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Influence of Occupational Safety and Health Practices on Safe Working Culture in Pharmaceutical Industry in Kwara State

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Abstract

The goal of occupational safety and health is to provide a safe working environment for employees and to enhance their capacity to perform daily tasks in a safe and healthy manner. A company or sector that prioritizes worker health and safety can foster a culture of safety in the workplace. Sadly enough, the impact of the OSH regulations is ineffective, as the key stakeholders pay less attention to OSH regulations. For optimum OSH in Nigeria, maximum enforcement and compliance with the regulations must be in place. This study therefore investigated into the impact of OSH components (Regulations, Awareness and Inspection) at ensuring and enhancing safe working culture in Nigeria with particular focus on pharmaceutical industry in North Central Zone of Nigeria used mixed method. The study utilizes survey research design of ex post facto type with the use of questionnaire to collect data. SPSS Frequency count, percentages, mean and standard deviation were used to analyze the bio data of the respondent while Partial Linear Square-SEM (Bootstrapping) was used to carry out the construct reliability and validity test, discriminant validity, cross loading, Cronbach's Alpha correlational analysis which was tested at P-value of 0.05 and 0.01 level of significance and the T-value respectively. The study finds out that, OSH Regulations does enhance safe working culture most especially because its in line with the global and ILO standard and well known to the employees. The concludes that the awareness level is too low and lastly the OSH Inspection is not so actively functional and as such recommend digitalization and aggressive sensitization across board and culture of professionalism should be inculcated into the act of OSH inspection and stringent action should follow non-compliance to inspection officers recommendations which is to be based on their observations.

***Keywords*:** Occupational, Safety, Health, Regulation, Safe Working Culture,

1.1 Introduction

The multidisciplinary discipline of workplace safety, also known as occupational safety and health (OSH), is focused on the welfare, safety, and health of individuals while they are at work. One of the objectives of workplace safety initiatives is to provide a healthy and safe work environment (Friend & Kohn, 2006). No matter the size or nature of the company, all employees must follow workplace safety procedures since a safe workplace promotes productivity, (Armstrong, 2012). Anderson (2007), based on his findings purported that Safety precautions shield workers, property, and equipment from harm. An organization will spend less money and make more money if it can prevent or

minimize injuries and property damage, (NSC, 2005). Procedures for workplace health and safety. Therefore, it is imperative that OSH rules and regulations are enforced effectively and with responsibility, (Fajana, 2012). When the Employees Compensation Act of 2010 is enacted into law in Nigeria, it will be enforced by Nigeria Social Insurance Trust Fund which is meant to enforce OSH regulations as a preventive measure against work-related hazard and at the same time compensate employees for any form work-related hazard in the course of employment. The preventive measure is not adequately being impactful and effective maybe this is because Nigerian practices do not prioritize OSH enforcement (Okolie & Okoye 2012). Idubor & Osiamoje (2013) concluded that non-compliance with OSH regulations is made possible by lack of enforcement. Diugwu et al & Egila (2012) contend that the non-functional OSH legislation and provisions are the primary cause of Nigeria's failed OSH management system, despite the fact that non-compliance with OSH regulations is a significant factor in the country's bad state of work-related hazard occurrence.

Workers in Nigeria at different sectors of the economy recently, have been subjected to accidents which range from minor to fatal, as some have lost their lives right in the line of duty, while some have lost vital organs, therefore rendered permanently incapacitated, (Omoro & Okaka, 2016). The issue of safety and health at workplace which once occupied a major place in the programmes and plans of the employers are now treated with levity. In his address, the Keynote Speaker, President of International Commission on Occupational Health (ICOH) Dr. Jukka Takala stated that the global yearly death of workers has gone up to 2.78 million from the past 2.3 million recorded in 2014. This, he said is due to growing labour force, better data and higher life expectancy leading to non-communicable work-related diseases, adding that Nigeria had 10, 023 fatal occupational accidents and an estimated 32, 858 fatal work-related disease, (Onyenucheya, 2018). Despite these enforceable remedies provided by the law, many employees are still ignorant of the provisions and are, therefore, still at the mercy of their employers and are being treated with disdain. The health and safety of employees is a very significant issue to consider with relation to the attainment of organizational goals and sustainable (Economic) development, (ILO, 2013). Safety culture has been identified as a critical factor that sets the tone for importance of safety within an organization and its environ at large and which in turn does have its impact on the Nation’s economic development at large as mentioned in the findings of OToole, (2002).

This study objectively examined the influence of Occupational Safety and Health Regulations, Awareness level and Inspection on Safe Working Culture. In accordance with the set-out objectives, hypotheses testing were carried out to test if there is any significant relationship between occupational safety and health regulations, awareness level, inspection and safe working culture and with that the study is able to answer the question of what influence does occupational safety and health regulations, awareness level and inspection have at ensuring a safe working culture.

2.1 Conceptual Clarification

Occupational safety and health (OSH) OSH is an interdisciplinary area that involves protecting the health, safety and welfare of people in the workplace and others that may be affected directly or indirectly by the activities at the workplace, (Kalejaiye 2013).

Regulation: Regulation involves enforcement by public sector agencies of controls and restrictions on certain activities. NSW state and local governments regulate many activities, including the health and safety of workplaces, environmental management, construction and property development, motor vehicles, and food, as well as licensing of occupations and skills.

Safe Working Culture: A safety culture is an organizational culture that places a high level of importance on safety beliefs, values and attitudes and these are shared by the majority of people within the company or workplace. A positive safety culture can result in improved workplace health and safety (WHS) and organizational performance, (Harm, 2013).

3.1 Theoretical Framework

Safety culture theory is concerned with understanding and developing organizational norms and values related to workplace safety. It entails cultivating an environment in where mistakes are encouraged, errors are considered as chances for growth, and leadership, communication, learning, cooperation, mindfulness, evidence-based medicine, and patient-centered care are promoted. The safety culture hypothesis emphasizes the need of increasing labor protection awareness, reducing workplace accidents and occupational diseases, and training employees to detect and report risks. It also emphasizes the importance of a systematic measuring approach for improving safety culture, including identifying strengths and weaknesses, implementing targeted actions, and learning from the results.

4.1 Methodology

This study adopts the survey research design of the ex-post facto type. The populations comprise of the total number of staff of 10 Pharmaceutical companies in Kwara State as gathered from Manufacturers Association of Nigeria secretariat in Kwara state and National Agency for Food and Drug Administration and Control (NAFDAC) official website which is 1,434. This represents the total number of all categories of staff in the industry. Therefore, since the number of staff is known (1,434) then the sample size of 287 was determined using Yamane (1967) sample size determination formula. Kumar (1976) sample size proportion determinant formula as cited in Singh and Masuku, (2014) was used to carry out the sample size allocation with the staff strength of each of the pharmaceutical manufacturing industries under study. The study further adopted multi stage sampling technique to select respondents from whom the data gotten guided the study to the achievement of set objectives. The rationale for using the multistage sampling techniques is that more than one sampling will be applied in order to achieve the stated research objectives. The stratified sampling techniques took care of different levels of employees in the pharmaceutical industries under study and simple random techniques was used to select from identified homogenous population in stages of the research effort. The central tendency measurement was used in this study to detect the frequency percentages variation with five interval scale constructs. The descriptive statistics in the tables below give an overview of the statistics for the study's variables which Occupational Safety and Health regulations, Occupational Safety and Health Awareness and Occupational Safety and Health Inspection. Measures of

frequency are included in the summary data. Self-made questionnaire method was adopted to enable the researcher have a comprehensive information on the influence of Occupational Safety and Health on Safe Working Culture. The questionnaire was divided into two sections. The first section covers information on the respondent's personal bio data and the second section focus on the question relating to the influence of occupational safety and health regulation on safe working culture in Nigeria. SPSS Frequency count, percentages, mean and standard deviation were used to analyze the bio data of the respondent while Partial Linear Square-SEM (Bootstrapping) was used to carry out the correlational analysis which was tested at P-value of 0.05 and 0.01 level of significance and the T-value respectively.

4.1.1 Discriminant Validity (Cross-Loading)

The discriminant validity is carried out first by looking at correlations between the measures for possible potential overlapping of constructs. Second, whether items are strongly loaded on their own construct in the model were examined. Third, whether the average variance shared between each construct and that its measures are greater than the average variance shared between the constructs and other constructs are also explored, as suggested by Compeau et al. (1999). In this respect, the results of Table 1 show that the squared correlations for each construct is less than the average variance extracted by the indicators measuring that construct. Hence, the measurement model reflects an adequate convergent validity and discriminant validity.

Table 1: DISCRIMINANT VALIDITY-CROSS LOADING

	OSH-AWARENESS	OSH-INSPECTION	OSH-REGULATION	SAFE WORKING CULTURE
OSH-A I	***0.903***	0.771	0.744	0.712
OSH-A II	***0.883***	0.743	0.767	0.73
OSH-A III	***0.92***	0.805	0.714	0.732
OSH-A IV	***0.89***	0.835	0.703	0.75
OSH-I I	0.812	***0.913***	0.644	0.745
OSH-I II	0.827	***0.938***	0.674	0.749
OSH-I III	0.805	***0.944***	0.692	0.773
OSH-I IV	0.813	***0.915***	0.762	0.786
OSH-R I	-0.043	-0.063	***-0.045***	-0.18
OSH-R II	0.723	0.649	***0.855***	0.581
OSH-R III	0.608	0.59	***0.847***	0.581
OSH-R IV	0.782	0.7	***0.905***	0.678
SWC I	0.776	0.761	0.681	***0.919***
SWC II	0.784	0.78	0.691	***0.918***
SWC III	0.738	0.771	0.676	***0.94***
SWC IV	0.736	0.752	0.649	***0.925***
SWC V	0.725	0.743	0.653	***0.922***

Source: Author's Field Survey, (2024)

Table 2: DISCRIMINANT VALIDITY-FORNEL LACKER CRITERION

	OSH-AWARENESS	OSH-INSPECTION	OSH-REGULATION	SAFE WORKING CULTURE
OSH-AWARENESS	***0.899***			
OSH-INSPECTION	0.878	***0.928***		
OSH-REGULATION	0.814	0.748	***0.753***	
SAFE WORKING CULTURE	0.813	0.823	0.725	***0.925***

Source: Author's Field Survey, (2024)

4.1.2 Reliability Analysis

Reliability is an indication of the internal consistency of the instruments measuring the concepts and helps access the "goodness" of measure (Sekaran & Bougie, 2010). There are many different types of reliability estimates. By looking at the results of the Cronbach's Alpha range from 0.70 to 0.95 thus confirming the reliability of the instrument used. The range of reliability test using Cronbach's Alpha is from zero to one. The closer to one the higher the level of internal consistency among items and thus the reliability of the instruments are ensured in this study.

Table 3: CONSTRUCT RELIABILITY AND VALIDITY-OVERVIEW

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
OSH-AWARENESS	**0.921**	0.921	0.944	0.808
OSH-INSPECTION	**0.946**	0.946	0.961	0.86
OSH-REGULATION	**0.7**	0.813	0.791	0.567
SAFE WORKING CULTURE	**0.958**	0.958	0.967	0.855

Source: Author's Field Survey, (2024)

4.1.3 Predictive capacity of the identified determinant factors and hypotheses testing:

The p-value and t-value of the path coefficients are generated to test the significant contribution of each path following the bootstrapping approach to validate the hypotheses put forward in the study (Chin, 1998). The results show that all hypotheses in this research are supported with t-values ranging from 2.204 to 6.535 at an alpha value ranging from 0.028 to 0.000 respectively (Table 4).

Table 4: Summary of Path coefficient and hypotheses testing

	Original Sample (0)	**Sample Mean (M)**	**STDEV**	**T-Statistics**	**P-Values**	**Remark**
OSHR-SWC	0.140	0.143	0.064	2.204	0.028	Sig
OSHA-SWC	0.299	0.293	0.090	3.330	0.001	Sig
OSHI-SWC	0.457	0.460	0.070	6.535	0.000	Sig

Source: Author's Field Survey, (2024).

5.1 Testing of Hypotheses:

5.1.1 **Research hypothesis one:** There is no significant impact of OSH Regulations at ensuring Safe Working Culture. It is shown in table 5 that there is a significant impact of OSH Regulations at enhancing Safety Working Culture in Nigeria (n=217, t(2.204), p(.028). Hence, ECs-OSH Regulations had influence on Safe Working Culture in the study. This result base on the analyzed evidence does support the alternative hypothesis.

5.1.2 Research hypothesis two: OSH Awareness does not have a significant effect on Safe Working Culture. It is shown in table 5 that OSH Awareness does have a significant effect on Safe Working Culture (n=217, t(3.330) p(.001). This result supported the alternative hypothesis base on the gathered evidence.

5.1.3 Research hypothesis three: OSH Inspection does not have a significant influence on Safe Working Culture. It is shown in table 5 that OSH Inspection does have a significant influence on Safe Working Culture (n=217, t(6.535) p(.000). This result rejected the null hypothesis base on the gathered evidence.

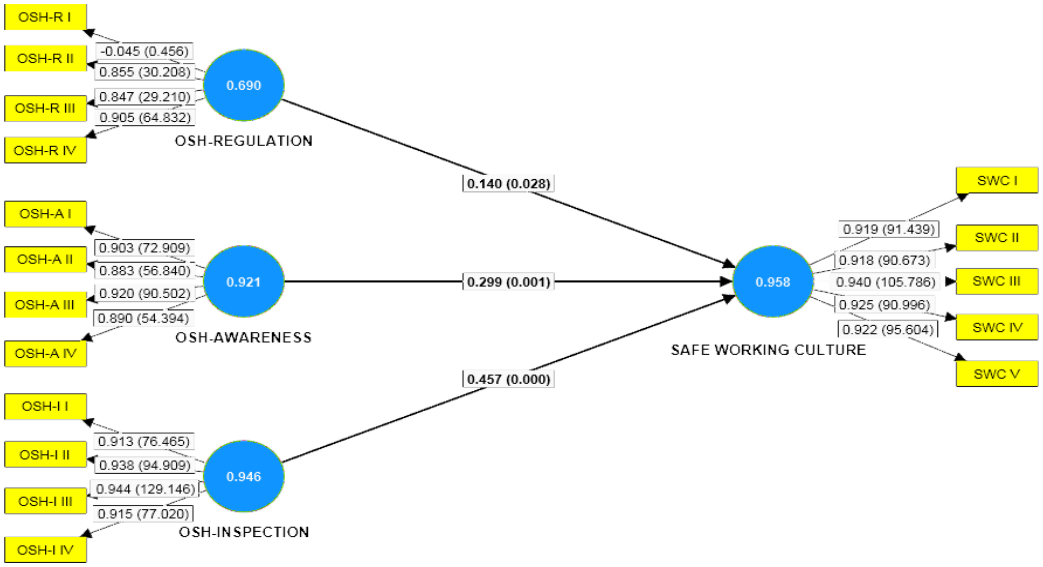

Figure 1: Result of the Path Analysis for final Research Model (Author's Field Survey, 2024)

6.1 Discussion of Findings by Objective

Table 5: Analysis of respondents' view on ECS-OSH AWARENESS

RESPONSES ON OSH REGULATIONS	SD		D		N		A		SA		
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	MEAN
I am satisfied with OSH Regulations regarding work-related hazards and safe working practices.	5	2.3	20	9.2	46	21.2	85	39.2	61	28.1	4.03
The Occupational Safety and Health provisions is in line with global standard	6	2.8	53	24.4	83	38.2	52	24.0	23	10.6	3.98
Occupational Safety and Health adequately addresses all forms of work-related hazards	13	6.0	76	35.0	49	22.6	50	23.0	29	13.4	4.01
There is wide adherence to the OSH regulations in the course of employment by employees	19	8.8	71	32.7	55	25.3	44	20.3	28	12.9	4.05

WEIGHTED MEAN= 4.01

Source: Author's Field Survey, 2024.

> "The study was able to find out under this objective that 85 respondents (39.2%) Agreed and 61 respondents (28.1%) Strongly Agreed to being satisfied with OSH Regulation regarding work-related hazards and safe working practices. The study also came about 52 respondents (24.0%) agreed and 53 respondents (54.4%) disagreed to the fact that the scheme adequately addresses all forms of work-related hazards. In addition, 76 respondents (35.0%) disagreed and 50 respondents (23.0%) agreed to OSH being stringent as it relate with all forms of work-related. And lastly 71 respondents (32.7%) agreed and 44 respondents (20.3%) agreed to an aggressive sensitization and training where needed both on public and organizational level in other to boost the public knowledge and compliance level at both employer and employee's level"

The study carried out an assessment of Occupational Safety and Health impact on Safe Working Culture in Nigeria. From the findings, base on the first objective with data presentation as shown in Table 5, it was revealed that there is a significant impact of OSH Regulations at ensuring Safe Working Culture, n =217, t (2.204), p (.028). This is in line the view of Hezekiah and Bolatito (2023) who explained Occupational safety and health (OSH) as the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, considering the possible impact on the surrounding communities and the general environment. And also, in line with ILO Recommendation C121, article 26 which opined that occupational safety and health is a key element in achieving sustained decent working conditions and strong preventive safety cultures. Occupational Safety and Health (OSH) deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards (WSPR, 2022).

Table 6: Analysis of respondents' view on OSH AWARENESS

RESPONSES ON OSH AWARENESS	**SD**		**D**		**N**		**A**		**SA**		
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	MEAN
I am well trained on OSH regulations towards safe working culture	38	17.5	61	28.1	31	14.3	66	30.4	21	9.7	3.16
OSH Training is effective at ensuring Safe Working Culture in my work place	29	13.4	69	31.8	47	21.7	49	22.6	23	10.6	3.13
The Occupational Safety and Health motivates employees to prioritize safety in their work.	29	13.4	71	32.7	32	14.7	64	29.5	20	9.2	3.06

OSH Training is of global standard enough to ensure safe working culture	41	18.9	64	29.5	40	18.4	51	23.5	21	9.7	2.98

WEIGHTED MEAN= 3.1

Source: Author's Field Survey, 2024

"The study under this objective found out that 61 respondents (28.1%) disagreed while 66 respondents (30.4%) Strongly Agreed to having knowledge about the OSH provisions being enough to provide for any form of work-related hazard an employee is to encounters in the course of employment. 69 respondents (31.8%) while 49 respondents (22.6%) both Agreed and Strongly Agreed to the provisions of the scheme concerning claims and compensation in related any form of work-related hazard not to be biased and fair and in the same vain, 71 respondents (32.7%) and 64 respondents (29.5%) Agreed and Strongly Agreed to the fact that the scheme does adequately ensures income security in case of any form of work-related hazard which comes in both cash and non-cash benefits. And furthermore, 64 respondents (29.5%) and 51 respondents (23.5%) Agreed and Strongly Agreed to streamlining the claims and compensation process for overall timely effectiveness"

The second objective which is examining the impact of OSH Awareness level on Safe Working Culture with data presentation as shown in Table 6 is proved to be significant and impactful according to the respondents n =217, t (3.330) p (.001) which is in line with Mukhtar, Blessing, Yewuhalashet, Adams, Kelebogile, Hajime & Youhei (2024) view that improved awareness can contribute to a culture of safety in workplaces and empower workers to assert their rights when necessary. This finding shows that awareness is a key factor at making OSH impactful on the Safe Working Culture.

Table 7: Analysis of respondents' view on OSH INSPECTION

RESPONSES ON OSH INSPECTION	**SD**		**D**		**N**		**A**		**SA**		
	Frequency	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**	**MEAN**
Employees are recognized or rewarded for promoting safe working practices in my organization.	32	14.7	81	37.3	26	12.0	59	27.2	19	8.8	2.89
The current compensation scheme adequately addresses the risks associated with work-related hazards.	43	19.8	68	31.3	32	14.7	44	20.3	30	13.8	2.94
I am knowledgeable about the standard procedures to ensure a safe working culture in my organization.	47	21.7	54	24.9	34	15.7	58	26.7	24	11.1	3.02
The employee compensation scheme encourages employees to report near misses or potential hazards	45	20.7	56	25.8	30	13.8	53	24.4	32	14.7	2.99

WEIGHTED MEAN= 3.0

Source: Author's Field Survey, 2024.

"The study found out base on objective four which is about Occupational Safety and Health Inspection impact that 81 respondents (37.3%) disagreed while 59 respondents (27.2%). The OSH provisions being adequate to influence a safe working culture at the work place or in the course of employment is disagreed to by 68 respondents (31.3%) and Agreed to by 44 respondents (20.3%). And furthermore, the study questioned on whether the OSH provisions is in line with global standard, 54 respondents (24.9%) and 58 respondents (26.7%) Agreed and Strongly Agreed respectively to it being in line with global standard. OSH regulations encourage employees to report mere misses was disagreed to by 56 respondents (25.8%) while agreed to 53 respondents (24.4%)".

The last objective data presentation as shown in Table 7 with hypothesis testing that OSH Inspection does not have any significant impact on safe working culture is rejected and the alternative hypothesis supported n =217, t (6.535) p (.000) which according to Justice (2016) is the right position in the sense that through regulatory oversight and inspection, it seeks to promote accountability and adherence to best practices in occupational safety and health**.**

7.1 Conclusion

This study examined the influence of occupational safety and health regulation, awareness and inspection at ensuring safe working culture among the employees of 10 pharmaceutical companies in Kwara state and is able to establish a conscious view of authors by the means of empirical analysis that the absence of effective Occupational safety and health regulations in Nigeria which calls for adequate measure not to hamper the prospective economic growth of the nation. Likewise, organizations should understand the importance and benefits of compliance with OSH in the work environment as enabler to increased safety, productivity, competitive advantage, accident and fatality reduction and above all the consequences of tarnished images of the organization and that of the country at large which is line with Nnedinma, David, Keith and Boniface, (2014) submission base on their findings.

The awareness level among the employees about occupational safety and health regulations is low and as a result negatively impact on the safe working culture in the work place. Having regulations in place is of no use when the target populace is not even aware of it existence. There is need for aggressive sensitization and awareness by the regulators of occupational safety and health purpose of which is to give adequate information on how to foster safe working culture in the course of employment as it relates the various employment in place.

As it relates to the occupational safety and health inspection, there is high lack of professionalism in the administration of this exercise which is greatly harming the effectiveness of the occupational safety and health regulations in place. Human is meant to neglect when there is no proper professional monitoring in place. Therefore, if more trained professionals are recruited and trained as OSH inspectors and enforcers that will boost OSH enforcement in Nigeria.

8.1 Recommendations

The study therefore recommends that:

i. The organization's occupational safety and health rules should be more than merely cosmetic, but substantive and implementable in accordance with worldwide standards. Furthermore, regulations should be updated and altered as needed to avoid having outdated or severely limited regulations.
ii. In order to develop a safe working culture among employees, the various entities in charge of implementing Occupational Safety and Health Regulations in every workplace must execute aggressive awareness and sensitization programs.
iii. Improvement is required in the professional administration of occupational safety and health inspections, and as such, global standard training and certifications are critical. In addition, additional qualified recruitment is required to effectively support the inspectorate exercise.

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