

The Effect of Occupational Health and Safety Inspection on Employee Performance In Sugar Companies In Kakamega County, Kenya.

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Abstract : The twentieth century witnessed remarkable reductions in the number and rate of occupational fatalities and injuries. However, many preventable injuries and deaths still occur. There are barriers to progress in occupational injury prevention and strategies for overcoming them. In mining, the frequency of death has dramatically declined over the century. The latest figures indicate that less than 6000 employee deaths from injury occurred in 2000 (Stout, 2012). Catastrophic events have prompted increased attention, resources, and action on workplace hazards and risks, resulting in sweeping changes, including new protective laws. Science based approaches to prevention have contributed to progress. An Occupational Health and Safety study of factories found out that employees are exposed to a series of hazards at their workplaces. The purpose of this study was to assess the effect of occupational health and safety inspections on employee performance in sugar companies in Kakamega County, Kenya. The study was anchored on the Domino theory. A causal design was used to examine effect of occupational health and safety inspection on employee performance. The research found out that occupational health and safety inspection and employee performance show that if inspection is raised by a unit level, employee performance would be improved by 0.117 units but ranging between 0.074 and 0.16 at 95 percent confidence level. The simple model was observed to be valid with an F value of 29.309 (DF 1, 157) and R square of 0.157 at P=0.000. This means that occupational health and safety inspection explains 15.7 percent of the variation in employee performance. The recommendation for study therefore include managers of the sugar companies should ensure occupational health and safety inspection is regularly done so as to reduce incident of accidents and injuries and improve employee performance.

Keywords: inspection, occupational health and safety, employee performance,

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I. Introduction

1.1 BACKGROUND TO THE STUDY

The Bureau of Labour Statistics (2013)[1] indicate that in the United Kingdom 2 million people are reported to be suffering from illnesses believed to be caused or made worse by their current or past work. Overall UK performance is better than many other European countries such as Germany, France, Italy, Spain and Poland in the key areas of injuries, fatalities and self-reported work related ill-health (British Safety Council, 2014). This is a worrying trend and has a great effect on the employee performance. Evaluation and implementation of prevention efforts are most successfully achieved in partnership between researchers and the industry at risk, which requires outreach efforts on the part of the occupational research community (Sinha, 2014)[2].

The specific hazards facing Sugar Company employees vary from one Company to another. The main areas of concern include injuries from machinery and equipment, unsafe handling of and exposure to chemicals for crop protection, and injuries from the crops themselves like sugarcane, especially during harvesting and transportation. Other common hazards include long daily and weekly hours of physically strenuous work, the repeated shouldering of heavy loads, falls, insect and snake bites, and adverse weather conditions. If these areas are inspected and the risks ascertained then the performance of the employees would by all means improve.

A good practice of Occupational Health and Safety inspection in an organization should reduce injuries to the employees and demonstrate better task performance and citizenship behaviour which at the end of the day increases performance.

1.2 Statement of the Research Problem

Several studies have been undertaken by different scholars about occupational health and safety inspection. Deepali (2014)[3] studied Health and Safety Measures With Reference To Selected Co-Operative Sugar Factories. The study was undertaken in a number of selected of co-operative sugar factories in Sangli and Kolhapur district in Ghana. The research found out the effectiveness of health, safety measures provided at selected co-operative sugar factories. It was realized that implemented health provisions in the sugar factories help in increasing the work productivity according to majority of employees. It gave job satisfaction to majority of employees. It was found out that majority of employees got motivated due to implemented health provisions. This study focused on some co-operative societies outside of Kenya. It dwelt on comparing the Human Resource practices with the Health and Safety measures. In this study emphasis is put on the need for the unionists to help in the defense for the employees when the occupational health and safety practices and needs are violated by the employer. The study did not bring out the fact that the occupational health and safety inspections should be mandatory to be undertaken by the employers and realize fruits to the firms. The objective of the study was to establish the effect of Occupational Health and Safety inspection on employee performance in Sugar Companies in Kakamega County, Kenya.

1.3 Significance of the paper

This study will benefit the Sugar industry players. Human resource managers and related officials in the organizations will be able to make future decisions based on and guided by these research findings. Scholars and researchers will be encouraged to conduct further research on occupational health and safety awareness and employee performance using different variable and even research designs.

1.4 Objective of the Research Paper

The objective of the study was to establish the effect of Occupational Health and Safety inspection on employee performance in Sugar Companies in Kakamega County, Kenya.

1.5 The Research Hypothesis

A null hypothesis was developed from the objective of the study.

H₀: Occupational health and safety inspection has no significant effect on employee performance.

1.6 The Conceptual framework

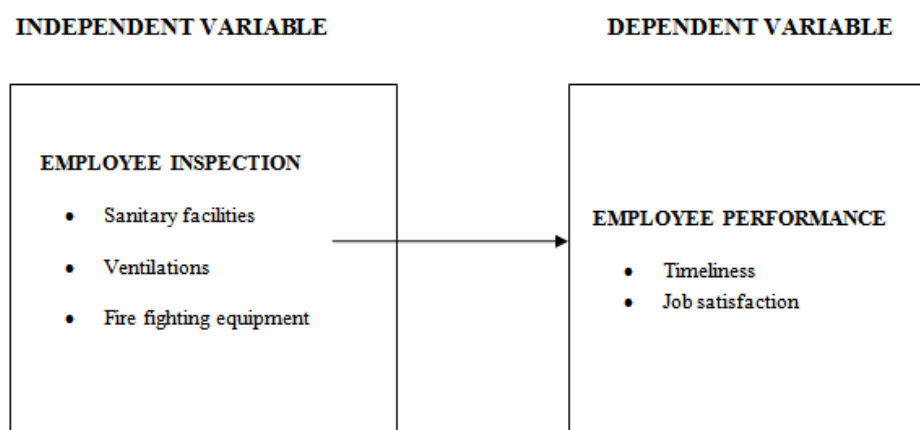


Figure.1: The Conceptual Framework.
Source: Own Conceptualization, (2017)

II. Literature Review

Inspection is one of the most common and effective tools for identifying and correcting problems before they cause accidents. Inspection should also be used to draw attention to and encourage good health and safety practices. There are two types of inspections: informal inspections and formal, planned inspections. Informal inspections boil down to conscious awareness of health and safety hazards and controls as people do their jobs. Informal inspections are an important part of an effective system of hazard identification and control that should be done by employees, supervisors, and managers. Since employees are often the first to see things happen, they should be required and encouraged to report hazards. Hollnagel (2015) [4]describes a formal inspection as a planned walk through or examination of a workplace, selected work area or particular hazards, machinery, tools, equipment and work practices. In any workplace, day to day activities create health and safety hazards. People, equipment, materials, and the environment constantly change. Some environmental changes

remove hazards, others create new ones. Inspections help focus attention on change and help solve problems before they cause accidents. Formal inspections must include an inspection of work processes and procedures to ensure the adequacy of safe work procedures.

A system of internal reporting of all accidents and ill-health cases plus incidents of non-compliance with the health and safety practices should be setup so that the experience gained may be used to improve the practices. The organization should encourage an open and positive approach to reporting and follow-up and should also put in place a system of ensuring that reporting requirements are met.

McCunney (2014) [5] insists that an organization should establish procedures for investigating accidents and incidents to identify their causes, including possible deficiencies in the health and safety practices. Those responsible for investigating accidents, and incidents should be identified and the investigation should include plans for corrective action, which incorporate measures for: restoring compliance as quickly as possible; preventing recurrence; evaluating and mitigating any adverse safety and health effects; reviewing the risk assessments to which the accident relates; assessing the effects of the proposed remedial measures. The organization should implement and record any changes in documented procedures resulting from corrective and preventive action.

As defined by Saunders (2002)[6] A health and safety inspection should examine the whole organization in order to test whether it is meeting its safety aims and objectives. It will examine hierarchies, safety planning processes, decision- making, delegation, policy-making and implementation as well as all areas of safety practices planning. Health and safety inspections can be conducted by safety advisers and or personnel specialists but the managers, employees and trade union representatives can be involved. The conducting of an inspection is well facilitated if check lists are prepared and a simple form used to record results. Managers can also be held responsible for conducting inspections within their departments and even better, individual members of these departments can be trained to carry out inspections in particular areas.

III. Research Methodology

3.1 INTRODUCTION

This chapter describes the methodology that was used in the research. These are research design, population of study, sampling techniques, data collection procedure, data collection instruments and validity of research instruments.

3.2 STUDY DESIGN

The causal research design was used to undertake the study. This type of research design is used to measure what effect a specific change will have on existing norms and assumptions. It is also good for investigating and attempting to establish the existence of certain relationships among dependent and independent variables. Causal effect occurs when variation in one phenomenon, an independent variable, leads to or results, on average, in variation in another phenomenon, the dependent variable. (Kothari, 2014)[7].

3.3 POPULATION OF THE STUDY

A population refers to all items or people under consideration in any field of inquiry (Sekaran, 2013)[8]. In other words, Population of a study can be considered as an entire group of people; events or things of interest that a researcher wishes to study. The Target population of this study was 499 employees from the following firms; Mumias Sugar Company, West Kenya Sugar Company and Butali Sugar Company (FKE, 2015)[9]. The distribution of the population was as shown in Table 3.1.

Table 3.1: Target population.

| SUGAR COMPANY | COMPANY EMPLOYEES |
|----------------------|--------------------------|
| MUMIAS | 316 |
| WEST KENYA | 117 |
| BUTALI | 66 |
| TOTAL | 499 |

Source: Federation of Kenya Employers, (2015)

The formula $n=N/1+e^2N$; (Yamane, 1967)[10] where n is the sample size, N is the total population and e is the error, was used to sample 222 employees from the three Sugar Companies.

3.5 DATA COLLECTION PROCEDURE

Questionnaires were administered to the sampled low cadre employees from all departments. The employees were given the questionnaires to fill using the information they had without indicating their identity. Interview schedule were organized with the employees of managerial and supervisory status as well as the union officials in order to source for more information on the Occupational Health and Safety practices policy in

Mumias Sugar Company. Secondary data was perused and analyzed to get the information on the policy of Occupational Health and Safety practices in the company.

3.6 DATA COLLECTION INSTRUMENTS

Questionnaires development was guided by the objective of the study. The questionnaires were administered to the three sugar company employees. The tool sought for personal information of the respondents and that concerning occupational health and safety. The respondents' responses were limited to ticking the correct answers. The main reason, as to why the researcher used questionnaires was because, they are easy to administer and are economical in terms of money and time. They are also simple to compute and analyze (Yauch, 2011)[11].

3.7 VALIDITY

The validity of a study is the degree to which two or more items measure the same concept the accuracy and meaningfulness of results generated by the research instruments in relation to the same phenomena (Mugenda and Mugenda, 2012)[12]. The validity of research instruments was obtained through piloting on respondents who are not participating in this study. The findings from the pilot study enabled the researcher to acknowledge errors and validate the research instruments. To ensure validity of the study, the researcher conducted a pilot study of 22 respondents at Nzoia Sugar Company. The researcher also sought suggestions on improvement of the research instrument from colleagues and supervisors.

IV. Data Analysis

The objective of the study was to examine the effect of Occupational Health and Safety Inspection on employee performance in the Sugar Companies in Kakamega County. This factor was measured by eight Occupational health and safety inspection is one of the most common and effective tools for identifying and correcting problems before they cause accidents. A carefully carried out inspection whether formal, informal or planned by inspectors internally or extended would identify risks before they lead to actual accidents. Inspections should be continuous and well guided by policy so that weaknesses are addressed in real time. Organizational inspections in this study focused on finding out whether certain equipment and materials are available to contain risks from occurring, protective clothing, and availability of sufficient ventilation, water and lighting, all these items need to be present to mitigate risk or even reduce severity of injuries or loses at the work place. More frequent inspection is necessary for increased safety of the employees. Table 4.4 shows statistics for the factor based on the eight items used to collect data in this study.

Table 4.4: Descriptive Statistics for Occupational Health and Safety Inspection

| NO | How often are the following facilities inspected by your occupational health and safety officers? | Daily | Weekly | Monthly | Yearly | Not at all | Mean Rank | STD Dev |
|----|---|--------------|-------------|-------------|-------------|-------------|-----------|---------|
| 1 | Availability of ventilation. n=179 | 28 15.6% | 28 15.6% | 36 20.1% | 48 26.8% | 39 21.8% | 2.77 | 1.37 |
| 2 | Proper Lighting. n= 180 | 58 32.2% | 23 12.8% | 49 27.2% | 35 19.4% | 14 7.8% | 3.59 | 2.57 |
| 3 | Availability of Water safety policy. n=177 | 91 51.4% | 30 16.9% | 27 15.3% | 17 9.6% | 12 6.8% | 3.97 | 1.29 |
| 4 | Cleanliness oftoilets. n= 179 | 107 59.8% | 23 12.8% | 18 10.1% | 16 8.9% | 15 8.4% | 4.07 | 1.34 |
| 5 | Comfortable Chairs and Tables. n= 175 | 24 13.7% | 14 8% | 35 20% | 52 29.7% | 50 28.6% | 2.49 | 1.34 |
| 6 | Protective Equipment. n = 179 | 49 27.4% | 14 7.8% | 19 10.6% | 78 43.6% | 19 10.6% | 2.98 | 1.43 |
| 7 | First Aid Kit. n= 178 | 35 19.7% | 22 12.4% | 63 35.4% | 31 17.4% | 27 15.2% | 3.04 | 1.03 |
| 8 | Fire extinguishers. n = 180 | 39 21.7% | 34 18.9% | 67 37.2% | 33 18.3% | 7 3.9% | 3.36 | 1.12 |

Source: Field Data, (2017)

Inspection of available ventilation returned a mean rank of 2.77 and a standard deviation of 1.37. Clearly there is insufficient inspection of this facility at the workplace for nearly half (about 48%) of the employees whose indicated inspection was either none existent or done only annually. Employees who indicated that safety officers inspected ventilations daily were 15.6%, weekly by another 15.6% of employees

representing 28 employees each, monthly by 20%, yearly 26.8% of employees, and 'not at all' were 21.8% of the sampled employees. This could be because the inspections of the ventilation are done through observation quietly and therefore the respondents might not be realizing that it takes place regularly.

The results show that the respondents who indicated that lighting is inspected at the workplace daily were 32%, those saying it was being done weekly were 12.8%. A population of 27% said it was done monthly, while 19.4% said it was being done yearly and those who stated that no inspection of this kind took place were 7.8% out of the 180 sampled employees. The mean rank of the frequency of inspection is 3.59 which again falls between monthly and annual inspections.

Water safety inspection at the place of work is important because it reduces incidence of water borne diseases like, cholera, typhoid among others. Employees need to drink and use clean treated water which should also be used in industrial processes. Participants in this study stated that inspection happened daily at 51.4%, weekly were 16.9%, monthly were 15.3%, while yearly were 9.6% and not at all were 6.8%. A high average frequency for inspecting water was 3.97. This implied that inspection was mostly monthly or yearly. This may have implication on employee health since incidence of consuming contaminated water rises with less frequent inspection. Water inspection received significant positive response perhaps because it is changed daily. This might have seemed like an inspection to some respondents.

Clean toilets are also part of a healthy environment. Employees' health is greatly supported when they use clean washrooms with clean water. If the washrooms are not kept clean, then contamination becomes easy with a possible diseases outbreak like diarrhea, typhoid and cholera. Occupational health and safety demand that employer provides decent, clean toilets to ensure that the staff is healthy and hence motivated to work harder. Statistics from Table 4.2 indicate the frequency of inspecting toilets to ensure they are clean was daily as reported by 59.8% totaling to 107 employees, weekly were 12.8% while monthly were 10.1%. Those who indicated yearly were 8.9% and 'not at all' were 8.4% of the 179 respondents. Average inspection frequency for toilets was therefore weekly at 4.07 and there was some variation in standard deviation of 1.34. This is an area of frequent use and a clean toilet could easily indicate that there has been an inspection. This may be the cause of most respondents having indicated that the toilets were inspected daily.

Comfortable chairs and tables enhance performance of employees when they use them at work. If employees are not comfortable at work then health problems may arise leading to increased absenteeism to seek medical attention and physiotherapy. As policy of Occupational Health and Safety companies should consider a safe and comfortable working environment to include appropriate furniture and equipment. Data collected show that safety officers inspected furniture in the offices daily at a percentage of 13.7 or 24 participating employees, weekly were 8% while monthly were 20% and yearly were 29.7%. Those who indicated that there was no inspection of furniture at all were 26.6% or 50 employees. The mean inspection frequency was 2.49 which was quite low. This refers to inspection happening mostly annually. Thus employees are more likely to be using uncomfortable furniture at the workplace with wide spacing between inspection periods.

Protective equipment according to Table 4.4 were inspected daily as indicated by 27.4%, weekly were 7.8%. Those who said it was done monthly were 10.6% while yearly were 43.6% and not at all were 10.6%. Once again inspection frequency averages were monthly or beyond with a Mean of 2.98. This could pose a challenge to employees when equipment breakdown more frequently. It is expected that a more frequent inspection for equipment used like protective clothing and materials would reduce the hazards that may cause accidents and unnecessary injuries. An effective Occupational Health and Safety inspection program would conduct inspection of production equipment daily or weekly along with protective clothing.

Respondents indicated that first aid kits were inspected daily at 19.7%, weekly was at 12.4%, while monthly was at 35.4%. Those who said yearly were 17.4% and the ones saying that it did not happen at all were 12.2%. A mean frequency of inspection for first aid kit was at 3.04 which meant monthly, which would be considered lower than expected. A weekly or daily inspection for the kit would be more acceptable.

Finally, inspection of fire extinguishers by safety officers is expected to ensure that they are in good functional form and ready for use in case of emergency fire. Fire is hazard that can cause a lot of damage and destruction. In addition, information and training of how to use this equipment should be provided by supervisors and managers. Inspection frequency for fire equipment was daily indicated by 21.7% of the employees, it occurred weekly as reported by 18.9% of employees, monthly were 37.2% while yearly were 18.3% and those stating that inspection did not take place at all were 3.9% of the 180 sampled employees. Safety of employees from fire outbreaks should be guaranteed in an industrial setting because fires would be more common from electrical faults, inflammable agents, malfunctioning machines etc. This item had an average frequency of inspection value of 3.36 at monthly which again is not often enough to guarantee safety of employees. The standard deviation of inspection frequency is 1.12 which meant that variability of response on this score was modest. When the managers regularly keep inspecting the workplace safety will ensure that the employees are able to perform to their best. Organizations have to reinforce inspections if they want to increase the performance of their employees. The study set out the following null hypothesis from the second objective.

Hypothesis H0:

Occupational Health and Safety inspection has no significant effect on employee performance.

To test this hypothesis, employee performance was also regressed on Occupational safety and health inspection to find out how well performance is explained by inspection. The results were presented in Table 4.5

Table 4.5: Occupational Health and Safety Inspection Model Summary

| Model | R | Adjusted Square | RStd. of Estimate | Change Statistics | | | | | Durbin-Watson | |
|-------|-------------------|-----------------|-------------------|-------------------|--------|--------|---------|-----|---------------|-------|
| | | | | Square | Square | theR | SquareF | df1 | | df2 |
| 1 | .397 ^a | .157 | .152 | 2.211 | .157 | 29.309 | 1 | 157 | .000 | 1.684 |

a. Predictors: (Constant), Health inspection item sum

b. Dependent Variable: Employee Performance

Source: Field Data, (2017)

Similarly a regression model for health inspection and employee performance show that if inspection is raised by a unit level, employee performance would be improved by 0.117 units but ranging between 0.074 and 0.16 at 95 percent confidence level. The coefficient is positive and significantly different from zero. The Durbin Watson value generated from the results was 1.684, a value which ranges between 1.5 and 2.5, implying there exist positive serial correlation amongst the variables i.e. relationship of values separated from each other by a given time lag in the residuals is positive. The estimated regression expression is

$$Y = 7.45 + 0.117INS \tag{2}$$

From the model summary in Table 4.5, simple model is observed to be valid with an F value of 29.309 (df 1, 157) and r² of 0.157 at P=0.000. This means health inspection alone explains 15.7 percent of the variation in employee performance.

Similarly a regression model for health inspection and employee performance shown in Table 4.6 shows that if inspection is raised by a unit level, employee performance would be improved by 0.117 units but ranging between 0.074 and 0.16 at 95 percent confidence level. The coefficient is positive and significantly different from zero. The estimated regression expression is

$$Y = 7.45 + 0.117X_2 \tag{2}$$

Y = Employee performance

X₂ = Occupational Health and Safety inspection

Table 4.6: Occupational Health and Safety Inspection Coefficients

| Model | Unstandardized Coefficients | | Standardized Beta | t | Sig. | 95.0% Confidence Interval for B | | Correlations | | | Collinearity Statistics | |
|---------------------|-----------------------------|------------|-------------------|--------|------|---------------------------------|-------------|--------------|---------|------|-------------------------|-------|
| | B | Std. Error | | | | Lower Bound | Upper Bound | Zero-order | Partial | Part | Tolerance | VIF |
| (Constant) | 7.459 | .596 | | 12.522 | .000 | 6.282 | 8.635 | | | | | |
| 1 Health inspection | .117 | .022 | .397 | 5.414 | .000 | .074 | .160 | .397 | .397 | .397 | 1.000 | 1.000 |

a. Dependent Variable: Employee Performance

a. Dependent Variable: Employee Performance, * indicates statistically significant at 5% level of significance
Source: Field Data, (2017)

V. Conclusion

The objective of this study was to assess the effect of occupational health and safety inspection on employee performance in sugar companies in Kakamega County, Kenya.

5.3 CONCLUSIONS

The findings revealed that frequent Occupational Health and safety inspections were found to be quite significant. The inspection of the workplace facilities indicated that they can improve employee performance. Irrespective of the organization culture that may exist in any of the Sugar Companies of Kakamega County, inspection was seen to steer employee performance in the Sugar Companies. All aspects of inspection need to be

explored and implemented by supervisors and managers of the Sugar Companies. Routine inspections at the Sugar Companies seem to be working. Therefore regular inspection of facilities, materials and compliance efforts has the greatest possibility of promoting health and safety of employee performance.

5.1 RECOMMENDATIONS

The following recommendations were made basing on the findings and the conclusions in this research paper. Managers and Occupational Health and Safety officers of Sugar Companies in Kakamega County should move beyond establishing policies, practices and procedures to intensification on inspection activities to mitigate occurrence of accidents and injuries at the work place.

5.2 SUGGESTION FOR FURTHER STUDY

The study undertook the causal study design; other researchers can use other study designs like descriptive or case study to compare their findings with these results.

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