011). *Wilful blindness: Why we ignore the obvious*. Simon and Schuster.

Homp, M., Seideman, A., Gravelle, S. and Hayes, A. (2021). Contemporary Mathematics at Nebraska. *Contemporary Mathematics*. https://mathbooks.unl.edu.

Hofstede, G. (2017). Cultural dimensions. www.geert-hofstede.com. Accessed 11/5/17.

Hofmann, D. A. & Stezer, A. (1996).A cross-sectional investigation of factors influencing unsafe behaviours and accidents. *Personnel Psychology*, 49, 307-339.

HSC (1993).Health and Safety Commission; Advisory Committee for Safety in Nuclear Installations Study Group on Human Factors.*3rd Report: Organizing for Safety*. (London: HMSO). *p23.*

HSE (2005).Health and Safety Executive; A review of safety culture and safety climate literature for the development of the safety culture inspection toolkit. Research Report 367. (Bristol: HSE), p42.Available at:http://www.hse.gov.uk/research/rrpdf/rr367.pdf.

Idrees, M. D., Hafeez, M. & Kim, J. (2017). Workers' age and the impact of psychological factors on the perception of safety at construction sites. *Sustainability,* 9 (5), 745-760. Doi: 10.3390/su9050745.

Idubor, E. E. & Oisamoje, M. D. (2013). An exploration of health and safety management issues in Nigeria's effort to industrialize. *European Scientific Journal*, 9 (12): 1857 – 7881 (print) e- 1857- 7431 154.

Igbinedion, D. A., Abraham, N. M. & Nwogu, U. J. (2016). Government's involvement in Safety Management in Public Early Childhood Education Centres (ECECs) in Rivers State, Nigeria, World Journal of Education, 6(1),40-49.

IHI (2017).Safety Climate Survey. Institute for Healthcare Improvement. www.ihi.org. Accessed 7/5/2017.

ILO (2015).Safety and health at work. International Labour Organization. www.ilo.org. Accessed 29/4/2015.

Ishola, A. A. (2017). Workplace Safety Management as correlates of wellbeing among factory workers in Oluyole Industrial Estate, Ibadan, Oyo State, Nigeria. *African Journal of Social Work*, 7(2), 45-51.

Jafari, M. J., Gharari, M., Ghafari, M., Omidi, L., Kalantari, S. & Fardi, G. R. A. (2014). The influence of safety training on safety climate factors in a construction site. *International Journal of Occupational Hygiene*, 6(2), 81-87.

Jia, A. Y., Rowlinson, S., Loosemore, M., Xu, M., Li, B. & Gibb, A. (2017).Institutions and institutional logics in construction safety management: the case of climatic heat stress. Construction Management and Economics, 35(6): 338-367.

Johnson, S. E. (2007). The predictive validity of safety climate. *Journal of safety research*, *38*(5), 511-521.

Ju, C.& Rowlinson, S. (2014). Institutional determinants of construction safety management strategies of contractors in Hong Kong. Construction Management and Economics, 32(7-8): 725-736.

Kho, M. E., Carbone, J. M., Lucas, J. &Cook, D. J. (2005). Safety Climate Survey: reliability of results from a multicenter ICU survey. Qual. Saf. Health Care 2005;14:273–278. doi: 10.1136/qshc.2005.014316.

Kines, P., Lappalainen, J., Mikkelsen, K. L., Olse, E. Pousette, A., Tharaldsen, J., Tomasson, K. &Torner, M. (2011). Nordic Safety Climate Questionnaire (NOSACQ-50): A new tool for diagnosing occupational safety climate. *International Journal of Industrial Ergonomics,* 41, 634-646.

Kitzinger, J. (1994). The methodology of focus groups: the importance of interaction between research participants. *Sociology of Health & Illness*, 16(1), 103-121.

Krause, T. R, Seymour, K. J & Sloat, K. C. M. (1999). Long-term evaluation of a behavior-based method for improving safety performance: a meta-analysis of 73 interrupted time-series replications. *Safety Science*, 32(1), 1-8.

Lawton, R., Parker, D., Manstead, A. S. R. &Stradling, S. (1997). The role of effect in predicting social behaviours: The case of road traffic violations. *Journal of Applied Social Psychology*, 27, 1258-1276.

Lee, C., & Green, R. T. (1991).Cross-cultural examination of the Fishbein behavioral intentions model. *Journal of International Business Studies*, 289-305.

Lee, T. (1998).Assessment of Safety Culture at a Nuclear reprocessing Plant. Work and Stress, 12(3), 217-237.

Lee, T. & Harrison, K. (2000). Assessing Safety Culture in Nuclear Power Stations, Safety Science, 34 (1-3), 61-97.

Leiter, M. (2010). Developing a safety climate: shared assumptions and interventions. Available online at www.wcb.ns.ca.

Li, Y., Wu, X., Gao, J. & Yin, W. (2019). Impact of Safety Attitude on the Safety Behaviour of Coal Miners in China. Sustainability, 11, 6382-6403. Doi: 10.3390/su11226382.

Lin, S. H., Tang, W. J., Miao, J. Y., *et al.*, (2008). Safety climate measurement at workplace in China: a validity and reliability assessment. *Safety Science*, 46, 1037-1046.

Li, Q., Ji, C., Yuan, J., & Han, R. (2017).Developing dimensions and key indicators for the safety climate within China's construction teams: A questionnaire survey on construction sites in Nanjing. *Safety Science*, *93*, 266-276.

Li, Y., Wu, X., Luo, X., Gao, J. and Yin, W. (2019). Impact of safety attitude on the safety behaviour of coal Miners in China. *Sustainability*, 11(11),6382.

Lim, K.C., Park, M. & Shin, G. (2017). Influences of sense of ethics and attitude towards patient safety in the confidence in patient safety in nursing students, *Journal of muscle and joint health*, 24(2), 140-149.

Lingard, H. & Holmes, N. (2010). Understandings of Occupational Health and Safety risk control in small business construction firms: barriers to implementing technological controls. *Journal of Construction Management and Economics*, 19(2).217-226.

Lundstrom, T., Pugliese, G., Bartley, J., Cox, J. & Guither, C. (2002).Organizational and Environmental factors that affect workers health and safety and patient outcomes. *Am J Infect Control*, 30(2), 93-106.

Luria, G., Zohar, D., & Erev, I. (2008). The effect of workers' visibility on effectiveness of intervention programs: Supervisory-based safety interventions. *Journal of Safety Research*, *39*(3), 273-280.

Luther, R. E.*et al.* (2008). Culture Management in the UK Industry.IET 3rd international conference on Systems Safety.20 – 22 October, Birmingham.2008.

Lutness, J. (1987). Measuring up: assessing safety with safety climate surveys. Occupational Health and Safety 56 (2), 20-26.
Ma, Q. & Yuan, J. (2009).Exploratory study on safety climate in Chinese manufacturing enterprises. *Safety Science*, 47, 1043-1046.

Lyu, S., Hon, C. K. H., Chan, A. P. C., Wong, F. K. W. & Javed, A. A. (2018). Relationships among Safety Climate, Safety Behavior, and Safety Outcomes for Ethnic Minority Construction Workers. Int. J. Environ. Res. Public Health, 15,

484.DOI:10.3390/ijerph15030484.

Masood, R., & Choudhry, R. M. (2011).Measuring safety climate to enhance safety culture in the construction industry of Pakistan. CIB W099 Conference Paper, August, 2011. Available at: https://www.researchgate.net/publication/28371231.

Makhonge, P. W. (2005). Challenges in development of labour inspection system. African Newsletter on Occupational Health and Safety, 15 (2), 32-33.

McFadden, K. L., Stock, G. N., & Gowen III, C. R. (2015). Leadership, safety climate, and continuous quality improvement: impact on process quality and patient safety. *Health care management review*, *40*(1), 24-34.

McGonagle, A. K., Essenmacher, L., Hamblin, L., Luborsky, M., Upfal, M. &Arnetz, J. (2016). Management Commitment to safety, Teamwork, and Hospital Workers Injuries. *J. Hosp. Adm.,* 5(6): 46-52. DOI: 10.5430/jha.v5n6p46.

McSweeney, B. (2002). Hofstede's model of national cultural differences and their consequences: A triumph of faith – a failure of analysis. *Human Relations,* 55(1), 89-118.

Mearns, K., Flin, R., Flemming, M. & Gordon, R. (1997).Human and organizational factors in offshore safety. Report (OTH 543). Offshore safety Division.HSE Books, Suffolk.

Mearns, K., Flin, R., Gordon, R. & Flemming, M. (1998).Measuring safety climate on offshore installations. *Work and Stress,* 15, 144-160.

Mearns, K., Whitaker, S., Flin, R., Gordon, R. & O'Connor, P. (2000). Factoring the human into safety: Translating research into practice (Rep. No.HSEOTO 2000 061).

Melin-Johansson, C., Palmqvist, R. & Ronnberg, L. (2017). Clinical intuition in the Nursing process and decision-making_ A Mixed-Studies Review. J. Clin. Nurs, 26(23-24), 3936-3949. DOI: 10.1111/jocn.13814.Epub2017Jun22.

Merriam – Webster (2015). An Encyclopaedia Britannica Company [ONLINE] Available at: http://www.merriam-webster.com/dictionary/safety. [Accessed 18th March 2015].

Merriam – Webster (2017). An Encyclopaedia Britannica Company [ONLINE] Available at: http://www.merriam-webster.com/dictionary/intuition. [Accessed 1st October, 2017].

Miroshnik, V. (2002). Culture and international management: a review. *Journal of management development*, *21*(7), 521-544.

Mohamed, S. (2002). Safety climate in construction site environments. *Journal of Construction Engineering and Management*, 128 (5), 375-384.

Mohamed, S. (2003). Scorecard approach to benchmarking organizational safety culture in construction. *Journal of Construction Engineering and Management*, 129 (1), 80-88.

Mohan, D., Tiwari, G., Khayesi, M. & Nafukho, F. M. (2006). *Road traffic injury prevention*,

World health Organization, Geneva, Switzerland.

Mullen, J., Kelloway, E. K. & Teed, M. (2017). Employer safety obligations, transformational leadership and their interactive effects on employee safety performance. *Safety Science*, 91, 405-412. Doi: 10.1016/j.ssci.2016.09.007.

National Bioethics Advisory Commission (2001). Ethical and policy issues in research involving human participants. https//bioethics.georgetown.edu.

Neal, A., Griffin, M. A. & Hart, P. M. (2000).The impact of organizational climate on safety climate and individual behavior. *Safety science*, *34*(1), 99-109.

Niskanen, T. (1994).Safety climate in the road administration. *Safety Science*, *17*(4), 237-255.

Noort, M. C., Reader, T. W., Shorrock, S., & Kirwan, B. (2015). The relationship between national culture and safety culture: Implications for international safety culture assessments. *Journal of occupational and organizational psychology*, 89, 515-538.

Nuwayhid, I. A. (2004). Occupational health research in developing countries: a partner for social justice. *American Journal of Public Health*, *94*(11), 1916-1921.

Obrenovic, B., Jianguo, D., Khudaykulov, A. & Khan, M. A. S. (2020). Work-Family Conflict impact on Psychological Safety and Psychological well-being: A job performance Model. *Front Psychol,* 11: 475. Doi: 10.3389/fpsyg.2020.00475.

O'Connor, P., O'Dea, A., Kennedy, Q. & Buttrey, S. (2011). Measuring safety climate in the aviation industry: A review and recommendations for the future. *Safety Science*, 49, 128-138.

OSHC (2000). Safety attitudes, safety climate, and employee health among older and younger workers working at height in construction industry: A facet approach. Occupational Safety and Health Council, pp 66.

Ojanen, K., Seppala, A. &Aaltonen, M. (1998).Measurement methodology for the effects of accident prevention programs. *Scandinavian Journal of Work, Environment and Health* 14, 95-96.

Ojo, G. (2010). An Assessment of the construction sites risk-related factors. *Proceedings of the 40th Annual General Meeting/Conference of the Nigerian Institute of Building. Asaba, Delta State, 9-14 November, 2010.[Google Scholar]*.

Okoli, J., Watt, J. & Weller, G. (2016). Managing complex fires in urban environments: A tale of two cultures. International conference on urban risks, Lisbon, 30 June -2 July.

Okolie, K. C., &Okoye, P. U. (2012).Assessment of national culture dimensions and construction health and safety climate in Nigeria. *Science Journal of Environmental Engineering Research*, *2012*.

Okoye, P. U., Okolie, K. C., & Ngwu, C. (2017).Multilevel safety intervention implementation strategies for Nigeria construction industry. *Journal of Construction Engineering*, vol. 2017, doi:10.1155/2017/8496258.

Okun, A. H., Watkins, J. P. and Schulte, P. A. (2017). Trade associations and labor organizations as intermediaries for disseminating workplace safety and health information. *American Journal of Industrial Medicine*, 60(9): 766-775. DOI: 10.1002/ajim.22746.

Orlean Invest West Africa (2013). Nigerian Outlook: Roles of Government Agencies. Available at: http://www.orleaninvest.com/nigerian-outlook/roles-of-government-agencies/. [Accessed 23 July 2015].

Onne Oil & Gas Free Zone (OGFZA) HSE Consultative Committee Report, 2018.

Onne Oil & Gas Free Zone (2014).*Onne Oil & Gas Free Zone.* [ONLINE]
Available at: http://www.onnefreezone.com/. [Accessed 27/08/2014].

OSHA (2015).Creating safety culture. Occupational Safety and Health Administration, US Department of Labour. Available at: www.OSHA.gov. [Accessed 04/29/2015].

OSHA (1998). Information Booklet on Industrial Hygiene. Occupational Safety and Health Administration, US Department of Labour. Available at: www.OSHA.gov. (Accessed 04/10/2019).

Oyewole, S. A. & Haight, J. M. (2009).Making the business case: assessment of safety intervention and resource allocation and optimization. *Proceedings of the Safety Conference and Exposition*, American Society of Safety Engineers (ASSE '09); June-July, San Antonio, Tex, USA.

Park, J., Kim, Y. & Han, B. (2018). Work sectors with high risk for work-related musculoskeletal disorders in Korean men and women. *Safety and Health at Work*, 9(1), 75-78.

Patankar, M. S. (2003). A study of safety culture at an aviation organization. *International Journal of Applied Aviation Studies*, 3(2), 243-259.

Penden, M., Scurfield, R., Sleet, D. *et al,* (2004). *World Report on Road Traffic injury Prevention Training Manual*, World health Organization, Geneva, Switzerland.

Perneger, T. V., Staines, A. & Kundig, F. (2014). Internal consistency, factor structure and construct validity of the French version of the Hospital Survey on Patient Safety Culture. *BMJ Quality & Safety*, 23 (5), 389-397.

Pfeiffer, Y. & Manser, T. (2010). Development of the German version of the Hospital Survey on Patient Safety Culture: dimensionality and psychometric properties. *Safety Science*, 48, 1452-1462.

Petitta, L., Probst, T. M., Barbaranelli, C., & Ghezzi, V. (2017).Disentangling the roles of safety climate and safety culture: Multi-level effects on the relationship between supervisor

enforcement and safety compliance. *Accident Analysis & Prevention*, *99*, 77-89.

Phuspa, S. M. & Rudyarti, E. (2017). The relationship of Belief, Experience, Knowledge and Attitudes towards Safety Behaviour of Construction Workers at University of Ponorogo. *Indonesian Journal for Health Sciences*, 1(2). Doi: 10.24269/ijhs.v1i2.614.

Philipp, R., Philipp, E. & Thorne, P (1999).The importance of intuition in the occupational medicine clinical consultation. *Occupational Medicine*, 49(1): 37-41.

Pousette, A., Larsson, S., Torner, M. (2008). Safety Climate – cross-validation, strength and prediction of safety behavior. *Safety Science*, 46, 398-404.

Punch (1994): In Behi, R., & Nolan, M. (1995). Ethical issues in research. *British Journal of Nursing*, *4*(12), 712-716

Ritchie, J. & Lewis, J. (2012). Qualitative Research Practice: A Guide for Social Science Students and Researchers. Sage: London.

Reason, J. (1990).Human error. Cambridge University Press, Cambridge.

Rosanoff, N. (1999). Intuition Comes of Age: Workplace Applications of Intuitive Skill for Occupational and Environmental Health Nurses. Sage Journals, http://journals.sagepub.com/doi/abs/10.1177/216507999904700403. Accessed 01/10/2017.

RoSPA (2017).Learning from safety failure. Royal Society for the Prevention of Accidents.www.rospa.com/occupational-safety. Accessed 8/4/17.

SAGE (2019). *Thematic Analysis of Interview Data in the Context of Management Controls Research*. SAGE Publications Ltd. https://methods.sagepub.com. Accessed 22/02/2020.

Saidin, M. M., Abuld Hakim, M., Wan Yusoff, W.M., Syamsus, H. M. & Mat, N. A. (2008). Development of Safety Culture in the Construction Industry: The Leadership and Training Roles. *2ndInternational Conference on Built Environment in Developing Countries (ICBEDC)*, 1902-1920.

Saldana, J. (2013). The Coding Manual for Qualitative Research. Sage, London.

Salminen, S. (2017).'Human error', *OSHWiki*.http://www.oshwiki.eu. Accessed 21/2/12.
Salminen, S. & Seppala, A. (2005).Safety climate in Finnish-and Swedish-speaking companies. *International Journal of Occupational Safety and Ergonomics*, 11(4), 389-397.

Schroder, H.M. (1970). Safety performance measurement. *Journal of Safety Research,* 2, 188 -195.

Seo, D. C., Torabi, M. R., Blair, E. H., & Ellis, N. T. (2004). A cross-validation of safety climate scale using confirmatory factor analytic approach. *Journal of Safety Research,* 35(4):

427-445.

Sexton, J. B. & Thomas, E. J. (2003). The Safety Climate Survey: psychometric and benchmarking properties. Technical Report 03-03. The University of Texas Center of Excellence for Patient Safety Research and Practice (AHRQ grant # 1PO1HS1154401 and U18HS1116401.

Sexton, J., Helmreich, R., Neilands, T., *et al.,* (2006). The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. *BMC Health Services Research, 6*(1), 44.

Seymen, O. A. (2006). The cultural diversity phenomenon in organization's and different approaches for effective cultural diversity management: a literary review. *Cross Cultural Management: An International Journal*, *13*(4), 296-315.

Sharma, S. C. (2019). Disaster Management. India: Khanna Book Publishing Co. (p) Ltd.

Shotwell, P. H (2013). "Human error is not the real cause of accidents". Atlantic Environmental, www.atlenv.com. (Accessed 04/29/15).

Shteynberg, G., Sexton, B. J. & Thomas, E. (2005).Test retest reliability of the safety climate scale. Technical Report 01-05. The University of Texas Center of Excellence for Patient Safety Research and Practice (AHRQ grant # 1PO1HS1154401 and U18HS1116401.

Siu, O., Philips, D. R. & Leung, T. (2003). Age differences in safety attitudes and safety performance in Hong Kong construction workers. *Journal of Safety Research*, 34(2), 199-205.

Soh, S., Morello, R, Rifat, S., Brand, C & Barker, A. (2016). Nurse perceptions of safety climate in Australian acute hospitals: a cross-sectional survey. *Australian Health Review* 42(2) 203-209 https://doi.org/10.1071/AH16172.

Soyemi, S., Obafunwa, J., Faduyile, F., Williams, O., Emiogun, F., Osuolale, F. & Kila, O. (2016). Fatal Traumatic slicing injuries of the chest: An Industrial death and safety concerns. African Journal of Trauma, 5,54. DOI: 10.4103/ajt.ajt_16_16.

Spector, P. E., Cooper, C. L., Sanchez, J. I., O'Driscoll, M., Sparks, K., Bernin, P. & Miller, K. (2001). Do national levels of individualism and internal locus of control relate to well-being: an ecological level international study. *Journal of Organizational Behavior*, *22*(8), 815-832.

Srivastava, S. K. (2004). Impact of Labour Welfare on Employee Attitudes and Job Satisfaction. *Management and Labour Studies*, 29(1), 31-41. Doi: 10.1177/0258042x0402900103.

Stake, R. E. (1978).The Case Study Method in Social Inquiry. Educational Research, 7(2), 5-8.

Sumner, S. A., Pallangyo, A. J., Reddy, E. A., Maro, V., Pence, B.W., *et al*. (2014). Effect of free distribution of Safety Equipment on usage among Motorcycle-Taxi drivers in Tanzania –

A Cluster randomized controlled trial. Injury, 45(11), 1681-1686.

Tarrants, W.E. (1980). The measurement of Safety Performance.Garland STPM, New York.
Torner, M., Pousette, A. & Larson, S. (2002). Safety climate in Swedish construction industry – A pilot study replicating a model from British manufacturing industry. Paper presented at the Network Conference on the Prevention of Accident and Trauma at Work, (Elsinore, Denmark).

Thornton, P. H.& Ocasio, W. (1999). Institutional Logics and the Historical Contingency of Power in Organizations: Executive Succession in the Higher Education Publishing Industry, 1958-1990. American Journal of Sociology 105: 801-843.

Törner, M. & Pousette , A. (2009). Safety in construction–a comprehensive description of the characteristics of high safety standards in construction work, from the combined perspective of supervisors and experienced workers. *J Safety Res,* 40(6):399-409.

Tsai, Y. (2011). Relationship between organizational culture, Leadership Behaviour and Job Satisfaction. *BMC Health Services Research*, 11, 98. DOI: 10.1186/1472-6963.

Tuncel, S., Lotlikar, H., Salem, S. & Daraiseh, N. (2006). Effectiveness of behaviour-based safety interventions to reduce accidents and injuries in workplaces: critical appraisal and meta-analysis. *Theoretical Issues in Ergonomics Science*, 7(3), 191-209.

Ukpong, I. G. (2012). Nature under siege: Portrait of environmental crisis in the Niger Delta. Author house, USA. Pp177.

Umeokafor, N. & Windapo, A. (2019). The influence of Religious consciousness on construction Health and Safety Practices and performance. *Journal of construction in Developing countries*, 24(1), 23-47.

Umeokafor, N., Evaggelinos, K., Lundy, S, *et al*. (2014). The pattern of occupational accidents, injuries, accident causal factors and intervention in Nigerian factories.*Developing Country Studies*, 4(15), 119-127.

vanMelle, M. A., vanStel, H. F., Poldervaart, J. M., deWit, N. J., Dorien L.M.Zwart, D. L. Z. (2018). Validation of a questionnaire measuring transitional patient safety climate indicated differences in transitional patient safety climate between primary and secondary care.Journal of Clinical Epidemiology, 94: 114-121. https://doi.org/10.1016/j.jclinepi.2017.09.018.

Vijalapura, N.T., Renuka, S.D. & Ramesh, M. (2018). Status of Safety Climate in Chemical Industry-Karnataka. Journal of Safety Engineering 2018, 7(1): 32-36. DOI: 10.5923/j.safety.20180701.03.

Wang, J. & Yan, M. (2019). Application of an improved Model for Accident Analysis: A Case Study. *International Journal of Environmental Research and Public Health,* 16, 2756. DOI: 10.3390/ijerph16152756.

Walters, D. (1996). Trade Unions and the effectiveness of workers representation in Health and Safety in Britain. *International Journal of Health Sciences,* 26(4), 625-641.

Wang, C., Wang, J., Wang, X., Yu, H., Bai, L., Sun, Q. (2019). Exploring the impacts of factors contributing to unsafe behaviour of coal miners. *Safety Science*, 115, 339-348.

Webb, N. (2016). Incident reporting in the modern world: How tech is improving safety. TG Daily; www.tgdaily.com. Accessed 8/4/2017.

Wiegmann, D. A., Hui Zhang, T. L., von Thaden, G. S. & Mitchell, A. A. (2002).A synthesis of safety culture and safety climate research. Technical Report ARL-02-3/FAA-02-2 prepared for Federal Aviation Administration Atlantic City International Airport, NJ. Available at www.nrc.gov.

Williams, G. (2019). Taking responsibility for negligence and Non-negligence. *Criminal Law and Philosophy*, 14; 113-134. DOI: 10.1007/s11572-019-09506-8.

Williamson, A.M., Feyer, A.-M., Cairns, D., & Biancotti, D. (1997). The development of a measure of safety climate: the role of safety perceptions and attitudes. *Safety Science,* 25: 15-27.

Wills, A. R., Watson, B. C. & Biggs, H. C (2009).An exploratory investigation into safety climate and work-related driving. *Work: A Journal of Prevention, Assessment & Rehabilitation,* 32(1), 81-94.

Wolfensberger, W. (1967).Ethical issues in research with human subjects.
Science, *155*(3758), 47-51.

Wong, L. P. (2008). Focus group discussion: a tool for health and medical research.
 Singapore Med J, *49*(3), 256-60.

Workplace Improvision (2009). Improvised Hardhat *10 Most Common Workplace Safety Violations[*ONLINE] Available at:http://earthli.com/news/view_article.php?id=2059.
[Accessed18 March2015].

Worksafe (2017). High risk industries. Workplace Health and Safety, State of Queensland. https://www.worksafe.qld.gov.au/rehab-and-claims/injuries-at-work/high-risk-industries. Accessed 15/07/2018.

Yule, S., Flin, R. &Murdy, A. (2007).The role of management and safety climate in preventing risk-taking at work. *International Journal of Risk Assessment and Management*, 7(2), 137-151.

Zainal, Z. (2007). Case Study as a Research Method. JurnalKemanusiaan, (9) 1-6.

Zohar, D. (1980). Safety climate in industrial organizations: Theoretical and applied implications. *Journal of Applied Psychology*, 65(1), 96-102.

Zhang, Q., Ge, Y., Qu, W., Zhang, K., & Sun, X. (2018). The traffic climate in China: The mediating effect of traffic safety climate between personality and dangerous driving behaviour. Accident Analysis & Prevention, 113: 213-223.

Zohar, D. (2002). Modifying supervisory practices to improve subunit safety: A leadership-based intervention model. *Journal of Applied Psychology*, 87 (1), 156-163.

Zohar, D. (2008). Safety climate and beyond: A multi-level multi-climate framework. *Safety Science*, *46*(3), 376-387.

Zohar, D., Huang, Y. H., Lee, J., & Robertson, M. (2014).A mediation model linking dispatcher leadership and work ownership with safety climate as predictors of truck driver safety performance. *Accident Analysis & Prevention*, *62*, 17-25.

Zohar, D., Huang, Y. H., Lee, J., & Robertson, M. M. (2015).Testing extrinsic and intrinsic motivation as explanatory variables for the safety climate–safety performance relationship among long-haul truck drivers. *Transportation Research Part F: Traffic Psychology and Behaviour*, *30*, 84-96.

Zohar, D. & Luria, G. (2003). The use of supervisory practices as leverage to improve safety behavior: A cross-level intervention model. *Journal of Safety Research*, *34*(5), 567-577.

Zohar, D. & Luria, G. (2005). A multilevel model of safety climate: Cross-level relationships between organization and group-level climates. *Journal of Applied Psychology,* 90, 616-628.

Zou, P. X.W., Sunindilo, R. Y. & Dainty, A. R. J. (2014). A mixed methods research design for bridging the gap between research and practice in the construction industry. Safety Science. Volume 70, December 2014, 316 - 326.

Appendices

Appendix 1. List of companies in Onne Oil and Gas Free Zone

DMS Nigeria Ltd

	CLIENT APPROVED LIST FOR OCTOBER 2013				
S/NO.	APPROVED ENTERPRISES	DATE OF APPLICATION	STATUS	DATE APPROVED	CERTIFICATE NUMBER
1	ABUMUSA INVESTMENT NIGERIA LTD	06 May 2009		19-May-09	173
2	ADAMAC INDUSTRIES LIMITED	04 December 2000		18 April 2001	65
3	ADAMAC PIPES & COATING SERVICES LIMITED	10 November 2008		24 November 2008	165
4	ADDAX PETROLEUM DEVELOPMENT (NIGERIA) LIMITED	12 July 2001		23 July 2001	71
5	ADDAX PETROLEUM EXPLORATION NIGERIA LIMITED	15 September 2004		26 November 2004	131
6	ADDAX PETROLEUM JDZ 4 LIMITED	13 March 2009		16 March 2009	168
7	AFREN RESOURCES LIMITED	19 April 2010		10 May 2010	201
8	AFRI BANK PLC	19 September 2000		05 July 2001	
9	AOS ORWELL (FORMALLY AFRICA OILFIELD SERVICES LIMITED)	13 April 2001		14 September 2001	73
10	AFRICAN PETROLEUM OILFIELD SERVICES	15 January 2005		08 March 2005	139
11	AGIP ENERGY & NATURAL RESOURCES NIG. LTD.	12 February 1999		02 July 2000	40
12	AHIAHU CONSTRUCTION AND SUPPLY COMPANY LIMITED	21 May 2009		02 June 2009	184
13	ALCON NIGERIA LIMITED	26 June 1998		14 April 1999	30
14	AMAL NIGERIA LIMITED	17 May 2011		24 May 2011	206
15	ARKLEEN OIL & GAS LIMITED	03 January 2002		22 May 2002	84
16	ASCOT FLOW LINES LIMITED	02 March 2005		17 March 2005	140
17	ASSOCIATED MARITIME SERVICES LIMITED	03 February 2012		14 February 2012	218
18	BAKER HUGHES COMPANY LIMITED	12 March 2010		23 March 2010	192
19	BAKER HUGHES NIGERIA LIMITED	23 June 1999		09 July 1999	33
20	BELLSEA LIMITED	02 September 2013		19 September 2013	248

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21	BK TUBULARS NIGERIA LIMITED	02 September 2008		23 September 2008	164
22	BOSKALIS INTERNATIONAL B.V	04 May 2011		24 May 2011	207
23	BOURBON LOGISTICS NIGERIA LIMITED	13 July 2011		29 July 2011	208
24	BRAWAL OIL SERVICES LIMITED	17 August 2000		29 May 2001	68
25	BRIGHT OCEAN INTEGRATED SERVICES	06 May 2009		19 May 2009	172
26	CAMERON FLOW CONTROL TECHNOLOGY NIGERIA LIMITED	20 May 2013		30 May 2013	244
27	CAMERON OFFSHORE SYSTEM NIGERIA LIMITED	14 December 2005		29 December 2005	150
28	CAMERON VALVES & MEASUREMENT WEST AFRICA LIMITED	24 November 2004		26 January 2005	134
29	CHEVRON NIGERIA LIMITED	19 July 1998		15 February 1999	21
30	CLEDOP WEST AFRICA LIMITED	04 July 2003		15 August 2003	111
31	D & A ASSOCIATES LIMITED	06 May 2009		19 May 2009	176
32	D.M.S. (NIGERIA) LIMITED	18 January 2010		04 February 2010	191
33	DAEWOO NIGERIA LIMITED	21 November 2002		11 December 2002	97
34	DAMAGIX NIGERIA LIMITED	02 August 2010		11 October 2010	203
35	DEEP OFFSHORE INTERNATIONAL SERVICES WEST AFRICA LIMITED	24 September 2012		31 January 2013	238
36	DEEP OFFSHORE SERVICES NIGERIA LIMITED	12 July 2013	PROVISIONAL	19 September 2013	247
37	DELATTRE BEZONS NIGERIA LIMITED	26 March 2010		07 April 2010	195
38	DEL WASTE MANAGEMENT COMPANY LIMITED (formerly DELTA ENVIRONMENTAL LOGISTICS LIMITED)	22 May 2000		30 June 2000	49
39	DELTAAFRIK ENGINEERING LIMITED	09 May 2008		12 August 2008	163
40	DIAMOND BANK	14 April 1999		17 August 2000	
41	DIESEL POWER (NIGERIA) LIMITED	31 August 1999		05 June 2000	47
42	EMERALD ENERGY RESOURCES LIMITED	24 April 2012		14 May 2012	224
43	ENERGY CEMENT NIGERIA LIMITED	22 July 1997		11 February 2000	152
44	ENERGY EQUIPMENT AND SERVICES LIMITED	23 February 2001		26 February 2001	76

131

45	ESSO EXPLORATION AND PRODUCTION NIGERIA LIMITED	10 March 1998		09 April 1998	17
46	FMC TECHNOLOGIES LIMITED	31 December 1999		01 February 2000	41
47	FREZONE PLANT FABRICATION INTERNATIONAL LIMITED	30 December 2003		17 March 2004	121
48	GEO-FLUIDS LIMITED	19 January 2005		14 April 2005	132
49	GEOPLEX DRILLTEQ LIMITED	14 May 2013		14 May 2013	235

S/NO.	APPROVED ENTERPRISES	DATE OF APPLICATION	STATUS	DATE APPROVED	CERTIFICATE NUMBER
50	GLOBAL OFFSHORE DRILLING LIMITED	10 November 2000		26 February 2001	62
51	GLOBESTAR ENGINEERING COMPANY NIGERIA LIMITD	01 July 2004		16 August 2004	128
52	GREAME PROPERTIES LIMITED	20 January 2012		14 February 2012	212
53	HALLIBURTON ENERGY SERVICES NIGERIA LIMITED	11 August 2000		24 August 2000	53
54	HAMILTON TECHNOLOGIES LIMITED	15 January 2007		23 March 2007	155
55	HYUNDAI HEAVY INDUSTRIES COMPANY NIG. LIMITED	22 May 2002		19 June 2002	91
56	INDIGO DRILLING LIMITED	03 January 2013		15 January 2013	232
57	INTEGRATED MATERIALS MANAGEMENT LIMITED	14 June 2000		20 July 2000	50
58	INTEROIL INVESTMENT (NIG.) LIMITED			04 March 2013	241
59	INTELS JOINT DEVELOPMENT ZONE	25 January 2002		31 January 2002	83
60	INTELS NIGERIA LIMITED	17 November 2003		28 November 2003	117
61	INTELS WEST AFRICA LIMITED	17 November 2003		28 November 2003	116
62	IMPACT LOGISTICS INVESTMENTS LIMITED	31 July 2013		03 September 2013	246
63	ITALMOTOR LIMITED	23 March 2013		30 May 2012	228
64	JARANDER MOORING & LOGISTICS SERVICES LIMITED	12 July 2010		29 July 2010	202
65	KOSSAM OIL AND GAS COMPANY LIMITED	21 May 2009		02 June 2009	183
66	LOGSCON INTEGRATED SERVICES LIMITED	20 January 2012		14 February 2012	220

67	LUBRIK ENGINEERING SERVICES LIMITED	07 June 2013		24 June 2013	245
68	LSCM NIGERIA LIMITED	25 February 2012		26 March 2012	223
69	MAKON ENGINEERING AND TECHNICAL SERVICES LIMITED	10 February 2010		29 April 2010	197
70	MARISERVE MARITIME SERVICES LIMITED	26 January 2012		14 February 2012	217
71	MARITIME ROYAL STEVEDORING LIMITED	03 May 2010		10 May 2010	200
72	MBONNY TECHINCAL SERVICES LIMITED	24 November 2004		11 October 2005	147
73	MCJUNKIN NIGERIA LIMITED	28 April 2001		30 May 2001	70
74	MGM LINES SRL	9th March 2010		30th March 2010	193
75	MGM LOGISTICS SOLUTIONS SERVICES LIMITED (formerly MGM SHIPPING NIGERIA LIMITED)	28 August 2009		09 September 2009	189
76	M-I NIGERIA LIMITED	18 February 1999		16 May 1999	32
77	MOBIL PRODUCING NIGERIA UNLIMITED	24 July 1997		13 August 1997	1
78	NESTOIL LIMITED	23 March 2009		27 April 2009	169
79	NET GLOBAL SYSTEM INTERNATIONAL LIMITED	18 June 2009		17 August 2009	188
80	NIGERIA AGIP EXPLORATION LIMITED	16 June 1999		26 July 1999	35
81	NIGERIA AGIP OIL COMPANY LIMITED	27 May 1998		29 July 1998	15
82	NIGERIAN PETROLEUM DEVELOPMENT COMPANY LIMITED	09 November 2011		03 February 2012	211
83	NIGERIAN WESTMINSTER DREDGING AND MARINE LIMITED	12 April 2013		14 May 2013	243
84	NOTORE CHEMICAL INDUSTRIES LTD	25 March 2008		26 June 2008	161
85	NOV OIL AND GAS SERVICES NIGERIA LIMITED	03 July 2012		17 September 2012	230
86	OANDO ENERGY SERVICES LIMITED	21 May 2001		05 June 2001	69
87	OCTG SUPPLY INC.	22 April 2003		20 August 2003	106
88	OIL & INDUSTRIAL SERVICES LIMITED	15 November 2002		20 August 2003	98
89	OILTEST SERVICES LIMITED	23 April 2002		20 May 2002	89

S/NO.	APPROVED ENTERPRISES	DATE OF APPLICATION	STATUS	DATE APPROVED	CERTIFICATE NUMBER
90	OILTOOLS (AFRICA) LIMITED	20 December 2006		13 February 2007	154
91	OIS INDORAMA PORT LIMITED	21 March 2013		28 March 2013	242
92	ONNE REAL ESTATE MANAGEMENT LIMITED	15 January 2013		31 January 2013	236
93	ORLEAN INVEST WEST AFRICA LIMIED	30 April 2009		02 June 2009	185
94	PAUDSIMAN (NIGERIA) LIMITED	22 January 2012		05 March 2012	222
95	PELLEGRINI NIGERIA CATERING LIMITED	15 April 2000		19 May 2000	44
96	PETROLEO BRASILEIRO NIGERIA LIMITED	20 May 2004		25 May 2004	125
97	PIPE COATERS NIGERIA LIMITED	07 April 2010		29 April 2010	198
98	PORTLAND MARITIME SERVICES LIMITED	26 January 2012		14 February 2012	219
99	PRESSURE CONTROL SYSTEMS NIGERIA LIMITED	11 February 2006		11 May 2006	151
100	PRIME INVESTMENT & CORPORATE SERVICES LTD	01 February 2011		16 February 2011	204
101	PRIME PROPERTY DEVELOPMENT SERVICES AND MANAGEMENT COMPANY LIMITED	15 January 2013		31 January 2013	237
102	PRO DE ECCHER LIMITED	20 January 2012		14 February 2012	214
103	PRODECO (PROPERTY DEVELOPMENT COMPANY) LIMITED	01 January 2011		16 February 2011	205
104	PRODECO INTERNATIONAL LIMITED	27 June 1997		07 August 1997	5

S/NO.	APPROVED ENTERPRISES	DATE OF APPLICATION	STATUS	DATE APPROVED	CERTIFICATE NUMBER
105	PROJECT MASTER NIGERIA LIMITED	08 May 2012		30 May 2012	227
106	REMM OIL SERVICES LIMITED	15 June 1999		26 July 1999	34
107	RIVERS HOUSING & PROPERTY DEVELOPMENT COMPANY LIMITED	15 January 2013		31 January 2013	234
108	SAIMA NIGERIA LIMITED	02 May 1998		25 October 1998	22
109	SAIPEM CONTRACTING NIG. LTD	09 April 1998		01 June 1998	14
110	SAIPEM NIGERIA LIMITED	26 February 1998		03 December 1998	13

111	SALINI NIGERIA LIMITED	18 March 2002		26 March 2002	86
112	SARIMA NIGERIA LIMITED	07 May 2009		19 May 2009	178
113	SATELLITE OIL AND GAS INTERNATIONAL LIMITED	06 May 2009		19 May 2009	174
114	SCHLUMBERGER NIGERIA LIMITED.			07 December 1998	19
115	SEA PETROLUEM & GAS COMPANY LIMITED			07 October 1997	6
116	SEA TRUCKS NIGERIA LIMITED	20 August 1998		25 October 1998	20
117	SEADRILL MOBIL UNITS NIGERIA LIMITED	13 March 2009		27 April 2009	169
118	SHELL NIGERIA EXPLORATION PET. COMPANY	14 November 1999		26 December 1999	38
119	SHELL PET. DEV. COMPANY	21 November 1997		27 February 1998	7
120	SKYE BANK PLC	08 September 2010			
121	SKY-LINK GLOBAL CONCEPT LIMITED	30th March 2010		29 April 2010	199
122	SLOT ENGINEERING NIGERIA LIMITED	21 November 2002		12 December 2002	100
123	STANDARD CHARTERED BANK NIGERIA LIMITED	16 March 2011		01 July 2011	
124	STAR DEEP WATER	11 March 1999		12 April 1999	28
125	STARZ MARINE & ENGINEERING LTD	12 July 1998		23 June 1999	23
126	STRATUS AFRICA LIMITED	23 March 2012		07 May 2012	225
127	SUDELETTRA NIGERIA LIMITED	20 April 2000		05 June 2000	45
128	TALEVERAS GROUP OF COMPANIES LIMITED	11 October 2012		04 January 2013	231
129	TECON OIL SERVICES LTD.	17 June 2003		10 March 2004	113
130	TENARIS GLOBAL SERVICES NIGERIA LIMITED	11 August 2000		24 August 2000	52
131	TEXTRON MARITIME SERVICES LIMITED	06 May 2009		19 May 2009	180
132	TIDEX NIGERIA LIMITED	02 February 2005		25 February 2005	135
133	TITAN TUBULARS NIGERIA LIMITED	11 December 2006		13 February 2007	153

134	TONIMAS NIGERIA LIMITED	19 January 2007		24 August 2007	159
135	TOTAL E & P NIGERIA LIMITED	21 August 1997		07 October 1997	10
136	TOTAL PREMIER SERVICES NIGERIA LIMITED	19 September 2002		20 August 2003	99
137	TOTAL UPSTREAM NIGERIA LIMITED	07 September 1999		15 September 1999	37
138	TRANSOCEAN SUPPORT SERVICES NIGERIA LIMITED	09 January 2007		23 March 2007	156
139	TREVI CONSTRUCTION COMPANY LIMITED	17 November 2006		18 May 2007	157
140	TREVI FOUNDATIONS NIG. LTD	21 January 2002		25 January 2002	25
141	TUBULAR TECHNICAL SERVICES LIMITED	04 October 2011		11 October 2011	210
142	UNICORN INTEGRATED MARINE ENGINEERING LTD	06 May 2009		19 May 2009	179
143	VALUETRADE GLOBAL SERVICES LIMITED	20 January 2012		14 February 2012	215
144	VAM ONNE NIGERIA LIMITED	06 June 2007		27 November 2008	167
145	VISTA MARITIME COMPANY LIMITED	26 January 2012		14 February 2012	213
146	WAEP NIGERIA LIMITED	10 May 2012		30 May 2012	226
147	WASCO OIL SERVICE COMPANY NIGERIA LIMITED	09 August 2012		17 September 2012	229
148	WESCO NIGERIA LIMITED	20 April 2001		30 May 2001	66
149	WEST AFRICA CATERING NIGERIA LIMITED			29 April 2003	107
150	WEST AFRICA CONTAINER TERMINAL	22 August 2000		15 September 2000	58
151	WEST AFRICA MACHINERY & SERVICES (BVI) LIMITED	28 November 2012		04 December 2012	239
152	WEST AFRICA MACHINERY & SERVICES LIMITED	16 September 2011		11 October 2011	209
153	WEST AFRICA SERVICE PLANT LIMITED	22 March 2010		26 April 2010	196
154	WEST ATLANTIC SHIPYARD LIMITED	06 December 2004		26 January 2005	136
155	ZIDON ENGINEERING SERVICES LIMITED	22 January 2012		28 February 2012	221
	SUSPENDED CLIENTS				

S/NO.	APPROVED ENTERPRISES	DATE OF APPLICATION	STATUS	DATE APPROVED	CERTIFICATE NUMBER
156	ALPHAMERIC INTERNATIONAL LIMITED	06 April 2005		20 April 2005	141
157	BREDERO SHAW GLOBAL LIMITED	06 October 2004		10 November 2004	130

S/NO.	APPROVED ENTERPRISES	DATE OF APPLICATION	STATUS	DATE APPROVED	CERTIFICATE NUMBER
158	BURNSVILLE INTEGRATED SERVICES LIMITED	19 October 2004		15 March 2005	128
159	BUSSDOR & COMPANY LIMITED	31 July 2003		09 December 2003	110
160	CHIOMA PRODUCTIONS LIMITED	20 July 2001		23 July 2001	71
161	CONOCO PETROLEUM NIGERIA LIMITED	16 May 2005		04 July 2005	145
162	COOPER CAMERON CORPORATION NIGERIA LIMITED	30 July 1999		15 September 1999	36
163	EIDA (OIL DATA)	19 May 1999		03 May 2000	42
164	FIDDIL LIMITED	17 March 1999		16 May 1999	31
165	FIDELITY BANK PLC				
166	GEO-REYSTING PRODUCTS LIMITED	22 May 2009	PROVISIONAL	02 June 2009	
167	INT'L TRADING & LOGISTIC COY.LIMITED	17 February 2009	PROVISIONAL	17 August 2009	
168	SIEMENS LIMITED	20 December 2002		17 March 2003	103
169	VINEWHITE LIMITED	30 December 2003		08 March 2004	119
170	ZAKHEM OILSERV LIMITED	04 March 2003		14 April 2003	105

Appendix 2. Participant information sheet

MIDDLESEX UNIVERSITY
SCHOOL OF SCIENCE AND TECHNOLOGY

School of Science and Technology Ethics Sub-committee

1.   Study title

Exploration of safety climate in Nigeria: A study of organizations in Onne Oil and Gas Freezone.

2.   Invitation paragraph

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

3.   What is the purpose of the study?

The study is aimed at exploring the internal and external factors that influence safety climate in Nigeria, using the Onne Oil and Gas Free Zone (OGFZ) as a case study. The study is expected to cover a period of four years.

4.   Why have I been chosen?

You have been selected to participate in the focus group discussion because you work within the Onne Oil and Gas Freezone (OGFZ), and should have knowledge of safety climate within your organization.

5.   Do I have to take part?

You are requested to decide whether or not to take part. If you decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you

decide to take part you are still free to withdraw at any time and without giving a reason.

A decision to withdraw at any time, or a decision not to take part, will not be communicated to your organization and will not affect your job at the OGFZ.

6.   What will happen to me if I take part?

You will be required to participate in a focus group discussion. The focus group session is expected to last for an average of one hour.
The focus group will involve ten participants selected from different organizations within the OGFZ, in addition to the researcher and two field assistants.
You will be expected to give honest responses even when they do not agree with others' viewpoints, as there are no right or wrong answers to the focus group questions.Your personal responses/comments during the focus group discussion will not be used to represent the views of your organization.
The focus group will be audio-recorded for the purpose of analysis, however, your responses during the session will remain anonymous and names will not be mentioned in the report, thus your responses cannot be traced back to you, and your identity will not be revealed to anyone other than the interviewer collecting your demographic form. The study will involve three (3) focus groups, each comprising 6 - 8 participants.

7.   What do I have to do?

You will be required to complete a demographic form before your participation in the focus group discussion. The participant will be given a copy of the information sheet and a signed consent form to keep.
For orderliness during the session, I will like only one individual to speak at a time in respect for one another and to enable individual responses to be heard.
You are not expected to eat but can drink water during the session. You are not expected to engage in any form of argument, quarrel or fight, or make abusive comments against other participants even when their views do not agree with yours.

8.   What are the possible disadvantages and risks of taking part?

There is no known risk in participating in this study.

9.   What are the possible benefits of taking part?

We hope that participating in the study will help to improve safety climate in your organization. The information we get from this study will help us to make useful suggestions that will help to improve safety climate in the OGFZ.

10.   Will my taking part in this study be kept confidential?

All information that is collected about you during the course of the research will be kept strictly confidential. Any information about you which is used will have your name and address removed so that you cannot be recognised from it.

11.   What will happen to the results of the research study?

This research will be published as part of a postgraduate thesis; however, participants will not be identified in any report/publication.

12.   Who has reviewed the study?

The study would be reviewed by the Middlesex University, School of Science and TechnologyEthics Sub-committee.

13.   Contact for further information

For further information, participants can contact the following:

Researcher's Contact Details

Emmanuel Ukpong-udo,
School of Science and Technology,
Middlesex University, United Kingdom,
Email: Eu058@live.mdx.ac.uk

Principal Research Supervisor

Dr Alan Page
School of Science and Technology,
Middlesex University, United Kingdom,
Email:A.Page@mdx.ac.uk

Research Supervisor

Dr Gordon Weller,
School of Science and Technology,
Middlesex University, United Kingdom,
Email: G.Weller@mdx.ac.uk

Thank you for your time to go through the terms of participation, and for your participation in the focus group.

Appendix 3. Participant consent form and approval letter

Middlesex University London

Participant Identification Number:

CONSENT FORM

Title of Project: Exploration of safety climate in Nigeria: A study of organizations in Onne Oil and Gas Freezone

Name of Researcher: Emmanuel Ukpong-Udo

Please initial box

1. I confirm that I have read and understand the information sheet dated **30 June, 2016** for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to

    withdraw at any time, without giving any reason.

3. I agree that this form that bears my name and signature may be seen

    by a designated auditor.

4. I agree that my non-identifiable research data may be stored in National Archives and be used anonymously by others for future research. I am assured that the confidentiality of my data will be upheld through the removal of any personal identifiers.

5. I understand that my interview may be taped and subsequently transcribed.

6.   I agree to take part in the above study.

| 1 |
| 2 |
| 3 |
| 4 |
| 5 |
| 6 |

_____   _____

Name of participant   Date   Signature

_____   _____

Name of person taking consent   Date   Signature
(if different from researcher)
_____   _____

Researcher   Date   Signature

1 copy for participant; 1 copy for researcher.

Appendix 4. Focus Group questions

Focus Group Questions

Teaser Question: If you were a manager of a company and your son fails to comply with safety procedures, what would you do?

- ☐ What are your opinion about what keeps people safe at work?
- ☐ What are the major workplace safety risks within your organization? What are your workplace safety risks? What are the main causes of workplace injury? What are the main causes of injury at your workplace?
- ☐ What are the various common measures taken by your organization to keep people safe? What are the measures often taken by your organization to enhance workplace safety?
- ☐ What are the organizational characteristics affecting safety climate in your organization?
- ☐ Do you think your organization has a good safety climate? What are the constraints affecting safety climate within your organization?
- ☐ What are the external factors influencing safety climate within your organization?
- ☐ What influence your attitude to your organization safety rules (safety climate)?
- ☐ Do you have personal reasons affecting your attitude to your organization's safety rules?
- ☐ Do you trust religious/superstitious/traditional beliefs over organizational safety climate to stay safe at work?

In-depth Interview Questions

1. Can you describe in your own words how safe is it to work at your organization?
2. What do you feel are the major workplace safety risks within your organization?
3. What are the main causes of workplace injury within your organization?
4. Do you think safety is a significant management priority within your organization?
5. Can you describe the measures taken by management to reduce work place safety risks?
6. Can you describe the measures taken by management to promote workplace safety) within your organization?
7. What do you feel are the main constraints affecting achievement of a good safety practices within your organization?
8. Are there any internal issues or factors that affect safety in your organization?
9. Are there any external issues or factors that affect safety in your organization?
10. Can you describe the response of staff/employees to safety procedures
11. What in your view are the major factors that impact on staff/employees safety behaviour
12. Does the behaviour of individuals impact on the overall safety climate of your organisation?
13. Can you describe any personal views affecting your attitude to your organization's safety rules?

Focus Group/In-depth interview Participants' Demographics

Note: The information provided in the demographic form will be used strictly for the purpose of analysis and cannot be traced to you, and your identity will not be made available to any person or your organization.

Participant Number	
Organization	
Unit	
Rank/Position	
Years of experience in your field	
Number of years in the company	
Age	
Gender 1 = Male 2 = Female	
Marital status 1 = Married 2 = Partner 3 = Single 4 = Divorced	
Highest Educational Qualifications (Please, specify your educational qualification).	
Nationality (Please, specify your country of origin)	
Are you a member of the trade union? (Please, specify…)	
Where do you live?	

Appendix 7. OGFZA HSE performance Report

Performance Indicators									Year: 2017
THE HSE COMMITTEE – Analysis of Key Performance Indicators (KPI)									
Operating Companies	**Performance Indicators**								
Company	**Fatality**	**LTI**	**Medical Treatment Case**	**First Aid Case**	**Resticted Work Case**	**Fire**	**Spill/Pollution**	**Road Traffic Accident**	**Total**
Abumusa Investment Nigeria Ltd	0	0	0	0	0	0	0	0	0
Adamac Industries Limited	0	1	8	14	2	0	0	1	26
Adamac Pipes & Coating Services Limited	0	0	0	0	0	0	0	0	0
Addax Petroleum Development (Nigeria) Limited	0	0	0	0	0	0	0	0	0
Addax Petroleum Exploration Nigeria Limited	0	2	0	9	4	1	0	2	18
Addax Petroleum JDZ 4 Limited	0	0	0	0	0	0	0	0	0
Afren Resources Limited	0	0	0	10	4	0	0	18	32
Afri Bank PLC	0	0	0	0	0	0	0	0	0
Aos Orwell	0	0	0	0	0	0	0	0	0
African Petroleum Oilfield Services	0	0	0	0	0	0	0	0	0
Agip Energy & Natural Resources Nig. LTD	0	0	0	0	0	0		0	0
Ahiahu Construction and Supply Company Limited	0	0	0	0	0	0		0	0
Alcon Nigeria Limited	0	0	0	0	0	0	0	0	0
Amal Nigeria Limited	0	0	0	0	0	0	0	0	0
Arkleen oil & Gas Limited	0	0	0	0	0	0	0	0	0
Ascot Flow Lines Limited	0	0	0	0	0	0	0	0	0
Associated Maritime Services Limited	0	0	0	0	0	0	0	0	0
Baker Hughes Company Limited	0	0	0	0	0	0	0	0	0
Baker Hughes Nigeria Limited	0	0	0	0	0	0	0	0	0
Bellsea Limited	0	0	0	0	0	0	0	0	0
BK Tubulars Nigeria Limited	0	0	0	0	0	0	0	0	0
Boskalis International B.V	0	0	0	0	0	0	0	0	0
Bourbon Logistics Nigeria Limited	0	0	0	0	0	0	0	0	0
Brawal Oil services Limited	0	0	0	0	0	0	0	0	0
Bright Ocean Integrated Services	0	0	0	0	0	0	0	0	0
Cameron Flow Contol Technology Nigeria Limited	0	0	0	15	0	2	0	9	26
Cameron Offshore System Nigeria Limited	0	0	0	0	0	0	0	0	0
Cameron Valves & Measurement West Africa Limited	0	0	0	0	0	0	0	0	0
Chevro Nigeria Limited	0	0	0	0	0	0	6	0	6
Cledop West Africa Limited	0	0	0	0	0	0	0	0	0
D & A Associates Limited	0	0	0	2	0	0	0	0	2
D.M.S (Nigeria) Limited	0	0	0	0	0	0	0	0	0

Company	Fatality	LTI	Medical Treatment Case	First Aid Case	Resticted Work Case	Fire	Spill/Pollution	Road Traffic Accident	Total
Daewoo Nigeria Limited	0	0	0	0	0	0	0	0	0

Performance Indicators

Company	Fatality	LTI	Medical Treatment Case	First Aid Case	Resticted Work Case	Fire	Spill/Pollution	Road Traffic Accident	Total
Damagix Nigeria Limited	0	0	0	0	0	0	0	0	0
Deep Offshore International Sercvices West Africa Limited	0	0	0	0	0	0	0	0	0
Deep Offshore Services Nigeria Limited	0	0	0	0	0	0	0	0	0
Delattre Bezons Nigeria Limited	0	0	0	0	0	0	0	0	0
Del Waste Management Company Limited	0	0	0	0	0	0	0	0	0
Deltaafrik Engineering Limited	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0
Diamond Bank	0	0	0	0	0	0	0	0	0
Diesel Pwer (Nigeria) Limited	0	0	0	0	0	0	0	0	0
Emerald Energy Resources Limited	0	0	0	0	0	0	0	0	0
Energy Cement Nigeria Limited	0	0	0	0	0	0	0	0	0
Energy Equipment And Services Limited	0	0	0	0	0	0	0	0	0
Esso Exploration And Production Nigeria Limited	0	1	5	19	4	1	0	6	36
FMC Technologies Limited	0	0	0	0	0	0	0	0	0
Frezone Plant Fabrication International Limited	0	0	0	0	0	0	19	0	19
Geo-Fluids Limited	0	0	0	0	0	0	0	0	0
Geoplex Drill Teq Limited	0	3	6	20	8	1	0	9	47
Global Offshore Dilling Limited	0	0	0	0	0	0	0	0	0
Globestar Engineering Company Nigeria Limited	0	0	0	2	0	4	19	8	33
Greame Properties Limited	0	0	0	8	0	0	13	0	21
Halliburtion Energy Services Nigeria Limited	0	0	0	0	0	0	0	0	0
Hamilton Technologies Limited	0	0	3	5	0	4	0	6	18
Hyundai Heavy Industries Company Nig. Limited	0	0	0	0	0	0	0	0	0
Indigo Drilling Limited	0	0	0	0	0	0	0	0	0
Integrated Materials Management Limited	0	0	0	0	0	0	0	0	0
Interoil Investment (Nig.) Limited	0	0	0	0	0	0	0	0	0
Intels Joint Development Zone	0	1	3	7	0	3	0	7	21
Intels Nigeria Limited	0	0	0	0	0	0	0	0	0
Intels West Africa Limited	0	0	0	0	0	0	0	0	0
Impact Logistics Investments Limited	0	0	0	0	0	0	0	0	0
Italmotor Limited	0	0	0	0	0	0	0	0	0
Jarander Mooring & Logistics	0	3	8	14	2	1	0	3	31
Jarander Mooring & Logistics Services Limited	0	0	0	0	0	0	0	0	0
Kossam Oil And Gas Company Limited	0	5	12	20	6	0	2	7	52
Logscon integrated Services Limited	0	0	0	0	0	0	0	0	0
Lubrik Engineering Services Limited	0	0	0	0	0	0	0	0	0
LSCM Nigeria Limited	0	0	0	0	0	0	0	0	0
Makon Engineering And Technical Services Limited	0	0	0	0	0	0	0	0	0
Mariserve Maritime Services Limited	0	0	3	0	0	0	0	18	21

Company	Fatality	LTI	Medical Treatment Case	First Aid Case	Restricted Work Case	Fire	Spill/Pollution	Road Traffic Accident	Total
Maritime Royal Stevedoring Limited	0	0	0	0	0	0	0	0	0
Mbonny Technical Services Limited	0	0	0	0	0	0	0	0	0
Mcjunkin Nigeria Limited	0	0	0	0	0	0	0	0	0
MGM Lines SRL	0	0	0	0	0	0	0	0	0
MGM Logistics Solutions Services Limited	0	1	5	6	0	1	4	0	17
M-I Nigeria Limited	0	0	0	0	0	0	0	0	0
Mobil Producing Nigeria Unlimited	0	0	0	0	0	0	0	0	0
Nestoil Limited	0	0	3	9	1	0	1	1	15
Net Global system International Limited	0	0	0	0	0	0	0	0	0
Nigeria Agip Exploration Limited	0	0	0	0	0	0	0	0	0

	Performance Indicators								
Company	Fatality	LTI	Medical Treatment Case	First Aid Case	Resticted Work Case	Fire	Spill/Pollution	Road Traffic Accident	Total
Nigeria Agip Oil Company Limited	0	0	0	0	0	0	0	0	0
Nigerian Petroleum Development Company Limited	0	0	0	0	0	0	0	0	0
Nigerian Westminster Dredging And Marine Limited	0	0	0	0	0	0	0	0	0
Notore Chemical Industries LTD	0	0	7	19	0	3	20	0	49
Nov Oil And Gas services Nigeria Limited	0	0	0	0	0	0	0	0	0
Oando Energy Services Limited	0	0	0	0	0	0	0	0	0
OCTG Supply INC.	0	0	0	0	0	0	0	0	0
Oil & Indstrial Servies Limited	0	0	0	0	0	0	0	0	0
Oil Test Services Limited	0	1	0	15	5	1	0	5	27
Oiltools (Africa) Limited	0	0	0	0	0	0	0	0	0
OIS Indorama Port Limited	0	0	0	0	0	0	0	0	0
Onne Real Estate Management Limited	0	0	0	0	0	0	0	0	0
Orlean Invest West Africa Limited	0	0	0	0	0	0	0	0	0
Paudsiman (Nigeria) Limited	0	0	0	0	0	0	0	0	0
Pellegrini Nigeria Catering Limited	0	0	0	0	0	0	0	0	0
Petroleo Brsileiro Nigeria Limited	0	0	7	16	5	0	0	5	33
Pipe Coaters Nigeria Limited	0	3	9	17	0	0	0	2	31
Portland Maritime Services Limited	0	0	0	0	0	0	0	0	0
Pressure Control Systems Nigeria Limited	0	0	0	6	0	1	0	0	7
Prime Investment & Corporate Services And Management Company Limited	0	0	0	0	0	0	0	0	0
Pro De Eccher Limited	0	0	0	0	0	0	0	0	0
Prodeco (Property Development Company) Limited	0	0	0	0	0	0	0	0	0
Prodeco International Limited	0	1	0	20	3	0	0	9	33
Project Master Nigeria Limited	0	0	0	0	0	0	0	0	0
Remm Oil Services Limited	0	0	0	0	0	0	0	0	0
Rivers Housing & Property Development Company Limited	0	0	0	0	0	0	0	0	0
Saima Nigeria Limited	0	0	0	0	0	0	0	0	0
Saiipem Contracting Nig. LTD	0	0	0	0	0	0	0	0	0
Saipem Nigeria Limited	0	0	0	0	0	0	0	0	0
Salini Nigeria IImited	0	0	0	0	0	0	0	0	0
Sarima Nigeria Limited	0	0	0	0	0	0	0	0	0

Company	Fatality	LTI	Medical Treatment Case	First Aid Case	Restricted Work Case	Fire	Spill/Pollution	Road Traffic Accident	Total
Satellite Oil And Gas International Limited	0	0	0	0	0	0	0	0	0
Satellite Oil And Gas International Limited	0	0	0	0	0	0	0	0	0
Schlumberger Nigeria Limited	0	0	0	0	0	0	0	0	0
Sea Petroleum & Gas Company Limited	0	0	0	0	0	0	0	0	0
Sea Trucks Nigeria Limited	0	0	0	0	0	0	0	0	0
Seadrill Mobil Units Nigeria Limited	0	0	3	7	0	0	0	0	10
Shell Nigeria Exploration Pet. Company	0	0	0	0	0	0	0	0	0
Shell Pet. Dev. Company	0	0	0	0	0	0	0	0	0

Performance Indicators									
Company	Fatality	LTI	Medical Treatment Case	First Aid Case	Resticted Work Case	Fire	Spill/Pollution	Road Traffic Accident	Total
Skye Bank PLC	0	0	0	0	0	0	0	0	0
Sky-Link Global Concept Limited	0	0	0	0	0	0	0	0	0
Slot Engineering Nigeria Limited	0	0	0	13	0	0	0	6	19
Standard Chartered Bank Nigeria Limited	0	0	0	0	0	0	0	0	0
Star Deep Water	0	0	0	0	0	0	0	0	0
Starz Marine & Engineering LTD	0	0	0	0	0	0	0	0	0
Stratus Africa Limited	0	0	0	0	0	0	0	0	0
Sudelettra Nigeria Limited	0	0	0	0	0	0	0	0	0
Taleveras Group of Companies Limited	0	0	0	0	0	0	0	0	0
Taleveras Group of Companies Limited	0	0	0	0	0	0	0	0	0
Tecon Oil Services LTD	0	1	6	18	3	7	1	8	44
Tenaris Global Services Nigeria Limited	0	0	0	0	0	0	0	0	0
Textron Maritime Services Limited	0	0	0	0	0	0	0	0	0
Tidex Nigeira Limited	0	0	0	0	0	0	0	0	0
Titan Tubulars Nigeria Limited	0	2	5	8	2	0	0	6	23
Tonimas Nigeria Limited	0	0	0	0	0	0	19	0	19
Total E & P Nigeria Limited	0	0	0	5	0	0	0	0	5
Total Premier Services Nigeria Limited	0	0	0	0	0	0	0	0	0
Total Upstream Nigeria Limited	0	0	0	0	0	0	0	0	0
Transocean Support Services Nigeria Limited	0	0	0	0	0	0	0	0	0
Trevi Construction Company Limited	0	0	0	0	0	0	0	0	0
Trevi Foundations Nig. LTD	0	0	0	0	0	0	0	0	0
Tubular Technical Services Limited	0	0	0	0	0	0	0	0	0
Unicorn Integrated Marine Engineering LTD	0	0	0	0	0	0	0	0	0
Valuetrade Global Services Limited	0	0	0	0	0	0	0	0	0
Vam Onne Nigeria Limited	0	1	7	18	9	1	0	3	39
Vista Maritime Company Limited	0	0	0	0	0	0	0	0	0
Waep Nigeria Limited	0	1	8	5	7	0	2	1	24
Wasco Oil Service Company Nigiera Limited	0	0	0	0	0	0	0	0	0
Wesco Nigeria Limited	0	0	0	0	0	0	0	0	0
West AfricaCatering Nigerial Limited	0	0	3	19	1	6	7	16	52
West Africa Container Terminal	0	2	0	15	5	0	0	8	30
West Africa Machinery & Services (BVI) Limited	0	0	0	0	0	0	0	0	0
West Africa Machinery & Services Limited	0	0	0	3	0	0	0	0	3
West Africa Service Plant Limited	0	0	0	0	0	0	0	0	0

West Atlantic Shipyard Limited	0	0	0	19	0	4	0	10	33
Zidon Engineering Services Limited	0	0	0	0	0	0	0	0	0

Appendix 8.   Summary of NVivo-generated themes and references

1.   Nvivo_Code Ref_Q1: What keeps people safe at workplace

Theme 1: Compliance (to safety rules and procedures)

<u>\<Files\\Question 1 Nvivo\></u> - § 15 references coded [13.62% Coverage]

Reference 1 - 0.38% Coverage

…compliances with the various regulations

Reference 2 - 0.30% Coverage

policies and procedures we have

Reference 3 - 0.43% Coverage

PPE being put in place help us to work safely

Reference 4 - 0.62% Coverage

we are always careful in carrying out all the job assessments.

Reference 5 - 0.59% Coverage

working in an environment where blame culture is not promoted

Reference 6 - 2.08% Coverage

people are not scared to report unsafe acts, unsafe conditions and hazards because they know that once they report it's going to be clustered and nobody is going to be blamed for any incident that occurred, thank you

Reference 7 - 1.08% Coverage

just relying with international labour laws and the recommendations and conventions of article 16 and article 19

Reference 8 - 1.54% Coverage

Then on the other part, the employees also have a part to play, they also have a duty to fellow employees in terms of making sure that the right things are done

Reference 9 - 0.45% Coverage

… you will tend to obey it including safety rules

Reference 10 - 0.90% Coverage

you must obey the rules and regulations of the organization and the safety policy to the later

Reference 11 - 0.94% Coverage

what actually keeps somebody safe at work is just having that mind-set of obeying safety policies,..

Reference 12 - 1.46% Coverage

And also, working safe because my action can affect the next person, so I work safe to keep all of us as a team alive and to do the work the next time.

Reference 13 - 0.51% Coverage

So, I need to keep myself safe, keep others also safe

Reference 14 - 1.42% Coverage

There are already laid down rules, the guiding principle when carrying out any task, anywhere you are working, so I tried to follow them objectively

Reference 15 - 0.91% Coverage

It's good to stay alive and keep the work going, do your duty, follow the rules and regulations

Theme 2: Personal Commitment to safety

<Files\\Question 1 Nvivo> - § 12 references coded [11.15% Coverage]

Reference 1 - 0.59% Coverage

our *perception to safety, individual perception (to safety),*

the most important thing is understanding what safety is

complying with the company procedures

having the right mind-set while you are at work

individual factors because safety is more or less a personal thing

proper analysis

And for you to be safe at that job, you must have worked whatever would distract you first.

If you don't work safe, you go home either you are dead, or something else or one hand or when you come to the company, you come with a complete body, then if you didn't work safe, as you are going home, you are going as a half man, not a complete human being again, which means you are supposed to work safely and you chose to work unsafe

So I do my best to make sure that I work safe

Me working safe is a personal obligation. So, I want to work safe so I can stay alive to work the next day

I'm motivated to work safe, one: so I can leave complete because there is no amount of money the company would pay me that would replace any part of my body.

Reference 12 - 1.32% Coverage

since life doesn't have a spare, so, there is no point to working unsafe, so you have to be safe, you work safely and go back home safely

Theme 3: Management commitment to safety
<Files\\Question 1_Nvivo> - § 7 references coded [4.99% Coverage]

Reference 1 - 0.43% Coverage

the commitment from our various organizations

Reference 2 - 0.20% Coverage

management commitment

Reference 3 - 0.37% Coverage

There has to be management commitment,

Reference 4 - 0.88% Coverage

management commitment is very very fundamental to health and safety of every organization.

Reference 5 - 1.12% Coverage

management factor, because it's the processes the management have put in place to ensure that the work place is safe

Reference 6 - 0.40% Coverage

I think that management has a role to play

Reference 7 - 1.60% Coverage

the kind of judgement you are given by the safety team. If they come out to remind us about the task ahead, how to do it, it would also keep us safe in our work place

Theme 4: Employee competence

<Files\\Question 1 Nvivo> - § 7 references coded [3.93% Coverage]

Reference 1 - 0.30% Coverage

policies and procedures we have

Reference 2 - 0.54% Coverage

the most important thing is understanding what safety is

Reference 3 - 0.38% Coverage

competency on the part of the operators

Reference 4 - 0.58% Coverage

We have vast use of experience and its more of a routine job

Reference 5 - 0.63% Coverage

by constantly training and ensuring their competency at all times,

Reference 6 - 0.37% Coverage

Panicking when working is uncalled for

Reference 7 - 1.14% Coverage

You must learn to do all your job hazard analysis before embarking on any job to enable you to be safe at the position

Theme 5: Welfare

<Files\\Question 1 Nvivo> - § 4 references coded [3.33% Coverage]

Reference 1 - 0.55% Coverage

I think the number one that is our concern is our welfare

Reference 2 - 0.38% Coverage

bullying on people that is uncalled for

Reference 3 - 1.22% Coverage

But if your dreams and aspirations are being catered for, and as you move on, you aspire, then you'll be safe, you think safely

Reference 4 - 1.18% Coverage

when a driver drives for a certain period of time and don't have any road accident, they give him a certain amount of money

Theme 6: Work environment

<Files\\Question 1_Nvivo> - § 3 references coded [2.94% Coverage]

Reference 1 - 0.38% Coverage

is the environment conducive for work?

Reference 2 - 1.42% Coverage

So if you are in an environment where your dreams and aspiration cannot be met, you feel *insecure* and safety would be a secondary thing to you there

Reference 3 - 1.14% Coverage

For me I think one of the properties that could keep somebody safe at work is constant reminder of how safe the work is…

2. Nvivo_Code Ref_Q2:   Major causes of workplace safety risks and injuries

1. Natural factors
<Files\\Question 2_major safety risk> - § 1 reference coded [0.13% Coverage]

Reference 1 - 0.13% Coverage

… climate factors

2. Management-specific factors

<Files\\Question 2_major safety risk> - § 8 references coded [7.50% Coverage]

Reference 1 - 0.28% Coverage

Inadequate resources for trainings

Reference 2 - 2.68% Coverage

equipment and materials we use get expired, sometimes they get worn out, if the organization does not pay attention to these materials and equipment in terms of replacing them regularly or checking them regularly, it can cause unsafe situations and most times we notice and witness accidents when these things are not done

Reference 3 - 0.36% Coverage

a proper *incentive* needs to be put in place

Reference 4 - 0.91% Coverage

checks needs to be put in place to ensure that everyone is complying to lay down safety rules and regulations

Reference 5 - 0.30% Coverage

when you have *incompetent personnels*

Reference 6 - 0.79% Coverage

we are working under people, and sometimes the so-called experts undermine the issue of safety,

Reference 7 - 0.41% Coverage

Lack of proper sensitization from the safety unit

Reference 8 - 1.77% Coverage

the safety personnel, the officers who are supposed to guide the workers, the workforce on how to keep safety rules are not even conversant with the nature of the job that is being carried out in the environment.

3. Job-specific factors

<Files\\Question 2_major safety risk> - § 10 references coded [11.53% Coverage]

Reference 1 - 0.14% Coverage

equipment failure

Reference 2 - 0.05% Coverage

noise,

Reference 3 - 0.74% Coverage

we have dust because we work with cement, so the risk of inhaling cement affect your life

Reference 4 - 2.03% Coverage

We use machines, like my colleague said that doesn't have a emotions, You can be using the filling machine, if you don't place it well or you use it wrongly it can come off the machine and then cut someone, so you'll be careful how you use it.

Reference 5 - 2.56% Coverage

We have different machines such as caterpillars, cranes of different types which they have different sharp objects around them, so you have to wear your safety shoes, wear your safety gears, your hand grove and helmet so that you will not be injured because without all those things, you'll injure yourself,

Reference 6 - 0.79% Coverage

you make sure the oil is not pouring down because when it pours out (somebody may slip and fall

Reference 7 - 4.10% Coverage

one of the problems is that your fingers can be chopped off, the machine can even grind you together with the work piece, that is a fact. Apart from that, we have a highly dangerous filling box shift to any direction, its not controlled, you cannot control it, even if you have a gap, some of them escapes the gap and can still get to you, so these shifts, very hot and can also pierce your skin, in fact if it gets to your eyes, automatically you are blind, so this is a high risk job for me

Reference 8 - 0.30% Coverage

risk of personnel falling at height,

Reference 9 - 0.38% Coverage

Yea, still slip and fall hazards is a problem

Reference 10 - 0.44% Coverage

Problem of slip and falls, and when there is spillage

4. Employee-specific factors

<Files\\Question 2_major safety risk> - § 29 references coded [13.59% Coverage]

Reference 1 - 0.33% Coverage

Human factor, human factor, one of them

Reference 2 - 0.08% Coverage

Negligence

Reference 3 - 0.09% Coverage

distraction

Reference 4 - 0.09% Coverage

Complacency

Reference 5 - 0.07% Coverage

Mind-set

Reference 6 - 0.13% Coverage

attitude to work

Reference 7 - 0.31% Coverage

Failure to follow safe system of work

Reference 8 - 0.13% Coverage

Wilful violation

Reference 9 - 0.05% Coverage

Stress

Reference 10 - 0.06% Coverage

Fatigue

Reference 11 - 0.28% Coverage

Nonchalant (attitude of employee)

Reference 12 - 0.07% Coverage

Mind-set

Reference 13 - 0.09% Coverage

Human error

Reference 14 - 0.13% Coverage

failure to plan

Reference 15 - 0.64% Coverage

when you don't have a *good housekeeping*, you are bound to have those injuries

Reference 16 - 0.51% Coverage

when the personnel are embarking on what they call *horse play*

Reference 17 - 1.04% Coverage

if there are *no proper job hazard analysis* before embarking on that particular job it is possible to cause accident or injury

Reference 18 - 0.80% Coverage

Communication, lack of communication could also be responsible for such to occur in a work place

Reference 19 - 0.79% Coverage

negligence in the part of the workers can also be a factor that can cause hazard and accidents,

Reference 20 - 0.81% Coverage

if you don't place it well or you use it wrongly it can come off the machine and then cut someone

Reference 21 - 0.29% Coverage

so you'll be careful how you use it

Reference 22 - 1.02% Coverage

if your mind is not there, there's a tendency to make mistakes, that you hurt yourself or others working with you is there

Reference 23 - 0.80% Coverage

So all these things you need to put on your safety gears, your helmet and then your safety shoes

Reference 24 - 0.38% Coverage

we don't leave regulations of safety out of it

Reference 25 - 0.57% Coverage

also personnel attitude when they are doing the task, also a problem

Reference 26 - 0.78% Coverage

if you don't put the necessary caution signs, it has really caused issues for some companies,

Reference 27 - 1.23% Coverage

if you don't use the necessary safety gears like as in the issues of the cleaners, they might be contaminated by some diseases that may not go well

Reference 28 - 0.99% Coverage

that's concentration, without concentration it would be difficult to for the person, otherwise you might run into a fix

Reference 29 - 1.04% Coverage

if you don't put on the proper PPEs, it might lead to, and if it's not properly contained, it might really lead to hazards.

3. Nvivo_Code Ref_Q3:   Measures taken by organization to enhance safety

Theme 1: Incentive

<Files\\Question 3 Measures> - § 4 references coded [2.20% Coverage]

Reference 1 - 0.70% Coverage

Appreciating personnel that have followed safety to the letter

Reference 2 - 0.29% Coverage

Welfare packages and wages

Reference 3 - 0.38% Coverage

…so incentives would be given

Reference 4 - 0.82% Coverage

That is motivation (referring to salaries paid), that one goes a long way

Theme 2: Safety system

<Files\\Question 3 Measures> - § 20 references coded [25.27% Coverage]

Reference 1 - 1.07% Coverage

ensuring that we have a fit for purpose equipment. And also provision of a fit for purpose PPEs

Reference 2 - 1.03% Coverage

putting ERP in place, (Researcher: What do you mean by ERP?); emergency response procedures

Reference 3 - 0.47% Coverage

Creating safety awareness within the staff

Reference 4 - 0.51% Coverage

outlined safety standard operating procedures

Reference 5 - 0.64% Coverage

Development and continuous review of safe work procedures

Reference 6 - 0.55% Coverage

Compliance with all toolbox meetings instructions

Reference 7 - 0.33% Coverage

safety equipment for that day

Reference 8 - 0.44% Coverage

By creating a work friendly environment

Reference 9 - 1.66% Coverage

the company I work has devised a means of checking, they report every equipment breakdown, and then look at the date these equipment were procured,

Reference 10 - 0.67% Coverage

They provide the PPE that is personal protective equipment,

Reference 11 - 0.89% Coverage

there is no task that is done without safety personnel present to guide the job

Reference 12 - 0.76% Coverage

onsite personnel are there to ensure that safety rules are kept.

Reference 13 - 2.88% Coverage

I think one measure or breakthrough we have of recent in our company is this issue of permit and having a GSA provided where you document all the hazards that would be associated with the job, what to be done, how to control them, those measures are there

Reference 14 - 1.86% Coverage

Provision of safety gears (provision of safety materials), safety boots, hand groves, so this ones can make it a bit easy for us to avoid, easy for us to avoid risk.

Reference 15 - 0.49% Coverage

They constantly provide us with eye goggles

Reference 16 - 5.71% Coverage

these days, the safety shoes are substandard, they are not the correct one, they can cut, they may collect safety boots, then after three days to four days, they may collect safety boots after three days or five daysthey may come back to collect another one may be that one is substandard. Formally we didn't have a good safety boot that you can put on for one good year without any complaint, so is they can be able to provide good ones, that's**(Researcher: improve on the quality)**, yes, it would be better

Reference 17 - 0.35% Coverage

provision of PPEs, proper PPEs,

Reference 18 - 1.49% Coverage

PPEs, OGP (Oil & Gas Production) lifesaving rules which are there too that we use for every safety meetings for workers to be aware.

Reference 19 - 1.61% Coverage

you don't expect them to work without PPEs, and in that case the job has to suffer, and because the guys cannot work as at that particular time

Reference 20 - 1.87% Coverage

And also risk assessment conducted to put control measures in place, and additional monitoring and inspection of the tasks, they also help to make the work place safe

Theme 3: Training

<Files\\Question 3 Measures> - § 15 references coded [11.62% Coverage]

Reference 1 - 0.51% Coverage

constant training and retraining of the staff

Reference 2 - 0.18% Coverage

Training as well

Reference 3 - 0.72% Coverage

proper orientation to all personnel involved in any organization

Reference 4 - 1.65% Coverage

Introduction of behavioural based safety programmes such as course to improve in the overall behavioural perception of personnel in the work place

Reference 5 - 0.27% Coverage

Quality safety trainings

Reference 6 - 0.10% Coverage

trainings

Reference 7 - 1.16% Coverage

they embark on what they call toolbox meeting every morning before the workers commence their job daily

Reference 8 - 1.33% Coverage

they also embark on safety training regularly to enable the workers to be acquainted with safety rules and regulations

Reference 9 - 0.76% Coverage

We can't over emphasize on the need for training, adequate training

Reference 10 - 1.52% Coverage

To me I think safety is to communicate, appreciate, take it to the grass root because everybody has his own mentality of understanding.

Reference 11 - 0.49% Coverage

I just want to add *tool box meeting* quickly

Reference 12 - 0.71% Coverage

Training and retraining of the staff on the need and awareness,

Reference 13 - 1.68% Coverage

then safety awareness, as in creating awareness, and then proper synergies so as to know what and what to be do, and where to be and where not to be.

Reference 14 - 0.19% Coverage

Proper training,

Reference 15 - 0.35% Coverage

Effective training to personnel

4. Nvivo_Code Ref_Q4:   Organization characteristics affecting safety climate in your organization

Theme 1: Communication

<Files\\Question 4_Org Climate> - § 1 reference coded [0.65% Coverage]

Reference 1 - 0.65% Coverage

Communication gap has to be bridged from the management level down to the lower cabin

Theme 2: Finance

<Files\\Question 4_Org Climate> - § 6 references coded [4.95% Coverage]

Reference 1 - 1.02% Coverage

management has to value safety more by allocating more resources in terms of by finances, then resources needed for all the operations

Reference 2 - 1.20% Coverage

issue of the cost of safety, they seem not to consider the total cost of working safe into the cost of every project, and as such in the middle of a project,

Reference 3 - 0.65% Coverage

organizations look at the finance and tried to create what they call unsafe condition

Reference 4 - 0.85% Coverage

When it comes to safety, the management should not try to be cutting cost because safety is not 'any how' aspect

Reference 5 - 0.79% Coverage

if they don't provide enough equipment or facilities to do the task, it can also affect the performance

Reference 6 - 0.44% Coverage

poor welfare amenities, something should be done about it

Theme 3: Management-employee relationship
<Files\\Question 4 Org Climate> - § 7 references coded [6.01% Coverage]

Reference 1 - 0.52% Coverage

think management has to be closer and more friendly to the workforce

Reference 2 - 0.49% Coverage

and stay closer to the people and make the environment friendly.

Reference 3 - 1.18% Coverage

Everyone should be treated equally. In a situation whereby the management wants its safety officers to work as a police officer instead of being friendly,

Reference 4 - 1.16% Coverage

some of our people here, just a mere sight of a safety officer becomes a hazard to some of them because of the attitude of some of our safety officers.

Reference 5 - 1.50% Coverage

now we hardly see, except for the meetings which have our safety meetings that we help when we have our festivities, we don't see our safety officers coming around at least to see what is going on.

Reference 6 - 0.23% Coverage

Motivation of the workers too.

Reference 7 - 0.93% Coverage

[Motivation], maybe first quarter of safety they will announce the best safety award personnel, they would give the person

Theme 4: Policies
<Files\\Question 4 Org Climate> - § 7 references coded [7.06% Coverage]

Reference 1 - 0.38% Coverage

the manner of implementation of safety procedures

Reference 2 - 0.69% Coverage

we have for instance the stop work authorities which are actually incident prevention tool

Reference 3 - 0.40% Coverage

remove the blame culture, remove the flogging policy

Reference 4 - 0.14% Coverage

changed management

Reference 5 - 1.85% Coverage

I want to elaborate more on this issue of cost for safety, you know, most cases when the workers come, we tend to put much emphasis on wearing a hard hat, safety boots, your everything, but sometimes when they come to your office for something

Reference 6 - 2.31% Coverage

So if the management refuse to observe the time constraint therefore the tendency of having problem is there. Therefore, safety has to impose and advice the management to take time and give more ample time to the safety officers to perpetuate their own procedures in such a way that to avoid the menace

Reference 7 - 1.30% Coverage

if safety is critically important, it should be as easy as possible to get anything that has to do with safety provided it's not misused or being sold like some people do

Theme 5: Punitive measures
<Files\\Question 4 Org Climate> - § 4 references coded [2.82% Coverage]

Reference 1 - 0.78% Coverage

they choose a kind of their persons you know do it with favouritism,doing favouritism, talking of that

Reference 2 - 0.98% Coverage

if a staff makes a mistake, there should be more of correction than punitive so this will encourage a healthy safety environment

Reference 3 - 0.27% Coverage

I want to speak on punitive measure

Reference 4 - 0.79% Coverage

Pressure from the head of department. I've seen where a safety officer was dropped that he stopped a job.

5. Nvivo_Code Ref_Q5:   Constraints affecting safety climate

1. Employee factor

<Files\\Question 5_Constraints> - § 4 references coded [3.48% Coverage]

Reference 1 - 1.40% Coverage

People can willingly come to safety meetings, they report incidents, they report SOBs. For me I feel that somehow we have come to embrace safety as a culture in the organization

Reference 2 - 0.70% Coverage

personally the perception of the workers concerning our work environment is not too good,

Reference 3 - 0.78% Coverage

it depends on the department or personnel involved, some might have should we say attitude problem

Reference 4 - 0.59% Coverage

So our attitude, you find the workers attitude towards safety.

2. External factor

<Files\\Question 5_Constraints> - § 4 references coded [3.65% Coverage]

Reference 1 - 0.52% Coverage

Now they may say because the economy is down and all these things,

Reference 2 - 1.85% Coverage

I believe that what is holding us back as a company is actually the country we find ourselves, we don't have the legislations that hold employers to task on safety and so many employers are getting away with things that are not right,

Reference 3 - 0.55% Coverage

there is an international organization performance ranking in safety.

Reference 4 - 0.74% Coverage

But when the government policy is not favouring them, you see them derailing in certain areas

3. **Organizational factor**

<Files\\Question 5 Constraints> - § 14 references coded [12.47% Coverage]

Reference 1 - 0.33% Coverage

not also skip the fact that a good welfare….

Reference 2 - 0.39% Coverage

Sometimes safety is being preached than practiced

Reference 3 - 0.66% Coverage

So management should try to improve on assuring workers of job security, not threat

Reference 4 - 0.92% Coverage

but management need to continue to work on it just like my colleague said, if there is any change or any redundancy,

Reference 5 - 0.48% Coverage

but I think where we are losing it is actually implementation

Reference 6 - 1.30% Coverage

I want to talk on *management walkabout (supervision),* it's encouraging when workers are out there and they see their top management coming to see what they are doing

Reference 7 - 0.96% Coverage

a typical example is the issuance of PPE, and first and foremost, most PPEs that are being issued out are of poor quality.

Reference 8 - 0.56% Coverage

On my own I would start with welfare, management has to improve on it,

Reference 9 - 2.64% Coverage

A situation whereby some batch would be working like in Plant, we do work 24hours in dedicated areas they are not asked to work 24 hours, but we in Plant we are the ones that will go and relieve them and then at the same time also we come back to work in Pole there by working 24 hours, that issue also management should look into it.

Reference 10 - 0.73% Coverage

I said sometime here that the welfare of the person, the personnel working should be noted,

Reference 11 - 1.22% Coverage

So what we are saying is the safety of the individual, the personnel should always be brought to mind, the management should always be concern about that.

Reference 12 - 0.61% Coverage

But one of the constraints is also the management decisions during emergency,

Reference 13 - 1.00% Coverage

the management should give the safety department free hand to run the safety affair, give fund, just let them do what is right.

Reference 14 - 0.66% Coverage

might be due to the way we handle our own safety, every morning, we have a tool box,

6. Nvivo_Code Ref_Q6:   External factors influencing safety climate with the organization

Government factor

<Files\\Question 6 External factors> - § 5 references coded [3.62% Coverage]

Reference 1 - 0.39% Coverage

so I think the external factors, the government is a core one.

Reference 2 - 0.59% Coverage

Well, external factors, I want to mention, I want to point out government. Government policies first

Reference 3 - 0.32% Coverage

The external factor is this, in this case, government,

Reference 4 - 0.31% Coverage

And also, the present government, what is going on?

Reference 5 - 2.01% Coverage

They don't have jobs, there's no money, and it's all from the government, so it is the government that is affecting, that is causing what is happening to the company. So that is why nobody looks at the company, we are not blaming the company but government**(Researcher: So, that is government policy now),** yes, that is affecting the company

Insecurity

<Files\\Question 6 External factors> - § 7 references coded [6.81% Coverage]

Reference 1 - 0.26% Coverage

Like political violence, political violence,

Reference 2 - 0.47% Coverage

Last time they beat me (researcher: they beat you?), yes, when Okrika and Eleme

Reference 3 - 0.91% Coverage

So, imagine what happens when someone from community threatened you and you know you have to cross his house to go home, you'll just manage to leave him.

Reference 4 - 0.42% Coverage

Another part is because of the militancy issue, the security involved.

Reference 5 - 0.23% Coverage

And talking about the *community crisis*,

Reference 6 - 2.42% Coverage

And so many people have gone away, and it's part of the security, again because most of these guys that were employed have now gone back, were militants, in fact there are some that we know that were working with us and they calmed down but now they are out again, and they have gone back to their business of kidnapping, robbery and all that, so you know, those are the external things that are affecting us

Reference 7 - 2.09% Coverage

before our very eye, all these boys, small small boys, of 12 or 13, these boys came...and this guy came into the premises with a gun (Researcher: Gun?), yes!he called my supervisor that

today is your last day. The guy knelt down and begged him, said please, I'm not the one and he left the gate without anybody searching him, and he left with that gun.

Socioeconomicfactor

<Files\\Question 6 External factors> - § 9 references coded [5.95% Coverage]

Reference 1 - 0.28% Coverage

Especially with the present economic situation,

Reference 2 - 0.31% Coverage

I think the economic recession is really biting hard,

Reference 3 - 0.24% Coverage

Our roads, now in the morning you wake up

Reference 4 - 2.41% Coverage

Let's say, like my colleague just said, stress, stress is a one killer and it's what we face every day, every day.I got here, I leave home like she said on time, and the road, you see this bus and this one quarrelling, by the time you get from it, you are not with the right frame of mind to do a lot of things, …transferred aggression, so emotionally, you are unstable because of the stress you just face.

Reference 5 - 0.71% Coverage

When you say the the external effect, then the economic recession, the economic recession is a big stress on the staff.

Reference 6 - 0.52% Coverage

And outside that you look at the transportation system, most of them after the day job,

Reference 7 - 0.64% Coverage

It still boils down to recession because it affects your mind-set, it affects the way you, your livelihood

Reference 8 - 0.54% Coverage

For me the biggest challenge I had when I started the job here is the condition of the road

Reference 9 - 0.31% Coverage

Where I am at my firm, look at the road of the port,

Third party influence
<Files\\Question 6 External factors> - § 10 references coded [4.07% Coverage]

Reference 1 - 0.28% Coverage

I would say is client pressure on the workers,

Reference 2 - 0.42% Coverage

They believe that customer is always right (client pressure on workers)

Reference 3 - 0.52% Coverage

the fact that so many clients want to cut cost is actually giving us serious challenges

Reference 4 - 0.33% Coverage

but our clients, they are also making us to cut corners.

Reference 5 - 0.41% Coverage

my own take is the effect that the community could have on the system

Reference 6 - 0.41% Coverage

private sector they are all together making things work, to work out,

Reference 7 - 0.24% Coverage

I want to talk about community influence,

Reference 8 - 0.74% Coverage

Family problem, I think is also a problem, it's also a factor, an external factor that could affect safety in our work place.

Reference 9 - 0.53% Coverage

and you still have the family burden on you, your family tie, your family, your friends,

Reference 10 - 0.19% Coverage

And talking about the community,

7. Nvivo_Code Ref_Q7: What influences your attitude to your organization's safety rules?

Belief system
<Files\\Question 7_influence attitude> - § 2 references coded [1.05% Coverage]

Reference 1 - 0.81% Coverage

I'll say religious values. Religious values is something that influences our mind set and attitude to work

Reference 2 - 0.24% Coverage

Cultural *and economic* factors

Employee decision
<Files\\Question 7_influence attitude/decision> - § 4 references coded [1.73% Coverage]

Reference 1 - 0.47% Coverage

the mind-set, your perception to safety influences what you do

Reference 2 - 0.28% Coverage

The duty I owe to my fellow employees

Reference 3 - 0.41% Coverage

By failure to carry out safety rules and regulations,

Reference 4 - 0.56% Coverage

you see that that worker's attitude to safety and other policies goes down

Experience
<Files\\Question 7_influence attitude> - § 4 references coded [2.54% Coverage]

Reference 1 - 0.85% Coverage

Sometimes I also say awareness is so so important, if you don't know it's another thing, so awareness is there,

Reference 2 - 0.33% Coverage

Trainings (Researcher: Trainings?), Yes, Sir

Reference 3 - 0.59% Coverage

I work the way I work because I'm a professional (professionalism) in my field

Reference 4 - 0.76% Coverage

I just want to add that if you are not informed, you are deformed. I want to talk about information.

Family concern
<Files\\Question 7_influence attitude> - § 2 references coded [1.95% Coverage]

Reference 1 - 0.54% Coverage

I just love my wife and kids, so I want to work and go home to see them

the company taking care of your family, medical, education, the academics, even if the money is not too big, but let the children, their education be guaranteed, their health, you know,

Health condition
<Files\\Question 7 influence attitude> - § 2 references coded [1.72% Coverage]

Reference 1 - 0.62% Coverage

You see somebody who is sick, you are even asking him to go and operate a machine

Reference 2 - 1.10% Coverage

therefore he must continue to work, like my young man here said, the worker can die. If the workers has produced enough for that day, let him be.

Management factor
<Files\\Question 7 influence attitude> - § 20 references coded [13.28% Coverage]

Reference 1 - 1.51% Coverage

sometimes, consequence management, if you know that if you violate, you are going to be given punitive actions, red card, yellow card, so, it can also help you to sit up which is not bad in its self

Reference 2 - 0.08% Coverage

Incentives

Reference 3 - 0.49% Coverage

Intrinsic motivation, the way my managers commend me when I work

Reference 4 - 0.44% Coverage

Yea, if I'm well motivated, it influences me a great deal,

Reference 5 - 0.38% Coverage

Understanding from the management side to workers,

Reference 6 - 0.25% Coverage

I think motivation is a key to it

Reference 7 - 0.38% Coverage

the safety PPE is provided to them as at when due,

Reference 8 - 0.47% Coverage

you make sure that the collective bargain between the worker,

Reference 9 - 0.65% Coverage

I think one more thing there is the relationship between the boss and the subordinate

Reference 10 - 0.69% Coverage

If the management is able to communicate, the head of safety has to communicate to workers,

Reference 11 - 0.75% Coverage

When the organization is sincere to the work force, the spirit to obey safety rules would be there,

Reference 12 - 1.50% Coverage

Company showing, appreciating the effort one puts in, when you put in more, you'll be expecting more, but in terms of recognition, may be sometimes you can, even if it means an ordinary certificate

Reference 13 - 0.13% Coverage

economic factors

Reference 14 - 0.33% Coverage

I would say it's all about workers' welfare

Reference 15 - 0.26% Coverage

(Participants echoed: money).Money

Reference 16 - 2.32% Coverage

the money aspect, it's very terrible because in this our organization there are a lot of people that work their asses out, they try to put the job like, this is it, my job, so what they are giving in is not what, what they are giving out is not what they are not receiving enough of it in terms of money,

Reference17 - 0.96% Coverage

The same thing money, like the last time *(Researcher: What do you mean by money? salary and welfare)*, yes, salary and welfare.

Reference 18 - 1.22% Coverage

Assuming that *(Researcher: If there's improved benefit)*, yes, even though you hear that you are going tomorrow or next tomorrow*(Researcher: he won't die?),* yes.

Reference 19 - 0.13% Coverage

Welfare package,

Reference 20 - 0.34% Coverage

And another thing is apart from the welfare

8. Nvivo_Code Ref_Q8:   Personal reasons influencing employee attitude to organization's safety rules?

Bias system
<Files\\Question 8_personal reasons> - § 10 references coded [13.43% Coverage]

Reference 1 - 1.55% Coverage

The appraisal system of the organization is not based on merit. You can see a situation whereby somebody at lower qualification is controlling somebody at higher whatever

Reference 2 - 0.33% Coverage

there is a level of marginalization,

Reference 3 - 0.18% Coverage

Mine is sentiments.

Reference 4 - 1.09% Coverage

Yes, I think of placement. When you are not placed properly, you are talking of personal reasons that can affect safety,

Reference 5 - 2.59% Coverage

There is this policy that each year a worker should be appraised for the job he did for the previous year, and in such that there are ten workers in an establishment and you see somebody putting so much effort to do the job and at the end of the day others are appraised and he is not

Reference 6 - 1.43% Coverage

My own actually is just to emphasize concerning the issue of expatriate. Expatriate has to be reoriented because the company policy of safety is very perfect

Reference 7 - 0.26% Coverage

Mine is about discrimination.

Reference 8 - 3.66% Coverage

my own personal reason is that maybe they will bring a white guy (expatriate) from there, then we are here, we will teach the white guy the job, then tomorrow he'll remove you, like there is one that is going on now, that white guy doesn't know that job at all, he then removed the black so that they will not remove him, but it was the black that taught him that job he is doing. So I don't like that.

Reference 9 - 1.38% Coverage

but if you have a bullying supervisor, or somebody you cannot, no matter what you do, you hardly satisfy him, definitely it'll affect the way you work.

Reference 10 - 0.95% Coverage

Yes, a situation where I think it's what the white says is what stands, when the blacks says it is like,

Family concern
<Files\\Question 8_personal reasons> - § 2 references coded [2.83% Coverage]

Reference 1 - 0.85% Coverage

And when you hear you are going home and your family is there, you'll want to do everything.

Reference 2 - 1.99% Coverage

But when you are happy going home, your children, everybody would be happy, the next day you'll come back even to work more. But when you are not happy, you come back the next day, it's with grudges, that's my own take

Health concern
<Files\\Question 8_personal reasons> - § 3 references coded [2.00% Coverage]

Reference 1 - 1.01% Coverage

Prolonged standing (work stress) is a terrible thing that is affecting me or affecting my mind-set towards work

Reference 2 - 0.67% Coverage

that first, let me go back home complete the way I came (personal safety)

Reference 3 - 0.32% Coverage

its working 24 hours (work stress)

Job related
<Files\\Question 8_personal reasons> - § 5 references coded [2.05% Coverage]

Reference 1 - 0.62% Coverage

the fact that I don't know if my job is secured (job security), one!

Reference 2 - 0.26% Coverage

my own take is job insecurity

Reference 3 - 0.41% Coverage

the personal issue I have is that of pressure

Reference 4 - 0.58% Coverage

I would say understanding between the heads and the subordinates

Reference 5 - 0.17% Coverage

talk about respect.

Welfare
<Files\\Question 8 personal reasons> - § 5 references coded [4.21% Coverage]

Reference 1 - 0.98% Coverage

And the fact that I don't know when salary would be coming as well as overtime (payment) and even extension

Reference 2 - 1.38% Coverage

delay in payment, when it's supposed to be paid it's not paid, fifteenth is no longer fifteenth, twenty seven is no longer twenty seven, it's a problem

Reference 3 - 0.57% Coverage

The appraisal system of the organization is not based on merit.

Reference 4 - 0.60% Coverage

And then, welfare, workers welfare should not be under emphasized,

Reference 5 - 0.68% Coverage

So I think they should provide ways to encourage the employees [motivation].