Effect of occupational health and safety practices on performance of building construction industry in Nigeria

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Abstract

The study evaluated the effect of occupational health and safety practices on performance of building construction industry in Nigeria. The specific objectives were to: evaluate the effect of hazard identification on quality reinforcement of building construction industry in Nigeria and ascertain the effect of risk control on prompt delivery of building construction industry in Nigeria. Study area was Nigeria. The research design of the study was descriptive survey design. The study used structured questionnaire to obtain data. The population of the study comprised of 103,000 staff of selected construction firms in Nigeria. Simple random technique was used to select four construction firms namely: Reynolds Construction Company, Costain West Africa, Julius Berger Nigeria and Setraco Nigeria Limited. The sample size of 383 respondents was drawn from population of the study using Freund and Williams sampling technique. Research questions were answered using frequency, mean and standard deviation. The hypotheses stated were tested using Chi-square method. The empirical results showed that hazard identification has significant effect on quality reinforcement of building construction industry in Nigeria (Chi-square: 29.917 > Critical-value: 0.000) and risk control has significant effect on prompt delivery of building construction industry in Nigeria (Chi-square: 102.414 > Critical-value: 0.000). The study recommended that management of building construction industry in Nigeria should provide Personal Protective Equipment (PPE) to every field staff according to legislation and standards or best practice.

Keywords: Risk control, Hazard identification, Occupational health, Safety practices

1.1 Background of the study

The construction industry world over, is however considered as one of the most hazardous industry. The International Training Centre of the International Labour Organization (2021) claims that one in six fatal accidents at work occur on a construction site. It further stated that no less than 60,000 fatal accidents occur on construction sites around the world every year. Similar conclusions were made by Okoye, Ezeokonkwo & Ezekoli, (2026) [11] and Ajaelu, Obru-Egboro & Bemsodi (2024) [3]. Considering the adverse impacts of accidents, construction safety management is of genuine concern to all stakeholders in the construction industry. Construction industry is also viewed as labour intensive because labour cost amounts to 40-65% of the overall cost of a project (Zakariyyah, Faremi & Sotunbo, 2023) [15]. Therefore, the labour intensive nature of the industry will demands more human involvement at the production stage. Opatunji and Oyelami, (2025) [14] viewed accidents as part of the building production process that is unavoidable because construction industry is inherently dangerous, therefore, compliance or not to safety practices will forfeit the impact of safety regulations. Factors adding to occurrence of construction fatalities were known as the uniqueness of the sector that differentiate it from other industries. Abdullahi and Makinde. (2023) [1]; Ondimu and Ombui (2018) [13] and Ileka and Obinwune, (2024) [5] contend that the number and magnitude of accidents occurring and recorded on construction sites in Nigeria underscored low level of safety practices.

Occupational health and safety (OHS) practices in the Nigerian construction industry refer to the measures and procedures implemented to ensure the well-being, safety, and protection of workers in construction-related activities (Nkqayana & Smallwood, 2023). The construction industry in Nigeria is known for its significant contributions to economic growth and development, providing employment opportunities and infrastructure that drive growth across various sectors. However, the industry is also associated with significant occupational health and safety (OHS) risks, which can have serious implications for worker well-being (Adesola, Onwuegbuna & Abodunrin, 2021) [2]. However, safety is implemented, in essence, by contractors on work sites indeed need to adopt adequate safety related systems for the provision and control of work environment system and human behaviour. Government, unions and insurers have spent a great deal of time and effort attempting to evolve legislation, rules and regulations to help reduce the large loss of life and limbs, and the high number of “loss-work days”

The practice of safety in construction is regulated by governmental agencies such as the occupational safety and health administration (OSHA), which provides strict rules and regulation to enforce safety and health standards on jobsites. However, Legislation alone cannot reduce rates unless

craftsmen and management takes positive actions to integrate these rules into their everyday activities by implementing a safety management program. Safety management is aimed at removing or minimizing the forces which cause losses through injured workers, or damaged equipment and facilities. (Kumarasinghe & Kuliyapitiya, 2022) [6].

Hazard identification is the foundational process in occupational safety and health used to recognize any source of potential harm, injury, or illness in the workplace. Organizations perform this to proactively detect physical, chemical, biological, ergonomic, or psychosocial dangers before incidents occur. By systematically inspecting environments, analyzing tasks, and consulting employees, businesses can prioritize risks, implement preventive measures, and maintain a safer, more compliant, and productive work environment. Identifying workers' exposure to health hazards is typically more complex than identifying physical safety hazards (Obinwune, Ohanyere & Anah, 2023) [8]. For example, gases and vapors may be invisible, often have no odor, and may not have an immediately noticeable harmful health effect. Health hazards include chemical hazards (solvents, adhesives, paints, toxic dusts, etc.), physical hazards (noise, radiation, heat, etc.), biological hazards (infectious diseases), and ergonomic risk factors (heavy lifting, repetitive motions, vibration). Reviewing workers' medical records (appropriately redacted to ensure patient/worker privacy) can be useful in identifying health hazards associated with workplace exposures.

Risk control in Occupational Safety and Health (OSH) involves implementing strategies to eliminate or minimize workplace hazards. Organizations use a systematic Hierarchy of Controls to rank solutions from most to least effective. Priority is given to eliminating the hazard entirely (e.g., removing a dangerous machine) or substituting it with a safer alternative, followed by engineering controls, administrative changes (e.g., training), and finally Personal Protective Equipment (PPE) as a last line of defense (Lingard & Holmes, 2020) [7]. Owing this background of the study, this study aimed at dwelling in two major proxies of risk control and hazard identification as regards to effect of occupational health and safety practices on performance building construction industry in Nigeria.

1.2 Statement of the problem

Occupational safety and health practices entails protecting employees and other person affected by what the organization produces and does. It aims at protecting employees against the hazards arising from their employment or their links with the organization (Armstrong, 2009). These days the human resource managers are faced with crucial issues of occupational safety and health than before. The reason is that the workers just like any other resources require maintenance and care against Hazards and unsafe environment in order to maximize their wellbeing and sound health free of harm (Okechukwu & Onyia, (2022) [9].

According world health organization (WHO) data, 40%-50%, of the world population, is exposed to hazardous conditions in the workplace. It is also estimated that approximately 120 million occupational accidents occur worldwide each year, with 200,000 fatalities. On the fact note, each year between 68 million and 157 million new cases of occupational diseases arise as a consequence of various types of work-related exposures. In addition, approximately 30% -50% of workers in industrialized countries experience psychological stress. Environmental stressors such as hazardous conditions are one cause, but occupational stress results from work organization (e.g. workload, lack of autonomy and control over work, shift work, wage scales, and routine, repetitive work) (Okechukwu, *et al* 2021) [10].

Okoye, Ezeokonkwo and Ezeokoli, (2026) [11] found out that wounds, bruises, cuts, and fractures were the most reported injuries in the construction industry. This resulted in absenteeism from workers, loss of confidence by workers and the public, increased insurance premiums and proliferation of litigations. Inadequate occupational safety and health (OSH) practices lead to severe, multifaceted consequences, including physical harm, financial strain, and legal repercussions. Organizations frequently experience increased workplace accidents, fatalities, and chronic health issues, which directly reduce productivity and inflate operating costs through insurance premiums, compensation claims, and legal fees. Furthermore, poor safety records damage corporate reputation, lower employee morale, increase staff turnover, and may result in heavy fines, prosecution, or business closure. A high-profile case of negligence can lead to decreased customer trust, loss of clients, and a decline in revenue. Owing to these backdrops, this study aims to identify the effect of occupational health and safety practices on performance of building construction industry in Nigeria.

1.3 Objective of the study

The main objective of this study was to examine the effect of occupational health and safety practices on performance of building construction industry in Nigeria. The specific objectives were to:

- Evaluate the effect of hazard identification on quality reinforcement of building construction industry in Nigeria.
- Ascertain the effect of risk control on prompt delivery of building construction industry in Nigeria.

1.4 Research questions

The study aimed to answer the following questions:

- What is the extent to which hazard identification affects quality reinforcement of building construction industry in Nigeria?
- What is the extent to which risk control affects prompt delivery of building construction industry in Nigeria?

1.5 Significance of the study

This study would be beneficial and relevant to the following groups of individuals and groups namely: project managers, construction stakeholders, policymakers and researchers.

Project manager: The result of this study will provide valuable insights into the factors contributing to poor project

performance in the Nigerian construction industry and identify best practices that can be adopted to improve project performance. In addition, it will provide useful information for project managers, construction stakeholders, and policymakers, which can help to improve the performance of construction projects in Nigeria.

Employee of construction firm: Occupational Health and Safety (OHS) practices are essential for protecting employees from physical injuries, chronic illnesses, and psychological stress. By proactively identifying hazards and providing proper training. OHS programs directly reduce absenteeism, increase job satisfaction, and foster a supportive work environment.

The researcher: The outcome of this study will equally be useful to scholars and researchers, it would serve as reference materials that are reserve in libraries and shelves for further academic research. The study empirical findings are capable of adding new insights to present knowledge in the field.

2.1 Conceptual literature

2.1.1 Occupational Health and Safety (OHS): Occupational Health and Safety (OHS), also known as Workplace Health and Safety (WHS), is a multidisciplinary field concerned with ensuring the health, safety, and well-being of workers in their work environments. It encompasses a wide range of practices, policies, and regulations aimed at preventing work-related accidents, injuries, illnesses, and promoting overall worker welfare (Olutuase, 2024) [12].

The primary goal of OHS is to create work environments that are free from hazards and risks, where workers can perform their tasks safely and without compromising their physical or mental health. This involves identifying and assessing workplace hazards, implementing preventive measures, providing appropriate training and education, and establishing effective systems for monitoring and managing occupational risks (Okoye, Ezeokonkwo & Ezekoli, 2026) [11].

2.1.2 Key components of Occupational Health and Safety include:

a) **Hazard identification and risk assessment:** This involves identifying potential hazards in the workplace, such as unsafe equipment, exposure to harmful substances, ergonomic issues, or psychosocial factors. Risk assessment helps in evaluating the likelihood and severity of these hazards and determining appropriate control measures.

b) **Risk control and prevention:** Once hazards are identified, steps are taken to control or eliminate them. This can involve engineering controls (e.g., modifying equipment or processes), administrative controls (e.g., implementing safety protocols and procedures), and personal protective equipment (PPE) to mitigate risks (Ajaelu, Obru-Egboro & Bemsodi, 2024) [3].

c) **Training and Education:** Providing workers with adequate training and education on OHS practices is essential. This includes raising awareness of workplace hazards, teaching safe work procedures, promoting proper use of protective equipment, and fostering a safety-conscious culture among employees (Zakariyyah, Faremi & Sotunbo, 2023) [15].

d) **Health surveillance:** OHS programs often include health surveillance systems to monitor the health status of workers exposed to particular risks. This may involve regular medical check-ups, monitoring of exposure to hazardous substances, and assessing the impact of work-related factors on workers' health (Opatunji & Oyelami, 2025) [14].

e) **Incident reporting and Investigation:** Establishing mechanisms for reporting and investigating workplace incidents is crucial for identifying the causes and preventing future occurrences. Incident reporting systems help in collecting data, analyzing trends, and implementing corrective actions to improve safety (Misiurek & Misiurek, 2017).

f) **Compliance with regulations**: OHS is governed by laws, regulations, and standards set by governmental bodies or industry organizations. Compliance with these regulations is essential to ensure a safe work environment and avoid legal consequences (International Labour Organization, 2018). Continuous Improvement: OHS practices should be reviewed and updated regularly to adapt to changing work conditions, emerging risks, and technological advancements. Continuous improvement involves monitoring performance, conducting audits, and seeking feedback from workers to identify areas for enhancement (Abdullahi & Makinde, (2023) [1].

Effective implementation of OHS practices brings numerous benefits, including reduced workplace injuries and illnesses, improved worker morale and productivity, lower healthcare costs, and enhanced organizational reputation (Health and Safety Executive, 2021). It is a shared responsibility among employers, supervisors, workers, unions, and regulatory authorities to prioritize and promote a culture of safety and well-being in the workplace.

Economic Contributions, Occupational Hazards, and Challenges in Advancing Occupational Health and Safety in the Nigerian Construction Industry. The Nigerian construction industry makes significant economic contributions to the country's development. It generates employment opportunities, drives infrastructure projects, and contributes to economic growth. However, along with these contributions, the industry also faces several occupational hazards and challenges in advancing occupational health and safety (OHS) practices.

g) **Economic contributions:** The construction industry in Nigeria plays a vital role in job creation and poverty reduction. It employs a large number of workers, ranging from skilled labor to engineers and architects. Additionally, infrastructure development projects, such as roads, bridges, housing, and commercial buildings, stimulate economic activity and attract investments (Eurostat, 2021).

h) **Occupational Hazards:** The Nigerian construction industry is associated with various occupational hazards that pose risks to workers' health and safety (Oke & Aigbavboa, 2017). These hazards include:
   - **Physical hazards:** Workers are exposed to risks such as falls from heights, being struck by falling objects, accidents involving heavy machinery, and structural collapses.
   - **Chemical hazards:** Construction activities involve the use of various chemicals, including paints, solvents, adhesives, and construction materials containing hazardous substances. Workers can be exposed to these substances through inhalation, skin contact, or ingestion, leading to respiratory problems, skin disorders, or long-term health issues.
   - **Ergonomic hazards:** Construction tasks often involve heavy lifting, repetitive motions, awkward postures, and prolonged standing. These ergonomic hazards can result in musculoskeletal disorders, fatigue, and chronic pain.
   - **Psychosocial hazards:** Factors such as long working hours, high job demands, tight deadlines, and stressful work environments can contribute to mental health issues among construction workers, including stress, anxiety, and depression.

2.1.2 Performance of building construction

Construction project performance is a key measure of success in the construction industry. It is a multidimensional concept that is evaluated based on various criteria such as time, cost, quality, safety, and customer satisfaction. According to Hamada, (2023), construction project performance refers to the ability of a project to meet its objectives and deliverables while satisfying the needs and expectations of its stakeholders. The importance of measuring construction project performance has been widely recognized by researchers and practitioners alike. In the context of the construction industry, it is essential to evaluate project performance as it can impact the success of the project, the reputation of the construction company, and the overall health of the construction industry. As such, there is a growing body of literature that has focused on the development of performance metrics and indicators that can be used to evaluate and monitor construction project performance.

Building performance is the effective and efficient building functioning and its influence on the users, the natural environment, and urban environment. It is attained by means of building science, architectural design values and engineering, sustainability awareness and efficient energy use (Ondimu & Ombui. 2018) [13]. In traditional term, building performance has been utilized relative to quality of indoor air, fire safety, noise control and thermal efficiency. Each of these micro-level criteria is very important to instigate the comprehension on how adequate the building is meeting its functional requirements (Ileka & Obinwune, 2024) [5].

2.2 Theoretical literature

Safety Culture Theory is highly relevant to this study as it provides a framework for understanding the underlying factors contributing to the poor health and safety practices within the Nigerian construction industry. By examining the prevailing safety culture within construction firms and among construction workers, researchers can gain insights into the root causes of non-compliance with safety regulations and the challenges faced in implementing effective occupational health and safety (OHS) measures.

Moreover, Safety Culture Theory suggests that improving safety performance requires more than just implementing safety protocols and regulations; it necessitates a cultural shift towards prioritizing safety as a core value. By assessing the existing safety culture within the Nigerian construction industry, the study can identify cultural barriers and opportunities for promoting a stronger safety ethos. This understanding can inform the development of targeted interventions aimed at fostering a positive safety culture, enhancing compliance with safety regulations, and ultimately improving the well-being of construction workers.

Additionally, Safety Culture Theory highlights the importance of leadership and organizational commitment to safety. By examining the role of management practices, communication strategies, and employee engagement initiatives in shaping safety culture within construction firms, the study can provide valuable insights into effective strategies for promoting a culture of safety and reducing workplace accidents and injuries. Hence, Safety Culture Theory offers a comprehensive framework for analyzing the complex interplay of organizational factors, beliefs, and behaviors that influence safety performance within the Nigerian construction industry. By grounding the study in this theoretical perspective, researchers can provide a deeper understanding of the challenges and opportunities for advancing occupational health and safety practices in construction sites across Nigeria.

2.3 Empirical literature

Okoye, Ezeokonkwo & Ezekoli, (2026) [11] examined the health and safety knowledge and compliance of building construction workers on site in Anambra State, Nigeria. The result established a very weak positive correlation (r=0.19) between health and safety knowledge and compliance. It further established a strong positive correlation between health and safety knowledge and project performance (r=0.71); and between health and safety compliance and project performance (r=0.76). However, when the significance of the correlation was tested, the t-values obtained were (0.335), (1.746) and (2.025) respectively. From the result, all the t-values were less than the t-critical (3.182) at 5% significance level. The result implied that though there were relationships between all the variables considered, the relationships were not significant. Practically, this meant that health and safety knowledge and compliance alone cannot substantially improve the project

performance, but was limited to the values of their coefficient of determination (R2) 50.41% and 57.76% respectively.

Opatunji and Oyelami, (2025) [14] examined to enhancing maximum productivity which is germane to timely project delivery. The study identified various safety practices employed on site and factors influencing safety practices among contractors on Nigerian construction sites. The data for the study were obtained using multiple-choice questionnaire administered on 43 construction sites in Ibadan, Oyo State. A total of eighty-five (85) copies of questionnaire were distributed to respondents out of which sixty (60) were returned representing 70.5% response rate. Data received were analyzed using relative importance index (RII). The study revealed that identification of hazard ranked 1st positionwith RII of 0.90, medical provision ranked 2nd with RII of 0.87, risk control ranked 3rd with RII of 0.83, Occupational safety and health practices ranked 4th with RII of 0.80, safety review ranked 5th with RII of 0.75 and revealed that lack of safety management committee is the utmost factor affecting the adoption of safety practices in the Nigeria construction sites The study therefore concluded that hazard identification, instant medical provision, occupational safety and health programme are paramount towards achieving safe project delivery as revealed by the study and recommended that contracting firms should device a strategy that would identify hazards inherent in a particular project and set up safety management committees who would always be concerned with the safety of all and sundry on site.

Ajaelu, Obru-Egboro & Bemsodi, (2024) [3] assessment of occupational health and safety practices in the Nigerian Construction Industry: Challenges, Compliance and Implication for Worker Well-Being. This study examines the challenges faced in ensuring compliance with these regulations among construction workers in Nigeria. Data was gathered from safety personnel and construction professionals via questionnaires, with 175 responses analyzed out of 200 distributed. The analysis, conducted using SPSS V 24 and employing Factor analysis and mean item score, reveals that compliance with health and safety requirements among construction workers is subpar. Factors such as inadequate safety equipment, limited awareness of occupational health, and poor adherence to safety protocols emerge as the primary obstacles to compliance. To address these challenges, the study recommends the adoption of innovative measures and advanced technologies, such as radio frequency identification, for more effective monitoring of construction workers. The study suggests involving construction workers in the formulation of health and safety policies. By shedding light on these issues, this research aims to contribute to the enhancement of occupational safety standards on construction sites across the country.

Zakariyyah, Faremi & Sotunbo, (2023) [15] examined the level of compliance to health and safety among construction firms in Lagos State, from the perspective of workers. The study adopted a survey research design. The sample size for the study was one hundred and twenty (120) skilled artisans who were randomly selected from among foreign and indigenous construction firms in the state. The research instrument was a questionnaire that collected relevant data, with descriptive and inferential statistics being used for the data analysis. It was found that only 22% of the firms made provision for PPE, in the light of legislative requirements on standards. Regarding contractors' safety policy review, while one out of every three contractors bore their responsibilities under the safety policy, one out of every four contractors was requested to make some amendments. It was thus concluded that workers are not encouraged to report any incident or accident confirming a low level of compliance between the two firms. It is therefore suggested that there should be strict enforcement of measures for improving safety and health practices on construction sites, in addition to motivating workers on incident/accident reporting and specifying the right line of safety actions. Furthermore, risk assessment for work operations should be enhanced to minimise the percentage of work that is halted or executed unsafely.

Ondimu and Ombui (2018) [13] examined effect of occupational health and safety practices on performance of building construction industry in Nakuru County, Kenya. The specifics objectives of the study were to establish the effect of Occupational health and Safety training on building construction industry performance, examine the role of emergency response planning building construction industry performance, establish the effect of occupational health hazard control mechanisms on building construction industry performance and determine the effect of workplace inspections on building construction industry performance in Nakuru County, in Kenya. The study adopted a descriptive research design and the target population was 521 managers of construction companies registered with National Construction Authority. Descriptive statistics and inferential statistics were used to analyze data. Study results were presented on tables, charts and graphs. The study findings showed that training; emergency response planning; occupational health hazard control mechanisms; and workplace inspections affected performance of building construction industry in Nakuru County, Kenya. The study recommended that the management of construction firms should provide adequate training on OHS to the employee and continuously support OHS training practices; employ effective emergency detection measures to detect potential emergencies.

2.5 Literature gaps

There exists research gap between this study and past researches. The research gap covers subject gap, gap on geographical location of the study, gap on the variables and gap on methodology.

Subject gap: The subject matter of this work and some reviewed empirical studies have some differences. There are limited studies on effect of occupational health and safety

practices on performance of building construction industry in Nigeria. The study is geared to bridge the time period of 2024 to 2026 gap in literature.

Gap on the variables: The variables used in this study includes hazard identification and risk control are independent variable for proxy of occupational health and safety practices and quality reinforcement and prompt delivery are dependent variables for building construction industry in Nigeria.

Gap on methodology: The data analytical techniques used in this work in some ways differ from what was employed from past researches. The data analytical technique of the study was single regression method. The statistical technique was chosen because of its basic properties of best Linear, unbiased and efficient (BLUE) estimators. It is best for impact analysis.

3.1 Methodology

Study area was Nigeria. The research design of the study was descriptive survey design. The study used structured questionnaire to obtain data. The choice of location was based on proximity, effective coverage and cost minimization. The population of the study comprised of 103,000 staff of selected construction firms in Nigeria. Simple random technique was used to select four construction firms namely: Reynolds Construction Company, Costain West Africa, Julius Berger Nigeria and Setraco Nigeria Limited. The sample size of 383 respondents was drawn from population of the study using Freund and Williams sampling technique. Research questions were answered using frequency, mean and standard deviation. The hypotheses stated were tested using Chi-square method.

Data presentation and analysis

Table 1: Comprehensive demographic distribution of respondents

Title	Frequency	Percentage
Questionnaire distribution		
Questionnaires Distributed	383	100%
Returned Questionnaires	290	76%
Not Returned Questionnaires	93	24%
Gender		
Female	164	56.6%
Male	126	43.4%
Age bracket		
20-30 Years	90	31.0%
31-40 Years	126	43.4%
41-50 Years	71	24.5%
51Years – above	3	1.0%
Marital status		
Married	205	70.7%
Single	58	20.0%
Widow/widower	24	8.3%
Divorce	3	1.0%
Educational qualification		
OND/NCE/HND	54	18.6%
B.sc/B.Ed	236	81.4%

Sources: Field Survey, 2026

Three hundred and eight three (383) copies of questionnaire were designed and distributed to the respondents. Out of the 383 Questionnaires distributed, 290 (76%) were completed and returned while 93 (24%) were not returned. Therefore, 90 percent respondents were a good representation. The table showed the respondents profile in frequency and percentage distribution of gender, age bracket, marital status, and educational qualification.

Data analysis

Question (1) What is the extent to which hazard identification affects quality reinforcement of building construction industry in Nigeria?

Table 2: Responses of respondents on what is the extent to which hazard identification affects quality reinforcement of building construction industry in Nigeria

S/N	Question Items	VGE 4 (%)	GE 3 (%)	LE 2 (%)	VLE 1 (%)	Total	Mean	SD
1	Occupational health and safety practices can enable chemical exposures, or unsafe work practices-before they cause harm to staff	99	119	42	30	290	2.99	0.0287
		396	357	84	30	867		
		(34)	(41)	(14)	(10)	100%		
2	Occupational health and safety practices reduce cost that comes aftermath of an accident, which includes medical expenses, legal fees, insurance premium hikes, and productivity losses.	120	78	62	30	290	2.99	0.0917
		480	234	124	30	868		
		(41)	(27)	(21)	(10)	100%		
3	Occupational health and safety practices ensures organizations meet statutory requirements, protecting them from fines, legal claims, and potential shutdowns.	123	101	56	10	290	2.91	0.0389
		419	303	112	10	844		
		(42)	(26)	(35)	(3)	100%		
4	Occupational health and safety practices prevents unexpected equipment failure or operational disruptions, helping businesses maintain production schedules and meet deadlines.	190	50	26	24	290	3.40	0.0528
		760	150	52	24	986		
		(66)	(17)	(8)	(8)	100%		
5	Occupational health and safety practices improves brand credibility with clients, investors, and regulators, while simultaneously aiding in talent retention by providing a secure workplace.	100	140	26	24	290	3.09	0.0109
		400	420	52	24	896		
		(34)	(48)	(8)	(8)	100%		
	Grand Mean						3.08	0.0446

This table shows that the respondents indicated their option on what is the extent to which hazard identification affects quality reinforcement of building construction industry in Nigeria. The respondents are in agreement with all the items. The research items 1,2,3,4,5 have mean score of above 3.5 point respectively and it was rated great extent by respondents. The study revealed that hazard identification has significant effect on quality reinforcement of building construction industry in Nigeria since occupational health and safety practices prevents unexpected equipment failure or operational disruptions, helping businesses maintain production schedules and meet deadlines (Grand mean (3.08) is greater than cut-off mean (2.5).

Question (2) What is the extent to which risk control affects prompt delivery of building construction industry in Nigeria?

Table 3: Responses of respondents on what is the extent to which risk control affects prompt delivery of building construction industry in Nigeria?

S/N	Question Items	VGE 4 (%)	GE 3 (%)	LE 2 (%)	VLE 1 (%)	Total	Mean	SD
1	Occupational health and safety practices put in place administrative controls, and personal protective equipment (PPE) in order to remove or minimize exposure to dangers.	101	144	30	15	290	3.14	0.250
		404	432	60	15	911		
		(35)	(49)	(10)	(5)	100%		
2	Occupational health and safety practices reduces costs associated with medical expenses, workers' compensation claims, and unplanned operational downtime.	112	102	40	36	290	3.00	0.293
		448	306	80	36	870		
		(37)	(35)	(14)	(12)	100%		
3	Occupational health and safety practices streamlines processes, ensures better housekeeping, and improves equipment reliability	109	98	45	38	290	2.96	0.269
		436	294	90	38	858		
		(38)	(34)	(16)	(13)	100%		
4	Occupational health and safety practices helps companies meet their legal obligations, protecting management from potential prosecution, heavy fines, or legal penalties.	112	98	50	30	290	3.01	0.314
		448	294	100	30	872		
		(38)	(33)	(17)	(10)	100%		
5	Occupational health and safety practices improves a company's public image, making it more attractive to clients, investors, and potential employees who prioritize ethical and safe business practices.	114	106	50	40	290	3.15	0.306
		456	318	100	40	914		
		(39)	(36)	(17)	(14)	100%		
	Grand Mean						3.05	0.291

This table shows that the respondents indicated their option on what is the extent to which risk control affects prompt delivery of building construction industry in Nigeria. The respondents are in agreement with all the items. The research items 1,2,3,4,5 have mean score of above 3.5 point respectively and it was rated great extent by respondents. The study revealed that risk control has significant effect on prompt delivery of building construction industry in Nigeria since occupational health and safety practices helps companies meet their legal obligations, protecting management from potential prosecution, heavy fines, or legal penalties (Grand mean (3.05) is greater than cut-off Mean (2.5).

4.3 Test of hypotheses

The two hypotheses were formulated for this study and will be tested and a decision taken is based on the rule below.

Decision rule: Reject Hi if *p*-value > 0.01.

4.3.1 Hypothesis One

H_1 = Hazard identification has no significant effect on quality reinforcement of building construction industry in Nigeria.

What is the extent to which hazard identification affects quality reinforcement of building construction industry in Nigeria?

	Observed N	Expected N	Residual
Very low extent	36	72.5	-36.5
Low extent	71	72.5	-1.5
Great extent	99	72.5	26.5
Very great extent	84	72.5	11.5
Total	290		

Test Statistics	
What is the extent to which hazard identification affects quality reinforcement of building construction industry in Nigeria?	
Chi-Square	29.917[a]
Df	3
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 72.5.

In testing this hypothesis, the result of the Chi-square statistic shows the model to evaluate the effect of hazard identification on quality reinforcement of building construction industry in Nigeria. The results of the chi-square statistics denotes that the null hypothesis is rejected while the alternative hypothesis is accepted indicating that hazard identification has significant effect on quality reinforcement of building construction industry in Nigeria (Chi-square: 29.917 > Critical-value: 0.000).

4.3.2 Test of hypothesis two

H_2 = Risk control has no significant effect on prompt delivery of building construction industry in Nigeria.

What is the extent to which risk control affects prompt delivery of building construction industry in Nigeria?

	Observed N	Expected N	Residual
Very low extent	29	72.5	-43.5
Low extent	46	72.5	-26.5
Great extent	73	72.5	.5
Very great extent	142	72.5	69.5
Total	290		

Test statistics	
What is the extent to which risk control affects prompt delivery of building construction industry in Nigeria?	
Chi-Square	102.414[a]
Df	3
Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 72.5.

In testing this hypothesis, the result of the Chi-square statistic shows the model to ascertain the effect of risk control on prompt delivery of building construction industry in Nigeria. The results of the chi-square statistics denotes that the null hypothesis is rejected while the alternative hypothesis is accepted indicating that risk control has significant effect on prompt delivery of building construction industry in Nigeria (Chi-square: 102.414 > Critical-value: 0.000).

4.4 Discussion of findings

Effect of hazard identification on quality reinforcement of building construction industry in Nigeria

The findings of the study revealed that hazard identification has significant effect on quality reinforcement of building construction industry in Nigeria since occupational health and safety practices prevents unexpected equipment failure or operational disruptions, helping businesses maintain production schedules and meet deadlines (Chi-square: 29.917 > Critical-value: 0.000).

The outcome of the study is in line with the study of Okoye, Ezeokonkwo & Ezekoli, (2026) [11] that examined the health and safety knowledge and compliance of building construction workers on site in Anambra State, Nigeria. The result established a very weak positive correlation (r=0.19) between health and safety knowledge and compliance. It further established a strong positive correlation between health and safety knowledge and project performance (r=0.71); and between health and safety compliance and project performance (r=0.76). However, when the significance of the correlation was tested, the t-values obtained were (0.335), (1.746) and (2.025) respectively. From the result, all the t-values were less than the t-critical (3.182) at 5% significance level. The result implied that though there were relationships between all the variables considered, the relationships were not significant.

Effect of risk control on prompt delivery of building construction industry in Nigeria

The findings of the study revealed that risk control has significant effect on prompt delivery of building construction industry in Nigeria since occupational health and safety practices helps companies meet their legal obligations, protecting management from potential prosecution, heavy fines, or legal penalties (Chi-square: 102.414 > Critical-value: 0.000).

The outcome of the study is not in line with the study of Ajaelu, Obru-Egboro & Bemsodi, (2024) [3] that assessment of occupational health and safety practices in the Nigerian Construction Industry: Challenges, Compliance and Implication for Worker Well-Being. This study examines the challenges faced in ensuring compliance with these regulations among construction workers in Nigeria. Data was gathered from safety personnel and construction professionals via questionnaires, with 175 responses analyzed out of 200 distributed. The analysis, conducted using SPSS V 24 and employing Factor analysis and mean item score, reveals that compliance with health and safety requirements among construction workers is subpar. Factors such as inadequate safety equipment, limited awareness of occupational health,

and poor adherence to safety protocols emerge as the primary obstacles to compliance. To address these challenges, the study recommends the adoption of innovative measures and advanced technologies, such as radio frequency identification, for more effective monitoring of construction workers.

5.1 Summary of findings

The following are the major findings of the study**:**

- The study showed that hazard identification has significant effect on quality reinforcement of building construction industry in Nigeria since occupational health and safety practices prevents unexpected equipment failure or operational disruptions, helping businesses maintain production schedules and meet deadlines (Chi-square: 29.917 > Critical-value: 0.000)
- The study showed that risk control has significant effect on prompt delivery of building construction industry in Nigeria since occupational health and safety practices helps companies meet their legal obligations, protecting management from potential prosecution, heavy fines, or legal penalties (Chi-square: 102.414 > Critical-value: 0.000).

5.2 Conclusion

This study concluded that there is positive and significant effect of occupational health and safety practices on performance of building construction industry in Nigeria. The hazard identification and risk control and prevention were major key components of occupational health and safety out of training and education; incident reporting and investigation; compliance with regulations; health surveillance; incident reporting and investigation and compliance with regulations: Occupational health and safety practices put in place administrative controls, and personal protective equipment (PPE) in order to remove or minimize exposure to dangers; Occupational health and safety practices reduces costs associated with medical expenses, workers' compensation claims, and unplanned operational downtime. Occupational health and safety practices prevents unexpected equipment failure or operational disruptions, helping businesses maintain production schedules and meet deadlines, Occupational health and safety practices reduce cost that comes aftermath of an accident, which includes medical expenses, legal fees, insurance premium hikes, and productivity losses.

5.3 Recommendations

Based on the findings of this study, the following recommendations were made.

- Management of building construction industry in Nigeria should provide Personal Protective Equipment (PPE) to every field staff according to legislation and standards or best practice. Aside from this, workers need to be encouraged and motivated to report accidents. This will aid compliance statistics and data and will show where additional efforts on H & S are required. All incidents/accidents should be reported; currently, most construction firms require workers to report only incidents/accidents that cause injury to personnel or damage to plant, materials, or equipment.
- Management of building construction industry in Nigeria should adhere to H & S requirements as well as close monitoring and inspection will be required to detect unsafe work conditions. Consequently, contractors need to abide by H & S rules as stipulated in the H & S policy. Furthermore, there should be continuous training and retraining on Health and safety.

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