

EFFECT OF OCCUPATIONAL HEALTH AND SAFETY PRACTICES ON PERFORMANCE OF BUILDING CONSTRUCTION INDUSTRY IN NAKURU COUNTY, KENYA

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Abstract: The study sought to determine the effect of occupational health and safety practices on building construction industry performance in Nakuru County, Kenya. The specific 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. The study applied a stratified random sampling technique to select 221 respondents as the sample size for the study. Questionnaires were used as the main data collection instruments and a pilot study was conducted to pretest questionnaires for reliability. 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 concluded that training is the major factor that influences building construction industry performance, followed by occupational health hazard control mechanisms, then work place inspections and lastly emergency response planning. 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 and should provide immediate actions to emergencies; design effective hazard control plans which should be flexible and regularly updated; workers should be involved in workplace inspection; inspection results should be used to make workplace safer and conducive for workers and the management should always consider workplace inspection as a major event that should help in identification and elimination of hazards at workplace.

Keywords: Accidents, Emergency Response Planning, Occupational Health Hazard Control Mechanisms, Occupational safety and health, Performance management, Risk assessment, Workplace Inspections.

I. INTRODUCTION

For decades, occupational health and safety practices have dominated international agenda calling for support from the International Labour Organization (ILO) to execute their mandate on behalf of the international community through regional and national governments (Andrew,2010). Among these is the protection of workers against occupational

diseases and injury (Ballard, 2012). This position implies that disease and injury should neither be a norm at the workplace nor lack of resources for OHS implementation shouldn't be used to justify the non-provision of safe and healthy work environment by the employer. It has been established that productivity, employee wellbeing, reduced incidences at the workplace is promoted by safe and healthy work environment (Armstrong, 2008). All over the world, OHS remains to be the most critical but highly criticized issues in many organizations (Alman, 2010). 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 (Ballard, 2012).

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 same 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) (Beardwell & Holden, 2007). A survey conducted by British Safety Council revealed that positive organization performance which is as a result of employee's wellness is significantly influenced by health and safety of workers (Kreitner, 2007). A study by Desler, (2008) revealed that in the United States, the number of "cutback" days (on which less work is done than usual) attributable to a mental disorder averaged 31 per month per 100 workers. In annual terms, this represents 20 million working days on which employees are not fully productive because of a mental health problem caused by work-related health and safety problems.

Adeogun and Okafor (2013) observed that in many African countries organizations should implement OHS practices geared towards increasing the level of organizational commitment and motivation through reduced incidence at workplaces. Adeogun and Okafor (2013) noted that Tools such as noise control, waste and hazard control, worker's fitness in the job, feedback, modeling appropriate working environment, increasing the quality of business life, and creating appropriate physical working environment will improve the performance of an organization. In Africa and Nigeria in particular, the construction industry is listed as one of the fastest growing industry due to demand in real estate, housing and the provision of infrastructure in support of a growing population. (Manduku and Munjuri, 2017). According to Nigerian bureau of statistics report (2015), the industry recorded a growth rate of 18% between 2010 and 2012. The industry is largely dominated by international firms. The industry contributed 2.8% of GDP in 2010 and 3.05% of GDP in 2012 to the economy. A research report by Bank Audi Sal of Egypt released in 2016 on Egypt economic report, has indicated that construction sector accounted for 4-8% of GDP in the year 2015 while expanding by 9.7% from 7.4% in the previous financial year (Bailey & Soyoung, 2009). The state of OHS in Kenya, more so the construction industry, suffers the same fate as that of Nigeria. Buildings under construction have continued to collapse injuring and killing workers. Workers continue to suffer injuries and occupational diseases associated with exposure to a hazardous work environment, unawareness of health and safety regulations and unavailability of personal protective equipments. The menace has caused psychological trauma to victims and families as well as loss of earnings. Many workers have lost lives due to incidents in construction sites and some permanently crippled. Despite the steady growth in the construction sector in Kenya, the industry is accident prone (Nzuve, 2007). Data available from the Directorate of Occupational Health and Safety Services Kenya, (DOHSS) show that between 2005 and 2009, the country experienced 7769 fatalities across all industry sectors. In 2011, the construction industry accounted for 16% of fatal accidents (40 cases reported for 100,000 workers) and 7% of non-fatal cases (DOHSS Annual Report, 2011). Kabubo (2014) in his study found out that Kenya still experiences a large number of fatalities (about 64 deaths per 100,000 construction workers per year). About 32% of all construction site accidents are as a result of falling from elevated levels and being hit by debris (Manduku and Munjuri, 2017).

According to Kibe (2016) in his assessment of health and safety management on construction sites in Kenya found out that accidents and ill health amongst workers are caused by tools and equipments, slips, fall from heights and over exertion. Kibe (2016) 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. In Kenya, issues of occupational health and safety at workplaces are guided by acts of parliament and their subsequent amendments; occupational safety and health act of 2007 and workplace injuries and benefit act of 2007. OHS 2007 provides for the safety, health, and welfare of workers and all persons lawfully present at workplaces (Andrew, 2010). The legislation also allows compulsory annual safety and health audits, risk assessment, and a health and safety statement by all employers. This act also recognizes the need for a safe working environment free of hazards (Manduku and Munjuri, 2017). According to section 13 of OHS (2007), an employee has a duty to ensure his safety and duty of care for others without causing hazards. The employer too as the duty to provide safe working conditions and provides the right tools and protective equipment to its employees. The act lays huge responsibility on the employer not to expose workers to an environment which can cause occupational diseases and injuries. These provisions are consistent with occupational safety and health act 2006 of Uganda and ILO convention on occupational safety and health (Nzuve, 2007).

Other legislation like Workplace injuries benefit act 2007 (WIBA) allow for compensation to employees as a result of work-related injuries and diseases contracted during employment. The act applies to all employees, including employees employed by the Government, other than the armed forces, in the same way, and to the same extent as if the Government were a private employer. (Nyakang'o, 2011). Safety among small organizations is still far behind their larger counterparts and this issue is crucial since the majority of organizations in the construction industry are small organizations (Riza 2015). In Kenya, poor implementation of OHS practices in the construction industry has resulted to adverse effects on workplace incidences in the sector. According to DOHSS annual report, the cumulative number of accidents reported for years 2001- 2015 in the construction sector alone was over 5,000. The accidents accounted for over 21,034 man-days lost (Manduku and Munjuri, 2017). These incidents can be attributed to failure by the construction firms to implement OHS practices that comply with OHS legal and regulatory framework.

Workers are exposed to acute health hazards like fall from height and electric shocks, while chronic health hazard like exposure to hazardous substances is common in the construction industry (Vitharana, 2015). Practices such as training on OHS, emergency response planning, OHS hazard control mechanisms, and workplace inspections remains a major obstacle to success of OHS practices at construction companies. Kibe (2016) found out that accidents and injuries sustained at construction sites had a high impact on workers absenteeism, disruption of work and resulted in low morale among the employees. Employers also faced costly early retirements, loss of skilled staff and high insurance premiums due to work-related accidents and diseases. Building construction industry does not have a comprehensive policy framework. The Housing laws are fragmented and need harmonizing to enforce and monitor construction work to effectively curb malpractices in the construction sector (Ministry of Public Works, 2011). Previous studies on OHS have been undertaken in other sectors and hence the findings cannot be generalized to determine the effect of OHS practices on performance of building construction industry in Nakuru County, Kenya. To this end, it is evident knowledge gap in the literature on the performance of building construction industry is brought into light. This study, therefore, sought to establish the effect of occupational health and safety practices on building construction industry performance in Nakuru County, Kenya.

II. METHODOLOGY

Descriptive research design was adopted by this study. A descriptive research is defined by Kothari (2009) as studies concerned with describing the characteristics of a particular individual or of a group. The study also consisted of quantitative research. Mugenda (2008) has defined quantitative research as a research that attempts to quantify social phenomena by collecting, analysing and interpreting numerical data focusing on the links among a smaller number of attributes across many cases. Nakuru County was chosen because the County is currently experiencing growth in housing and the researcher is conversant with the County. The County has 521 NCA registered companies which fall in different categories under building class. The study population was a total of 521 managers representing building construction companies in Nakuru County registered by National Construction Authority under building class. The sample frame for the study was a list of 521 managers representing each of the construction companies in Nakuru County under building class registered by national construction authority. Descriptive research design was adopted by this study. A descriptive research is defined by Kothari (2009) as studies concerned with describing the characteristics of a individual or of a

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According to Orodho (2009) stratified random sampling is considered appropriate since it gives all respondents an equal chance of being selected and thus it had no bias and eased generalization of the findings. The target population was divided into strata based on the organization category as registered by NCA. Simple random sampling was then applied to select the respondents from each population strata. The sample was randomly picked from each stratum leading to a sample size of 221 respondents.

The researcher collected data by administering a questionnaire. Questionnaires were used because it enabled a researcher to reach a large group of respondents within a short time and with less cost. Most of the structured questions were closed-ended type and respondents were asked to mark the appropriate box matching the correct answer. Other questions required respondents to give opinions. Questionnaires were given to each respondent to be filled and they were collected after one week. Validity and reliability of data collection instruments was established by help of pilot study. Pilot-testing of instruments were done to ensure that items in the questionnaire are stated clearly and have the same meaning to all respondents. The instrument was tested on respondents who are not part of the selected sample. The researcher issued 15 questionnaires to respondents. Content and construct validity of the research instrument was looked unto. The researcher also shared the details and structure of the research instruments with the supervisor for analysis and cross-checking who confirmed that research instrument was reflecting on research objectives. Thereafter, the researcher made the necessary changes needed on the instrument ready for data collection.

To measure the instrument's reliability, internal consistency reliability Cronbach's alpha was used. According to Zinbarg (2005), an alpha coefficient higher than 0.7 show that the gathered data has a relatively high internal consistency. Data collected from closed-ended questions were coded. After coding, the data was keyed into a computer and analyzed using Statistical Package for Social Sciences (SPSS) version 22. The research used descriptive statistics to describe the data. In descriptive statistics, frequency distribution was generated in percentages, mean, standard deviation and variance results. Further, inferential statistics were used to analyze quantitative data using multiple Linear Regression model to establish the significance of the independent variables on the dependent variable.

The following multiple linear regression model was applied in the study:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Where:

Y= OHS performance

β_0 = Constant Term,

X_1 = Training

X_2 = Emergency response planning

X_3 = Occupational health hazard control mechanisms

X_4 = Workplace inspections

In the model, β_0 = was the constant term while the coefficients $\beta_i = 1, \dots, 4$ were used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variables X_1, X_2, X_3 and X_4 . ε was the error term which was used to capture the unexplainable variations in the model.

III. FINDINGS

From the data collected, out of the 221 questionnaires administered, 171 were filled and returned, which represents 77% response rate. This response rate is considered satisfactory to make conclusions for the study. This collaborates with Bailey (2010) assertion that a response rate of 50% and above is adequate, while a response rate greater than 70% is very good. This implies that based on this assertion, the response rate in this case of 77% was therefore very good. According to Kombo and Tromp (2002), a response rate that exceeds 30% of the total sample size of the study is deemed acceptable in gathering of sufficient data that could be generalized to represent the opinions of all respondents in the target population when the research design is descriptive. Table 1 below indicates the response rate.

Table 1: Response Rate

Response rate	Frequency	Percentage
Response	171	77%
Non Response	50	23%
Total	221	100%

Cronbach's Alpha was used to test the reliability of the proposed constructs. The research findings in table 2 indicated that all the constructs showed that the Cronbach's Alpha was above the required coefficient of 0.75 thus the results of the study were highly reliable and had a relatively high internal consistency and can be generalized to reflect opinions of all respondents in the target population. According to Mugenda and Mugenda (2003), a coefficient of 0.75 or more implies a high degree of reliability of the data.

Table 2: Response Rate

Constructs	Items	Cronbach's Alpha Values	Comments
Training	7	0.8983	Accepted
Emergency Response Planning	5	0.8784	Accepted
Occupational Health Hazard Control Mechanisms	6	0.8711	Accepted
Workplace Inspections	6	0.8862	Accepted
Performance of construction companies	5	0.8736	Accepted

The results obtained from the study showed that 80% of the respondents were male. The finding implied that male managers are majority of in the construction industry. This implies that building construction industry is male dominated. Majority (40%) of the respondents were in the age category of 32-40 years, followed by 30% who were in the age category of 41-50 years, then 20% of the respondents who were in the age category of over 51 years and over and lastly 10% of the respondents who were in the age category of above 21-31 years. The study results showed that the respondents who had university education level were 44%. 22% of the respondents had post-graduate education level, whereas 20% of the respondents possessed college education level, and finally 14% of the respondents had a professional qualification. This demonstrated that most of the organization managers were qualified professionals with technical knowledge and skills on the study problem and thus provided the study with reliable information research topic. According to Morris (2011) respondents with technical knowledge and skills on the subject under the study provides reliable information on the research problem. 40% of the respondents had a working experience of between 9-12 years, 26% of respondents had experience of between 13-18 years. It was also established that 20% of the respondents had a working experience of 19 years and above, 12% of the respondents had a working experience of 4-8 years and finally those with experience of below 3 years was 2% of the respondents. These findings were in line with Braxton (2008) that respondents with a high working experience assist in providing reliable data on the study problem since they have technical experience on the problem being investigated by the study.

Descriptive statistics data analysis based on the research variables which included; training; emergency response planning; occupational health hazard control mechanisms; workplace inspections and performance of building construction industry in Nakuru County, Kenya. The data was computed using the mean, standard deviation and variance results. The study requested respondents to indicate how they agreed or disagreed on key statements which related to OHS training in the organization using a scale of 1-5 (1-Strongly Disagree, 2-Disagree, 3-Moderately agree, 4-Agree 5-Strongly agree).

Table 1: OHS Training Mean, Standard Deviation and Variance Results

OHS Training	N	Mean	Std. Deviation	Variance
The trainings are adequate	171	2.571	1.6409	2.693
The management support training	171	4.435	0.5524	0.305
New employees are taken through induction training	171	4.092	1.0241	1.049
Training provided knowledge to work safely	171	4.085	0.978	0.957
The training assists in understand roles in OHS	171	4.357	0.6124	0.375
Training provided information on safety and health hazards and its control	171	4.028	1.0725	1.15
The company organizes refreshers courses on OHS	171	3.007	1.4715	2.165
Average	171	3.796	1.0502	1.242

According to study findings in Table 3, the respondents disagreed that the training are adequate as indicated by a mean of 2.571 and a standard deviation of 1.6409; the respondents agreed that the management support training practices as indicated by a mean of 4.435 and a standard deviation of 0.5524; the respondents also agreed that new employees are taken through induction training as indicated by a mean of 4.092 and a standard deviation of 1.0241. The respondents further agreed that training provided knowledge and skills to work safely as indicated by a mean of 4.085 and a standard deviation of 0.978; the respondents also agreed that the training assists in understanding their roles in OHS practices as indicated by a mean of 4.357 and a standard deviation of 0.6124. Finally, the respondents agreed that training provided information on safety and health hazards and its control as indicated by a mean of 4.028 and a standard deviation of 1.0725 and the respondents moderately agreed that the company organizes refreshers courses on OHS as indicated by a mean of 3.007 and a standard deviation of 1.4715.

On average all the training statements had an average mean score of 3.796, a standard deviation of 1.0502 and variance of 1.242. These findings indicate that only few respondents had varied or divided opinions since all the standard deviation and variance results were less than 1 and this indicates most respondents had convergent response. These findings also show that majority of the respondents disagreed that training on OHS was adequate. These findings agree with Muiruri and Mulinge (2014) where they found out that training on OHS in many construction firms was not adequate although the management of many construction firms supports training practices. The findings also concur with those by Kabubo et al (2016) that training on OHS provides knowledge and skills for employees to work safely. Further, they say that the accident rates is higher the construction industry due to lack of OHS training to its employees. Mwangi (2017) suggested that training and inductions should be conducted to all workers in the construction sector. This will help them to acquire the competencies in the health and safety aspects of their work to avoid or eliminate hazards at work.

Many respondents agreed that; the management supported training practices; new employees were taken through induction training; training provided knowledge and skills to work safely. This agrees with Kebenei (2014) training and inductions in construction site help inculcate in employees a positive health and safety culture. This also agreement with a study by Bann (2012) who has attributed awareness and safety culture in Australian construction industry to construction induction training whose effect is improved safety culture of the construction industry. The finding of the study showed that training assisted in the understanding of roles in OHS practices and training provided information on safety and health hazards and its control. Employees who have undergone induction training feel much safer and more aware of legislation relating to OHS and possible hazards at work (Bann, 2012). On the other hand, most of the respondents moderately agreed that the company organized refreshers courses on OHS. The second objective of the study was to examine the role of emergency response planning on the performance of building construction industry in Kenya.

Table 4: Emergency Response Planning Mean, Standard Deviation and Variance Results

Emergency Response Planning	N	Mean	Std. Deviation	Variance
The company has the ability to detect potential emergencies	171	4.0286	1.1991	1.438
Actions to emergencies are provided	171	4.4000	0.5851	0.342
Employee's responsibilities during emergency are clearly stated.	171	2.5500	1.4056	1.976
Resources required during emergency are provided.	171	2.5286	1.3541	1.834
Employees have been trained in emergency preparedness	171	4.3500	0.6338	0.402
Average	171	3.5714	1.0356	1.1984

Study results in Table 4 showed that most of respondents in the study indicated that organizations had the ability to detect potential emergencies as depicted by a mean of 4.0286 and a standard deviation of 1.1991; the respondents too agreed that organizations provided actions to emergencies as shown by a mean of 4.4000 and a standard deviation of 0.5851; the respondents further disagreed that employee's responsibilities during emergency are clearly stated as indicated by a mean of 2.55 and a standard deviation of 1.1715. The resources required during emergency are not provided as indicated by a mean of 2.5286 and a standard deviation of 0.3541. Lastly, the respondents agreed that employees have been trained in emergency preparedness as indicated by a mean of 4.3500 and a standard deviation of 0.6338. On average all the emergency response planning had an average mean score of 3.5714, standard deviation of 1.0356 and variance of 1.1984. The findings indicate that majority of the respondents agreed that the company can detect potential emergencies; actions to emergencies are provided and scale maps and floor plans are provided at accessible areas.

However, the finding also shows that majority of the respondents disagreed that employee's responsibilities during emergency are clearly stated and the resources required during emergency are provided. These negatively affected the company emergency response planning activities leading to a declined performance of the organization. These findings concur with Arewa and Farrell (2012) where they identified that the ability for construction firms to detect potential emergencies and provision of appropriate actions to emergencies plays a major role in the enhancement of the performance of building construction firms. This findings also support a study by Andrew (2010) who observed that many construction firms in Kenya, lacks an effective emergency response plans and this affects the reduction of destruction such as loss of workers life and property damage in case of work-related accidents such as the collapse of buildings during construction or workers injury.

This is also true as supported by findings by Nyakang'o (2011) that lack of clear definition of employee's responsibilities during emergency and lack of allocation of the required resources during emergency affects emergency response planning which negatively affects the performance of building construction industry in Kenya during emergencies. The study sought to determine the effect of occupational health hazard control mechanisms on building construction industry performance in Nakuru County, Kenya. Findings are in table 5 below.

Table 2: Occupational Health and Safety Hazard Control Mechanisms Mean, Standard Deviation and Variance Results

Occupational Health And Safety Hazards Control Mechanism	N	Mean	Std. Deviation	Variance
The organization has a hazard control plan	171	4.2429	0.98091	0.962
Hazard control plan is updated regularly	171	3.8929	1.0436	1.089
The employee understands the right controls to protect workers	171	3.8143	1.2557	1.577
The organization has adequate hazard control mechanism	171	2.4500	1.4107	1.990
The organization has provided enough resources for hazard control	171	3.0000	1.4982	2.245
Hazard control mechanisms effectiveness is checked frequently	171	3.1857	1.4473	2.095
Average	171	3.4309	1.2727	1.659

According to study findings in Table 5, the respondents agreed that most organization had provided hazard control plan as shown by a mean of 4.2429 and a standard deviation of 0.98091; the respondents also moderately agreed that hazard control plan is updated regularly as indicated by a mean of 3.8929 and a standard deviation of 1.0436 and on the employees understanding the right controls to protect them during non- routine tasks, the respondents moderately agreed as indicated by a mean of 3.8143 and a standard deviation of 1.2557. The respondents further disagreed that the organization has adequate hazard control mechanism as indicated by a mean of 2.45 and a standard deviation of 1.4107. The respondents moderately agreed that the organization has provided enough resources for hazard control as indicated by a mean of 3.0000 and a standard deviation of 1.4982. Lastly, the respondents moderately agreed that hazard control mechanisms effectiveness is checked regularly as shown by a mean of 3.1857 and a standard deviation of 1.4473. On average all occupational health and safety hazard control mechanism had an average mean score of 3.4309, standard deviation of 1.2727 and variance of 1.659.

These findings indicate that majority of the respondents agreed that the organizations have hazard control plan in place which is rarely updated regularly. The findings also show that employee in many construction firms did not understand the right controls to protect workers during non- routine tasks and the organizations lacked adequate hazard control mechanisms. The findings also imply that the organizations failed to provide enough resources for hazard control and the

hazard control mechanisms effectiveness was not checked frequently. These influenced the ability of the organization to protect its workers and machines from potential hazards. The study findings agree with a study by Nyakang'o (2011) who identified that many construction companies in Kenya lack effective occupational health hazard control mechanisms. This affects the implementation of OHS practices leading to low level of performance in many construction firms. The findings are also supported by Beardwell & Holden (2007), Desler (2008) who established that the success of construction sector in Japan and India can be attributed to the effectiveness of OHS practices implementation which is greatly influenced by the existence of robust occupational health hazard control mechanisms. However, in China, a study by Zou et al (2007) revealed that there is a desire for shortcuts and quick success by Chinese construction firms and instant benefit thereby neglecting safety issues. The study aimed to determine the effect of workplace inspections on the performance of building construction industry in Nakuru County, Kenya. Study results are in table 6 below.

Table 3: Workplace Inspections Mean, Standard Deviation and Variance Results

Workplace Inspections	N	Mean	Std.	
			Deviation	Variance
The organization has health and safety committee in place	171	4.5357	0.63936	0.409
The workplace is inspected regularly	171	4.0929	0.81264	0.660
Workers are involved in the workplace inspection	171	4.1786	0.91563	0.838
Inspection results are used to improve health and safety at the workplace	171	4.0643	1.08097	1.168
The management considers workplace inspection as a major event	171	4.0500	0.97689	0.954
Workplace inspection has helped in the identification and elimination of hazards at the workplace	171	4.0214	0.90933	0.827
Average	171	4.1571	0.8891	0.809

According to study findings in Table 6, the respondents agreed that most organization had constituted and working health and safety committee in place as indicated by a mean of 4.5327 and a standard deviation of 0.63936; the study findings also implied that the workplace is inspected regularly as indicated by a mean of 4.0929 and it was established that workers are involved in workplace inspection as supported by a mean of 4.1786 and a standard deviation of 0.91563. To establish if inspection results are used to improve health and safety at workplaces, a mean of 4.0643 and a standard deviation of 1.08097 was obtained from respondents. On whether the management considers workplace inspection as a major event and if workplace inspection has helped in identification and elimination of hazards at the workplace, majority of the respondent agreed with the statements and mean of 4 was obtained. On average all the emergency response planning had an average mean score of 4.1571, standard deviation of 0.8891 and variance of 0.809.

The study findings indicate that most of the respondents agreed that the organizations have health and safety committee in place; the workplace is inspected regularly; workers are involved in workplace inspection; inspection results are used to improve health and safety at workplace; the management consider workplace inspection as a major event and workplace inspection has helped in the identification and elimination of hazards at workplace. These findings agree with Larcher & Sohail (2009) that in many Chinese firms' workplace inspection helps to assess the safety of current activities or equipment; looks for health and safety improvement opportunities; identifies immediate or potential hazards and provides positive feedback on good safety. The findings are also in line with Okoye (2016) where he found out that many firms in construction sector the management consider workplace inspection as a major event and workplace inspection has helped in identification and elimination of hazards at workplace and these leads to reduced incidences at construction sites thereby positively enhancing performance of building construction firms. The dependent variable of this study was performance of building construction industry as measured by employee turnover, return on investment and employee wellbeing. Table 7 presents descriptive statistics on building construction industry performance.

Table 4: Performance of Building and construction Mean, Standard Deviation and Variance Results

Performance of Building Construction Industry	N	Mean	Std. Deviation	Variance
The organizations meet project deadlines	171	4.4857	0.8000	0.640
The rate and severity of accidents are lower in your organization.	171	4.2286	0.7897	0.624
The workers are motivated to achieve their targets	171	4.1786	0.9312	0.867
The cost of injury compensation is low	171	4.3643	0.8912	0.794
Lost time injury frequency rate is low	171	3.0058	0.7532	0.567
Average	171	4.0526	0.83306	0.6984

The result revealed that the organization meets project deadlines as indicated by a mean of 4.4857 and a standard deviation of 0.8000; OHS practices have contributed to reduced accident rates and severity of accidents as indicated by a mean of 4.2286 and a standard deviation of 0.7897 and the respondents agreed that OHS practices have resulted to a motivated workforce indicated by a mean of 4.1786 and a standard deviation of 0.91563. The respondents further agreed that OHS practices have contributed to reduced cost of workers compensable injuries as indicated by a mean of 4.363 and a standard deviation of 0.8912.

Finally, the respondents agreed that OHS practices have contributed to reduced lost time injury frequency rate as indicated by a mean of 3.0058 and a standard deviation of 0.7532. On average all the Performance indicators had an average mean score of 4.056 standard deviation of 0.83306 and variance of 0.6984. These findings indicated that OHS practices in the constructions firms have contributed to reduced Lost Time Injury Frequency Rate, first aid and medical treatment injury rate, cost of workers compensable injuries and reduced recurrence of incidents. The findings are supported by Sembe and Ayuo (2017) who say that there is a relationship between an employee's health and productivity of the employee. They say that organizations that have taken positively health and safety practices have experienced profitable returns on investment. They also have higher market premiums as compared to counter parts who have not implemented health and safety practices. Employee turnover are lower in workplaces with conducive and safe workplace environment as compared to companies with risky and unsafe work environment. However, these findings are in contrast with findings by Kibe (2016) who found out that, wounds, bruises, cuts and fractures were among the most common injuries in the construction industry which resulted to absenteeism from workers, loss of confidence by workers and the public, increased insurance premiums and proliferation of litigations.

Legesse (2016) says that Workplace injuries could result in tangible and intangible expenses on organizations and on employees which in return have an effect on organizational profitability, performance and employees' morale. The study findings are also supported by research findings by Sembe and Ayuo (2017) who established that OHS practices have a significant effect on employee job satisfaction and productivity. The study by Katsuro et al (2010) also found out that bad OHS practices decrease the workers' performance, leading to the decline of productivity. The study applied regression analysis to establish the statistical significant relationship between the independent variables and the dependent variable. The regression analysis results were presented using regression model summary table, Analysis of Variance (ANOVA) table and beta coefficients table. From the findings of the study, it shows that the regression model in table 8 below indicates that the coefficient of determination (R^2) is 0. 587 and R is 0.766 at 0.05 significance level. The coefficient of determination (R^2 , 0. 587) indicates that 58.7% of the variation of performance of building construction industry is affected by; OHS training; emergency response planning; occupational health hazard control mechanisms and workplace inspections. The remaining 41.3% of the variation on the building construction industry performance is influenced by other variables not included in the study model. This concurred with Graham (2002) that (R^2) is always between 0 and 100%. 0% indicates that the model explains none of the variability of the response data around its mean and 100% indicates that the model explains all the variability of the response data around its mean. In general, the higher the (R^2) the better the model fits the data (Crossman, 2013). This means that variables had high explanatory power on the variation in performance of building construction industry.

Table 5: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.766	0.587	0.583	0.38891

The study further used one-way Analysis of Variance (ANOVA) to test the significance of the overall regression model. Green & Salkind (2003) contend that one-way ANOVA helps in determining the significant relationship between the research variables. Table 9 below indicates that the high value of F (202.987) with significant level of p-value 0.00 which is less than 5% level of significance is enough to conclude that all the independent variables significantly affect the performance of building and construction industry. This implies that model linking independent variables to dependent variables was statistically significant.

Table 6: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.975	4	7.244	202.987	.000(a)
	Residual	4.818	170	.036		
	Total	33.793	174			

a Predictors: (Constant), X₁, X₂, X₃, X₄

b Dependent Variable: Y

Table 10 presents the results of the test of beta coefficients which shows the extent to which each independent variable significantly affects the performance of building construction industry most. As presented in table 4.10; (X₁) OHS training coefficient of 0.444 was found to be positive at significant level of (P=0.000<0.05) and this indicates that training significantly affects the performance of construction industry. According to Mohamed (2017), it is evident that OHS training improves the performance of construction projects and reduces injury rates in construction sites. This is also in agreement with Kibe (2016) who argues that when accidents are lower, less working hours are lost, litigations due to accidents are lower and absenteeism is reduced. The regression analysis also revealed a positive and significant relationship (X₂=0.059, P=0.000<0.05) and this indicates that emergency response planning significantly affects the performance of building construction industry. The study findings concur with a study by Andrew (2010) who found out that organizations can deal with the risks posed by various events if conduct business impact analysis. Further, organizations should identify and secure resources to handle emergencies should to resolve emergency situations and move to disaster recovery efforts to put the business in normal operations. Regression analysis further established that occupational health hazard control mechanisms (X₃) with a coefficient of 0.219 was found to be positive at significant level of (P=0.000<0.05). This indicates that occupational health and safety hazard control mechanisms significantly affect the performance of building construction industry. This in agreement with a study by Bailey & Soyoungh (2009) found out that occupational health hazard control mechanisms is a major factor of OHS practices that affect the performance of many construction firms in the USA.

The same findings are supported by a study carried out by Ballard (2012), and another one by Desler (2008) who argued that many firms have embraced effective occupational health hazard control mechanisms as a measure to increase the level of organization's performance. Finally (X₄) workplace inspections had a coefficient of 0.130 at significant level of (P=0.000<0.05) and this indicates that workplace inspections significantly affect the performance of the building construction industry. This clearly demonstrates that the performance of building construction industry in Nakuru County is significantly affected by all the independent variables but the relative importance of each independent variable is different. However, since the significance values were less than 0.005, all the coefficients were significant and thus the optimized regression equation was;

$$Y = 0.713 + 0.444X_1 + 0.219X_2 + 0.130X_3 + 0.059X_4 + \epsilon_i$$

Table 7: Regression Coefficients results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.713	0.171		5.077	0.000
	β ₁	0.444	0.051	0.520	8.728	0.000
	β ₂	0.059	0.048	0.069	1.241	0.002
	β ₃	0.219	0.043	0.269	5.136	0.000
	β ₄	0.130	0.035	0.172	3.715	0.000

a Dependent Variable: Y

The regression model above has established that taking all the independent variables into account; (X₁) OHS Training, (X₂) Emergency response planning, (X₃) Occupational health hazard control mechanisms and (X₄) Workplace inspections at Zero constant affects employee occupational health and safety performance in the construction industry (0.713). The

results presented also shows that taking all other independent variables at constant zero, a unit increase in OHS Training leads to a 0.444 increase in organizational performance; a unit increase in Emergency response planning leads to 0.059 increase in performance of building construction industry and a unit increase in Occupational health hazard control mechanisms leads to 0.219 increase in performance of building construction industry. Finally, a unit increase in Workplace inspections leads to 0.130 increase in performance of building construction industry. The major findings of the study revealed that all the independent variables (OHS Training, Emergency response planning, Occupational health hazard control mechanisms, and Workplace inspections had a positive and significant effect on the performance of building construction industry in Nakuru County, Kenya.

IV. DISCUSSIONS

The sought to determine the effect of occupational health and safety practices on performance of building construction industry in Kenya. The study specific objectives were to establish the effect of OHS training on, the role of emergency response planning, occupational health hazard control mechanisms, and workplace inspections on building construction industry performance in Nakuru County, Kenya. The study findings showed that OHS training; emergency response planning; occupational health hazard control mechanisms; and workplace inspections affected the performance of building construction industry in Nakuru County, Kenya. The first objective of the study was to establish the effect of OHS training on building construction industry performance in Nakuru County, Kenya. It was established that training was a major determinant on the effectiveness of the implementation of occupational health and safety practices which in return affected building construction industry performance in Nakuru County, Kenya. The study findings showed that OHS training was adequate in most construction firms. To the contrary, most respondents agreed that; the management supported training practices; new employees were taken through induction training; training provided knowledge and skills to work safely. The information obtained from training on safety and health hazards and its control assisted workers to understand their roles in OHS program. Majority of the respondents were found to moderately agree that the company organized refreshers courses on OHS. The study noted that exposure of employees to induction training; creation of safety awareness practices; recruitment of competent staff on OHS and conducting refresher courses on OHS plays a major role performance of building construction industry Nakuru in County, Kenya. The study aimed to examine the role of emergency response planning on the performance of building construction industry in Nakuru County, Kenya.

The study out that emergency response planning played a major role in improving the performance of building construction industry in Nakuru County, Kenya. The study found out that many construction firms can detect potential emergencies. The study also noted that in many construction firms' employee responsibilities during emergencies were not clearly stated and the resources required during emergencies were not provided. These negatively affected the company emergency response planning activities leading to a decline in performance of building construction organizations during disaster recovery period. The study aimed to establish the effect of occupational health hazard control mechanisms on the performance of building construction industry in Nakuru County, Kenya. The study findings indicated that occupational health hazard control mechanisms greatly affected the performance of building construction industry in Nakuru County, Kenya. The study findings showed that many construction firms have hazard control plans in place which are rarely updated regularly. The findings also show that employee in many construction firms did not understand the right controls to protect workers during non- routine tasks and the organizations lacked adequate hazard control mechanisms. The findings also implied that the organizations failed to provide enough resources for hazard control and the hazard control mechanisms effectiveness was not checked frequently.

The capacity of an organization to provide OHS hazard control mechanisms influenced the performance of building construction industry in Nakuru County, Kenya. The study sought to determine the effect of workplace inspections on building construction industry performance in Nakuru County, Kenya. Findings showed that building construction industry is moderately affected by workplace inspection activities. The study identified that many construction organizations have health and safety committee in place; the workplace is inspected regularly; workers are involved in workplace inspection; inspection results are used to enhance health and safety at workplace; the management considered workplace inspection as a major event and workplace inspection has helped in the identification and elimination of hazards at workplace. The study aimed to determine the extent to which the effects of OHS practices have contributed to

the key aspects of performance of building construction industry in Nakuru County, Kenya. The study findings indicated that OHS practices in the constructions firms have contributed to reduced Lost Time Injury Frequency Rate (LTIFR); reduced frequency and severity of accidents at workplaces and reduced cost of workers compensable injuries. These findings agree with findings by Arewa and Farrell (2012) who established that compliance to health and safety regulations gives returns in terms of cheaper insurance premiums, reduced incidents, lower medical bills, low cost of litigations and reduced absenteeism of employees from time. Organizations especially SME's are more susceptible to adverse economic performance due to non-compliance with health and safety regulations.

V. CONCLUSIONS

Based on the study findings, the study drew conclusions that training; emergency response planning; occupational health hazard control mechanisms; and workplace inspections affect the performance of building construction industry in Nakuru County, Kenya. The study also concluded that training is the major factor that affects the most performance of building construction industry followed by occupational health hazard control mechanisms, then workplace inspections and lastly emergency response planning. These findings concur with findings by Michael (2011) that training; emergency response planning; occupational health hazard control mechanisms; and workplace inspections are the major factors that affect the performance of building construction organizations.

VI. RECOMMENDATION AND SUGGESTIONS

The study recommended that Construction companies and other stakeholders need to come up with a policy framework which not only recommends and certifies persons considered competent to occupy supervisory positions but also certify persons who can work in construction firms. This can be done by making it mandatory for all workers in construction firms to undergo a basic OHS training and be issued with certificates which should allow them to work in construction sites. To improve on OHS training, the management of construction firms should provide adequate training on OHS to new and existing employee and create a culture OHS training in the organization. All new employees should be taken through OHS induction training and OHS training should be designed to provide employees with the required knowledge and skills to work safely. The training should be evaluated to ensure that employees are equipped with requisite knowledge in OHS and only certified trainers are used to offer training. Construction firms should also regularly organize refreshers courses on OHS. The management of the construction firms should employ effective emergency detection measures which can detect potential disasters before they occur. Each organization should develop its emergency response policy and every person in the organization made aware of the contents of the policy. Construction firms should provide necessary and adequate resources required to handle emergency situations.

Lack of emergency response plan hampers recovery during disasters. The management of construction firms should design effective hazard control plans which should be flexible and regularly updated. The management should also train employee on hazard controls in order to make employees understand the right controls to protect workers during non-routine tasks and the construction firms should provide adequate hazard control mechanisms. Enough resources for hazard control should be provided and the hazard control mechanisms effectiveness should be checked frequently. To improve on workplace inspections and performance of building construction industry in Nakuru County, the management of construction firms should constitute health and safety committees with competent and qualified staff who are well trained; the workplace should be inspected regularly; workers should be involved in workplace inspection. When workers own workplace inspection process, they will be able to provide feedback aimed at improving the safety of the work environment.

The main objective of the study was to determine the effect of occupational health and safety practices on building construction industry performance in Nakuru County, Kenya. Further studies should, therefore, be undertaken to establish effects of other variables that account for 40.3% not accounted by the research on building construction industry performance in Nakuru County. A similar study should also be undertaken in other categories of construction firms to find out how same occupational health and safety practices affect the performance of building construction industry. It is also suggested that future researchers to focus their attention on carrying out same research in other industries.

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