

The Conceptual Analysis of Occupational Health and Safety in Construction Work under Tsirang District

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Abstract: The Occupational Health and Safety in the construction work has drawn its place, in the spheres of researchers given its paramount importance for the wellbeing of the parties involved. The study on the conceptual analysis of Occupational Health and Safety in construction work explored the conceptualization and implementation by contractors, employees, and engineers of Tsirang district. In total, 14 contractors, 19 engineers, and 71 employees (n=104) took part in the study. The quantitative research method was administered using a five-pointed Likert-scale of item survey questionnaires. The data were analyzed using SPSS version 22 to compare means. The findings indicated that the participants have 'Neutral' concepts about Occupational Health and Safety in construction work. However, the finding also shows that there are certain issues and challenges in executing practically in the field. Based on the findings from the study, implications and recommendations are also discussed.

Keywords: Health, Safety, Contractor, Engineer, Employee.

Introduction

The Occupational Health and Safety (OHS) regulation in construction work in Bhutan was quite low in the past decade, despite the enforcement of the Labor and employment act of Bhutan, 2007 and regulation of welfare, 2012. The OHS is mainly intended for the well-being of the employee on-site, to have larger benefits of basic rights of the employee, which can aid themselves and their families. The International Employee Organization (ILO) and World Health Organization (WHO) jointly adopted Occupational Health and Safety in 1950 and later revised in 1995. Reverting to ILO and WHO, more than two million annual work-related deaths are rising due to rapid industrialization in developing countries. Besides, each year about 268 million non-fatal workplace accidents are resulting in at least three days of absence from work.

To overcome these obstacles, the conceptual analysis of OHS in the construction works is chosen as the main objective of this manuscript. The depth of OHS will be broadly focusing on the highest degree of the physical, mental, and social well-being of employees in all professions to have smooth workmanship as a wage earner. Additionally, to enhance the use of Personal Protective Equipment (PPE), Common Protection Measures (CPM), and Life Insurance. As it plays a vital role in the safety of the employee in the construction firms. Department of Labor and WHO, Bhutan Office (2012), indicated that the Ministry of Labor and Human Resources is mandated as a resource government organization in OHS. It has also shown that it is particularly focused on the prevention, enforcement, and compensation of the employee.

The implementation and gaining compliance with the OHS provisions which includes the standards of OHS are even conferred with the Ministry of Health organization about the Labor and Employment Act, 2007. The formulation of OHS laws and standards at the respective workplace should be reinforced by the procuring agency, MoLHR, CDB, and Contractor. The sustainable policy of development on public health should be framed standards guidelines for occupational health services, management, and development of OHS surveillance system for the welfare of the employee.

In the growth of urbanization and modernization in construction technologies, employee health hazards are a vital subject that pops up quite frequently in the mind of this study. To retaliate this, the result of this study encourages the contractor and procuring agency to reserve the life insurance of the employee as a safety factor. The fatal accident at the construction site may befall in the blink of an eye with non-compliance of OHS. However, in these studies, it witnesses that on the part of the client, they fail to monitor regularly at the construction site, despite it was a central amenity for the employees. The existing scenario even replicates that the OHS is never regulated strictly in any of the construction sites.

To overcome this tunnel of change, the advocacy of OHS is genuinely required until people are habituated as user-friendly on this system, and enforcing the law on the ground should be mandated in the construction firm, as it can minimize the root of the accident at the respective construction sites.

Literature Review

Perceptions on use of OHS by Contractors

The implementation of OHS by the contractor has been a center for studies, given the significant impact on the health and safety of the employees. Formally the perception on the use of OHS has to be adapted adequately by the contractor in the construction site. Otherwise, the failure of the concept will drag to the complexity at the workplace. The contractor has to play a vital in building the perception of the implementing OHS instantly at the construction site by establishing the criteria and standards of OHS in the respective construction site, to have a great benefit of the project participants and to complete the construction project in the stipulated period.

Ashley et al. (1987) refer that the successful completion results of the project are the best reward for implementing the quality, cost, and participant satisfaction of the OHS in the construction site. Likewise, Chan et al. (2002) also defined that construction project success as the degree of project goals and expectations which are met on time. The study here even directs that the facilitation is the source of gaining the best output in the construction period and regulating safety on-site enables the smooth functioning of the project at the respective site. The most of the contractors here are much aware of the OHS, however, the implementation practices at the field are rarely enforced at the construction site.

The strong determination of the contractor on the use of OHS can save the employee's life from the fatal accident at the construction site. The sense of accountability for OHS needs to grow green in the minds of the contractor, to have potential benefits for the employee at the workplace. Further, the implementation of the OHS needs to be graded by the respective engineers, Procuring Agency, and the Department of Labor for the safety of the employee on site.

Perceptions on use of OHS by Employee

The employee perception of OHS uses in the workplaces withstands strongly here in the studies, as the mindset of the employee is seriously important in the construction field. The employee is a key player in the construction firm. The value and concept of OHS need to be groom as well as it should be adhered appropriately. To commence the OHS in the respective construction site. However, the OHS implementation at the construction site is the question mark for the Employee.

The lack of the idea and knowledge on the OHS execution gives the employee a cluelessness to claim for the benefit of safety gears. The keeping same track adopted on OHS will have a great life in the construction period as the employee can have the lifesaving on hands. The most importantly the purpose of preserving the OHS in the construction firm has to be embedded with the contractor, employee, and engineer.

Perceptions on the use of OHS by Engineers

The significance of OHS signaling great efficiency in the construction firm. The signing of the Memorandum of Understanding in the theme of health and safety was also stimulated in between the Construction of Board and MoLHR (2020). Similarly, the Ministry of Work and Human Settlement had executed OHS in the Bhutan Standard Rate 2021, and the ministry even had issued an executive order to the implementation of OHS in the tender documents. To have a potential platform for the construction firms.

To strengthen OHS in the construction firm, the engineers had enforced OHS in the bill of quantity to have a better environment for the contractor as well as for the employee at the construction site. Furthermore, for the safety of the employee, the PPE is implemented to minimize exposure to a hazard and to ensure safety measures at the construction sites at all the time. The perception of the OHS has to be determined by the engineer. To have the sustainability in the enforcement of the safety gears at the respective construction site and to motivate hereafter to the contractor, for the security of the employee's safety in the construction site. The PPE is set into two phases, the first phase set of PPE includes a safety helmet, Safety Shoes, Protective Gloves, High Visibility Vest, and a Dust mask. The second phase set of PPE provides to the specific worker safety belts, Safety Harness, Safety Goggles and Spectacle, Ear Muffs, Ear Plugs, and welding shield or glass.

In addition, the Common Protection Measures (CPM) is to facilitate medical first Aids instantly at the construction site for the minor casualty in the first step, The recoding of the medical history of Employees, executing adequate safety signs and signboard at the site, keeping awake from the Fir and electrical safety, The fall protection, Boundary fencing of the construction site, and finally regulating the housekeeping practices at the respective site to have a clean and hygienic atmosphere in the workplace.

Similarly, Life Insurance is the best gift to the families and self, as it helps in the positive round as well as in the negative round in the background. The positive drive here is the insurance companies bless their share claimed or compensation claimed in the favor of the victim. The negative outflow tears the bereaved family, employers, and co-workers. A Life and death can't be a gamble here, the preserving and promoting OHS can transform the greater lifestyle of the employee.

Research Questions

The central question is framed here to study the conceptual analysis of OHS in the construction work under *Tsirang* District.

1. To examine how was the OHS implemented in the construction site?
2. To determine the benefit of OHS and central perception of OHS?

Data and Method

The quantitative method is used in this study to analyze the data of OHS obtained from the construction firm. The structured survey questionnaire was designed to acquire relevant information from the target participants; Contractor, employee, and Engineer through online access as well as face-to-face. The questionnaires were bifurcated into three themes such as perception of the implementation of OHS by contractors, perceptions of the use of OHS by the employee, and perceptions on the implementation of OHS by the Engineers. In addition, the observational note was maintained to supplement the data gathered from questionnaires and the findings.

Population and Sample

In this study, the population focused are contractors, employees, and engineers under the *Tsirang* district. The participant involved in the survey questionnaire is contractors, employees, and engineers under *Tsirangtoed*, *Mendrelgang*, and *Damphu* area which was selected based on the convenience sampling method.

Data analysis

The quantitative data were analyzed using SPSS version 22. The demographic information of the participants was also coded and reverse coding was also carried out with all the negative statements. Similarly, the observational notes were quantified and transcribed with the theme of the study.

Results and Findings

Survey Questionnaire

The survey respondent comprising of 14 Contractors, 71 Laborers, and 19 Engineers (n=104) were completed in this study. The Table 1 represents the status of targeted respondents such as contractors, Employees, and Engineers under the *Tsirang* district.

Table 1: Numbers of Respondents

Respondents	Frequency	Percentage (%)
Contractors	14	13.46
Employees	71	68.27
Engineers	19	18.27
Total	104	100.00

Table 2: Descriptive Statistics of Contractors' items in Likert Scale

SN		N	Minimum	Maximum	Mean	Std. Deviation
1	I assure you that all the Labors use the safety Kits.	14	2	5	3.3571	1.15073
2	I facilitate all the safety kits all the time on the construction site.	14	2	5	3.6429	0.8419
3	I often advise about the Safety precaution of labor in the construction site.	14	2	5	3.8571	1.02711
4	Physical Protection Equipment measures such as Helmet, Goggle, Hand glove, safety Boot, Safety harness are lifesaving at my construction site.	14	2	5	3.6429	0.92878
5	I have failed to procure safety kits at the site.	14	1	5	3.1429	1.29241
6	I have an idea about Occupational Health Safety.	14	2	5	3.8571	1.02711
7	My employees are aware of the labor and Employment act of Bhutan 2007.	14	1	5	3.1429	1.46009
8	I have reserved the Life insurance scheme for the labor.	14	1	5	2.9286	1.07161
9	I have age limits irrespective of gender on the construction site.	14	1	5	3.8571	1.23146
10	My Employees are concern about having the safety measures at the construction site.	14	2	5	3.5714	1.01635
	Valid N (listwise)	14				

The means of the Descriptive Statistics of Contractors for all items were three out of five except for the few items reflected in the Table 2. The conceptual analysis of OHS in the Construction work for the Contractors falls in the 'Neutral' form on the Likert Scale. However, the enforcement of the OHS at the construction site will have a greater benefit to firms as well as to the employee in near future.

Table 3: Descriptive Statistics of Employees' items in Likert Scale

SN		N	Minimum	Maximum	Mean	Std. Deviation
1	I'm glad to use the safety Kits all the time at the construction site.	71	1	5	4.0986	0.81337
2	The facilities of safety kits are abundantly available on the construction site.	71	1	5	3.3803	0.9909
3	I often advise about the Safety precaution of labor in the construction site.	71	1	5	3.9296	0.79864
4	Physical Protection Equipment such as Helmet, Goggle, Hand glove, safety Boot, Safety Harness is lifesaving at my construction site.	71	1	5	4.2535	0.8232
5	I have failed to use safety kits at the site.	71	1	5	3.4085	0.99395
6	I have an idea about Occupational Health Safety.	71	1	5	3.4648	1.10623
7	I'm aware of the labor and Employment act of Bhutan 2007.	71	1	5	2.7606	1.13973
8	I believe that the Life insurance scheme is essential.	71	1	5	4.2254	1.00281
9	The age limits are required on the construction site.	71	2	5	3.9577	0.83558
10	Safety measures are important at the construction site.	71	3	5	4.2958	0.57057
	Valid N (listwise)	71				

Comparatively, the means of Employees nearly fall to Four out of five on average, nonetheless, the average mean value of Three was rated in this item which is shown in the Table 3. Similarly, the conceptional analysis of OHS in the Construction work for the Employees even resulted as 'Neutral' on the Likert Scale. The idea and knowledge of the OHS at the construction site are in the average form, however, implementing the OHS will have potential facilitation to the employees and to the contractor.

Table 4: Descriptive Statistics of Engineers' items in Likert Scale

SN		N	Minimum	Maximum	Mean	Std. Deviation
1	I assure you that all the Labors use the safety Kits.	19	1	5	3.4737	1.30675
2	I facilitate all the safety kits all the time on the construction site.	19	1	5	3.7895	1.22832
3	I often advise about the Safety precaution of labor in the construction site.	19	3	5	4.4211	0.60698
4	Physical Protective Equipment such as Helmet, Goggle, Hand glove, safety Boot, Safety Harness is lifesaving at my construction site.	19	1	5	4.4737	1.02026
5	I have failed to enforce safety kits at the site.	19	1	4	2.3158	1.10818
6	I have implemented Occupational Health Safety in the Bill of Quantity.	19	1	5	4.0526	1.12909
7	Contractors and employees are aware of the labor and Employment act of Bhutan 2007.	19	1	5	3	1.24722
8	I support the Life insurance scheme for the labor.	19	3	5	4.3158	0.67104
9	The age limits irrespective of gender are mandatory on the construction site.	19	1	5	3.8421	1.01451
10	Contractors and employees are concern about having safety measures at the construction site.	19	1	5	3.1053	1.41007
	Valid N (listwise)	19				

Coincidentally, the mean value for the Engineers even falls on Four out of Five on average for all items which were indicated in the Table 4. Similarly, the conceptional analysis of OHS in the Construction work for the Engineers falls in the same category 'Neutral' on the Likert Scale. Nevertheless, reinforcing the essential of the OHS and executing the tender documents will bless the contractors and employees in the ground reality.

Conclusion: In the final count, the conceptual analysis of Occupational Health and Safety in the construction work is revealed as 'Neutral' from the Five-Pointed Likert Scale in this study. The quantitative method was applied here to obtain the relevant data from the targeted respondent such as Contractors, Employees, and Engineers. To supplement the conceptual analysis of OHS, the

perception of the individual was also discovered in this study. To strengthen OHS in the construction site, the respective procuring agency, Engineers, and Contractor have to strictly comply, to have a better working environment as well as the welfare of the employee on the construction ground.

Limitation and Suggestion for the future: Owing to the inadequate resources, time, and expertise, this research was focused only in the Tsirang District, Bhutan. The way forward for OHS is to incorporate it in the respective firms and procuring agencies. To broaden up managerial systems, personnel policy, principles for participation, training policies, and extensively undertaking in the quality management. It is always safe to advise and provide enough raising awareness among the public in the early stage, to wider their thoughts and action to build the future endeavor of employees. For future development, if the researcher can focus on the remaining district to get the value of the universal finding to incorporate in the construction firms, Corporation Organization, and to the government.

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