

Figure 4.2: Safety climate factors and compliance in the construction companies in Nigeria

4.1.6 Research Question 6: What is the influence of worker’s educational background on safety compliance?

Table 4.5: Distribution of respondents based Educational Background

Educational	Frequency (%)
No Basic Education	16 (19.51%)
Primary/Secondary School	47 (57.32%)
Technical/Diploma	14 (17.07%)
Bachelors, Masters & above	5 (6.10%)

Figure 4.3 presented the graph of the difference between worker’s educational background and safety compliance. It indicated that safety compliance increased as worker’s levels of education increases. Safety compliance dropped down to 2.3 for workers without education and 2.6 for workers with BSc. And Masters degrees. The graph demonstrated positive trend of worker’s safety compliance based on their difference levels of educational background. However, table 4.5 presented the distribution of respondents based educational background. Out of the total respondents, 19.51% have no basic education; 57.32% have primary/secondary school education; 17.07% have technical/diploma education and 6.10% for workers with bachelors, masters & above education.

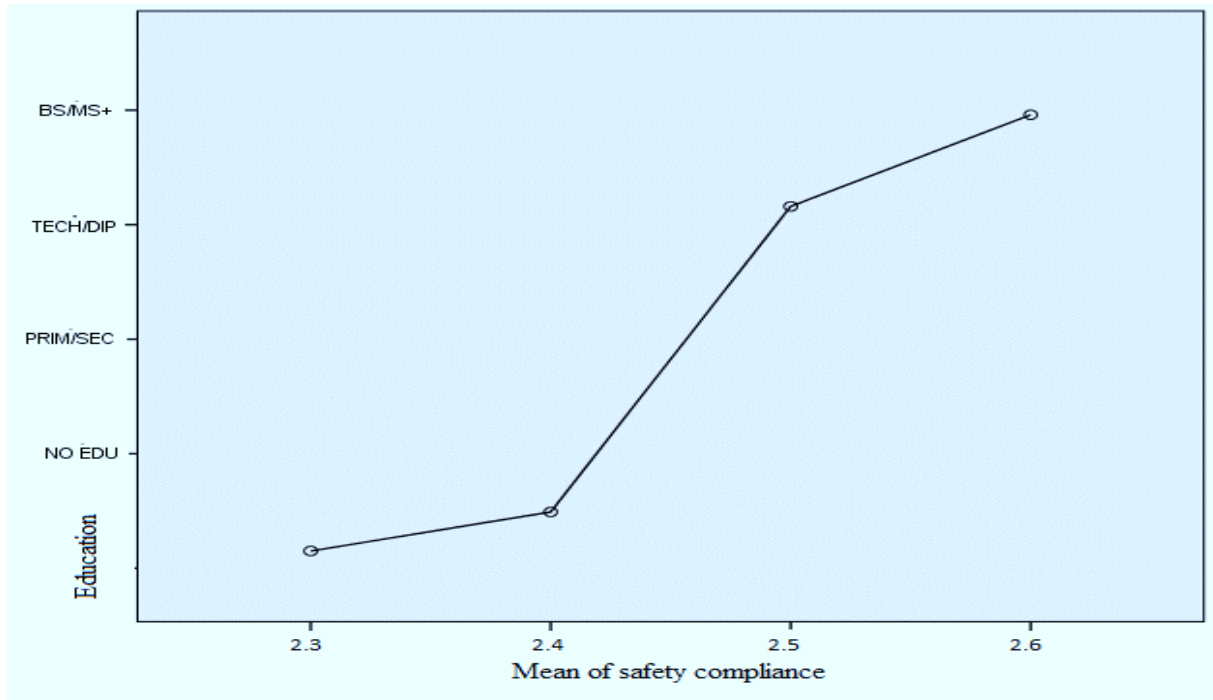


Figure 4.3: Graph of the influence of worker's educational background on safety compliance

4.1.7 Research Question 7: What is the influence of worker's experience on safety compliance?

Table 4.6: Distribution of respondents based on work experience

Work Experience	Frequency (%)
0-3	48 (58.54)
4-7	11 (13.41)
8-10	14 (17.07)
11 and above	9 (10.98)

The Figure 4.4 presented the difference between safety compliance and worker's job experience, it indicated an irregular trend between the two variables. Workers that fall within 0 – 3 years of work experience indicated 2.44 safety compliance and 4 – 7 years have 2.25 compliance. The trend moved up at 9-10 years and them down at 11 and above years. Similarly, Table 4.6 presented the distribution of respondents based on work experience. Out of the total respondents, 58.54% had 0-3 years of work experience, followed by 17.07% for 8-10, 13.41% for 4-7, and only 10.98% for 11 and above years of work experience.

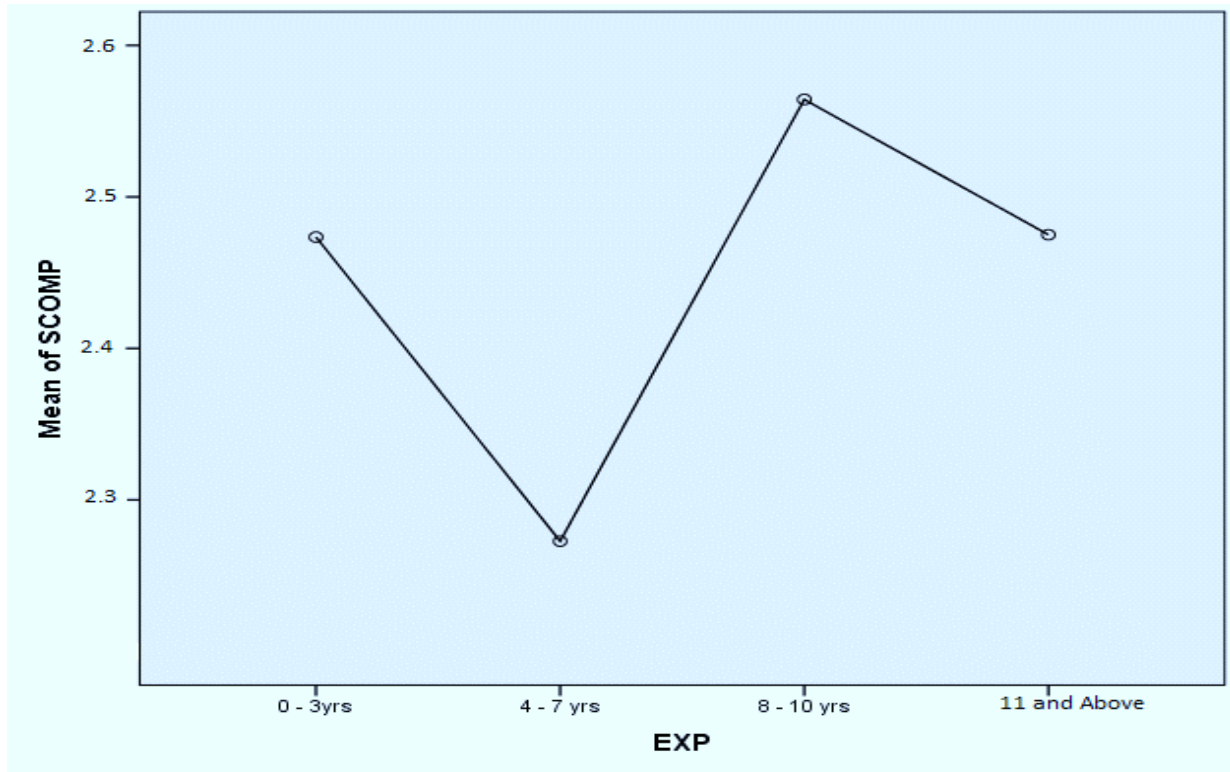


Figure 4.4: Graph of the influence of worker’s experience on safety compliance

4.1.8 Test of hypothesis 1: There is no significant relationship between safety climate factors and prevalence of accidents in the construction industry in Nigeria

Table 4.7: Regression analysis of safety climate factors and prevalence of accidents

		Prevalence of accident	Safety climate factors
Prevalence of accident	r- valve	1	- 0.312
	p-value		0.004
	N	82	82
Safety climate factors	r- valve	-0.312	1
	p-value	0.004	
	N	82	82
P < 0.05 significance level			

Table 4.7 indicated a correlation coefficient (r) of the relationship between safety climate factors and prevalence of accidents as - 0.312 which is closer to -1. However, the P-value of 0.004 in table 4.7 is less than 0.05 significance level. The researcher therefore rejected the Null hypothesis and conclude that there is significant relationship between safety climate factors and prevalence of accidents in the construction industry in Nigeria.

4.1.9 Test of hypothesis 2: There is no significant relationship between safety climate factors and compliance among workers in the construction industry in Nigeria

Table 4.8 below analyzed the relationship between the safety climate factors and compliance in the construction companies in Nigeria. The values of the correlation coefficient of (r) 0.726; 0.699, 0.555 and 0.622 respectively for management commitments to safety, safety training, worker’s involvement in safety, Safety communication respectively and worker’s safety compliance are close to 1, implying a relationship between the variables.

Table 4.8: Regression analysis of safety climate factors and compliance in the construction companies in Nigeria

		Management Commitment to Safety	Safety Training	Workers involvement in safety	Safety comm.	Safety compliance
Management Commitment to Safety	r	1	0.871	0.667	0.698	0.726
	p	-	0.000	0.000	0.000	0.000
	N	82	82	82	82	82
Safety Training	r	0.871	1	0.684	0.662	0.699
	p	0.000	-	0.000	0.000	0.000
	N	82	82	82	82	82
Workers involvement in safety	r	0.667	0.684	1	0.585	0.555
	p	0.000	0.000	-	0.000	0.000
	N	82	82	82	82	82
Safety communication	r	0.698	0.662	0.585	1	0.622
	p	0.000	0.000	0.000	-	0.000
	N	82	82	82	82	82
Safety compliance	r	0.726	0.699	0.555	0.622	1
	p	0.000	0.000	0.000	0.000	-
	N	82	82	82	82	82

P < 0.05 significance level

The P-Values from table 4.8 shows 0.000 results which is less than 0.05 level of significance. The researcher therefore rejected the null hypothesis and concluded there is a significant relationship between safety climate factors and compliance in the construction industry in Nigeria.

4.1.10 Test of hypothesis 3: There is no significant difference in worker’s educational background on safety compliance

Table 4.9: Descriptive analysis of safety compliance and educational background

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
NO EDU	16	2.2875	.26300	.06575	2.1474	2.4276	1.80	2.60
PRIM/SEC	46	2.3728	.35241	.05196	2.2682	2.4775	1.60	3.00
TECH/DIP	15	3.0400	.15492	.04000	2.9542	3.1258	2.80	3.40
BS/MS+	5	3.2400	.08944	.04000	3.1289	3.3511	3.20	3.40
Total	82	2.5311	.43735	.04830	2.4350	2.6272	1.60	3.40

Table 4.10: ANOVA of worker’s educational background and safety compliance

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	8.499	3	2.833	31.595	0.000
Within Groups	6.994	78	0.090		
Total	15.493	81			

The ANOVA table 4.10 shows the P- Value of 0.000. This value is less than 0.05 level of significance and therefore the researcher rejected the hypothesis and concluded that there is significant difference between worker’s educational background and safety compliance.

4.1.11 Test of hypothesis 4: There is no significant difference in worker’s work experience on safety compliance.

Table 4.11: Descriptive analysis of safety compliance and work experience

DESCRIPTIVE ANALYSIS								
	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
0 - 3 yrs	49	2.5367	.44192	.06313	2.4098	2.6637	1.60	3.40
4 - 7 yrs	11	2.4364	.51239	.15449	2.0921	2.7806	1.60	3.20
8 - 10 yrs	14	2.5821	.44532	.11902	2.3250	2.8393	1.80	3.40
4 - 7 yrs	8	2.5375	.33354	.11792	2.2587	2.8163	2.20	3.20
Total	82	2.5311	.43735	.04830	2.4350	2.6272	1.60	3.40

Table 4.12: ANOVA of worker’s work experience and safety compliance.

	Sum of Squares	df	Mean Square	F	P-value
Between Groups	0.137	3	0.046	0.232	0.874
Within Groups	15.356	78	0.197		
Total	15.493	81			

The P-Value in table 4.12 indicated 0.874 which is more than 0.05 level of significance. The researcher therefore accepted the Null hypothesis and conclude that no significant relationship exists between worker’s work experience and worker’s safety compliance.

5. DISCUSSION OF FINDINGS

5.1 The prevalence of accident in the construction industry

One noteworthy disclosure of this research was the prevalence of accidents in the construction industry in Nigeria. The investigation uncovered that 38.25% of the aggregate tested populace were associated with accident in their work environment. This figure concurs with the worldwide worries on the persevering high rate of mishaps in the construction industry. It was before noted by Takala (2009) that the aggregate worldwide yearly mishap rate

will to be 260,000 by 2020. Then again, as per Nghitanwa (2017) in 2010 and 2011 casualty and damage rates remained at 19.2 and 14,626 for each 100,000 laborers, respectively. The pattern without uncertainty would keep on increasing if suggestions to address negative climate perception by construction chiefs are not tended to.

5.2 The extent of safety climate factors in the construction industry in Nigeria

The distribution of respondents in light of safety climate factors were introduced in Table 4.3 A-D. This study found that construction administration and management were not dedicated to safety in the workplace. In spite of the fact

that the organizations had written safety policies and arrangements on ground, standards and methodology yet these policies were not being actualized, the management does not execute proposals to adjust hazardous acts/conditions; administrators/bosses don't indicate enthusiasm for the safety and security of employees; administration considers creation more imperative than the safety of the workers; administration does not give adequate individual defensive gear or personal protective equipment (PPE) to the workers. Considering safety preparing, it was additionally found that after introductory orientations given to laborers upon first arrival, organization does not further give occasional safety training/preparing to workers and this has brought about worker's powerlessness to react to crisis and/or emergency circumstances in the working environments. Incentives were not given to workers to encourage training participation. There were no safety committee comprising of management and worker's representatives and workers were not consulted regularly about health and safety issue as well as to participate in identifying safety problems. In terms of safety communication, it was discovered that company's policies, rules & procedures existed only on paper, these were not made clear to workers understanding; Emergency contacts were not displayed on the company's notice boards and finally, the safety objectives of companies were also not clear to workers.

5.3 The extent of safety compliance in the construction industry in Nigeria

The result revealed that workers in the construction companies: Do not use appropriate PPEs to do their work; Do not always report unsafe acts/conditions to management; Do not follow safety rules & procedures while carrying out their task. It was also discovered that they participate in safety meetings but the unsafe conditions at the workplace always made them to work unsafe. The finding above violates some basic obligations placed on employers in Article 16 of Convention 155 as expanded in Article 10 of Recommendation 164 that among others, employer shall provide the following to their workers: Provide and maintain workplaces, machinery and equipment, and use work methods, which are as safe and without risk to health as is reasonably practicable; Give necessary instructions and training, taking account of the functions and capacities of different

categories of workers; Provide adequate supervision of work, of work practices and of application and use of occupational safety and health measures; Provide, without any cost to the worker, adequate personal protective clothing and equipment which are reasonably necessary when hazards cannot be otherwise prevented or controlled and take all reasonably practicable measures with a view to eliminating excessive physical and mental fatigue (ILO, 1981).

5.4 The relationship between safety climate factors and the prevalence of accidents in the construction industry in Nigeria

This study researched on the connection between safety climate elements and predominance of mishaps in the construction industry in Nigeria. The correlation analysis of the data gathered demonstrates a huge converse connection between the factors, showing that as safety climate factors makes increase, mishaps level declines in the construction industry. In concurrence with the above discovering, Bowander (1987) studied related factors and furthermore found that the absence of, as well as the nonappearance of essential safety climate factors prompts a distinction between organizational hierarchical structures - human, innovative and system frameworks structures which transformed into injuries and fatalities and attendant costs recorded in organizations. Subsequently, it is vital for associations to distinguish and analyze the most basic factors that are fit for enhancing safety execution markers/indicators in the form of compliance and accident reduction. Subsequently, analysts and industry specialists have proposed safety climate factors as instruments through which safety execution as safety compliance can be enhanced (Dark colored, and Carter 2017).

5.5 The relationship between safety climate factors and compliance among workers in the construction industry in Nigeria

This investigation additionally looked at the connection between the safety climate factors, for example, administration duties regarding safety, safety preparing, workers' contribution to safety and security, safety correspondence/communication and compliance in construction organizations in Nigeria. The study uncovered a critical connection between the factors. Neal and Griffin (2006) concurs with the discoveries above and additionally

disclosed instrument used to foresee the connection between safety climate and safety called social exchange theory. He noticed that, when an association looks after the prosperity of its employees (i.e., the association has a positive safety climate), the workers are probably going to create verifiable commitments to perform their obligations, exhibiting conducts that are helpful to the organization. As far as safety performance is concerned, workers will act securely when they see that such conduct will bring esteemed characteristic or extraneous outcomes. At the point when an association really values wellbeing, there is an unusually high level of safety and security atmosphere in the association. Based on behaviour-outcome expectancies, employees are likely to behave safely because they expect that their safety behaviour would be rewarded and such behaviour would bring a valuable outcome to them

5.6 The influence of worker's educational background on safety compliance

This study further investigated how worker's educational background influences their safety compliance. Table 4.6 indicated that the majority (57.32%) of respondents hold primary/secondary school certificate. This is followed by workers with no basic education at all comprises of 19.51% of the total sample population. 17.07% of workers sampled have technical/diploma education and are placed as foremen on site. The supervisors occupy 6.10% of the sample population. Then again, in regards to safety compliance, it was established in this study that the majority of the workers in the industry did not have higher education and this is the purpose behind their high hazard resilience behaviour against the prerequisites of Article 19 of C155 which distinguished commitments put on all laborers and their agents to include: Taking reasonable care for their own safety and that of other persons who may be affected by their acts or omissions at work; Complying with instructions given for their own safety and health and those of others and with safety and health procedures; Use safety devices and protective equipment correctly and do not render them inoperative; Reporting forthwith to their immediate supervisor any situation which they have reason to believe could present a hazard and which they cannot themselves correct and also report any accident or injury to health which arises in the course of or in connection with work.

5.7 The influence of worker's experience on safety compliance

This study also investigated the influence of worker's experience on safety compliance. Table 4.7 revealed that 58.54% of the workers investigated have lower work experience, followed by 17.07% comprising of workers with 8-11 years of work experience. The least on the table are 13.41% and 10.98% for personnel with 4-6 and 11 above work experience. The ANOVA between the two variable indicated 2.54 safety compliance for 0- 3 years of experience and 2.44 compliance for 4 - 7 years of experience. Same is applicable to workers who have 11 and above years of work experience and with 2.55 safety compliance which is lower than 2.58 for 8-10 years of work experience. The indications implied that safety compliance is not influence by the differences in the levels of work experience.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The discoveries of this investigation uncovered that there is high pervasiveness of mishaps in the construction industry in Nigeria. This is on the grounds that workers in the industry saw that administration are not taking so much responsibilities regarding safety in the workplace. Also, laborers were not adequately prepared to guarantee that dangerous situations are recognized and relieved; laborers are not engaged with safety related issues. This has prompted poor safety compliance among the construction workers in Nigeria. The study additionally uncovered a huge connection between safety climate factors and the pervasiveness of mishaps and between safety climate variables and compliance among workers. It was further observed that safety compliance isn't impacted by work encounters rather safety compliance is based upon sound instructive foundation. Unfortunately, a whopping 76.83% of respondents either attended primary/secondary or have not been to school at all. Only 23.17% out of the sampled population have been to either technical / diploma school or hold BSc/ Master's qualifications. To enhance worker's safety culture and to improve safety climate that may lead to better perception and behave more safely, the research emphasized that safety climate has a positive impact on safety compliance. The research provided basic

information required to render solutions to unavailability of information to construction industry managers to assist determine safety related climate factors necessary to improve safety performance, increase productivity and profitability.

6.2 Recommendations

Based on the findings of this research, the following recommendations will be most useful to the construction industry's managers:

1. Adequate and enforceable health and safety regulations are urgently needed from the state government to regulate the activities of the construction industries in Nigeria
2. There are needs for the establishment of Construction Industry Training Board. This board should be charged with the task of training, retraining and providing advisory services to the Nigerian construction workforce;
3. Employers should identify and implement training needs of workers with poor educational background to enable them measure up their educational background lapses.
4. Complacency by the experience workers should be discourages as it contributes greater percentage of the high accident rates in the construction industry
5. Regular safety audits and performance review will aid in prompt identification of potential hazards in the work places.
6. Enforce visible top management commitment to organizational safety to motivate employees' commitment in the execution of their daily work activities.