

COMPLIANCE TO OCCUPATIONAL SAFETY AND HEALTH PRACTICES AMONG WORKERS IN FLOWER FARMS IN EMBU COUNTY, KENYA

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International Academic Journal of Arts and Humanities (IAJAH) | ISSN 2520-4688

Received: 27th July 2021

Published: 5th August 2021

Full Length Research

Available Online at: https://iajournals.org/articles/iajah_v1_i2_262_285.pdf

Citation: Gechemba, B. B., Warutere, P. N., Makau, I. K. (2021). Compliance to occupational safety and health practices among workers in flower farms in Embu County, Kenya. *International Academic Journal of Arts and Humanities*, 1(2), 262-285

ABSTRACT

The implementation of occupational safety and health in workplaces is of significance in improving safety working condition in horticultural sector in Kenya. The main objective of the study was to assess the level of compliance to occupational health practices among flower farm workers in Embu County, Kenya. Specific objectives were to determine risk identification and assessment practices among flower farms in Embu County, Kenya, to determine the level of compliance on surveillance of worker's health among flower farms in Embu County, Kenya and to determine the degree of occupational safety and health awareness among flower farm workers in Embu County, Kenya. A descriptive cross-sectional research design was used. The study population was 859 comprised of employees working in flower farms in Embu County. A sample size of 300 selected through stratified random sampling. Structured questionnaires, observational checklist, FGD and KII were also utilized to collect data. Data analysis was done using descriptive statistic technique and inferential analysis technique Pearson's Moment Correlation and regression. The study revealed that there is a strong, significant positive correlation between OSH Risk identification and assessment practices and compliance with Safe Work Environment ($r=0.799$, $P=0.001<0.01$). The study

established that Surveillance of workers' health had a strong, significant, positive influence on compliance with occupational Safety and health practices in Flower farms in Embu County ($r=0.711$, $P=0.021<0.05$). Further, the study established that the degree of awareness on safety and health has a strong, significant and positive correlation with Compliance of Occupational Safety and Health practices ($r=0.721$, $P=0.037<0.05$). The study concluded that there was a high level of risk identification and assessment practices thus improving the level of compliance with OSH practices in the flower farms in Embu County. The study concluded that there exists a health surveillance program indicating compliance to OSH practices in the flower farms in Embu County. From the results, there was high level of employee awareness on safety and health among the workers a predictor of level of compliance with OSH practices in the flower farms in Embu County.

Key Words: Compliance with Occupational Safety and Health practices, Risk identification and assessment, Surveillance of workers' health and occupational safety and Health awareness

INTRODUCTION

Globally, approximately 2 million occupational mortality rates happen each year (International Labour Organization, 2015). 330 million job-related injuries and 160 million job-related illnesses happen each year leading to approximately 3 days of absence from work (Christian, S., Bradley, Wallace & Burke). In 2015, the ILO report stated that more than

\$1.25 trillion is lost each year as an outcome of workplace injuries and illnesses. Barling and Hutchinson (2017) state that agriculture; forestry, mining and construction are examples of industries sectors with the utmost risk of accidents. Despite this alarming statistics, only 10-15% of the world's 3.2 billion workers have proper access to the full scope of occupational health services (Rantenen, 2015; Catherine & Dolan, 2014). In USA, the National Safety Council (2014) indicates that industrial accidents cost the country an astounding amount of US \$157 billion and an approximation figure of 3.4 million in injuries. China losses 200 billion Yuan estimated to be approximately 2% of its entire Gross Domestic Product to industrial accident (Wang and Huang, 2016). Although most countries have established regulations and enforcement activities, the working circumstances of the bulk of the world's employees, do not reach the threshold level fixed by the International Labor Organization (ILO, 2016). Compliance with occupation safety and health practices remain a concern in organizations globally. According to Barling and Hutchinson (2017), the continued development of occupational health services still has an enormous need globally.

Africa reports around 59,000 work-related fatal cases and over 4 million non-fatal cases annually (ILO, 2016). However, OSH has not been positioned top on Africa's developmental agenda. Instead, the focus has been entirely on growth, productivity and profitability of the struggling economies (Gyekye, 2015). Taiwo (2014), states that majority of the countries' regulatory and enforcement institutions have not been sufficiently equipped to deal with OSH issues, owing to lack of resources and historical administrative challenges. Africa provides 80% of the total world's labor power. However, between 5% to 10% of the population only, has access to professional ergonomics and operational safety management programs (Bruno, 2015). In the Sub-Saharan Africa, OSH is characterized with lack of human resource assets, teaching, and education in the area impacting negatively on workers access to such services (Kironbo, 2015). Most of the companies do not carry out health and safety monitoring, doctors fail to conduct systematic tests of occupational diseases and collect comprehensive occupational histories (GyeKye, 2015). In a research done in Zimbabwe, it revealed that 73% of the companies' inspections are infrequent or absent whereas in 57% of the companies' hazard reporting and recording was unsatisfactory missing the dates and other essential information (Dingani, Muzimkhulu, Spoponki & Chimba, 2015).

In Kenya, the degree of implementation of occupational safety and health in workplaces is utterly insufficient when compared to other advanced countries (Kironbo, 2015). Most of the workplaces are prone to occupational injuries and diseases (Wanjau, 2016). Most of the flower farm employees are prone to injuries, and issues of health and safety are not taken seriously by the owners and workers (Wanjau, 2016). In Embu County, agricultural sector is the backbone of the economy and majority of the population (70%) earns their livelihoods from crop production (MoALF, 2016). Horticulture is the major enterprise in the region, where major cash crops include vegetables, fruits, nuts and floriculture for both local and export markets (Embu County Fiscal Strategic Paper, 2017) In flower production, Embu County is ranked among the top 10 counties in Kenya (Kenya Flower Council, 2017). A report on Annual Development Plan 2016/17 outlines that the County earned about 5.5 billion

Kenyan shillings in income generated by horticultural crops. By the nature of the farm's operations, the need for occupational health services is paramount. However, Kenya flower industry still faces major sustainability challenges, particularly in areas of OSH (Wanjau, 2016). This study aims to assess compliance to OSH practices in accordance to the ILO's Occupational Health Services Convention, among workers in flower farms in Embu County.

Statement of the Problem

Kenyan flower industry contributes approximately 10.06% of the country's GDP (KFC, 2017). Additionally, the industry impacts about 500,000 livelihoods directly and over 2million livelihoods indirectly. According to the Horticultural Crop Directorate (2019), the industry has continuously recorded an industry growth in volume and value of flowers exported every year from 120,220 tons in 2010, 136, 601 tons in 2014 and 173,725 in 2019 (Horticultural Crops Development, 2014). Further, Kenya is the lead exporter of cut flowers to the European Union (EU) with a market share of 38%.Despite its economic contribution, the industry experiences many OSH challenges ranging from adverse environments, exposure to chemical hazards, inappropriate use of PPE, disparity amongst job requirements and worker's skills, and inappropriate management programs (Bruno, 2015). In 2016, the farm experienced an increase by 7.2% on health cost and litigation cases of diseases reported by workers after services from the farms in the region (HCD, 2016). These challenges expose the workers to occupational accidents and ill health which adversely affects growth and sustainability of the industry. Globally, studies have been carried out on compliance to OSH practices in various industries other than the flower farms (Rantanen, 2015).In Kenya, many studies conducted in flower industry focused on how OSH affects employees' job performance, job satisfaction and employee turnover, effects of use of pesticides on health (Orwa, 2014; Gitonga, 2015; Mwangi & Waingajo,2017; Githua, 2014). However, there is limited research on compliance to OSH practices in flower farms particularly in Embu County. This study sought to address knowledge gap on compliance status of flower farms in Embu County

Research Objectives

- i. To establish risk identification and assessment practices among flower farms in Embu County, Kenya.
- ii. To assess the level of compliance on surveillance of worker's health among flower farms in Embu County, Kenya.
- iii. To determine the degree of occupational safety and health awareness among flower farm workers in Embu County, Kenya.

LITERATURE REVIEW

Compliance to Occupational Safety and Health Practices

Occupational safety and health involves implementing programs within a workstation with a target of promoting, protecting the welfare and wellbeing of personnel (Westerholm and Walter, 2017). Gyeke (2015) states that, the intention of work place safety and health services are to defend the well-being of staffs, and to encourage the formation of healthy and non-toxic work surroundings. Over the past years, the International Labour Organizations have allotted guideline and provisions to developing of OSH services. In 1950, WHO and ILO came up with and described OSH services and their essential contents. This definition served as the International development standard for OSH services for 25 years up until the ILO 1985 approved OSH services convention (no. 161) and the adjoining Recommendation (no.171). These guidelines assisted a significant role in developing OSH services in the developing countries and other Eastern European countries.

To achieve its aim of protecting and endorsing the well-being and safety of the employees, occupational safety and health has to adhere to specific wants of the workers and the organization (Elgstrand, 2015). With a wide scope of the different sectors; manufacturing, construction, agricultural and other sectors, it's impossible to have one laid programme on operation of the occupational services which is appropriate for all the enterprises in every circumstance. Occupational Safety and Health Convention No. 155 and Occupational Health Services Convention No. 161, outlines that primary safety of worker lies on employer.

To ensure implementation of a decent occupational health practice, the employer must act in cooperation with the workers and their representatives especially on matters regarding the overall guidelines, content and the handling of OSH services (Elgstrand, 2015). In a study done by Musyoka (2014), in manufacturing firms in Mombasa County to establish the relationship between safety and health and performance. He established that most firms that had an effective safety and management system in place also showed a positive effect on work performance. Riyase (2015) states that, a poor OSH management system can lead to a competitive disadvantage that would impair the firm status in the market. This is often used as a factor to motivate companies to invest in a good OSH management system. Gyeke (2015) states making a link between safety and performance helps to demonstrate that investing in OSH should no longer be viewed as an incurred cost, it should be greatly considered as an integral parameter of the business and its investment becomes profitable (Ria, Anis & Oci, 2014). A healthy workforce that is motivated increases productivity and generates wealth necessary for the wellbeing of the entire community at large (Robson, Clarke, Cullen, Severin & Irvin, 2015). The physical, mental and social conditions of the work environment and proficiency of well-being and safety measures are key indicators of the quality of working life

Risk Identification and Management Practices

There are several occupational safety and health risk factors in the flower industry that act singly or in combination to influence the safety and health of the workers. A research by Gitonga, (2015) identifies some of the common hazard encountered in the sector. They include; exposure to pesticides, exposure to extreme temperature, greenhouse effect, and ergonomic hazards. If no measure is taken to address these risks, they can be detrimental to the employees' health(Githua, 2015). Identification of hazards, assessment and mitigation of dangers in the workplace is a vital part of any safety and health program (Christian et al., 2017). Clarke (2014) states that it nearly impossible to eradicate all the dangers within the workplace, the aim of risk identification and management is to control or eliminate hazards with a high potential to cause harm. It also aims to reduce the rest of the hazard to the lowest reasonable level so as all workers are protected from harm. Management of risks starts by examining the workplace and the work to be completed for the purpose of identifying hazards inherent in the job (Barling & Hutchinson, 2017). Some of the things that can help in identifying hazards in the workplace include: workplace inspection, consultation with employees who do the work, review of work instruction or conducting job safety analysis and reviewing of previous accident reports (Wang, 2016).

Barling and Hutchinson (2017) states that it is important to have a risk control measure after identifying a hazard. Hazard control involves making a decision on what needs to be done to control or eliminate a safety and health risk (Bruno, 2015). When managing safety and health risks, the hierarchy of risk control should be used to determine the effective measure to minimize risks. McLain and Jarell (2015) highlights that chemicals can be harmful to the employees and detrimental to the environment. Although statistics on the usage of pesticides in the flower industry are difficult to come by, the industry is recognized to practice a wide variety of chemicals including insecticides, fungicides, nematodes and plant growth regulators. Some of these chemicals have a potential to cause serious harm to human health (Makori, 2014). According to Kenya Pest Control Product Board (2015), the Kenyan commercial pesticides sector imports an average 7,300 tons of pesticides annually. The Kenyan market is valued at the US \$ 40.419 Million placing it among the highest pesticides users in the sub-Saharan Africa. Majority of the consumption goes to the flower industry. Storage, sorting, and packing of flowers are often done in the cold-room. Workers in these cold rooms are therefore exposed to low temperature for an excessive period of time (Mwangi & Waiganjo, 2017). Employees are also exposed to ergonomic hazards. They are continuously working for long hours in uncomfortable positions or postures and often doing repetitive tasks (Githua, 2015).A study done in flower farms in Tanzania revealed that farms had between 10 – 12 working hours per day with weekends and holiday, considered as working days. Another study conducted in Kenya revealed that most workers had to work up to midnight even when not on night duty (Gitonga, 2014).

Surveillance on Worker's Health

Medical surveillance for workers comprises of an assessment of health outcome established as a consequence of employee's contact to occupational safety and health risks (Christian et al, 2017). It's often not likely to eradicate all the hazards in the workplace. Surveillance of workers' health main role in assessing the fitness of an employee to carry out specific job (Barling and Hutchinson, 2017). Medical surveillance assesses any health impairment which may be as a result of harmful agents that are inherent in the work processes. Medical surveillance cannot protect the workers from health hazards. Additionally, health examinations cannot be a substitute to appropriate hazard regulator measures that have a higher precedence in the pecking order of actions (Rantanen , 2015). The health surveillance help to detect circumstances which make an employee vulnerable to the consequences of hazardous cause or notice the signs of harmful agent early enough before effect on the employee. Orwa (2017) emphasizes that health examination ought to be directed in matching with the surveillance of the working environment in order to establish a correlation between exposure and health effect.

Period examination is conducted during a worker's term of employment which may involve contact to possible work hazards that could not be completely eradicated (Gyekye, 2015). The main purpose of the periodic examinations is to monitor employees over their period of employment. It purposes at validating the worker's fitness in regards to their job tasks and to detect the signs which may result from work as early as possible (Kirombo, 2015). Rui (2016) emphasizes that periodic examination must often be supplemented with other examination depending on the nature of the hazard observed. Periodic monitoring also helps to keep in check the efficiency of the preventive and control measures in place and pinpointing likely health effects of the changes in work practices, change in technology of the substance used in the work assignment (Ojiem, 2016). Post-employment examinations at the end of services are performed after an employee has been terminated from an assignment that involves hazards that may cause future health impairment (Westerholm & Walters, 2017).

Occupational Safety and Health Awareness

Occupational safety and health should ensure delivery of suitable applicable material that establishes safety teaching and education with regards to its labor. ILO Occupational Health Services Convention (161) and Recommendation (171) has outlined provision, designing and implementation of safety program that provide training and information to personnel in their workplace (Elgstrand *et. al*, 2015). The conventions outline that employers should play continuous training for all workers in the organization. Occupational health services can assist increase employees' cognizance on workplace hazards in which workers is exposed, the potential risks and advice on proper use of personal protection equipment and control measures (Westerholm & Walters, 2017). Occupational health services provide an opportunity to provide useful material on the hazards existing in workplaces in addition the well-being and fitness principles applicable to their area of work (Rui, 2016). Safety and

health information ought to be written in a language that all workers comprehend. The information ought to be provided on an intermittent basis and when there is alteration in the work environment and when new equipment or substance is introduced to the work process (Rantanen, 2015).

Agbola (2015) study investigation on Influence of well-being and welfare administration on worker safety at the ports of Ghana and harbor specialist discovered that lack of training in safety and health and insufficient information on hazardous materials has a hostile effect on the performance of the employees and organization at large. He further outlines that to ensure an effective safety management; employers must offer trainings to employees and increase more mindfulness on the significance of health and welfare. In another research conduct in Malaysian manufacturing plants, employees who had been trained followed safety rules and regulations than those that had not been trained (Oluoch 2017). A change in the employees' behavior in terms of compliance to the safety rules and procedures is often viewed as an indicator of the effectiveness of the training (Clarke, 2014).

Conceptual Framework

The independent variables included Occupational health and safety risk assessment, Surveillance of workers' health and occupational safety and health awareness while dependent variable was compliance status of the farms.

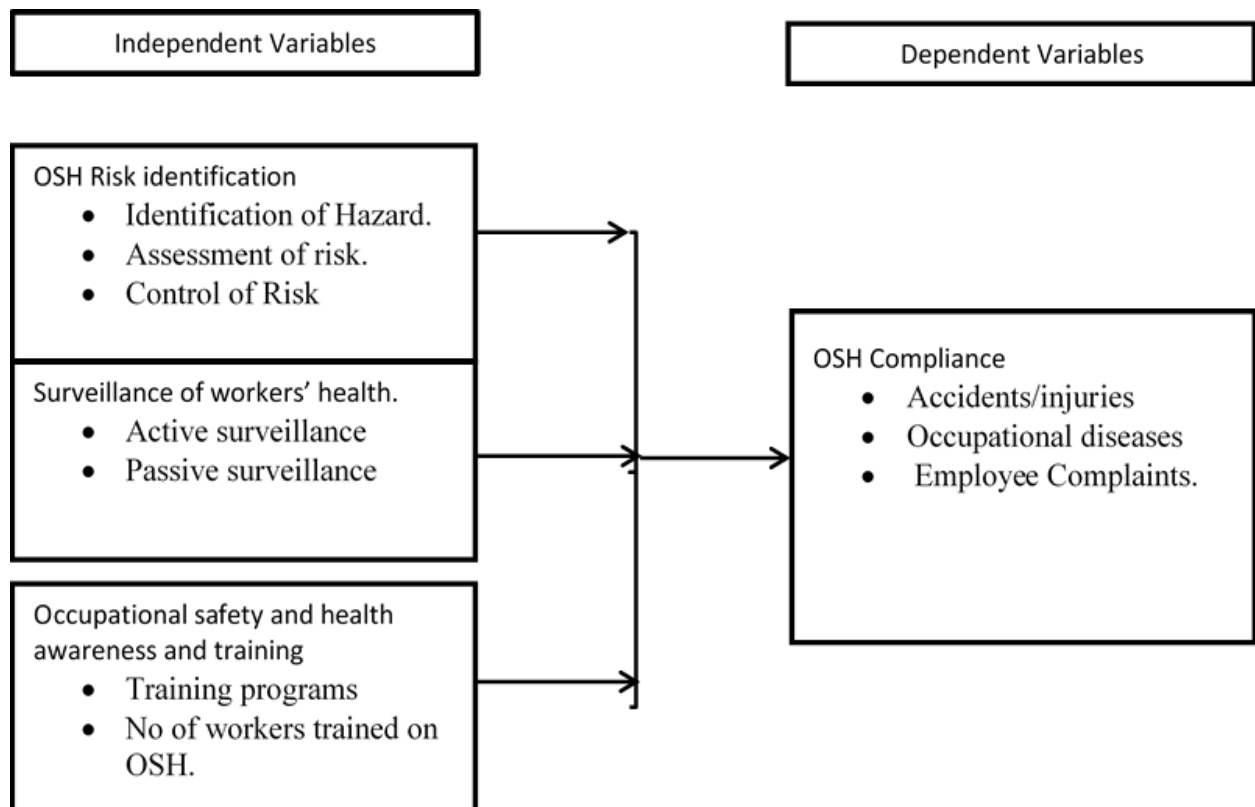


Figure1.1: Conceptual Framework

RESEARCH METHODOLOGY

Research Design

Descriptive cross-sectional study design was used as it utilizes both quantitative and qualitative methods in data collection were applied in this study. Descriptive cross-sectional surveys are used to refer to phenomena related with a topic population that depicts definite characteristics (Cooper & Schindler, 2011). The approach was considered suitable because the study encompassed fact finding and inquiries to evaluate the degree of implementation of occupational safety and health services in flower farms in Embu County.

Target Population

The target population comprised of all 859 the flower farm workers working within Embu County. The study population comprised of employees working in Fides Kenya ltd, Embu. Respondents across all the eight departments of the company were contacted. This includes; production department, crop protection department, engineering department, operations department, Human Resource department, Compliance and Quality Assurance department, Finance and Purchasing department and the administration department. A sample size of 300 was founded on the study population and calculated using the Slovin's formulae. Employees who were willing to participate in the study and have worked at the flower farm for more than 3 months at the time of this study were included in the study. This is because employees with more than 3 month are well acquainted with the Occupational Health and Safety practices in the farm. Employee who had worked in the farm for less than 3 months were excluded from the study. Employees of less than 3 months are assumed to be still undergoing induction and not well acquainted with OSH practices. Additionally, workers who were not willing to participate in the study were also excluded.

Data Collection Tools

Collection of primary data was done using a structured questionnaire (Creswell & Clarke, 2017). The questionnaire was used to gather quantitative data relating to occupational safety and health practices. The questionnaire was researcher administered and had a set of questions with a listing of multiple choices where respondents select the response which best describes their situation. The questionnaire was administered to 300 respondents across the eight departments in Fides Kenya. Respondents who were busy were allowed to fill the questionnaire at their own convenient time to avoid inconvenience during work hours. Qualitative data was collected from three focused group discussions (FGDs) and key informant interviews (KII) at three different sections using a semi-structured interview guide. The FGDs 31 members comprised of a few selected workers and the KII members comprised of management staff and safety representatives. The information sought here was to complement the quantitative information obtained using structured questionnaires. Further qualitative information was obtained using an observational checklist from 8 sections

sampled in the farm. The information sought using the checklist was based on the general observation of hazards and any control measures available in these facilities.

Data Management and Analysis

The researcher organized the data accordingly by ensuring that the raw data is corrected and free of any discrepancies and incompleteness. This entailed scrutiny of the instruments that were completed so as to detect and reduce possible errors such as misclassification, incompleteness and any gaps that may have been obtained from the respondents. Quantitative data from the respondents were managed by Statistical Package for Social Sciences (SPSS) version 26. The data was coded before entry. Additionally, qualitative data collected through observation checklist, FGD and KII was analyzed through content analysis. Descriptive statistics were employed in organizing and summarizing data sets of collected variable. Calculated means, standard deviations, percentages and Pearson's Product moment correlation analysis was done. The Pearson's product moment correlation was done to establish strength of the dependent and independent variables. Finally, the values of r^2 were determined to explain the percentage of the dependent variable accounted for by the independent variable.

RESULTS AND DISCUSSION

Introduction

Data analysis was based on the specific objectives and research questions of the study. A total of 300 questionnaires were administered to the respondents where 296 of them were adequately filled and returned. This constituted a 98% response rate. This rate was considered appropriate to derive the inferences regarding the objectives of the research. According to Mugenda and Mugenda (2003), a response rate of 50% and above was adequate for data analysis. Five socio-demographic variables were investigated and these included: Gender, department, position held in the farm, educational level and duration of time worked in the farm. The findings of the study show that 68% (n=202) of the respondents were females with the rest being males at 32% (n=94). This is because majority of the population working in the flower farms are female. Most respondents were from the production department 175% (n=59), the production department holds majority of the farm employees. Majority of the workers interviewed were from the general worker level at 65% (n=192) and majority of the respondents had worked below 5 years in the farm at 61% (n=182). A significant majority had secondary level of education at 49% (n=146), with only 23% (n=70) having attained college or university level education and above.

Risk Identification and Assessment Practices

Respondents strongly agreed that there is identification of hazards that may affect employees' safety and well-being in the workplace and that there exists risk recognition of risk factors

that may affect employees in the workplace and was indicated by a mean of 4.5359 and 4.5004 and standard deviation of 0.7000 and 0.77944 respectively. Respondents also agreed that risk mitigations are planned to improve health and safety of employees as indicated by a mean of 4.2332 and standard deviation of 0.69059 and that there exists clear measures to respond to workplace hazards as indicated by a mean of 4.0673 with a standard deviation 0.86470. Further results indicated that respondents agreed that mitigation to risks and hazards screening is implemented effectively as indicated by a mean of 3.8789 with standard deviation of 0.92933. Further respondents explained that identification of risks at workplace, assessment of hazards and controlling of risks was carried out in an effort to enhance compliance with Occupational safety and health practices in the flower farms in Embu County.

Table 1: Risk identification and assessment practices in relation to compliance with occupational safety and health practices.

Risk identification and assessment practices	Mean	Std Dev
There exists risk recognition of risk factors that may affect employees in the workplace.	4.5004	.77944
There is identification of hazards that may affect employees' safety and well-being in the workplace.	4.5359	.70300
Workers are actively involved in the identification and assessments of hazards.	3.8744	.95974
Risks and hazards screening is implemented effectively	3.8789	.92933
There exists clear measures to respond to workplace hazards	4.0673	.86470
Risk mitigations are planned to improve health and safety of employees	4.2332	.69059

From the observational checklist, it was observed that the hygiene, health and safety protocols or instructions are prominently displayed all access doors and other areas for all workers and visitors at the site. Plate 1 below shows a photo of hygiene health and safety protocols to be followed within the chemical zoned area. Employees were noted to be keenly following the hygiene, health and safety protocols laid down by the company to ensure no contamination to employees. Reports of accidents and ill health records were well maintained and reviewed on a quarterly basis by the health and safety committee members. On identification of risks, it was observed that workers were cautious and alert to hazards. Risk assessment has guided the identification of the high risk tasks and areas. High risk, danger areas and operations are recorded in a Risk Register and control measures to high risk jobs were in place and frequently monitored. In areas using hazardous substances such as chemicals, a register of hazardous substances was maintained and workers were observed to be putting on personal protective equipment. Further, it was found from the observed that there were instructions to manage risks such as permit to work of high risk jobs. The installation of machine incorporates safety ensuring they are guarded and hazard signs in

place. Moving parts of the machinery are fully safeguarded to minimize accidents and conform to the Occupational Safety and Health Act 2007. Signs and posters relevant to the safe operation of machinery are prominently displayed next to each machine. A safe operating procedure was displayed at the workshop for operating a grinder. The procedure gives a step by step guidance to ensure safety of the operator

Personal protection equipment was provided where the hazards wouldn't be eliminated by the measures in the hierarchy of control. It was also observed that housekeeping is keenly observed to ensure good flow of work and minimize accidents. Majority of the work in the farm was observed to be organised in such a way as not to endanger the safety and health of the employees. Floor, stairs and ground were observed to be clean and well maintained. Workplace overcrowding was not observed and the areas were well lit and well ventilated. A pack house floor was well demarcated to ensure items are not stored on the pathways and avoid trip hazards. First Aid facilities are provided at workplace was observed to be adequate. A Complete First Aid kits with is maintained on site, the first box is easily accessible in every work place. The Contents of the First Aid Kits are as per The Occupational Safety and Health Act 2007 and are appropriate to the activities being carried out on the farm. The Kits are manned only by staff trained in first aid. At least one First Aider is present at the various workplaces at any one time. Adequate firefighting equipment was in place and well maintained whereas flammable substances were safely stored as per the legal requirement. There was prominent display of fire procedures in all sections of the farm indicating emergency exits, emergency cut off points for electricity and water supplies and location of fire extinguisher.

Table 2: General observation on Risk identification and Observation

Results from the checklist (8 sections of the farm)				
Practice	Yes		No	
	(N)	% compliance	(N)	% compliance
Following of Hygiene, health and safety protocols.	4	50	4	50
Control measures on workers with high frequency of exposure to risks and hazards are in place.	8	100	0	0
Machine is installed in a safe way ensuring they are guarded and hazard signs in place.	6	75	2	25
There is protection provided by PPE and workers use their PPE properly at all times.	6	75	2	25
Floor, stairs and grounds is clean is maintained.	5	62.5	3	37.5
Workplace crowding is eliminated, clean, well lit, well ventilated.	7	87.5	1	12.5
A register of hazardous substances is available.	3	37.5	5	62.5
There is proper safe work procedures a provided for machines and high risk activities.	4	60	2	40
Permit to work of high risky non-routine work are provided for use at workplace.	4	50	4	50
First aid facilities are provided at workplace.	8	100	0	0
Workplace has adequate firefighting equipment.	8	100	0	0

Flammable substances are safely stored and handled.	7	87.5	1	12.5
Total	70	74.5	24	25.5

Level of Compliance on Surveillance of Workers Health

From the structured questionnaire, the extent to which respondents agreed on the implementation of surveillance of workers health in relation to compliance with occupational safety and health practices in flower farms is indicated in Table 3. From the results, respondents agreed that there was adequacy of PPEs provided in relation to the operations and processes executed in the workplace as indicated by a mean 4.1659 and standard deviation of 0.87214, and that Occupational diseases are investigated quickly in order to protect employees as indicated by a mean of 4.1300 and standard deviation of 0.75106. The results also indicated that there was suitability of PPEs provided in relation to the operations and processes executed in the workplace as indicated by a mean of 4.0045 and standard deviation of 0.94200. Further results indicated that workers agreed that there were programs to prevent accidents implemented to protect employees as indicated by a mean of 3.9686 and standard deviation of 0.98360. Respondents agreed that there is frequent medical examination of workers in contact to health risks as indicated by a mean of 3.9193 and standard deviation of 1.15966. Further results indicated that employees agreed that there is record keeping on surveillance health hazards and illness as indicated by a mean of 3.9058 with a standard deviation of 0.90798. Further respondents explained that outcomes were assessed and investigations were carried out to detect the circumstance that make employee vulnerable. However, some noted that pre-assignment or pre-employment medical examinations were not carried out and monitoring of employees over the period of employment to check on their health was also not carried out.

Table 3: Level of Compliance on Surveillance of Workers Health.

Compliance on Surveillance of Workers Health	Mean	Std Dev
There is frequent medical examination of workers in contact to health risks.	3.9193	1.15966
There are programs to prevent accidents are implemented to protect employees.	3.9686	.98360
Occupational diseases are investigated quickly in order to protect employees.	4.1300	.75106
There is adequacy of PPEs provided in relation to the operations and processes executed in the workplace.	4.1659	.87214
There is suitability of PPEs provided in relation to the operations and processes executed in the workplace.	4.0045	.94200
There is record keeping on surveillance health hazards and illness	3.9058	.90798

From the FGD and KII, it was found there exists a health surveillance program that was appropriate to the risk of work in the flower farm. The farm has schedule indicating that

agrochemical handlers; (storekeepers, spray men, supervisors) have undergone clinical examination and blood cholinesterase tests once in every three months. Employees working in other high risk jobs such as extreme cold temperature, high noise levels also undergo a clinical medical examination once in every year. However, it was noted that the program was not strictly followed and sometimes employees did not undergo the tests when needed to. Records of pre-employment and periodic medical examination to monitor employee's health were available and well maintained. However, post-employment tests were not conducted and no records on the same were available.

The farm was monitoring health and safety accidents and incidents that arise and is compliant with relevant legislation on hygiene, health & safety. A general register for recording accidents, near misses, dangerous occurrences and occupational diseases was available and well maintained at the workplace. Additionally, accident investigation records for all near misses, dangerous occurrences and occupational diseases were available and well maintained. The records indicated where it happened, what happened, the level of injury and the remedial actions taken to prevent recurrence of the accidents. The number of emergency accidents and incidents that occur is reviewed quarterly by the health and safety committee. Moreover, the farm has set a zero accident and incidents targets to be achieved by use of efficient technology or method, training or awareness and due diligence.

Degree of Awareness on Occupational Health and Safety

From the observational checklist, the Results in Table 4 indicated the extent to which the level of health and safety awareness and training of workers in Flower Farms in Embu County has been complied to. From the results, most respondents agreed that workers were provided with clear information on safe work procedures of their tasks as indicated by a mean of 4.3857 and standard deviation of 0.48784, respondents agreed that the safety training enhanced workers approach to safety and health issues at their workplace as indicated by a mean of 4.3453 and standard deviation of 0.66581 and also respondents agreed that sharing of knowledge increase employees' ability to identify workplace hazards as indicated by a mean of 4.3229 and standard deviation of 0.50561. The results further indicated that respondents agreed that they were aware of the procedures for reporting accidents, injuries and hazardous situations at work as indicated by a mean of 3.8924 with a standard deviation of 0.66243, that employees take their responsibility on safety as per OSHA 2007 as indicated by a mean of 3.8655 and standard deviation of 1.06535. On health and safety knowledge of workers, the workers agreed that they were skilled and aware of their responsibility on safety as per OSHA 2007 as indicated by a mean of 3.7713 and standard deviation of 1.31405. The respondents further explained that the flower farms management undertook Safety training to assist workers to gain new knowledge, more skills and positive attitude on improvement of competencies in performing their job. Further respondents indicated that employees were trained on use of PPE, engaging in safe work practices that reduce the risks to injuries, how to prevent potential risks and control to promote compliance with occupational safety and health practices.

Table 4: Degree of Awareness on Occupational Health and Safety.

Health and Safety Awareness	Mean	Std Dev
I am skilled and aware of my responsibility on safety as per OHA 2007	3.7713	1.31405
I take my responsibility on safety as per OSHA 2007	3.8655	1.06535
I am provided with clear information on safe work procedures of my task.	4.3857	.48784
The sharing of knowledge increase my ability to identify workplace hazards.	4.3229	.50561
The safety training enhanced my approach to safety and health issues at my workplace	4.3453	.66581
I am aware of the procedures for reporting accidents, injuries and hazardous situations at work.	3.8924	.66243

From the FGD and KII, it was indicated that companies had induction programs for new employees and records on the same are maintained. All new employees are informed of the relevant demands on their personal hygiene, health and safety within the farm. Additionally, an annual OSH training master plan with identified OSH training for each cadre of employees was maintained at the farm. It was noted that the farm had provided managers, supervisors and all other workers with sufficient information and adequate instructions on health and safety to enable them to perform their work in a satisfactory and safe manner in accordance with Kenyan legislation. Health and safety committee training is done by an approved company every three years as per the National Council for Occupational Safety and Health (NCOSH) guidelines. There also exist a list of trained health and Safety TOTs to enhance the capacity of the OSH training in the companies. Further, it was noted that the employees were aware of the existence of Occupational Safety and Health guidelines. The Occupational Safety and Health Act 2007 and relevant warning signs are displayed prominently in the workplace. This implied that health and safety knowledge of workers was in compliance to occupational safety and health practices among workers in Flower farms in Embu.

Table 5: Compliance with Safe Work Environment indicators

Safe Work Environment	Mean	Std Dev
I have suffered accident in the company since I was engaged	4.3543	.84099
I have suffered occupational illness in the company since engagement	4.5067	0.7038
I have reported safety and health concerns of your job	3.4036	1.30432
Workplace safety and health considered less important as compared to production and quality	2.8744	1.29532
I am free to stop work because something is unsafe	3.8341	1.30981
The management is supporting safe work conditions	3.7758	1.15624

The results in Table 5 indicate the extent to which work environment indicators were achieved at the workplace. From the results respondents strongly agreed that employees have suffered occupational illness or disease in the company since they were engaged as indicated by a mean of 4.5067 and standard deviation of 0.7038. The results also indicated that

respondents agreed that employees at the flower farms suffered accident or injury in the company since they were engaged as indicated by a mean of 4.343 and standard deviation of 0.84099. The results revealed that respondents agreed that they were free to stop work when something is unsafe and that management supports safe work condition as indicated by a mean of 3.8341 and 3.7758 with standard deviation of 1.30981 and 1.15624 respectively. Further results indicated that employee were indecisive , neutral on whether they report safety concerns or complaints about the safety and health of employees jobs and that workplace safety and health considered less important as compared to production and quality as indicated by a mean of 3.4036 and 2.8744 with standard deviation of 1.30432 and 1.29532 respectively.

Inferential Statistics

The correlation results shows that there is a strong, significant and positive correlation between OSH Risk identification and compliance with Occupational Safety and Health where $r=0.799$, $P =0.001<0.01$). This demonstrated that OSH risk identification and management has a relationship with compliance with Safe Work Environment. Correlation results indicated that there is a strong, significant and positive correlation between Surveillance of workers' health and compliance with Safe Work Environment where $r=0.711$, $P=0.021<0.05$. This indicated that Surveillance of workers' health predict better compliance with Safe Work Environment in Flower Farms in Embu County. Further Pearson correlation results indicated that health and safety awareness has a strong significant and positive correlation with Compliance with Safe Work Environment, $r=0.721$, $P=0.037<0.05$. This indicated that health and safety awareness predicts better compliance with Safe Work Environment in Flower Farms in Embu County.

A Multiple regression analysis was carried out to establish the relationship between occupational safety and health practices and compliance with Safe Work Environment in Flowering Farms in Embu County. R-Squared was 0.739 of variance or correlation between OSH Risk identification and management and Surveillance of workers' health and Information, education and training was associated with the Compliance with Safe Work Environment. The value of adjusted R^2 is 0.7145. The model summary results R^2 is 0.745, Std Error= 0.7850256 indicating that there was a significant variation between compliance with Safe Work Environment and the Safety and health practices influencing compliance with Occupational Safety and Health services 74.5% at confidence level of 95%. ANOVA results, F-ratio of 8.596, $P=0.000<0.05$ ascertain the regression model adopted by the study had a significant goodness of fit as $F=8.596$ and far exceeds the F -statistic 8.500 and $P=0.000<0.05$.

Table 7: Beta Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	3.8725	0.308		2.011	.0012
OSH Risk identification and management	0.592	0.0715	0.505	0.645	0.04
Surveillance of workers' health	0.529	0.044	0.519	3.515	0.003
Information, education and training	0.668	0.047	0.621	3.272	0.01

b. Dependent Variable: Compliance with Safe Work Environment

The regression results in Table 7 indicated that predictor OSH Risk identification and management had a significant, positive relationship with compliance with Safe Work Environment in Flower companies in Embu County as $\beta_1 = 0.505$, $P=0.04$, $t=0.645$. The regression results also indicated that predictor Surveillance of workers' health had a significant, positive relationship with compliance with Safe Work Environment in Flower companies in Embu County as $\beta_1 = 0.519$, $P=0.003$, $t=3.515$. The regression results also indicated that predictor Information, education and training had a significant, positive relationship with compliance with Safe Work Environment in Flower Companies in Embu County as $\beta_1 = 0.621$, $P=0.01$, $t=3.272$.

DISCUSSIONS OF FINDINGS

This demonstrated that OSH risk identification and management has a relationship with compliance with Safe Work Environment. It was noted that risk identification and management practices mitigates risks that are likely to cause accident thus creating a safe work environment that meets an organizations' legal obligation. The study revealed that there is a strong, significant and positive correlation between OSH Risk identification and compliance with Safe Work Environment ($r=0.799$, $P = 0.001 < 0.01$). These findings concurred with Oluoch, (2017) who conducted assessment of the occupational safety and health management practices in water service industry in Kisumu County, the study found that if the exposure to hazards and risks are reduced, the safe work environment improves in the water sector in Kisumu County. The findings also concurred with a study conducted by kironbo (2015) on Factors affecting implementation of occupational health and safety measures in construction industry in Mombasa County that concluded that risk identification and management can control or eliminate hazards with a high potential to cause harm thus leading to safe work environment. Regression results established that OSH Risk identification and assessment had a significant, positive relationship with compliance with Safe Work Environment in Flower companies in Embu County ($\beta_1 = 0.505$, $P=0.04$, $t=0.645$). The results revealed that identification of hazards that may affect employees' safety, risk mitigations planned to improve health and safety of employees and existing clear measures in response to workplace hazards foster compliance with occupational safety and health

practices in Flower farms in Embu County. Screening of risk hazards, assessment of hazards and controlling of risks was carried out in an effort to enhance compliance with occupational safety and health practices in the flower farms in Embu County. Where OSH risk identification and management practices were strengthened then the work environment would improve. These findings concurred with Njuguna (2007) who highlights that when risk identification and management practices are in place, workers are well motivated, behave safely at workplace and minimize the human error that may cause or create unsafe working environment.

Assessing the level of Surveillance of workers health is an indicator of compliance with OSH guidelines in organizations. Monitoring sickness absence can help to identify whether there is any relation between the reasons for ill health or absence and any health hazards which may be present in the workplace thus improving compliance to safety and health practices. The study ascertain that the farm was implementing programs to monitor employees' health as well as foster surveillance of working conditions in the flower farms in Embu County. The regression results further confirmed that Surveillance of workers' health had a significant, positive influence on compliance with occupational safety and health practices in Flower companies in Embu County ($\beta_1=0.519$, $P=0.003$, $t=3.515$). It was clear that a unit increase in Surveillance of workers' health contribute to an increase in level of compliance with Occupational Safety and health practices in flower farms in Embu County. These findings are in concurrent with Barling and Hutchinson, (2017) study that claims that by carrying out an assessment of your workers, you can monitor individuals for any adverse health effects and determine how much, if at all, their work is contributing to poor health, allowing you to develop exposure prevention strategies in the process.

These findings are concurrent with Makori (2014), who carried out a study on the influence of health and safety programs in manufacturing industries in western province, Kenya. He highlighted that health surveillance is an important part of health-risk management and seeks to confirm whether employees are potentially exposed to existing workplace hazards, whether the control measures are effective and the worker is showing no biological or clinical changes that could indicate damaging exposure thus improving compliance to OSH. The study also revealed that workers health surveillance practices such as execution of health examination to detect the circumstance that make employee vulnerable, pre-employment medical examination and periodic medical examination were carried out thus enhancing the level of compliance with safe work environment. These findings agree with an assessment carried out by Makhamara and Simiyu (2017) that there are occupational health and safety that contribute to organizational performance in the manufacturing sector in Kenya. The study highlights that medical surveillance that was undertaken allowed the facilities to take snapshots in time of the state of its workforce's health across the years that they were under employment.

It was found that an increased in employee knowledge and awareness on safety and health practices through training of employee on health and safety knowledge of workers, provision

of clear information on safe work procedures of their tasks and sharing of knowledge increased employees' ability to identify workplace hazards thereby improving level of compliance with OSHA 2007. The study established that knowledge and awareness on safety and health has a strong significant and positive correlation with Compliance with Safe Work Environment ($r=0.721$, $P=0.037<0.05$). regression analysis revealed that improving employee knowledge on safety and continuous training had a significant, positive influence of level of compliance with occupational Safety and health practices in Flower companies in Embu County ($\beta_3 =0.668$, $P=0.01$, $t=3.272$). As noted by Mathis (2015), training allows employees to acquire greater competencies to control their work, leading to them performing their jobs more safely. These findings are similar to the study carried out by Brandt-Rauf, Burton and McCunney (2011) in 16 cotton farms in Kuala Lumpur, that indicated a high level of safety and health knowledge among the workers in the farms. Corresponding to this, the study revealed that level of Health and Safety compliance by workers was also high. Training interventions leads to positive effects on safety knowledge and adoption of safe work behaviors and practices, and safety and health outcomes. Additionally, it is easy for permanent workers to negatively influence the new hires if they are not practicing safety. In other words, negative influence however, can be purged with the establishment of effective safety training which will ultimately lead to an effective safety culture. This study revealed that health and safety knowledge of work contributed to increased level of safe work environment thus improving compliance with occupational safety and health flower farms in Embu County.

Conclusion

Based on the findings, the study concluded that there exists a high level of hazard screening, assessment of risk and controlling of risks thus improving level of compliance with occupational safety and health practices in the flower farms in Embu County. The practices of increasing identification of hazards that may affect employees' safety, risk recognition practices and existence of risk mitigations planned to improve health and safety of employees and existing clear measures in response to workplace hazards foster compliance with occupational safety and health practices in Flower farms in Embu County. The study concluded that there exists a health surveillance program that was appropriate to the risk of work in the flower farm thus improving compliance to Occupational Health and Safety practices. The undertaking of surveillance health practices such as execution of health examination and research to detect the circumstance that make employee vulnerable, Pre-assignment or pre-employment medical examination were carried out and monitoring of employees over the period of employment enhance surveillance of health hazards in the workplace in the flower farms contribute significantly to level of compliance with occupational safety and health practices in flower farms in Embu County. The study concluded that there is a high level of employee awareness on safety and health through trainings, provision of clear information on safe work procedures and sharing of knowledge thus improving level of compliance with occupational safety and health practices in the flower farms in Embu County. Improvement of employee knowledge on safety and

continuous training, provision of clear information on safe work procedures of their tasks and sharing of knowledge increase employees' ability to identify workplace hazards thus increasing the level of compliance with OSHA 2007.

Recommendations

The study recommend that management in flower farms in Kenya should further ensure participation of every employed person in application and review of OSH risk identification and assessment practices. So as to be in compliance with section 6 of OSHA 2007. The flower farms should continue deploying OSH Risk identification and assessment to achieve high level of compliance with occupational Safety and health practices. Effective execution of OSH Risk identification and assessment, identification of hazards, risk recognition practices and existence of risk mitigations planned to improve health and safety of employees and existing clear measures in response to workplace hazards promote compliance with occupational safety and health practices in Flower farms in Embu County. The study recommend that management in flower farms should institute measures to improve on surveillance of workers' health practices as this would contribute to level compliance with occupational Safety and health practices in flowering companies. The farms should further institute periodic and post –employment medical examination for all workers to ensure compliance with Medical examination rules (2005).The management should focus on implementation of health examination and research to detect the circumstance that make employee vulnerable and foster surveillance of working conditions to improve level of compliance with OSH Practices in the flowering farms in Embu County. The study recommend that management in flower farms should seek measures that promote continuous training of employees on health and safety practices, provide manual on occupational safety and health practices and promote knowledge sharing on safety and health practices to achieve high level of compliance with occupational safety and health practices. The management should further adapt trainings that take into account new risk i.e change of machine or material to be in compliance with section 99, OSHA 2007.This would results into increase attendance of employee, improve productivity, increase awareness on safety and health issues and reductions in human and material losses, reduction in customer complaints and reduce total working days lost.

REFERENCES

- Agbola, R.M. (2015). The impact of health and safety management on employee Safety at the Ghana Ports and Harbour Authority. *International Journal of Business and Social Science*, 78(3), 443-449.
- Barling, J.& Hutchinson, I. (2017).Commitment versus control-oriented safety practices, safety reputation, and perceived safety climate. *Canadian Journal of Administrative Sciences*,17(2), 76-84.

- Bruno, L. (2015). The Impact of the Flower Industry on Kenya's Sustainable Development. *International Public Policy Review*, Vol. 7.
- Catherine, J. & Dolan W. (2014). The Ratification Status of ILO Convention Related to Occupational Safety and Health and its Relationship with Reported Occupational Fatality Rates. *Journal of Occupational Health and Safety*, 49(5), 72-79.
- Christian, M. S., Bradley, J. C., Wallace, J. C., & Burke, M. J. (2017). Workplace safety: A meta-analysis of the roles of person and situation factors. *The Journal of Applied Psychology*, 94(2), 1103-1127.
- Clarke, V. (2014). "What can thematic analysis offer health and wellbeing researchers?" *International Journal of Qualitative Studies on Health and Well-being*, 27(1), 1935–1968.
- Cooper D. R. and Emory C. W., (2011) "Business Research Methods," 5th Edition, Irwin.
- Creswell, J. & Clarke, W. (2017). *Research design: Qualitative and quantitative approaches*. California: Sage publications
- Dingani, M., Muzimkhulu, Z., Spooponki, K., Chimba, D. (2015). Review of Occupational Health and Safety Organization in Expanding Economies: The Case of Southern Africa. *Annals of Global Health: The Mount Sinai Journal of Medicine*, 8(4), 495-502.
- Elgstrandet A.I. (2015). *Do occupational health services really exist: Challenges for occupational health services in the regions*. Helsinki: Finnish Institute of Occupational Health.
- Embu County Annual Development Plan (2016/17), Finance & Economic Planning.
Embu County Fiscal Strategy Paper (2016) "Unlocking The Potential For Equitable Wealth And Employment Creation" County Government of Embu.
- Githua, B.W (2015), *The Influence Of Perceived Quality Of Health And Safety Standards On Employees Job Satisfaction At Oserian Development Company, Kenya*. Canopus Publishing.
- Gitonga (2015) Determinants of Common Health problems among Flower Farm Workers in Timau, Imenti North District. *Journal of Safety and Environment*, 8(2), 158–165.
- Gyekye, S. A. (2015). Workers' perceptions of workplace safety and job satisfaction. *International Journal of Occupational Safety and Ergonomics*, 11(3), 291-302.
- Horticultural Crops Development (2014) Horticultural Crops Production Report
- Health Safety Executive (2008) The Department of labour. *Model for Business, Excellence*. Government Printers: United Kingdom.
- ILO (2016). Decent work – Safe work: A global report on work-related accidents and ill health. Geneva: ILO.

- ILO (1985). Occupational Health Services Convention (No. 161)
- International Labour Organization (2015). *Estimating the Economic Costs of Occupational Injuries and Illnesses in Developing Countries: Essential Information for Decision-Makers*. Geneva: ILO
- International Labour Organization (2016). *Global Strategy on Occupational Safety and Health*. Conclusions adopted by the International Labour Conference at its 91st Session. Geneva: ILO Publications.
- Kenya Pests Control Product Board (2015). Pesticides use and management in Kenya, (KPCPB) Nairobi.
- Kirombo, M.H. (2015). Factors affecting implementation of Occupational health and safety measures in the construction industry: The case of Mombasa County. Kenya UON.
- Kenya Flower Council (2017). The Status of Flower Sector. Retrieved on 22 April, 2017 from <http://www.kenyaflowercouncil.org/>.
- Makhamara, J. & Simiyu, A. (2017). Influence of occupational health and safety on organizational performance in the manufacturing sector in Kenya: a case study of Kapa oil refineries limited. *The Strategic Journal of Business & Change Management*, 3(2), 30-59.
- Makori (2014). Influence of occupational health and safety programs on performance of manufacturing firms in Western Province, Kenya. *African Journal of History and Culture (AJHC)*, 4(4), 46-58.
- Mathis, R.L. & Jackson, J.J. (2015). *Human Resource Management. Essential Perspectives*, Third Edition. South West-ern: Thomson Corporation.
- MClain T., & Jarell, P. (2006). The impact of organizational climate on safety climate and individual behavior. *Journal of Safety Science*, 34, 99-109.
- MoALF (2016) *Climate Risk Profile for Embu. Kenya County Climate Risk Profile Series*. The Kenya Ministry of Agriculture, Livestock and Fisheries (MoALF), Nairobi, International Centre for Tropical Agriculture (CIAI), Nairobi.
- Mugenda, O.M. and Mugenda, A.G. (2003). *Research Methods; Quantitative and Qualitative Approaches*. (2nd Rev. Ed.). African Centre for Technology Studies (ACTS), Nairobi.
- Musyoka, R. (2014) Relationship between health and safety programmes and performance of manufacturing firms in Mombasa county, Kenya *Canadian Journal of Administrative Sciences*, 13(4), 46-54.
- Mwangi, J. & Waiganjo, E. (2017). Influence of occupational health and safety on employees' performance in the flower industry in Kenya: A case study of Penta Flowers, Thika Sub-County. *The strategic Journal of Business and Change Management*, 3(15), 191-208.

- National Safety Council. (2014) *Fundamentals of Industrial Hygiene*. Itasca, IL: National Safety Council.
- National Profile on Occupational Health and Safety in Kenya. (2013), Directorate of Occupational Health and Safety (DOSHS) Reports.
- Occupational Safety and Health Act 2007 (Cth) s. 60.1 (Kenya).
- Oluoch I. (2017). Effect of Occupational Safety and Health Awareness on Work Environment in the Water Service Industry within Kisumu County - Kenya. *IOSR Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT)* e-ISSN: 2319-2402, 11 (6) Ver. I35-41
- Ojiem, D. O. (2016). Occupational health and safety management practices among the electronic media houses in Kisumu County, Kenya. Mass media Printing Press
- Orwa, H.B. (2017) Labor Turnover in the Flower Industry in Kenya. *International Journal of Humanities and Social Science*, 3(14) 304-305.
- Rantanen J. (2015). Occupational health services in selected International Commission on Occupational Health (ICOH) member countries. *Journal of Environmental Health*. 2(1), 269-277
- Ria M., Anis K., & Ca H., (2014). The Influence of Occupational Safety and Health on Performance with Job Satisfaction as Intervening Variables: Study on the Production Employees in PT. Mahakarya Rotanindo, Gresik. *American Journal of Economics*, (1), 154–157.
- Riyase (2015) An Assessment of Occupational Health and Safety Practices on Job Performance at the Tetteh Quashire Memorial Hospital, Manopang Akuapan, Kwame Nkrumah University Publishers, Ghana.
- Robson, L. S., Clarke, J. A., Cullen, K., Severin, C. & Irvin, E. (2015). The effectiveness of Occupational Health and Safety Management System Intervention: A systematic review. *Safety Science*, 45(2007), 329-353.
- Rui, C. (2016). Experience with Basic Occupational Health Services. Singapore: WSH Conference
- Taiwo, A. S. (2014). The influence of work environment on workers' productivity: A case of selected oil and gas industry in Lagos, Nigeria. *African Journal of Business Management*, 4(3), 299-307.
- Wang, Y. & Huang, P. (2016) Statistics of industrial accidents in China during the period from November to December in 2015. *Journal of Safety and Environment*, 7(1), 154–157.

Wanjau, M. N. (2016). Contribution of Motivational Management to Employee Performance, Vehicle Body Building industry in Kenya. *International Journal of Humanities and Social Science*, 3(14).

Westerholm, P. & Walters, D. (2017). Supporting Health at Work - International Perspectives on Occupational Health Service. Special issue of Policy and Practice in Health and Safety. Leicester: IOSH Services Ltd. p. 1-190.

World Health Organization (2014). Commission on Managing Workplace Health and Safety, Integrating health and safety at the workplace. World Health Organization; Geneva, Switzerland.