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*Full Length Research Paper*

# Assessment of the impact of occupational health and safety programmes on employee productivity of manufacturing firms in western province, Kenya

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Occupational health and safety continues to be one of the most critical but highly criticized issues within the discipline of Human Resource Management. The purpose of the study was to investigate the impact of health and safety programmes on employee productivity of manufacturing firms in Western Kenya. The study presents the results on an empirical study conducted. The study utilized a convenient sample by using all manufacturing firms in Western Kenya. Content validity and reliability of the research instruments were done through test retest method using one of the manufacturing firms which was not included in the final analysis. Reliability coefficient yielded a Cronbach's alpha of 0.88. The data from all the manufacturing firms was collected and analyzed using descriptive statistics and inferential statistical tools like Pearson correlation, simple regression and one way ANOVA. The study findings revealed a positive but less significant relationship between occupational health and safety programmes and employee productivity of manufacturing firms. This indicated that OHSP were not efficient in the organizations studied, thus, affecting employee productivity of firms in terms of attitude, commitment, compliance, meeting goals, safety guard tampering, stress level, burnout, aggressiveness, absenteeism and sickness. Management of firms must put in place policies and structures for improving occupational health and safety. Organizations should put in place active health and safety committees which should be given mandate to implement their recommendations. Everyone in the organization should follow the laid down policies, rules and safety precautions to reduce accidents. The study results provide vital information to managers, researchers and academicians on the significance of occupational health and safety in business organizations.

**Keywords:** Occupational Health and Safety Programmes, Hazards and Employee Productivity.

## INTRODUCTION

The human resource managers these days are faced with crucial issues of occupational health and safety than before. The reason is that the workers just like any other resources require maintenance and care in order to

maximize their productivity (Casio, 1996). It is against this background that health and safety should not be viewed as a separate function or responsibility, but as a broader initiative that aims at improving productivity, profitability and competitiveness of a firm (Pike, 2000).

The corporate image of an organization is a reason for keen interest on health and safety. Organizations would like to avoid issues which would spoil their public image. This is as a result of the emergence of lobby and human

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rights groups. A survey conducted for British Safety Council; a campaigning organization which encourages good health and safety practices revealed that 81% of senior managers believed that health and safety had a significant effect on their organizations' reputation (Pike, 2000). They noted that there is nothing more damaging to an organization's reputation than causing death or injury to an employee.

The latest statistics on work-related health and safety show that 2 million people are suffering from an illness they believe was caused or made worse by work, with approximately 30 million days (1.3 days per employee) lost per year due to work-related ill health or injury (Health and Safety Commission, 2006). It is clear from this figure that work-related ill health, accidents and injury present a significant cost to the UK economy and employers, as well as to individual employees and their families who experience the personal impact of work-related health and safety issues – an impact which may be felt long after the event (Marson G K., 2001).

Despite the obvious need to manage health and safety proactively, some organizations do not give it the priority it deserves. This may be due to a lack of knowledge, skills and motivation, or to limited staff resources. Cost is also an important issue, with companies feeling that they lack the capital necessary to make proper investment in health and safety, and failing to appreciate the importance of this investment (Dorman P, 2000). Likewise, few companies measure or understand the costs of health and safety failures in their organizations (Haefeli K, Haslam C and Haslam R A, 2005). This failure to understand how investment in health and safety may affect the organization in terms of measurable outcomes is partly due to the challenges inherent in establishing exactly how effective occupational safety and health (OSH) management is related to employee productivity.

In Kenya, earlier programmes about work related accidents and diseases have given rise to the establishment of Occupational Safety and Health Programmes (OSHP) in industrial settings. This has also brought about the enactment of Occupational Safety and Health Act (OSHA) which sets out specific standards on Governments' policies regarding practices in all workplaces and determines the extent of punishments meted out against offenders (Okumbe, 2001).

The Kenya Government has legislated two laws that touch on employee Occupation Health and Safety (Government of Kenya Law Report, 2008). The Occupational Health and Safety Act 2007 replaced The Factories Act. It has Provisions on; Registration of workplaces; guidelines on provision of health and safety at workplace. It sets up bodies and officers to ensure compliance to the Act. It provides for inspection of workplaces to ensure they abide by the provisions. It imposes fines to those who violate the Act.

The Work Injury Benefits Act 2007 covers compensation for all employees for injuries sustained at the workplaces. It's an improvement of the earlier Workman's Compensation Act which only covered selected group of workers; those earning sh. 400,000 per annum. However employers are resisting implementation claiming it will increase labour costs. The Ministry of Labour reports that more than half of the industrial accidents and injuries in Kenya go unreported. It estimates that reported occupational fatalities and injuries for the years 2000-2004 were 1528, 1923, 1332, 1599, and 1387. This is viewed against the background that factories and other work places have to be registered by the Department of Occupational Health and Safety, but by the end of 2004 only 11,387 such enterprises were registered excluding the 1.3 million micro and small enterprises ( Nyakang'o, 2005).

A study by Nyakang'o (2005) revealed that most of the reported accidents are those seeking compensation under the Workman's Compensation Act. In the year 2003 data indicated that mining, construction and transport accounts for 41% of accidents in Kenya, machine operators and assemblers 28% while other occupations share 31% of workplace accidents. This shows that these occupations are injury prone while matters of safety are treated casually by both the employer and employees. The figures of accidents show that they are still high pointers that work environment are still unsafe.

### **Occupational Health and Safety Programmes and Employee productivity**

Workers just like any other resources require maintenance and care in order to maximize their productivity (Mberia, 2001). Therefore occupational health and safety should have a broader initiative that aims at improving productivity, profitability and competitiveness of a firm.

Organizations need to have measures which will enable them to reduce the hazards affecting the workers. These measures put in place will eventually improve performance of these firms. One of the measures ( Kenei, 1995); include having an effective way of passing knowledge, skills, and attitudes on health and safety through education and training. Employees can be trained to think, act and work in a hazard free environment. The knowledge of a problem is a step towards getting a solution for it. An informed employee stands a better position to remain health and safe unlike an ignorant one.

Human resource managers are faced with many issues of occupational health and safety than before. The reason is that workers just like any other resources require maintenance and care in order to maximize their

productivity (Mberia, 2001). It follows therefore that health and safety should not be viewed as a separate function or responsibility, but as a broader initiative that aims at improving productivity, profitability and competitiveness of a firm.

Many industries are now faced with various problems including work related accidents due to poorly designed plants and equipments and problems inherent in the work environment. There is a problem of work related diseases which affect the performance of workers. The problems affecting workers in industries also affect employers greatly. This is because this result to economic losses due to absenteeism of the employees'. The cost of compensating workers is enormous. Burnout victims display a hostile attitude towards the organizations which reduce their productivity ( Okumbe, 2001).

A study by Kessler et al, (1997) revealed that even if an employee is not absent from work, mental health problems can cause a substantial reduction in productivity. For example, 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 (World Health Organization, 2003a). In their study Harnois et al, (2000), reported that in a large financial services company in the USA, depression resulted in an average of 44 working days for each employee with depression lost because of short-term disability compared with 42 days for heart disease, 39 days for lower back pain, and 21 days for asthma. In the United States, each worker with depression costs his or her employers approximately US\$3000. The majority of costs for employers are related to absenteeism and loss of productivity rather than treatment.

The Association of Canadian Insurance Companies estimates that 30–50% of disability allowances are paid for mental health problems and that such problems are the leading cause of long-term absence from work. The experience of many employers is that, once an employee has been absent for three months for health reasons, it is very likely that the absence will last more than one year (Harnois & Gabriel, 2000). The cost of mental disorders at a Canadian University, including the salary insurance and replacement of staff, amounted to C\$3 million for the year 2001 (Université Laval, 2002). It is estimated that stress-related absences cost between 4 and 5 billion pounds each year in the United Kingdom (Mentality, 2003).

While there has traditionally been a focus on demonstrating the effectiveness and economic value of OSH management and interventions (Tompas E, et al, 2006), as well as, more recently, OSH management systems, (Robson L S et al, 2007) far less research has focused on employee outcomes of OSH management.

The limited research available has generally focused on the theories of 'social exchange' (Blau P M, 1977) and 'perceived organizational support' Eisenberger R, et al (1986). Together, these theories suggest that employees' perception of their treatment by their employer influences their behaviour and attitudes to work. Where employees feel that they are treated favourably by their organization, they will in turn 'reciprocate' with more positive work behaviours and attitudes.

Perceived organizational support has been found to have a positive influence on safety attitudes and behaviours, Hofmann D A, et al (2003). A recent study found that management commitment to safety was related to a number of employee attitudes, including job satisfaction, organizational commitment and intention to quit. Other work has considered how safety climate perceptions are linked to employee outcomes, including organizational commitment, intention to quit and job involvement Morrow P C and Crum M R., (1998). This research suggests that where employees feel their organization 'cares' for them, including where they have positive views on the management of their health and safety, this may foster safer working practices and have a positive impact on employees' attitudes, hence productivity.

There is normally a temptation for employers to cut spending on health and safety when they want to tame costs, remarked the executive director at the Federation of Kenya Employers (FKE) while warning that this could be a costly affair for a firm in the long-run. The concerns come in the wake of recent work place disasters in Kenya that have caused hundreds of deaths over the past two years. (Mwaura, 2009).

The latest was the collapse of a building under construction in Kiambu a fortnight ago which left at least 16 people dead. In February, a fire at the Nakumatt Downtown fire caused 30 deaths, activating debate on the subject of safety and compensation of workers. In September 2007, 10 workers of Devki Steel Mills in Athi River Township were killed in an early morning explosion.

Human resource departments in most companies have for the last few months been revising their employment policies to factor in the new provisions in what is forcing adjustment of staff budgets in only one direction--up--calling for a slash in some of the items. (Mwaura, 2009).

From the above discussion therefore, the following null hypothesis was suggested:

Ho: Occupational health and safety programmes do not have a significant effect on employees' productivity.

## **METHODOLOGY**

This study was conducted through a survey design. It was conducted in Western Province of Kenya, currently, Kakamega, Vihiga, and Bungoma Counties. It was a

**Table 1.1** Employee productivity indicators

| Variable       | Mean | Std Deviation | Variance |
|----------------|------|---------------|----------|
| Commitment     | 4.37 | 0.496         | 0.246    |
| Attitude       | 4.26 | 0.452         | 0.205    |
| Rules          | 4.21 | 0.713         | 0.509    |
| Targets        | 4.26 | 0.653         | 0.427    |
| Safety guards  | 2.79 | 0.631         | 0.398    |
| Burnout        | 2.79 | 0.713         | 0.509    |
| Aggressiveness | 2.84 | 0.765         | 0.585    |
| Absenteeism    | 2.16 | 0.602         | 0.363    |
| Sick off days  | 2.16 | 0.602         | 0.363    |

**Source:** Field data 2010

census study covering all manufacturing companies in the region. Self reporting questionnaires, consisting of five sections and an observation checklist were used to collect data. A total of 70 respondents were used; managers (5), human resource managers (5), heads of departments (40) and safety officers (20). Health and safety officers were used to issue, and pick questionnaires from the subjects. The researcher personally filled the observation checklist. A pilot study was conducted in one of the firms not found in the study area using test retest method to establish their validity. An extensive review of relevant existing literature was used to develop the measures for the study variable.

A pilot study was conducted in one of the firms which were not included in the final study whose feedback was incorporated to improve the questionnaires. To establish the reliability of the study, Cronbach's Alpha Coefficient was computed and yielded an alpha of 0.88. The results of the pilot study revealed that the research instruments were reliable both in content and face validity. Data analysis was done at two levels, using descriptive statistics and inferential statistics. In descriptive statistics measures of central tendency, frequency tables and percentages were used. Inferential statistics involved the use of correlation, simple and multiple regression analyses.

## RESULTS AND DISCUSSIONS

The tests were conducted to investigate the extent of significance association between the variables in the study, while regression analyses were conducted to investigate the significance and direction of the relationships between the variables.

In the regression tests, the direction criterion was pegged on the alpha value of  $\alpha \leq 0.05$  as a significance criterion; and that the significance test qualification was nearness to 0.00. In regression analysis, the significance tests are pegged Beta weight values, where decision criterion was on beta or coefficient range 0.30 to 0.70

which suggests a moderate relationship between variables tested. The significance test criterion was nearness to +1 or -1, which is acceptable as evidenced from similar studies. (Kothari1990).

In regression analyses, the positive relationship evidenced in Beta weight implies direct relationship while negative relationship evidenced in Beta weight value implies inverse relationship. The Beta weight value shows extend of change positively or negatively and that the degree of relationship is independent of the sign of the correlation co-efficient. For instance, -0.60 or +0.60 suggests same degree of relationship between the variables. The Beta or the coefficient range 0.30 to 0.70 suggests a moderate relationship and that less than this suggests a low relationship while larger than this suggests a high relationship.

Qualitative findings were incorporated in the researcher's interpretations on the basis of the literature reviewed and experience got from the field. This is acceptable as per previous study (Wegulo, 1997).

### The Summary of Employee Productivity indicators on all organizations

The following is the summary of the mean, SD, and variance of the firms as indicated in the data analysis:-

Table 1.1 revealed that the highest mean was commitment (4.37) while the lowest mean was on absenteeism and sick off days (2.16). The standard deviation revealed the highest was aggressiveness of employees (0.765) followed by rules compliance (0.713), while the lowest was attitude of workers (0.452). The highest variance was shown in aggressiveness of workers (0.585) while the lowest was attitude of workers (0.205).

It was also observed that most workers were committed to their duties and that their attitude was good. However, some were concerned about the high production targets given by their bosses. This resulted in some of them tampering with machine speeds so as to achieve more

**Table 1.2** Regression of mean of occupational health and safety programmes, against overall mean of employee productivity.

|                                  |           |                       |                    |          |                 |
|----------------------------------|-----------|-----------------------|--------------------|----------|-----------------|
| Multiple R                       | 0, 29     |                       |                    |          |                 |
| R Square                         | 0, 08     |                       |                    |          |                 |
| Adjusted R Square                | 0, 03     |                       |                    |          |                 |
| Standard Error                   | 0, 34     |                       |                    |          |                 |
|                                  | <b>df</b> | <b>Sum of Squares</b> | <b>Mean Square</b> | <b>F</b> | <b>Signif F</b> |
| Regression                       | 1         | 0, 18                 | 0, 18              | 1, 52    | 0, 23           |
| Residuals                        | 17        | 2, 02                 | 0, 12              |          |                 |
| <b>Variables in the Equation</b> |           |                       |                    |          |                 |
| <b>Variable</b>                  | <b>B</b>  | <b>SE B</b>           | <b>Beta</b>        | <b>t</b> | <b>Sig t</b>    |
| MEANOHSP                         | 0, 28     | 0, 23                 | 0, 29              | 1, 23    | 0, 23           |
| (Constant)                       | 2, 08     | 0, 97                 |                    | 2, 14    | 0, 05           |

Source: Field data 2010

production. This creates more problems as machines tend to break down frequently injuring workers.

**The impact of occupational health and safety programmes on employee productivity**

The hypothesis in this study stated that:  
 Ho: Occupational health and safety programmes have no significant effect on employees' productivity.  
 To test this hypothesis, regression was done to compare the occupation health and safety programmes and employee productivity. Table 1.2 above presents an overall mean of OHSP against EP.

Table 1.2 indicates that, (F=1.52,  $\alpha=0.23$ ,  $\beta \leq 0.29$ ,  $p \leq 0.23$ ). The beta (0.29) was low indicating that the overall OHSP mean against the overall EP mean had a weak linear correlation between the two variables. This indicated that organizations that have OHSP practises do influence EP though not significantly. Besides OHSP, they were other factors which affect the workers productivity, for example salaries. It was also revealed that any increase in OHSP practices led to positive employee productivity, though insignificant. Correlation of the variables indicated that the relationship between the means of OHSP and EP (0.29) was weak. This indicated that industries that have OHSP may not significantly affect productivity of their employees. Therefore, the hypothesis was rejected.

**CONCLUSIONS**

The study revealed that employee productivity was positive, for example employee attitude towards work was positive (73.7%), followed by adherence to organizational rules and employee commitment both with (63.2%). However, the respondents strongly disagreed

that absenteeism was high as indicated by (84.2%), and that employees were asking for sick off days (84.2%).

The study indicated that,  $\beta \leq 0.29$ ,  $p \leq 0.23$  showed a weak correlation between OHSP and EP. This reveals that though organizations have OHSP practiced it does not significantly affect EP because; besides OHSP there were other factors which affect the workers productivity for example working conditions, politics and other factors. The analysis showed that any increase in OHSP practices did not lead to positive employee productivity. This shows that firms need to address these other factors also.

**RECOMMENDATIONS**

On the strength of the foregoing findings and conclusions, it was recommended that: Management of firms must put in place policies and structures for improving occupational health and safety. Organizations should put in place active health and safety committees which should be given mandate to implement their recommendations. Workers grievances should be listened to avoid chances of carelessness on their part which may be costly. Health and safety measures should be in place and employees should be trained on how to use the emergence facilities in case of a problem. Methodology for hazard identification and risk assessment should be proactive, provide for risk classification, consistent with capabilities of risk control, highlight training needs and monitoring of required actions.

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