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Research Article

Construction Management Role in Mitigating Well-being and Occupational Health Hazards

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Abstract

The construction industry is a major employment sector globally but is characterized by complex operations and high exposure to occupational hazards, which pose risks to workers' physical, psychological, and social well-being. This study evaluated the role of construction management in mitigating occupational health hazards and promoting worker well-being in selected construction companies within Auchi, Edo State, Nigeria. A survey research design was employed, administering structured questionnaires to project managers, site engineers, safety officers, and site workers across five companies. Data were analyzed using descriptive statistics and inferential techniques (regression and ANOVA) via SPSS. Findings indicate that the workforce is predominantly male (86.66%), largely within the 34–49-year age group (43.80%), married (58.09%), and well-educated (53.33% tertiary education). While awareness of basic safety practices and personal protective equipment (PPE) was high, compliance varied across sites and tasks. Most respondents avoided using mobile phones (81.00%) and worked cautiously around unfinished or hazardous areas (94.29%), though electrical hazard exposure remained significant (39.00% frequently troubleshooting). Weather rarely affected PPE use (69.52%), and prior safety orientation positively influenced adherence to safety protocols (76.19%). The study concludes that effective construction management—through safety orientation, supervision, and enforcement—is critical for reducing occupational hazards and enhancing worker well-being. Continuous training, hazard monitoring, and systematic implementation of safety policies are recommended to achieve sustainable construction practices.

Keywords

Construction Management, Occupational Health, Safety Management, Well-being, Construction Industry

1. Introduction

The construction industry is one of the largest employment-generating sectors worldwide and plays a significant role in national and global economic development [2, 4, 17]. Despite its economic importance, the industry is characterized by complex operations, dynamic work environments, and high exposure to occupational hazards [3, 7-9]. Construction activities are often labour-intensive, involving physically demanding tasks, changing site conditions, and the use of heavy machinery, all of which contribute to increased risks to workers' health, safety, and well-being [6, 19].

Globally, construction has been identified as one of the most dangerous industries due to the frequency and severity of accidents recorded on project sites [10-12]. Workers are exposed to numerous physical hazards such as falls from height, machinery-related injuries, noise, dust, and poor ergonomic conditions. In addition to physical risks, the industry also presents significant

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psychological and social challenges, including long working hours, job insecurity, and work pressure, which have been linked to stress, anxiety, and depression among construction workers [12, 15].

Well-being is a multidimensional concept encompassing physical, psychological, and social aspects of human life [18]. In the workplace, well-being influences productivity, job satisfaction, and overall project performance [16, 17]. Poor health and reduced well-being among construction workers can lead to absenteeism, reduced efficiency, early retirement, and increased accident rates [13, 22].

Construction management plays a central role in addressing occupational health and well-being challenges through planning, coordination, supervision, and enforcement of safety policies [5, 23]. Effective management commitment to safety culture, training, and communication has been shown to significantly reduce accident occurrence on construction sites [14, 17]. This study therefore evaluates the role of construction management in mitigating occupational health hazards and improving the well-being of workers in the Nigerian construction industry. The construction industry is one of the largest employment-generating sectors worldwide and plays a significant role in national and global economic development. Despite its economic importance, the industry is characterized by complex operations, dynamic work environments, and high exposure to occupational hazards. Construction activities are often labour-intensive, involving physically demanding tasks, changing site conditions, and the use of heavy machinery, all of which contribute to increased risks to workers' health, safety, and well-being.

Globally, construction has been identified as one of the most dangerous industries due to the frequency and severity of accidents recorded on project sites. Workers are exposed to numerous physical hazards such as falls from height, machinery-related injuries, noise, dust, and poor ergonomic conditions. In addition to physical risks, the industry also presents significant psychological and social challenges, including long working hours, job insecurity, work pressure, and limited work–life balance. These conditions have been linked to stress, anxiety, depression, and other mental health concerns among construction workers.

Well-being is a multidimensional concept encompassing physical, psychological, and social aspects of human life. In the workplace, well-being influences productivity, job satisfaction, and overall project performance. Poor health and reduced well-being among construction workers can lead to absenteeism, reduced efficiency, early retirement, and increased accident rates. Consequently, ensuring healthy working conditions is not only a moral and social responsibility but also an economic necessity for construction organizations.

Construction management plays a central role in addressing occupational health and well-being challenges. Through effective planning, coordination, supervision, and enforcement of safety policies, construction managers can significantly reduce workplace hazards and promote safer work practices. Aligning construction management practices with the objectives of Sustainable Development Goal 3, which emphasizes good health and well-being for all, is essential for achieving sustainable development within the construction sector [20, 21]. This study therefore focuses on evaluating the role of construction management in mitigating occupational health hazards and improving the well-being of workers in the Nigerian construction industry.

2. Materials and Methods

2.1. Study Area and Scope

The study was conducted within Auchi environs in Edo North Senatorial District, Edo State, Nigeria. The research focused on selected public construction projects executed between 2021 and 2024. Five construction companies operating within the study area were considered in order to obtain representative data on occupational health and safety practices.

2.2. Research Design and Respondents

A survey research design was adopted for the study. Structured questionnaires were administered to construction stakeholders, including project managers, site engineers, supervisors, safety officers, and site workers. The respondents were selected to capture diverse perspectives on occupational health hazards and well-being issues across different roles within the construction industry.

2.3. Data Collection Instrument

The primary data collection instrument was a structured questionnaire designed to obtain information on demographic characteristics, occupational health and safety practices, exposure to hazards, use of personal protective equipment, safety training, and perceptions of management commitment to worker well-being. The questionnaire was structured to ensure clarity and consistency in responses.

2.4. Data Analysis

Collected data were analyzed using the Statistical Package for Social Sciences (SPSS) (George and Mallery, 2003; Field, 2013). Descriptive statistics were employed to summarize respondents' characteristics and responses, while inferential statistical techniques, including regression analysis and analysis of variance (ANOVA), were used to evaluate the influence of construction management practices on occupational health and safety outcomes. The adopted analytical approach is consistent with established methods used in construction health and safety research (Fellows and Liu, 2008; Creswell, 2014). Collected data were analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics were employed

to summarize respondents' characteristics and responses. Inferential statistical techniques, including regression analysis and analysis of variance (ANOVA), were used to evaluate the significance of construction management practices on occupational health and safety outcomes.

3. Results and Discussion

The findings of this study are discussed in relation to existing occupational health, safety, and well-being research in the construction industry. The discussion aligns the observed results with established evidence on safety management systems, training, and management commitment [1].

3.1. Stakeholders in the Construction Industry

Table 1. Stakeholders in the Construction Industry.

S/N	Stakeholder Group
1	Clients / Project Owners
2	Construction / Project Managers
3	Site Engineers / Supervisors
4	Contractors and Subcontractors
5	Workers / Trade Unions
6	Health, Safety and Environmental (HSE) Officers
7	Designers / Consultants
8	Regulatory and Government Agencies
9	Professional Associations
10	Financial Institutions and Insurance Companies
11	Local Communities and NGOs

3.2. Occupational Health and Safety Practices

The demographic characteristics of respondents are summarized in Tables 1 to 6, while Figures 1 to 5 present the corresponding graphical representations. These include gender distribution, age groups, marital status, level of education, and type of organization.

Table 2. Respondents Based on Gender.

Gender of Respondents	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Male	17	13	22	16	23	86.66	1
Female	3	2	3	4	2	13.34	2
Total	20	15	25	20	25	105/100	

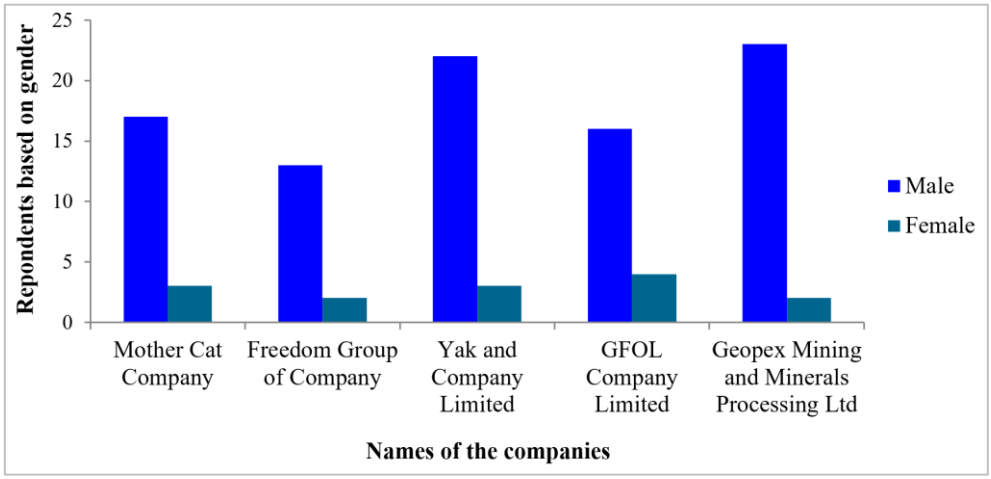

Figure 1. Respondents Based on Gender.

Table 3. Respondents Based on Age.

Age of Respondents	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
18 - 33	10	4	8	9	7	36.19	2
34 - 49	8	9	12	7	10	43.80	1
50 – 65	2	1	3	4	5	14.28	3
66 – 81	0	1	2	0	3	5.71	4
Total	20	15	25	20	25	105/100	

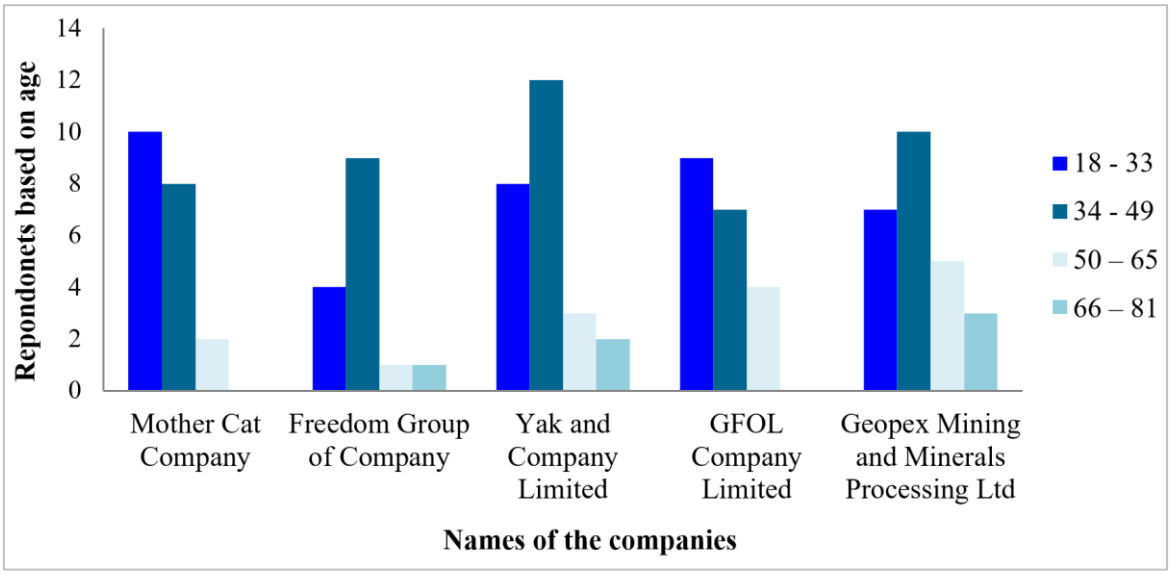

Figure 2. Respondents Based on Age.

Table 4. Respondents Based on Marital Status.

Marital status of Respondents	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Single	11	7	11	5	9	40.95	2
Married	9	8	13	15	16	58.09	1
Others	0	0	1	0	0	0.95	3
Total	20	15	25	20	25	105/100	

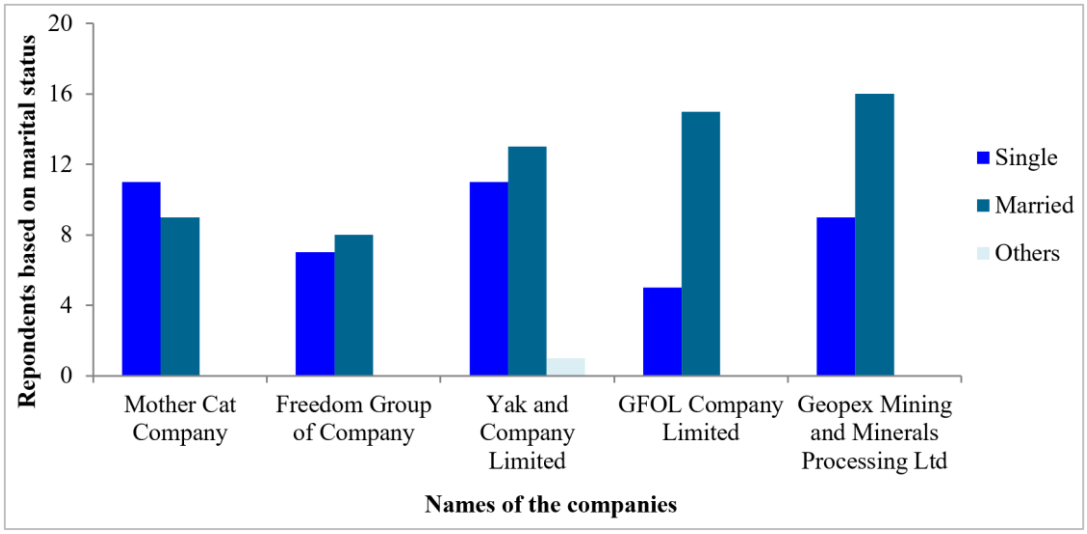

Figure 3. Respondents Based on Marital Status.

Table 5. Respondents Based on Level of Education.

Level of Education of Respondents	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Vocational	3	5	7	3	6	22.86	2
Primary	1	0	2	1	2	5.71	4
Secondary	4	1	5	6	3	18.10	3
Tertiary	12	9	11	10	14	53.33	1
Total	20	15	25	20	25	105/100	

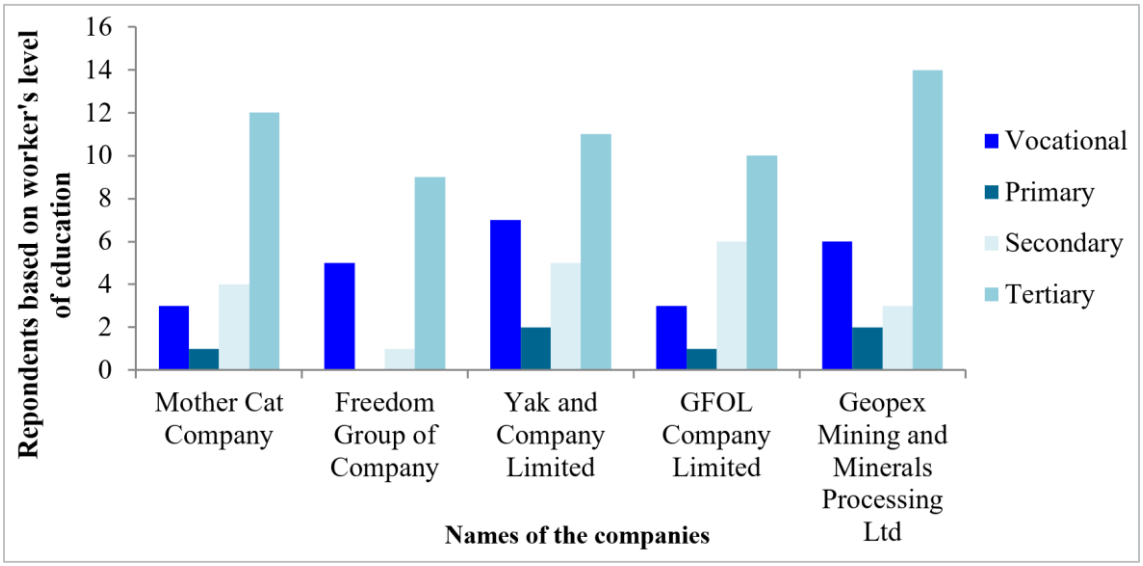

Figure 4. Respondents Based on Level of Education.

Table 6. Respondents Based on Type of Organization.

Type of organization of Respondents	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Client (e.g., government, developers)	0	0	0	0	0	0.00	4
Consultant	5	1	1	2	0	8.57	2
Contractor	15	14	23	18	24	89.52	1
Others	0	0	1	0	1	1.90	3
Total	20	15	25	20	25	105/100	

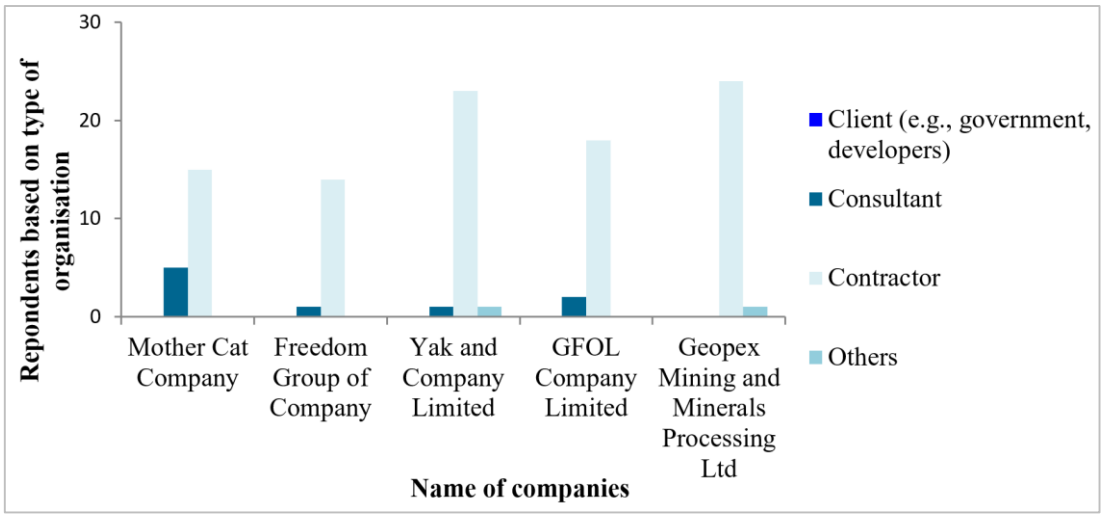

Figure 5. Respondents Based on Type of Organization.

Table 1 identifies the diverse stakeholders involved in the construction industry, reflecting the broad representation of actors engaged in construction activities across the sampled companies. As shown in Table 2, the workforce is predominantly male (86.66%), while females account for 13.34%, confirming the male-dominated nature of the industry. Table 3 indicates that most respondents are within the active working-age group of 34–49 years (43.80%), followed by those aged 18–33 years (36.19%), suggesting a relatively young and experienced workforce. According to Table 4, married respondents form the majority (58.09%), while Table 5 reveals that over half of the respondents (53.33%) possess tertiary education, indicating adequate educational capacity to understand occupational health and safety requirements.

Despite this demographic advantage, questionnaire responses show that although most respondents are aware of basic safety requirements and the importance of personal protective equipment, compliance varies across sites and job categories. The use of safety helmets, boots, and reflective vests is relatively common, while deficiencies were observed in the consistent use of respiratory protection, fall arrest systems, and safe manual handling practices. Electrical safety and work around unfinished or hazardous sections of sites were also identified as major areas of concern. These findings indicate that awareness alone is insufficient, highlighting the need for stronger enforcement, supervision, and monitoring of occupational health and safety practices by construction management.

3.3. Training, Orientation, and Safety Culture

Tables 7 to 10 and Figures 6 to 11 summarize respondents' perceptions and experiences regarding safety orientation, hazard awareness, use of personal protective equipment, and adherence to safety regulations.

Table 7. Use of Phone While Working on Site.

Respondents that use phone while working on site	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Always	0	0	0	0	0	0.00	4
Almost	2	1	1	1	2	7.00	3
Seldom	3	2	1	2	4	12.00	2
Never	15	12	18	17	19	81.00	1
Total	20	15	20	20	25	100/100	

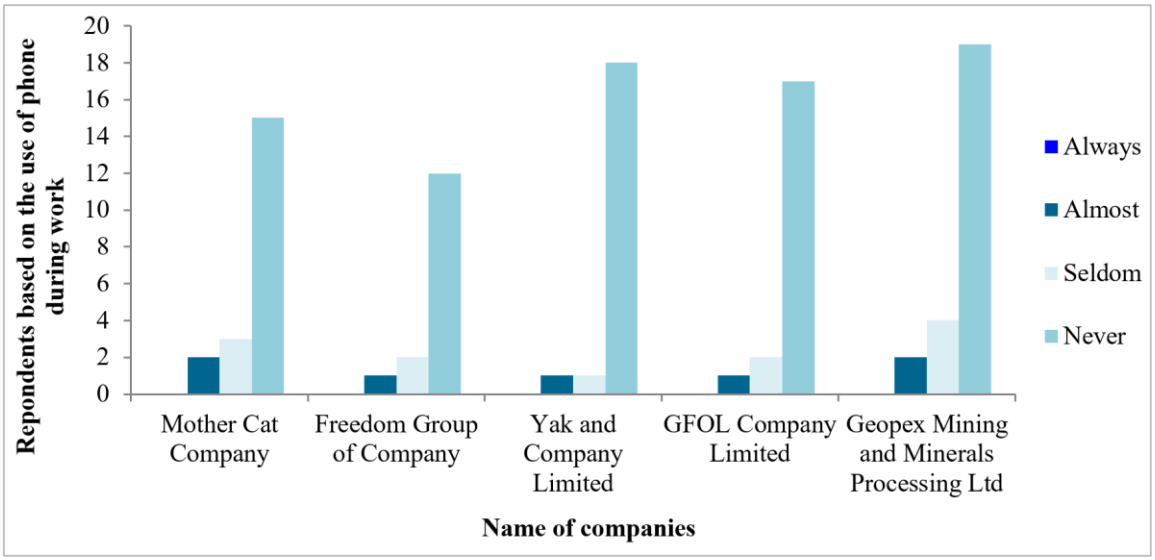

Figure 6. Respondents Based on Use of Phone While Working.

Table 8. Working Through Dangerous and Unfinished Areas.

Respondents that work through dangerous and unfinished work in site	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Always	0	0	0	0	0	0.00	4
Almost	1	0	1	0	0	1.90	3
Seldom	1	1	1	0	1	3.81	2
Never	18	14	23	20	24	94.29	1
Total	20	15	25	20	25	105/100	

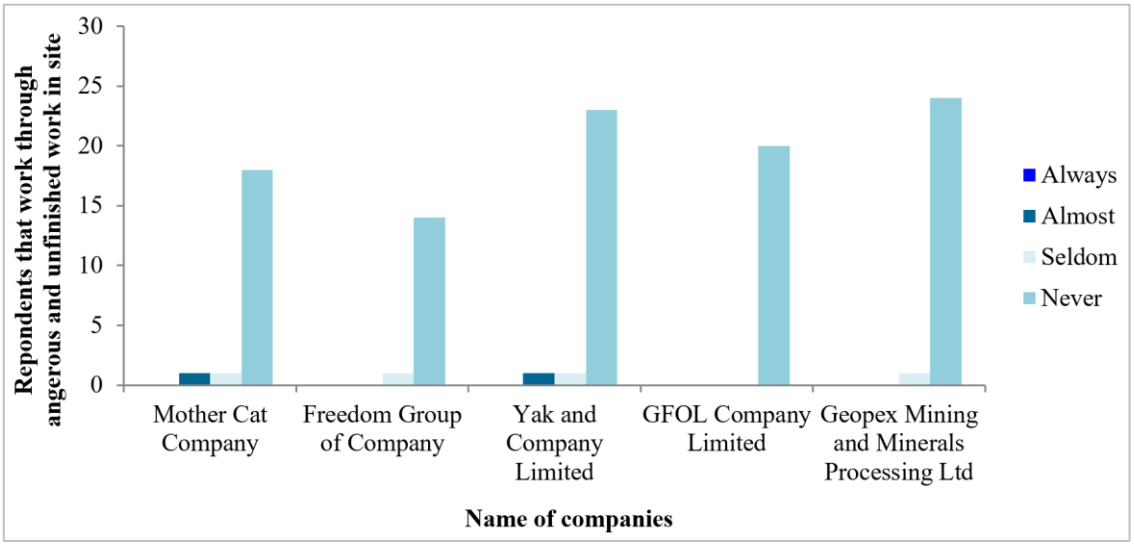

Figure 7. Respondents Working Through Dangerous Areas.

Table 9. Troubleshooting Electrical Hazards on Site.

Respondents that troubleshoot an electrical hazard in site	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Always	9	8	11	8	3	39.00	1
Almost	1	0	5	6	3	15.00	4
Seldom	5	4	7	3	8	27.00	2
Never	5	3	2	3	6	19.00	3
Total	20	15	25	20	20	100/100	

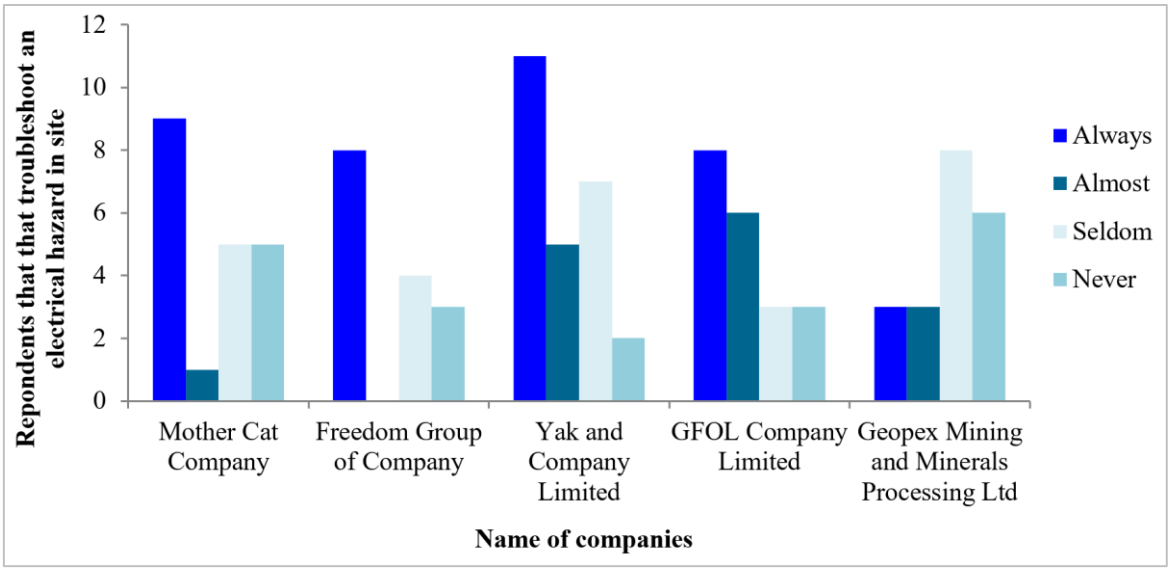

Figure 8. Respondents Troubleshooting Electrical Hazards.

Table 10. Weather as a Factor Affecting Use of Safety Equipment.

Respondents that weather as a factor affects for not using any safety equipment	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Always	0	0	2	1	3	5.71	4
Almost	3	2	4	1	1	10.48	3
Seldom	2	3	5	2	3	14.29	2
Never	15	10	14	16	18	69.52	1
Total	20	15	25	20	25	105/100	

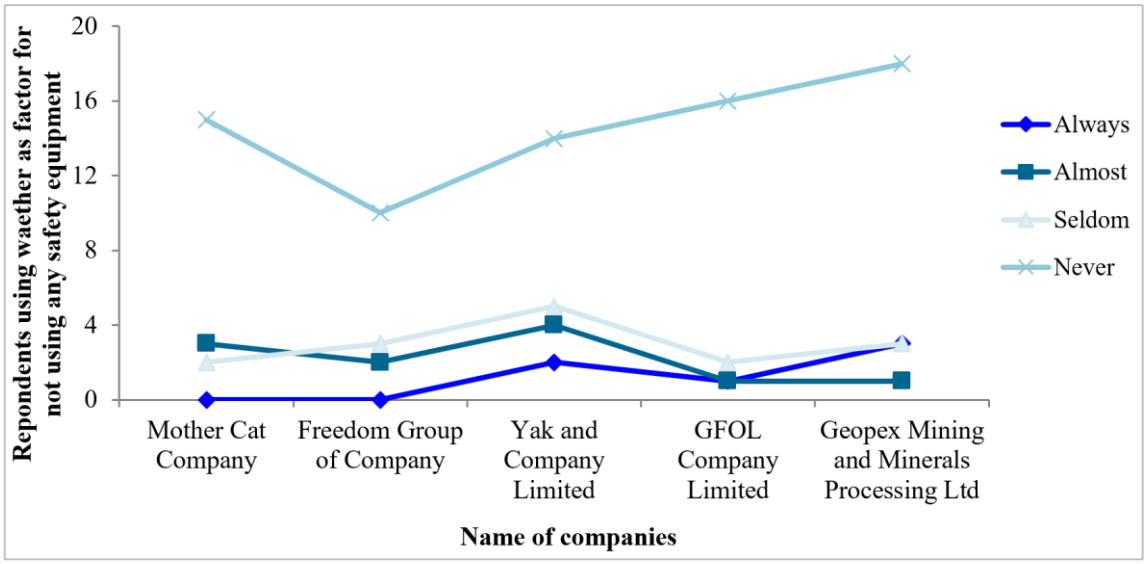

Figure 9. Effect of Weather on Use of Safety Equipment.

Table 11. Prior Orientation on Hazard Management.

Respondents that are given prior orientation on hazard management before starting work	Frequency of respondents in different companies					Percentage (%)	Rank (R)
	Mother Cat Company	Freedom Group of Company	Yak and Company Limited	GFOL Company Limited	Geopex Mining and Minerals Processing Ltd		
Always	17	13	20	11	19	76.19	1
Almost	2	1	3	7	4	16.19	2
Seldom	1	1	2	2	2	7.62	3
Never	0	0	0	0	0	0.00	4
Total	20	15	25	20	25	105/100	

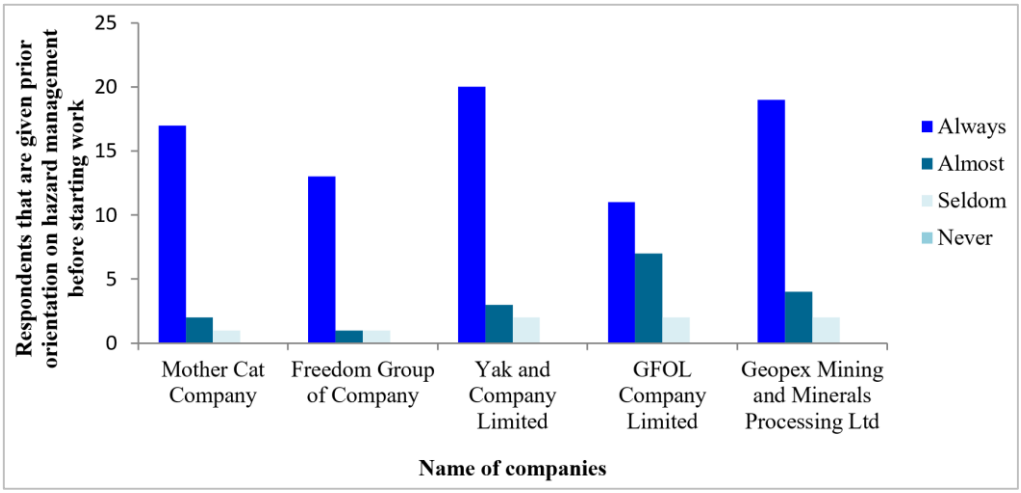

Figure 10. *Respondents Given Prior Safety Orientation.*

The findings in Tables 7 to 11 indicate that adherence to occupational health and safety practices varies across the sampled construction companies. Table 7 shows that the vast majority of respondents (81.00%) never use their phones while working on site, suggesting minimal distraction from mobile devices. Similarly, Table 8 reveals that 94.29% of respondents never work through dangerous or unfinished areas, reflecting cautious site behavior.

However, Table 9 indicates that troubleshooting electrical hazards is more frequent, with 39.00% of respondents always engaging in such tasks, while 27.00% do so seldom, highlighting potential exposure to electrical risks depending on role and supervision. Table 10 shows that weather rarely affects the use of safety equipment, with 69.52% of respondents indicating that weather does not prevent them from using PPE, though a small proportion (5.71%) reported it as a consistent factor.

Table 11 demonstrates the positive impact of prior safety orientation, with 76.19% of respondents always receiving hazard management briefing before starting work. This prior orientation and continuous training correlate with better compliance, as respondents acknowledged that hazard signage, safety briefings, and supervision significantly reduce accidents and near-miss incidents. Nevertheless, inconsistencies remain, as not all workers reported formal safety training or medical checks before employment, indicating gaps in management enforcement of occupational health and safety standards.

4. Conclusion

This study has examined the role of construction management in mitigating occupational health hazards and promoting worker well-being within the Nigerian construction industry. The findings indicate that while workers generally demonstrate awareness of safety practices such as avoiding mobile phone use (81%) and steering clear of hazardous areas (94.29%) significant gaps remain in training coverage, hazard control, and consistent enforcement of safety regulations. Construction management practices, particularly safety orientation, supervision, and compliance monitoring, were shown to have a meaningful impact on improving occupational health and safety outcomes.

The study concludes that effective construction management is indispensable for enhancing worker well-being and reducing occupational health hazards. Integrating occupational health considerations into project planning and execution, alongside continuous training, supervision, and enforcement of safety policies, is essential for fostering a safe, productive, and sustainable construction environment.

Abbreviations

PPE	Personal Protective Equipment
HSE	Health, Safety, and Environmental
ANOVA	Analysis of Variance
SDG	Sustainable Development Goal
α	Coefficient of Safety
β	Hazard Exposure Factor
γ	Risk Weight

Author Contributions

Ogbebor John Imentinyan: Data curation, Methodology
Ibrahim Abdulrazaq Olayinka: Validation
John Wasiu: Supervision

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Agyekum, K., Simons, B. and Yeboah, S. (2018). Factors influencing the performance of safety programmes in the Ghanaian construction industry. Journal of Engineering, Design and Technology, 25(2), pp. 39–61.

[2] Ai Lin Teo, E. and Yean Yng Ling, F. (2006). Developing a model to measure the effectiveness of safety management systems of construction sites. Building and Environment, 41, pp. 1584–1592.

[3] Behm, M. (2005). Linking construction fatalities to the design for construction safety concept. Safety Science, 43(8), pp. 589–611.

[4] Bowen, P., Edwards, P. and Lingard, H. (2013). Workplace stress experienced by construction professionals in South Africa. Journal of Construction Engineering and Management, 139(4), pp. 393–403.

[5] Cameron, I. and Duff, R. (2007). Use of performance measurement and goal setting to improve construction managers' focus on health and safety. Construction Management and Economics, 25, pp. 869–881.

[6] Choudhry, R. M. and Fang, D. (2008). Why operatives engage in unsafe work behavior. Journal of Construction Engineering and Management, 134(4), pp. 242–251.

[7] Conchie, S., Moon, S. and Duncan, M. (2013). Supervisors' engagement in safety leadership. Safety Science, 51, pp. 109–117.

[8] Creswell, J. W. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Thousand Oaks, CA: Sage Publications.

[9] Fang, D., Chen, Y. and Wong, L. (2006). Safety climate in the construction industry. Journal of Construction Engineering and Management, 132(11), pp. 1146–1152.

[10] Field, A. (2013). Discovering Statistics Using IBM SPSS Statistics. London: Sage.

[11] George, D. and Mallery, P. (2003). SPSS for Windows Step by Step. Boston: Allyn & Bacon.

[12] International Labour Organization (2011). Health and Safety Hazards in the Construction Industry.

[13] Jones, W., Gibb, A., Haslam, R. and Dainty, A. (2019). Work-related ill-health in construction. Safety Science, 120, pp. 538–550.

[14] Kines, P., Andersen, L., Spangenberg, S., Mikkelsen, K., Dyreborg, J. and Zohar, D. (2010). Improving construction site safety through leader-based verbal safety communication. Journal of Safety Research, 41, pp. 399–406.

[15] Langdon, R. R. and Sawang, S. (2018). Construction workers' well-being. Journal of Construction Engineering and Management, 144(2).

[16] Lingard, H. and Rowlinson, S. (2005). Occupational Health and Safety in Construction Project Management. London: Routledge.

[17] Lingard, H. and Turner, M. (2017). Promoting construction workers' health. Construction Management and Economics, 35(5), pp. 238–253.

[18] Marks, N., Clark, A., Siegrist, J., Stutzer, A., Vittersø, J. and Wahrendorf, M. (2009). Measuring wellbeing across Europe. Social Indicators Research, 91, pp. 301–315.

[19] Mitropoulos, P. and Cupido, G. (2009). The role of production and teamwork practice in construction safety. Journal of Safety Research, 40, pp. 265–275.

[20] World Health Organization (2001). The World Health Report 2001: Mental Health – New Understanding, New Hope.

[21] Yiu, N. S., Chan, D. W. and Sze, N. (2019). Implementation of a safety management system in managing construction projects. Safety Science, 117, pp. 23–32.

[22] Zafar, J. and Chileshe, N. (2018). Analysis of health and well-being practices among older construction workers. In: Proceedings of the 34th ARCOM Conference, pp. 341–350.

[23] Zou, P. X. and Sunindijo, R. Y. (2015). Strategic Safety Management in Construction and Engineering. Hoboken: Wiley.