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INTERNAL FACTORS AND IMPLEMENTATION OF OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEMS IN PUBLIC WATER SECTOR IN KENYA

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ABSTRACT

The main purpose of this study was to examine how internal factors in the Public Water Sector in Kenya influence implementation of Occupational Health & Safety Management Systems (OHSMS). The study specific objectives included: to assess how top management commitment influence implementation of OHSMS in Public Water Sector in Kenya, to establish how implementation of OHSMS is influenced by employees' competence in Public Water Sector in Kenya, to evaluate how implementation of OHSMS is influenced by Occupational Health & Safety Framework and to assess the influence of Technology on implementation of OHSMS in Public Water Sector in Kenya. The study targeted a population 160 staff working at Public Water Sector in Kenya and embraced descriptive research design. Sampling method was applied in the study and the main data collection instruments was a questionnaire with both open-ended and close-ended questions. This tool for research had both the nominal and the Likert-type scale on the quantitative variables section. To test questionnaires reliability and validitya Pilot study was undertaken. Descriptive statistics and data analysis method was applied to analyze data with the aid of Statistical Package for Social Sciences (SPSS) software to compute results of the responses in form of frequencies, percentages, mean and standard deviation. Lastly, Multiple Linear Regression model was applied to find out the significance of the independent variables on the dependent variable. The results were presented in form of tables and charts. It was established that top management commitment, employee competency, Occupational Health & Safety framework and technology have signficant influence on OHSMS implementation in Public Water Sector in Kenya. The study recommended that top management should prioritise on provision of sources for OHSMS implementation, train workers and allocate work based on employee competency. Further, organizations in Public water sector should develop OHS policy, set up OHS commitees to handle safety issue and embrace latest technology in management of OHSMS implementation.

Keywords: *Top Management, Employees' Competence, Occupational Health & Safety Framework, Technology, Occupational Health and Safety Management Systems*

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INTRODUCTION

Occupational Health & Safety and Management System (OHSMS) have been used by Nations and organisation who wish manage safety and health risksassociated with their business in an organised and predictable manner(Zimolong and Elke,2010). Further, OHSMS processes and procedures have been established by the International Labour Organization (ILO) with counsultations with its stakeholders and tripartite constituents. These guidelines provides ways to ensure sustainable safety culture within organisations in form of human and economic benefits to both workers and organizations (David, 2015). Introduction of OHSMS in organizations has resulted to the reduction of hazards and risks and has improved productivity thereby resulting to governments, employers, workers unions and workers acknowledging its importance (Dessler, 2011).

According to Kagia (2014)Occupational Health & Safety is area concerned with protecting the safety, health and welfare of workers in a workplace. OHS is guided by a myriad of legisalations which are scatered across different enforcenet authorities meant to ensure that organizations comply with provisions of the laws and therefore safeguard health and safety of workers at workplaces. There has been growth in interest on matters of safety in kenya partly due to the enactment of new consititution and enlightenmnet of workers rights. Also this has been promoted by a rise in incidences at workplaces like colapse of buldings that are under construction thereby necestating quick fix reaction from enforment agencies. Matters of health and safety are guided OHSA 2007 of Kenya which clearly states the responsibilities of occupiers and workers of an organization. It also gives guidelines to managers who may lack capacity in form of knowledge and skill to run OHS programs. As enshirined in kenyan constitution, every person is entitled to safe working environment free of hazards and deseases. This is also supported by the Kenyan Constitution, the Occupational Health & Safety Act, 2007 and the various labour laws currently in force (ROK, 2017).

In Kenya, Occupational Health and Safety Act, 2007 governs occupational health and safety activities and sefeguard health and welfare of workers and all persons lawfully present at workplaces. (ROK, 2017).

The Water Act 2016 has established the structure for the water sector, which has resulted in creation of the following state corporations in the Public Water Sector; the Water Resources Authority, National Water Services Regulatory Board, Water Harvesting and Storage Authority, and the Water Tribunal. A point to note is that Water is a national resource that is owned by the National Government hence, the ownership function is bestowed inthe Water Resources Authority (ROK, 2016).

Also, under the Fourth Schedule of the 2010 kenyan Constitution, water services and sanitation role including related water works has been vested with the county gorvernement, while conservation of water as a natural resource is vested nationally with the national government. As such, Water Services Regulatory Board (WASREB) is the regulator of theentire water sector and WARMA undertakes management of all water resources nationally. However, Water Service Boards in which by design have been operating across county boundaries and were licensed to provide water services have lost their national level function as their roles have been assigned to county governments under the Fourth schedule of the consitution (ROK, 2016).

In consideration of their current coverage and their indivisibility, the Water Boards thus cannot be transferred to any one county due to the areasthey cover. However, there has been need to devolve these services to counties thus Boards being transfered to the counties of main operation so thatthey serve as joint authorities in line with Article 189 (2) of the Constitution that provides for cooperation between two levels of government and between county governments through joint committees and authorities. Therefore, in respect

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of the operations and management of the Water Service Boards, consultations is recommended between the national government and county governments (Muruka, 2014).

Although Water Service Providers (WSP)and the Water Service Boards (WSB)are distinct in their roles, the two operate in the same ministry. The main functions of the WSB is asset ownership and financing whereas WSP function is service provision.This is supported by Section 53(2) of the Water Act, 2016 that states that the WSB is mandated to purchase, lease or otherwise acquire on such terms as the Minister may approve, premises, plant, equipment and facilities (ROK, 2002).While, the WSP on the other hand is largely responsible for operations or control of water assets, even though the degree of responsibility may be varied according to the agency agreement that has to be signed between the two bodies (Akumu, 2013).

It has been argued that Water and Sanitation Companies ownership should thus be transferred to County Governments in order to serve customers better. The role of the National Water Conservation and Pipeline Corporation (NWCPC) has increasingly been diminisheddue to the enactment of the Water Act and establishment of Water Service Boards. The company needs to turned round so that it starts undertaking commercial works for bulk water storage and distribution. In this regard the governement formed a task force that has recommended that the role of the NWCPC be transferred to government so that the governement evaluates whether there is need to retain the NWCPC or it should be dissolved (ROK, 2013).

On the other hand, the Water Sector Trust Fund (WSTF) which was established to support access to water and sanitation in areas without adequate water supply and in merginalized places was retained. The WSTF was however added more roles through an expanded mandate to finance research on top of financing Water and sabtitation projects in the water sector (ROK, 2016). Due to the need for Environmental Conservation and in line with the etablishment of Kenya Water Towers Agency in 2012, the Government retained the Kenya Water Towers Agency to fill a gap in coordination, protection, rehabilitation, conservation and sustainable management of water towers across the country in liason with Kenya Forest Services (ROK, 2016). This is in realization that in nearly all cases water catchment are located in forests and therefore protection and conservation of all forests both natural and man made is vital for the conservation of water catchments in the country(ROK, 2013).

Water Services Boards on the other hand are assigned the role of ensuring there is the provision of efficient, affordable and sustainable water services in their areas of operation or areas of control. This important functions is undertaken through capital investements to increase water and sanitation services or coverage by signing contracts with WSPs for water service provision in certain areas. Such relationship for seamless services is regulated through a Service Provision Agreement (SPA). The WSBs will sign SPAs with WSPs only after they are re-constituted in accordance with the Corporate Governance Guideline and in compliance with the Water Act 2002. The main focus of water act 2002 was to ensure thatt water services are provided in an efficient and sustainable manner (WASREB, 2015).

Statement of the Problem

Water sector is one of the key pillars of the economy supporting economic growth but corporations in the Public water sector suffers challenges of conducive work environment and inadequacy of proper working tools which are results of lower implementation of OHSMS among others. Implemenation of OHSMS in Public water sector is at infancy inspite of water sector coprorations having established Occupational Health & Safety and Management Systems (OHSMS) and getting access to legislations such as Occupation Health & Safety Act (2007), that aid in the implementation of occupational health and safety measures in organizations. It is sad to note

that many organizations in this sector are yet to succeed completely in ensuring that their workplaces are safe and health and there is little data on the internal challenges impacting full implementation of OHSMS (Kibe, 2016). Thus, generally in Kenya, majority of organisations still experience continuous increase in reported cases of accidents and persons seeking compensation under the Work Injury Benefits Act.

According to Miruka (2014), in the year 2013, available data indicate that over 41% of accidents in Kenya are in mining, construction and transport sectors and little data in the Water Sector. Occupations like machine operators and assemblers accounted for over 28% while other occupations shared 31% of workplace accidents. This indicates that some occupations which are also in the Water Sector are injury prone whereas both employees and employers are still treating matters of safety casually. In relation to age groups 44.4% of the injuries happened among persons aged beween ages of 20 to 29 years, 25% in age group of 30 to 39 years and lastly 24% in the age group of below 20 years (Muruka, 2014).

Further, in spite of increase in the level of interest in Occupational Health & Safety Management Systems (OHSMS) globally and locally, Public Water Sector in kenya doesn't have any published or formalized studies on the factors influencing implementation of OHSMS. Also information on how OHSMS systems work and if they are effective in preventing occupational injuries and diseases is scanty. It has been observed that hazards and risks are prevalent in several work places inspite of existence of a lot information and legislations on the importance of Occupational Health & Safety Management System (OHSMS). Based on the above foregoings, this study aimed to fill the gap in lierature by determining the influence of internal factors of implementation of Occupational Health and Safety Management Systems in the Public Water Sector in Kenya.

Objectives of the study

The general objective of this study was to analyze how implementation of Occupational Health & Safety Management Systems is influenced by internal factors in Public Water Sector in Kenya. The study was guided by the following specific objectives:

- To assess the influence of top management support on implementation of OHSMS in Public Water Sector in Kenya
- To establish the influence of employees' competence on implementation of OHSMS in Public Water Sector in Kenya
- To evaluate the influence of Occupational Health & Safety Framework on implementation of OHSMS in Public Water Sector in Kenya
- To determine the influence of Technology on implementation of OHSMS in Public Water Sector in Kenya

LITERATURE REVIEW

Theoretical Review

Stakeholder Theory

The Stakeholder Theory, originally detailed by a doctor named Edward Freeman is defined as a conceptual framework of business ethics and organizational management(Freeman, 2015). The theory addresses moral and ethical values in the management of a business or other organization and integrates both a resource-based view and market base view, although it adds a socio-political level. The latest version of the theory as identified by freeman seeks to define the specific stakeholders of an organization and examine the conditions under which managers treat these parties commonly refered to as as stakeholders. In this study the Top management is thus taken to be stakeholers elucidated in the first of objective of the study.

Other scholars like Donaldson and Preston argue that the theory has multiple distinct aspects that are mutually supportive: descriptive, instrumental, and normative. In their postulation, the descriptive method is used in research to describe and explain

the characteristics and behaviors of firms, including how companies are managed, the way the managers think about managing,how the board of directors considers corporate entities, and the nature of the organizations all of which affects the level of top management commitment. The instrumental method uses empirical data to identify the connections that exist between the management of stakeholder groups and the achievement of corporate goals (mostly profitability and efficiency goals). The normative method, commonly identified as the core of theStakeholder theory by Donaldson and Preston, focuses on how corporations are structured, functions and the philosophies behind their operation and management (Freeman, 2015).

This theory determines the level of top management commitment by use of the multiple distinctive aspects that is descriptive instrumental and normative, which helps managers to identify the key stakeholders who are directly affected by the OHSMS and how they influence the level of top management commitment. The stake holders directly determines the exent to which top management commit themsleves in implementing safety policy and working procedures. Implementation of OHSMS is determined by different stake holders who in turn affect top management commitment. The theory thus helped in determining how top management influence implementation of OHSMS in Public Water Sector in Kenya.

Core Competency Theory

The theory elucidates the strategies the organization will take in order to achieve competitive advantage. The theory came into effect in 1990 when theorist like Prahalad and Gary defined organizations core competencies as a harmonized combination of multiple resources and skills that distinguish a firm in the marketplace. They argue that core competencies will provide organization with human resources with requisite skill and comptencies in OHSMS, make contribution to the perceived customer benefits of the end product and and assist in production of unique products that in the market are highly defferentiated and diffcult to be immitatedby competitors (Prahalad & Gary, 2010).

Public Water Sector in Kenyathus in order to achieve the second objective in the study should try to align their OHSMS strategies to tap into the core competencies in their organization so as to aid in value addistion in the organization. Employees competencies such as technical superiority, better customer relationship management, and unique set of internal processes that are efficient help the firm to respond and manage its OHSMS efficiently (Prahalad & Gary, 2010).

Public Water Sector in Kenyais able to improve on core competencies when it has on its disposal competent employees that have capacity to implement OHSMS. Itsparamountto note that core competencies helps the organizations with a means to identify their core strengths and weakness hereby putting strategiesinplace hat will make organization achieve its core mandate. Its is paramount to note that employee's competency plays a key role in determining the capacity of the overall organization employee's competencies and this helps organizations to determine and improve on competencies required for OHSMS. This theory was thus relevant to assess how implementation of Occupational Health & Safety Management Systems would be influenced by employees' competence in Public Water Sector in Kenya.

Psychological Safety Climate Theory

Psychological safety climate (PSC)emanates largely from management practicessuch as organizational policies, practices, and procedures which are aimed at protecting psychological health and safety of employee (Law, 2011). The PSC theory contents emphasis only on the production factors and framework and suggests focus on the organizational level PSC as dictated by job demands and available resources since they influences work conditions. This subsequently, influences psychological health problems of any workplace. According to Dollard (2011) the conceptual theory of psychological

safety climate draws upon perspectives from the work of stress, psychological risk, and organizational safety climate. In order to improve the level of compliance with OHSMS, employees' psychological safety and engagement must be enhanced (Chullen, 2012). It is therefore necessary to have Occupational Health & Safety Framework that clearly stipulates the employees working conditions and actions necessary to be undertaken to improve on employees' safety and wellbeing at the work place as required in the third objective of the study.

This theory was relevant to identify the influence of Occupational Health & Safety Framework on implementation of Occupational Health & Safety Management Systems in Public Water Sector in Kenya.

Technology Adoption Theory

This theory explains how, why and at what rate new ideas and technology spread through cultures operating at the individual and the firm level (Venkatesh, etal 2013).Technology adoption theory sees acceptance of technology especially innovation as being communicated through channels over time and within a particular social system hence addressing the forth objective of the study. Individuals are seen to be in different degrees of willingness to adopt innovation and thus, it is commonly observed that the quota of the population that adopts innovation is normally distributed over time (Venkatesh, etal 2013).

Adoption of new technology in an organization leads to innovation on methods of production, development of new products, service provision, marketing systems and accessing information on new markets for products.Public Water Sector in Kenya that adopt new technology are likely to implement OHSMS in order to meet new operations and processes that demands improved methods of operations. This theory is relevant to identify the influence of Technology on implementation of Occupational Health & Safety Management Systems in Public Water Sector in Kenya.

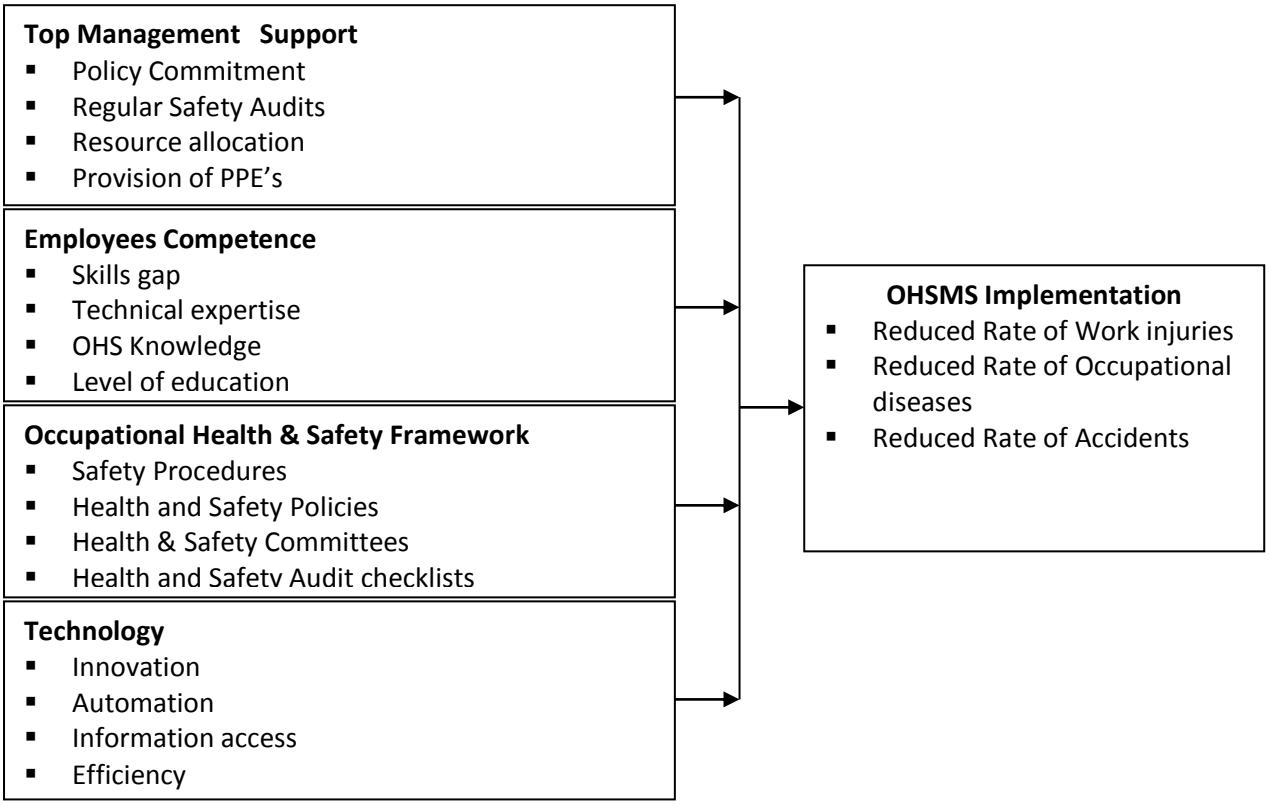

Figure 1: Conceptual Framework

Empirical Review

Management commitment has beendefined as the management's involvement and engagement in actions towards achievement of a goal (Cooper, 2006). Management commitment is important in the implementation of OHS and can be demonstrated through various ways such as establishment and funding of safety training and education, rewarding employees, provision of personal protective equipments, and empowerment of employees to make OHS decisions. Training allows employees to be aware of health and safety hazards at their work places as well as enable them acquire necessary skills and knowledge that is relevant to their work. Management can also reward employees who act safely and those who report unsafe acts by thier co-wokers. Surienty (2012) argues that for such actions to be successful, it require financial support from the top management which he says lacks in SME's as compared to mulitinational companies.

According to Suriently (2012), for any organization to succeed in it's OHS measures, the top management must be committed to invest money into those activities which support OHSMS implementation. On the other hand, management commitment can also be viewed from their commitment to penalize employees who do not follow safety measures such as the use of PPEs. Surienty (2012) in his study noted that organization structures in many SMEs usually has limited head count thus there is less human resource allocated to champion safety issues.

Emami (2017) carried out a study on application of competency management system in safety performance in a Canadian structural and erection industry. He argues that competency programs creates a culture that focuses on job training, identification of competent people, and ensuring that the process functions properly. The employees should be given opportunity to assess themselves in terms of required competencies and the organisation should provide opportunity for training to its workers especially on requistite skills to be able to perform their work. From this study, the researcher noted that there was a strong negative correlation between the training penetration rate and incident occurrence. According to emami (2017) as the number of participants increased, injury rates were reduced. It was evident that competence gained by workers enabled them to carry out incident investigation correctly and faster, respond to incidence and report incidences including making witness statements.

Gaceri (2015) study found out that lack of training on health and safety measures directly affects performance and productivity of the employees. The researcher further found out that training influenced implementation of health and safety measures by reducing unsafe acts among new employees, and enhanced awareness amongst existing staff. The result of training is that employees are more confident in handling and prevention of accidents.

OHSMS includes the organizational structure, planning of OHSMS activities, responsibilities of stakeholders, practices and procedures. It also includes processes and resources necessary for developing, implementing, achieving, reviewing and maintaining the organization's OHS policy. Kibe (2016) in his study argues that there are several things that are not being done well in many construction sites for examples, failure to train workers, poor employee participation and lack of health and safety committees thatinfluence implementation of health and safety measures. He also realised that OHSMS implementation has been negatively impacted by lack of management commitment and absence of health and safety management policy.

Kemei et al (2017) on study of common hazards inconstruction sitesin Nairobi county argues that project managers have a safety responsibility to prepare project safety plan, identify potential hazards at the site, prepare written safety plans and insists on formal reporting of injuries, death and property damage as a result of accidents. In the study, they found out that 12% of the construction

sites visited during the study lacked a written safety policy. This violates the Kenyan laws that requires employees at the construction sites to be trained adequately, establishment of health and safety committees at workplaces, provision of right tools and equipments to work and issuance of appropriate PPEs to workers. It was also realised that most construction firms in Nairobi don't have a safety policy and also allocated less than 1% of their project budgets to health and safety, hence resulting to an inadequately funded safety programs.

Adoption of new technology nowadays has enabled employers to have access to a number of compuer software applications that aid in incidents reporting, keeping and retrieval of OHS records, monitoring of unsafe acts by employees at work and facilitate OHS training as well keeping track of employees leave and absences and management of their medical expenses. Further, emergence of more sophisticated tools and gadgets offers a fresh perspective on how workplace safety can be further improved. For example advanced robotics, high-speed data processing, 3d visualisations and now upcoming virtual reality is changing the way how workplaces are being run today. With the help of 3D imaging software technology employees are able to create 3D visualizations of their work environment and engage better with their surroundings. This allows employees to see what is happening around them as well as what they are currently doing. At the same time employers are able to use technology to track movement of workers on field work as well as use of high speed of communication gudgets to transmit data in cases of emergency.

Another area of technology advancement is in expolaration especially in areas that are considered dangerous. For example, exploration in dangerous work places is achieved through the use of drones with cameras that transmit images and data which can be used to mitigate or correct risks and hazards.

Productivity of any organization is affected by many factors among them, the health and safety of the workers and technology in place. Thus, it is the duty of employers to provide a safe and a hazard free environment to its workers. Whereas on the other hand the employees are also duty bound to uphold health and safety regulations at work and not to expose themselves and workmates to unsafe environments, employers must implement OHSMS and comply with government reglations. This is because, workers are commited to the organization that considers the safety of its workers as number one priority.

Mensah (2016) found out in Ghana that there is a moderate positive and significant association between employee retention and commitment and occupational health and safety management in the mining industry. He established that whenworkerspercieve management of health and safety to be positive, wokers tend to stay in that organization for a longer time because they know that their health and safety is assured by the organization. By contrast, where there is negative perceiption on top managementactions on OHS or if its below expectation, they tend to be withdrawn in their behaviors hence absenteeism, high turnover and low productivity.

METHODOLOGY

The study adopted descriptive research design. The study was undertaken in the four Public Water Sector in Kenya mandated to manage water and sanitation services. These companies were public corporations fomed under the Public Corporations Act with the aim of delivering public services in the Water Sector. The state corporations had implemented OHSMS but still faced implementation challenges. The target population comprised of 160 HR and middle level management staff working in the state corporations offices in Nairobi. The state corporation included; Water Sector Trust Fund, Water Sector Regulatory Board, Water Resources Management Authority and National Water Conservation and Pipeline Corporation. The unit of analysis was thus stated as all Managers, Officers and Assistants in Human Resources Department and Assistant Managers and Senior Officer in other

Departments who are in middle management. The Study adobted a stratified random sampling to pick sample from a population of 160 staff in the Public Water Sector in Kenya. The primary data was collected using self administered questionnaires to the respondents which were picked at appropriate dates. Secondary data was collected from books, Journals, reports and past studies. To aid in data analysis, the Statistical Package for Social Sciences (SPSS) was used. To test the significance relationship of independent variables against the dependent variable, the following multiple regression model was used.

$Y = B_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_i$

Where:

Y= OHSMS Implementation (Dependent Variable)

X_1 = Top management commitment(Independent Variable)

X_2 = Employee competence (Independent Variable)

X_3 = OHS Framework (Independent Variable)

X_4= Technology(Independent Variable)

B_0 = constant of regression

B_1 = (1,2,3,4) Regression coefficeients

ε. = error term/stochastic term

FINDINGS

Top management commitment

The study aimed to establish the influence of Top management commitmentin implementation of Occupational Health & Safety Management Systems in Public Water Sector in Kenya. The study requested respondents to indicate how they agreed or disagreed on key statements which related to top management support in the organizationusing a scale of 1-5 (1-Strongly Disagree, 2-Disagree, 3-Moderately agree, 4-Agree 5-Strongly agree).

Table 1: Top management commitment Mean, Standard Deviation and Variance Results

	N	Mean	Std. Deviation	Variance
The top management of this institution is devoted to the implementation of occupation safety and health regulations and policies.	87	3.8966	.76302	.582
The organization top management support issuing of personal protective equipment to employees	87	3.8621	.86498	.748
Top management assist in undertaking regular occupational health & safety audits	87	3.3103	.76721	.589
Top management budgets and gives out financial resources for implementation of occupational health and safety measures in the organization	87	3.6782	.84212	.709
Top management is part of OHS committee.	87	3.7816	.81305	.661
Average	**87**	**3.7058**	**0.8101**	**0.6578**

According to study findings in Table 1, the respondents disagreed that the top management of their institution were devoted to the implementation of occupation safety and health regulations and that OHS policies were adequate as indicated by a mean of 3.8966 and a standard deviation of 0.76302; the respondents disagreed that their organization's top management supported issuance of personal protective equipment to employees and that they were adequate as indicated by a mean of 3.8621 and a standard deviation of 0.86498; the respondents agreed that the Top management assisted in undertaking regular occupational health& safety audits as indicated by a mean of 3.3103 and a standard deviation of 0.76721; the respondents also agreed that Top management budgets and gives out financial resources for implementation of occupational health and safety measures in the organization as indicated by a mean of 3.6782and a standard deviation of 0.84212. The respondents further agreed that their Top management were part of OHS committee as indicated by a mean of 3.7816and a standard deviation of 0.81305; On average all the top management support statements had an average mean score of 3.7058, a

standard deviation of 0.8101 and variance of 0.6578. These findings indicated that the respondents'had convergent opinions since all the standard deviation and variance results were less than 1.

These findings also showed that majority of the respondents agreed that top management support on OHSMS implementation was adequate. These findings were in agreement with Suriently (2012), who says that for any organization to succeed in it's OHS measures, the top management must be committed to invest money into those activities which support OHSMS implementation. The finding also agreed with a study by Lepak, (2010) who found out that support of safety and heath measures come from top management who include Managers who are the people that supervise the human resources to achieve the organizational goals. Thus, all managers need to be opinion leaders themselves to motivate their employees in the right direction during OHSMS implementation.

The findings also concurred with those ofSeok J. et al (2013) who asserts that due to lack of health and safety management system, most managers were motivated to develop OHSMS at their workplaces in order to eliminate and manage health and safety risks associated with organization activities.OHS managers focus on health and safety issues, site general managers also had to pay attention to many other issues including logistics, cost, completion of projects on time, etc. The management in these organizations should support implementation of OHSMS by providing necessary support for the various needs including risk assessmentin the sites, understand the problems that the OHS manager experience in their day to day work environment and strive to provide leadership.

Employee competence

The second objective of the study was to establish the influence of employees' competence on implementation of OHSMS in Public Water Sector in Kenya.

Table 2: Employee competence Mean, Standard Deviation and Variance Results

	N	Mean	Std. Deviation	Variance
Work allocation is carried out in respect of relevant training and acquired skills	87	4.2759	.67668	.458
Employees have the required technical expertise in their respective roles.	87	3.1264	.77467	.600
The organization regularly organizes relevant training to foster technical expertise of workers.	87	3.8161	.84260	.710
The organization frequently conducts regular Employees skills Audit.	87	3.7241	.84482	.714
The organization repeatedly sensitized its staff on Occupational Safety & Health.	87	3.3448	.75986	.577
Average	**87**	**3.6575**	**0.77973**	**0.6118**

According to study findings in Table 2, most of respondents in the study indicated that Work allocation is carried out in respect of relevant training and acquired skills as depicted by a mean of 4.2759 and a standard deviation of 0.67668; the respondents too agreed that employees have the required technical expertise in their respective roles as shown by a mean of 3.1264 and a standard deviation of 0.77467; the respondents however disagreed that their organizations regularly organizes relevant training to foster technical expertise of workers as indicated by a mean of 3.8161 and a standard deviation of 0.84260. The organizations frequently conducted regular employees'skills audit as indicated by a mean of 3.7241 and a standard deviation of 0.84482. Lastly, the organizations repeatedly sensitized their staff on Occupational Safety & Healthas indicated by a mean of 3.3448 and a standard deviation of 0.75986. On average all employees Competence

statements had an average mean score of 3.6575, standard deviation of 0.77973 and variance of 0.6118.

The findings indicate that majority of the respondents agreed that employees have acquired necessary skills and knowledge and expertise to carry out their roles. The respondents also agreed that the organizations allocated work in respect of the employee technical expertise. However, the finding also showed that majority of the respondents disagreed that resources are allocated to enhance their technical expertise and training. This negatively affected the organizations ability to implement OHSMS at workplaces.

These findings concurred with Emami (2017) who argues that competency programs creates a culture that focuses on job training and identification of competent people. The employees should be given opportunity to assess themselves in terms of required competencies and the organisation should provide opportunity for training to its workers especially on requistite skills to be able to perform their work. These findings were in line with a study by Gaceri (2015) who observed that lack of training influenced implementation of health and safety measures by reducing unsafe acts among new employees, and enhanced awareness amongst existing staff. And also, Training equips employee with skills and knowledge necessary to progress in their careers and to perform better in their jobs. This was also supported by Zakari et al (2016) who identified lack of skilled human resources as one of the barriers in implementaion of OHS in Ghana.

Occupational Health & Safety framework

The study also evaluated the influence of Occupational Health & Safety Framework on implementation of OHSMS in Public Water Sector in Kenya.

Table 3: Occupational Health & Safety framework Mean, Standard Deviation and Variance Results

	N	Mean	Std. Deviation	Variance
There are safety and health procedures in the organization	87	3.8276	.85190	.726
Employees follow procedures on safety and health.	87	3.4828	.81927	.671
The organization has developed OHS policy	87	3.4483	.74332	.553
The organization has established health & safety committee	87	3.8046	.84687	.717
OHS issue are adequately addressed by OHS committee	87	3.5747	.65826	.433
Average	**87**	**3.6276**	**0.7839**	**0.620**

According to study findings in Table 3, the respondents agreed that there are safety and health procedures in the organizations as shown by a mean of 3.8276 and a standard deviation of 0.85190; the respondents moderately agreed that Employees follow procedures on safety and healthas indicated by a mean of 3.4828and a standard deviation of 0.81927and that the organizations have developed OHS policy, since the respondents moderately agreed as indicated by a mean of 3.4483 and a standard deviation of 0.74332. The respondents however disagreed that the organization has established health & safety committee as indicated by a mean of 3.8046 and a standard deviation of 0.84687. Lastly, the respondents moderately agreed that the OHS issues were adequately addressed by OHS committee as indicated by a mean of 3.5747 and a standard deviation of 0.65826. On average all occupational health and safety framework had an average mean score of 3.6276, standard deviation of 0.7839 and variance of 0.620.

These findings indicated that majority of the respondents agreed that the organizations have health and safety procedures which are functional. The findings also showed that workers in Public water sector follow safety procedures as given to them. However, it show that most organizations do not have well established health and safety committees. The respondents moderately agreed that OHS issues are addressed through health and safety committees. The study findings are in agreement with a study by Kibe (2016) who

identified that many orgnaizations in construction sector lack health and safety committees that influence implementation of health and safety measures. He also realised that OHSMS implementation has been negatively impacted by absence of health and safety management policy. The findings were also supported by Kemei et al (2017) who idendifed that 12% of construction sites do not have established health and safety committees,and workers are not provided with right tools and equipments to work and issuance of appropriate PPEs to workers is a mirage. He also realised that most construction firms in Nairobi don't have a safety and health policy.

Technology

The study aimed to determine the influence of Technology on implementation of OHSMS in Public Water Sector in Kenya.

Table 4: Technology Mean, Standard Deviation and Variance Results

	N	Mean	Std. Deviation	Variance
The organization embraces innovation to improve on its performance.	87	3.4943	.88756	.788
Innovation has enhanced OHSMS implementation	87	3.7011	.53079	.282
The organization has automated its key processes	87	3.9310	.33387	.111
Automation has enhanced OHSMS implementation	87	3.8621	.34683	.120
Technology has enhanced access to information for OHSMS implementation	87	4.0460	.52624	.277
Average	**87**	**3.8069**	**0.5351**	**0.3156**

According to study findings in Table 4, the respondents agreed that the organization embraces innovation to improve on its performance as indicated by a mean of 3.4643 and a standard deviation of 0.8876; the study findings also implied that the organization have automated its key processes to enhance OHS as indicated by a mean of 3.931and it was established that OHSMS is fully automated assupported by a mean of 3.8621 and a standard deviation of 0.34683. To establish if the use of ICT to access OHS information has enhanced OHSMS, a mean of 4.0460 and a standard deviation of 0.52624 was obtained from respondents. On whether innovation has enhanced OHSMS, majority of the respondent agreed with the statements as mean of 3.7011 and standard deviation of 0.53079was obtained. On average all the technology responses had an average mean score of 3.8069, standard deviation of 0.5351and variance of 0.3156.

These findings indicated that majority of the respondents agreed that the organizations had embraced innovation to improve OHSMS implementation; the organizations have automated its key processes; the organization uses ICT to access OHS information enhancing OHSMS; ICT policies and procedures have enhanced OHSMS implementation; These findings were in agreement with Miller (2010) who stated that adoption of new technology nowadays has enabled employers to have access to a number of computer software applications that aid in incidents reporting, keeping and retrieval of OHS records, monitoring of unsafe acts by employees at work and facilitate OHS training as well as keeping track of employees leave and absences and management of their medical expenses. The findings were also in line with Lau (2010) where he found out that many firms in construction sector had taken advanatage of emergence of more sophisticated tools and gadgets that assist organizations to have a fresh perspective on how workplace safety can be further improved through realtime information acquistion and processing.

Occupational Health & Safety Magement Systems Implementation

The dependent variable of this study was Occupational Health and Safety Management

Systems Implementation as measured by Reduced Rate of Work injuries, Reduced Rate of Occupational diseases and Reduced Rate of Accidents. Table 5 presented descriptive statistics on OHSMS implementation in the Public water sector.

Table 5: Occupational Health & Safety Management System Implementation Percentage

Description	2015/2016	2016/2017	2017/2018
Number of OHS compliance Audit queries raised and not closed	25%	10%	0%
Number of staff trained in OHS	60%	75%	85%
Accidents and injuries reported at workplaces	10%	8%	2%

The result revealed that Public Water Sector in Kenya have shown remarkable improvement in implementation of OHSMS in indicated by the reduction on queries raised during OHS audit and number of closed the queries within the financial period. There was also remarkable increase in the number of employees who have been trained on OHS across the organizations in water sector from 60% of the employees acquiring OHS training in 2015/2016 to 85% in 2017/2018. Accidents and injuries reported at work have reduced from 10% of respondents that sustained injuries at work in 2015/2016, 8% in 2016/2017 and with the percentage standing at 2% in the financial period 2017/2018.

Inferential Statistics

The study applied regression analysis to establish the statistical significant relationship between the independent variables and the dependent variable. The independent variables included; (X_1) top management support, (X_2) employee competence, (X_3) OHSMS framework and (X_4) technology, while the dependent variables (Y) was the OHSMS implementation in the public water sector**.** The regression analysis results were presented using regression model summary table, Analysis of Variance (ANOVA) table and beta coefficients table.

The model used for the regression analysis was expressed in the general form as given below:

$$Y = B_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon_i$$

Regression Analysis Results

From the findings of the study, it showed that the regression model in table 6 coefficient of determination (R^2) is 0. 628 and R is 0.792 at 0.05 significance level. The coefficient of determination (R^2, 0. 628) indicates that 62.8% of the variation of OHSMS implementation is affected by; top management support; employee competence; Occupational Health & Safetyframeworks and technology. The remaining 37.2% of the variation on OHSMS implementation in water sector State Corporation was influenced by other variables not included in the study model. This was supported by Graham (2002) who says that (R^2) is always between 0 and 100% where 0% shows that the model explains none of the variability of the response data around its mean and100% indicates that the model does not explain any relationship between the variables. Higher (R^2) shows how better the model fits the data(Crossman, 2013). With R^2 of 0.618, variables had high explanatory power on the variation in implementation of OHSMS in Public Water Sector in Kenya.

Table 6: Model summary

Model	R	R Square	R Adjusted Square	std. Error ofb the Estimate	R Change	F Change	df1	df2	Sig. F Change	Duebin Watson
1	.792[a]	.628	.610	.27781	.628	34.589	4	82	.00	1.743

a. Predictors: (Constant), Occupational Health and Safety Framework, Technology, Employee competence, Top management commitment.

b. Dependent Variable: OHSMS implementation

To test the significance of the overall regression model, one-way Analysis of Variance (ANOVA) was used. According to Green & Salkind (2003) one-way ANOVA helps in determining the significant relationship between the research variables. Table 7 indicated that the value of F (34.589) with significant level of p-value 0.00 which is less than 5% level of significance. This means that all the independent variables significantly influence OHSMS implementation in water sector State Corporation in Nairobi County, Kenya.This confirms the statistical significance of the model linking independent variables to dependent variables.

Table 7: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.678	4	2.669	34.589	.000[b]
	Residual	6.328	82	.077		
	Total	17.006	86			

a. Dependent Variable: OHSMS implementation

b. Predictors: (Constant), Occupational health and safety framework, Technology, Employee competence, Top management commitment

Table 7 further presented the results of the test of beta coefficients which shows the extent to which each independent variable significantly influences OHSMS implementation in Public Water Sector in Kenya. As presented in table 8; (X_1) top management support coefficient of 0.424 was found to be positive at significant level of (P=0.002<0.05) and this indicates that top management support significantly influence OHSMS implementation in Public Water Sector in Kenya. According to Mohamed (2017), it is evident that OHS training improves the performance of construction projects and reduces injury rates in construction sites. This is also in agreement with Kibe (2016) who argues that when accidents are lower, less working hours are lost, litigations due to accidents are lower and absenteeism is reduced.

The regression analysis showed a positive and significant relationship (X_2=0.243, P=0.039<0.05) which indicated that employee competence significantly influences OHSMS implementation in the Public water sector. The study findings concurred with a study by Andrew (2010) who found out that organizations can deal with the risks posed by various events if it conducts business impact analysis. Further, organizations should identify and secure resources to handle emergency situations and move to disaster recovery efforts to ensure business continuity.

Regression analysis further established that OHSMS framework (X_3) with a coefficient of 0.474 was found to be positive at significant level of (P=0.000<0.05). This indicated that OHSMS framework significantly influenced OHSMS implementation in Public Water Sector in Kenya. This in agreement with a study by Bailey &Soyoung (2009) who found out that occupational health hazard control mechanisms are a major factor of OHS practices that affect the performance of many construction firms in the USA. The same findings are supported by a study carried out by Ballard (2012), and another one by Desler (2008) who argued that many firms have embraced effective occupational health hazard control mechanisms as a measure to increase the level of organization's performance.

Finally,(X_4) technology had a coefficient of 0.227 at significant level of (P=0.045<0.05) which indicates that workplace inspections significantly influences OHSMS implementation in the Public Water Sector.

This clearly demonstrated that OHSMS implementation in Public Water Sector in Kenya is significantly influenced by all the independent variables each having different relative important. All the significance values were less than 0.05 thus the regression equation was;

$$Y=0.229+ 0.424X_1 + 0.243X_2 + 0.474X_3 + 0.227X_4 +\varepsilon_i$$

Table 8: Regression Coefficients results

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	.229	.437		.525	.601		
	Top management commitment	.424	.131	.005	.030	.002	.188	2.333
	Employee competence	.243	.116	.262	2.096	.039	.290	3.451
	Technology	.227	.112	.145	2.031	.045	.896	1.117
	Occupational health and safety framework	.474	.130	.522	3.647	.000	.221	4.520

a. Dependent Variable: OHSMS implementation

From the regression model above, taking all the independent variables into account; (X_1) top management support, (X_2) employee competence, (X_3) OHSMS frameworkand (X_4) technology at Zero constant, influence on OHSMS implementation in Public Water Sector in Kenya stands at0.229.

The results presented also shows that taking all other independent variables at constant zero, a unit increase in top management support results to 0.424 increase in OHSMS implementation in Public Water Sector in Kenya; a unit increase in employee competence results to 0.243 increase inOHSMS implementation in Public Water Sector in Kenya and a unit increase in OHSMS framework results to 0.474 increase in OHSMS implementation in Public Water Sector in Kenya. Finally, a unit increase in technology results to 0.227 increases in OHSMS implementation in Public Water Sector in Kenya.

The study has revealed that all the independent variables (top management support, employee competence,OHSMS framework, and technology had a positive and significant influence on OHSMS implementation in Public Water Sector in Kenya.

CONCLUSION AND RECOMMENDATIONS

Based on the study findings, the study drew conclusions that internal factors influence implementation of OHSMS in Public Water Sector in Kenya. The study concluded that top management commitment with a coefficient of 0.424 is the major factor that influences implementation of OHSMS in Public Water Sector in Kenya, followed by employee competencywith a coefficient of 0.243, occupational health and safety framework with a coefficient of 0.474 and lastlyuse of technology in OHSwith a coefficient of 0.227.

The study suggests the following recommendations based on the conclusions from research findings;

First, top management support should be given first priority in implementation OHSMS in all organizations in the Public Water Sector since it is the driving force behind the success of OHMS implementation. Thus, top management should play a big role in OHSMS implementation by allocating resources, providing policy direction by formulating and implementaing OHS policies and support in the acquisition of the latest technology available in the market for OHS implementation and also support training of employees in relevant skills to carry out work in safer ways.

Second, the results of the study showed that employee's competence influence implementation of OHSMS. Thus, organizations under the Public Water Sector in Kenya should organize for regular training of workers by having yearly training plans and allocating employees work and tasks according to their competencies. Further, the organizations in the Public Water Sector should allocate enough

resources for training employees on Health and Safety skills and enhance employeestechnical expertise through on job rainings. Also, organization should set minimum number of training sessions in occupational health and safety that an employee should attend in a year and link them on future deployment and promotions in the organization and also attach rewards to achievement of the set standardsby employees to enhance OHS competency.

Third, all organizations in the Public Water Sector in Kenya should ensure there is an established and trained OHSCommiteein their organizations that can implement OHSMS. Ensure that there areOHS policies and procedureswith employees being sensitized on them. Further, these organizations should ensure that employees are provided with appropriate hazard control mechanisms and enforce use of appropriate PPEs.

Fourth, in order to improve use of technology, all organizations in the Public Water Sector should acquire relevant ICT, train employees on its use and ensure it is constantly used in reporting incidences, monitoring risks and in job placement and employee training. Further, organizations should develop and implement ICT policy on use oftechnology in OHSMS and always source for the latest and effective technology in the market that aids in implementation of OHSMS. (Darren Mark Joubert. 2013)

Suggestion for Further Studies

The main objective of the study was to determine the influence of internal factors on implementation of OHSMS in Public Water Sector in Kenya. Further studies should therefore be undertaken to establish effects of other variables that accounts for 38.2% not accounted by the research. Also similar studies should be undertaken in private owned organization in water sector to find out how similar factors influence implementation of OHSMS. The study recommended that other studies be done on other sectors since the current study mainly focused on the Public Water Sector.

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