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DEPARTMENT OF REAL ESTATE AND CONSTRUCTION MANAGEMENT

AN INVESTIGATION ON THE EFFECTIVENESS OF OCCUPATIONAL HEALTH AND SAFETY PROGRAMME ON THEKENYA POWER AND LIGHTING COMPANY LAST MILE CONNECTIVITY PROJECT PERCEIVED PERFORMANCE

A CASE STUDY OF NAKURU COUNTY, KENYA

BY

NYATUKA DAN MOGWAMBO
STUDENT REGISTRATION NUMBER: B53/8538/2017

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DECLARATION

DECLARATION BY THE CANDIDATE

I hereby declare this research project is my original work and has not been presented for examination in any other University. No part of this project may be reproduced without prior permission from the author and/or University of Nairobi.

NYATUKA DAN MOGWAMBO

Signature: ……

Date: ……

DECLARATION BY THE SUPERVISOR

This research project has been submitted for examination with my approval as the University supervisor.

DR. ARCH. RALWALA ANTHONY ODUOR
Lecturer
Department of Real Estate and Construction Management
University of Nairobi

Signature: ……

Date: ……

DEDICATION

To my sons Becher and Deuel; May you live with this creed, that excellence is a value which you should spare no pains to attain.

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This project has been made possible with immeasurable support and contributions of numerous people who have in one way or another contributed greatly to it. First, a special tribute goes to God Almighty, for the undeserving gift of life and good health, and for the provision of necessary resources to enable me achieve in academics and life entirely. Secondly, my appreciation goes to my supervisor Dr. Anthony Ralwala for his tireless professional assistance and guidance in the development of the proposal that helped shape my study in writing the project. I am also grateful for the efforts of the staff members of the University whose various courses shaped my career path and contributed to my choice of topic. Many thanks to Kenya power and Lighting Company Limited for giving me the opportunity to work and do and research on the Last Mile Connectivity Project. Special acknowledgements to my research team led by Mr. Bernard Odero for making it possible to come up with this project.

ABSTRACT

Electricity transmission, distribution and connection face numerous Occupational Health and Safety risks and if unchecked can affect project performance. Kenya Power and Lighting Company Limited came up with the Last Mile Connectivity project (LMCP) to connect 1.2 million customers across various Counties in Kenya. There is no specific study that has been conducted to analyze the status of Occupational Health and Safety as far as Last Mile Connectivity Project is concerned particularly with regard to occupational accidents. The main objective of the study was to analyze the effectiveness of Occupational Health and Safety Programme on the Last Mile Connectivity Project (of the KPLC) performance within the County of Nakuru in Kenya. The study specifically analyzed the effect of Occupational Health and Safety training, employee assistance, ergonomics, audit and policy in relations to Last Mile Connectivity Project performance. The underpinning theories used to analyze the objectives of the study were; Goal-Freedom Alertness Theory, Distraction Theory, Domino Theory, Social Cognitive and Social Change Theories. The study adopted a descriptive survey research design. The target population consisted of 200 contractors working at different categories in Nakuru County and 2,289 customers connected under Last Mile Connection Project. The study used random sampling technique and sampling formula recommended gymnasium (2000) which gave a sample size of 71 for the contractors' category. To sample the 2,289 customers connected through the Last Mile Connection Project, the study used Yamane (1967) simple random sampling technique, yielding a result of 341 customers connected by last Mile Project. The unit of analysis was contractors and customers in LMCP for each sample respectively. This study utilized a self-administered structured questionnaire to collect data. The questionnaire design was based on the conceptual framework developed after literature review. The data was analyzed through the use of descriptive statistics such as mean, median, standard deviation, frequency tables and percentages. The study tested the relationship between Last Mile Connection Project Occupational Health and Safety Programme and LMCP performance using Pearson Correlation and the regression model. The computer application package for social sciences SPSS (Statistical Package for Social Sciences Version 21.0) was used to aid in the analysis. The study established existence of significant positive linear relationship between training and LMCP performance indicating that Occupational Health and Safety training affected LMCP performance. Secondly, the study established a significant positive linear relationship between audit and LMCP

performance indicating that Occupational Health and Safety audit affected LMCP performance. Lastly, the study established a significant positive relationship between employees' assistance programme and LMCP performance. The study recommends that Kenya Power and Lighting Company should re-evaluate its Occupational health and Safety policy to be responsive to the reality of the extensive connectivity of the LMCP. Secondly, the company should put more effort on improvement of ergonomics both at the contractual level and consumer level to address concerns on the possibility of accidents occurrence. The study recommends further study on effect of the use of concrete corrugated poles on Occupational Health and Safety of contractors in the LMCP. The study also recommends an investigation on employees' occupational health and safety in the Kenya Power and Lighting Company Limited.

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List of Abbreviations and Acronyms.

GOK	- Government of Kenya
IEA	- International Energy Agency
ILO	- International Labor Organization
KNBS	- Kenya National Bureau of Statistics
LMCP	- Last Mile Connectivity Project
NOAT	- National Occupational Audit Tanzania
OHS	- Occupational Health and Safety
PDO	- Project Development Objectives
SCT	- Social Cognitive Theory
WHO	- World Health Organization

CHAPTER ONE

INTRODUCTION

1.0 Background of the Study

A report by the International Labor Organization (2010) on diseases and deaths allied to accidents at work highlights a mortality rate claiming over two million lives annually. It is added that ill-health and injury rate on the latter greatly surpasses this number. According to the literature review by Robson et al. (2007), there was an evaluation on the effects of the interventions of OHS on employees. This evaluation aimed at showing the rate at which safety and ill- health of the employees affect their economic well-being. He adds in the review that there is a possibility of compulsory OHS Management System adoption. This results from the statutes of the government. This similarly depends on the nature of an insurance policy. Due to this intervention, an eighteen per cent and twenty four to thirty four per cent reduction in the rate of injury in organization was later reported (Robson et al., 2007).

"Last Mile Connectivity Project" is a project launched by the KPLC Limited and funded by the GOK and African Development Bank. Its budget tallies to 13.5 billion Kenya shillings. This project aims at attracting customers numbering from 1.2 million through power supply and extending connection of electricity within Kenya. The LMCP's goal is within its existing transformers and radius: 45,000 and 600 respectively countrywide. To achieve the goal, the Kenya Power and Lighting Company will construct lines with low voltage electricity distribution capacity. It also intends to ameliorate its supply management capacity.

Further to achieve the named goals, this project is done in phases: electricity extension to the customers as highlighted above within the named radius and existing transformers as the first phase. There is the installation of new 500,000 transformers at the second phase and the final phase entails extending of electricity supply within the newly installed transformers. Installation of new transformers and extension of electricity power within the new transformers aims at reaching two and a half million and above costumers.

Current study analyzed the effect of OHS on LMCP performance taking the case of the County of Nakuru. The study is historical in nature since data collected was based on the contractors who implemented LMCP and customers who benefited from the project.

1.0.1 Electricity Connectivity Projects

According to the report by the World Bank (2012), fund amounting to 16.7 million dollars was donated to the Rural Electrification Project in Kenya by the World Bank. It was funded with 16.7 million dollars. This project was to run for nine years from 2003. This project aimed at ensuring electricity expansion in the remote areas of Kenya. This project was then evaluated by the World Bank in 2012 to rate its performance by a number of factors. These factors ranged from the project development objective (PDO), general implementation progress and the outcome attainment. This rating was fairly unsatisfactory for the project development objective factor and overall implementation progress. On the other hand, the completion outcome was moderately unsatisfactory (World Bank, 2012).

It is noteworthy that, just as in other parts of the World, Uganda faces challenges in her projects of the connectivity of electric power. As highlighted by Wesonga (2017, in western Uganda's seven districts, a contracted private firm named Ferdsult Engineering Services Limited ended its contract due to impediments. The company identified this project as lacking cost effective feature. Operation costs were non-transferable to customers. There were high connection charges as the company failed to connect individuals in the rural set-up(Wesonga,2017).

In the past few years, the World Bank and Africa Development Bank have funded the several Kenyan electricity connectivity projects. According to the World Bank (2018), there were benefits of diverse rating accrued by these projects at seasonal review of performance. In Kenya for instance, on the last date of March in the year 2015, dawned a project funded by the World Bank, Kenya Electricity Modernization Project. This project is expected to end by July 1, 2020. This project that is destined to increase people's access to electric power, improve electricity reliability and strengthen the financial situation of the KPLC. The World Bank, (2018) rated the project in the beginning of the year 2018 capable of satisfactorily attaining the PDO and the completion factors.

1.0.2 Kenya Power Last Mile Connectivity Project Context

To reduce poverty, it has been identified that electricity connectivity in the rural areas plays a key role. According to Abdullah &Markandya, (2012) this happens since a community socially and economically develops with electrification interventions in a given area. Further, the International Energy Agency, (2010) depicts lack of electricity access to closely 1.3 billion individuals worldwide and these are majorly rural residents. In the Sub-Saharan Africa, around a half of this population is within this deficiency circle. This is rated to nearly 45% of the population. Another report from the agency depicts that below a third of the population's household of the subcontinent have access to electricity whereas urban electrification globally rates more than 90 per cent. It is a forthcoming since less than 60% percent of Sub Saharan urban residents have achieved this global record. It is questionable whether the International Energy Agency 2030's estimation will be attained: that electricity access will be at a similar pace with current population growth. There is a high probability closely to 40% of Sub-Saharan Africa nationalities might fail to achieve this estimated universal goal to achieve electricity access before 2050.

Household electricity connectivity in Kenya is about three million with that in rural areas being lower than that of urban areas. Many Kenyans to date comfortably reside in the remote areas. Electricity lack in rural areas is affecting nearly percentage of ninety (90) of Kenyans (Abdullah and Markandya, 2012). According to a recent survey, the percentage of Kenyan household connected to electricity was 22.9% with 51.4% in urban areas and 5.2% in rural areas. In Nandi County, the connectivity was at 6.2% which is extremely low (KNBS, 2013).

Creation of the KPLC Limited from the Kenya Power Company occurred in 1954.This was under management of East Africa Power and Lighting for the purpose of transmission and distribution of power. It was to supply electricity, distribute the power to homes, as source of income to the company's thus efficient management. It was the mandate of the company to ensure sufficient line capacity leading to maintenance of supply and provide desired quality nationwide. Customers tallying to over 2.6 million were the target for proper selling and income (Kenya Power, 2016). Kenya Power is the sole retailer of the National Grid Electricity in Kenya. The Kenya Power as a stakeholder in the LMCP hires contractors to distribute and drop electricity to customers. The customers' role is to have their premises installed with electricity wiring as per the requirement of the company. There are just few employees especially the technical managers attached to the Last

Minute Connectivity Project to provide technical certification, monitoring and evaluation of the project.

It is out of this need for electricity access to all Kenyans that the implementing agency, The KPLC Limited instituted the Last Mile Connectivity Project to facilitate connection as a medium term plan to ensure universal access to electricity by the year 2030.

1.0.3 Health and Safety Programme and Organization Productivity.

It is essential in the KPLC that good health and safety of its 10,465 staff members is ensured. This is because of the sensitivity, relevance and the validity of the OHS programs to policy statements of vast organizations. In the KPLC setup, the employees are either non-unionized or unionized depending on employment agreement. It is unfortunate that the OHS programs are theoretical rather than practical. This is as far as outsourcing of protection activities is concerned, which is diminishing: the contractors insufficiently ensure the workers' mandatory health and safety rights. Protection of employees to from accidents have not be achieved. They are exposed to hazardous environment leading to reduced production.

Employees under strict safety and health conditions are more focused and careful at work compared to the ones lacking comprehensive plans for health and safety. This is derived from a study by the Integrated Benefits Institute (Kimberly, 2009). This culture should be emphasized in a workplace since it has a cause-effect relation on a company's leadership and coordination, and output.

Good job performance and healthy workforce is certain in firms that value and prioritize on healthy and safety working conditions. To trigger success, Jinnet, (2013) reports an increased interest for company employers in focusing on the link between performance and ill-health of employees. Keller and Price (2011) thought that an enterprise provides stakeholders with a conducive, that is, a healthy and safety working environment, operationally and financially to ensure performance. This evaluation is done by calculating operational profits, return on capital, returns to stakeholders, returns on stock and the net costs of operation. They define health as an organizational ability to "align, execute, and renew" itself. This is contrary to other views that it entails competition in continuous performance sustainability.

1.0.4 Fatality and Injury Statistics in Kenya Power Company

Kenya power employees and contractors and also the public have been experiencing occupational related accidents some of which cause serious injuries and some of these accidents unfortunately lead to fatality. Rate of accident occurrences were constantly high in the years 2016/2017 and 2017/2018 when the Last Mile Connectivity Programme was introduced. Table 1.1 below presents the summary of the accidents situations in Kenya Power Company.

Table 1.1: Accidents Statistics in Kenya Power Company

Category	**2009/10**	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**2017/18**	**Total**
Staff fatality	3	2	4	4	2	5	1	5	2	28
Contractors fatality	4	7	9	4	10	6	2	3	3	48
Serious injuries	15	26	15	27	15	55	19	38	31	241
Public fatalities	38	63	80	80	68	96	87	99	111	722
Total	**60**	**98**	**108**	**115**	**95**	**162**	**109**	**145**	**147**	**1039**

Source: Kenya Power Occupational Accidents Statistics, 2009-2018

1.1 Statement of the Problem

Kenya Power Company has developed policies, guidelines and programs on occupational safety and health that are applied and implemented across the board to all employees. The company is also committed to excellence and success in the energy sector through a motivation kitty used to award the best performing employees and Departments. The OHS programs of the KPLC Limited are designed to recognize employee performance, including in the Last Mile Connectivity Project.

A 2013 audit report on safety, health, its programs alludes an increase in accidents, perils, injuries and illnesses related to workers especially in technical sector to have a percentage increment of twenty-thirty. This results from failure to properly implement the programs (KPLC Safety and Health Audit Report, 2013).

The Last Mile Connectivity Project was initiated to extend electricity connectivity and to supply earn from customers tallying to more than 1.2 million. It aimed at electricity delivering characterized by more than 300,000 connections and to construct electricity lines having low distribution of voltage. This improves the performance of the KPLC in in electricity supply thus improvement in management. This massive electricity connection project provided various OHS challenges to the staff involved in the project and also customers connected to the National Grid, and risks such as work related accidents, illnesses and injuries were expected to increase in number and magnitude.

The number of accidents were constantly high in the years 2016/2017 and 2017/2018 at 145 and 147 cases respectively when the Last Mile Connectivity Programme was introduced. Serious injuries were also very high in the last two years, a period of the project, affecting contractors more since it is the contractors who are involved in the direct transmission and installation of electricity under the project. There is no specific study that has been conducted to analyze the status of OHS as far as Last Mile Connectivity Project is concerned with regard to such high number of occupational accidents. This scenario has motivated the current study that will analyze effectiveness of OHS Programme on the Last Mile Connectivity Project perceived performance in the County of Nakuru.

1.2 Hypothesis of the Study

The study tested the main hypothesis based on the test findings of the sub-hypotheses. When any of the sub-hypotheses are rejected, the main hypothesis is also rejected whereas when all the sub-hypotheses are accepted then the main hypothesis is also accepted (Leedy and Ormrod, 2005)

1.2.1 The main Hypothesis

HO: Null Hypothesis

OHS Programme on LMCP's performance in the County of Nakuru, Kenya is not effective.

HA: Alternative Hypothesis

OHS Programme on LMCP's performance in the County of Nakuru, Kenya is effective.

1.2.2 Sub-Hypothesis 1 on OHS Training

HO^1: Null Hypothesis

OHS training on LMCP's performance in the County of Nakuru Kenya is not effective.

HA^1: Alternative Hypothesis

OHS training on LMCP's performance in the County of Nakuru, Kenya is effective.

1.2.3 Sub-Hypothesis 2 on Health and Safety Audit

HO^2: Null Hypothesis

OHS audit on LMCP's performance in the County of Nakuru is not effective.

HA^2: Alternative Hypothesis

OHS audit on the LMCP's performance in the County of Nakuru, Kenya is effective.

1.2.4 Sub-Hypothesis 3 on Employees Assistance Programme

HO^3: Null Hypothesis

Employees' assistance programme on the LMCP's performance in the County of Nakuru is not effective.

HA^3: Alternative Hypothesis

Employees' assistance programme on the LMCP's performance within the County of Nakuru Kenya is effective.

1.2.5 Sub-Hypothesis 4 on Health and Safety Ergonomics

HO^4: Null Hypothesis

Health and safety ergonomics on LMCP's performance within the County of Nakuru, Kenya is not effective

HA^4: Alternative Hypothesis

Health and safety ergonomics on LMCP's performance within the County of Nakuru, Kenya is effective.

1.2.6 Sub-Hypothesis 5 on Health and Safety Policy

HO^5: Null Hypothesis

Health and safety ergonomics on Kenya power Last Mile Connectivity Project performance within the County of Nakuru, Kenya is not effective.

HA^5: Alternative Hypothesis

Health and safety ergonomics on Kenya power Last Mile Connectivity Project performance within the County of Nakuru, Kenya is effective.

1.3 Objectives of the Study

Investigation on the OHS programme's effectiveness and the performance of Last Mile Connectivity Project of the KPLC within the County of Nakuru is the main objective of this study. Specific objectives of the study were;

i. Evaluation of OHS training's effectiveness on LMCP's performance perceived in the County of Nakuru, Kenya.
ii. To analyze effectiveness of OHS audit on the Last Mile Connectivity perceived Project performance in the County of Nakuru.
iii. To assess perceived effectiveness of employee assistance programme on the Last Mile Connectivity Project performance in the County of Nakuru.
iv. To analyze perceived effectiveness of OHS ergonomics on the Last Mile Connectivity Project performance in County of Nakuru.
v. To analyze the perceived effectiveness of occupational health and safety policy on the LMCP's performance in County of Nakuru.

1.5 Value of the Study

The study's findings may influence policy development. The findings may also attract practitioners' attention and scholarly interest regarding the analysis of the OHS programme's effectiveness on the LMCP's performance in County of Nakuru in Kenya. The findings will also enable Kenya Power Company to align its OHS Policy with Last Mile Connectivity project which is a massive connection project with various OHS risks for the purposes of minimizing possible OHS accidents that may occur by improving safety at the workplace. Secondly, employees involved in the actual implementation of LMCP will benefit from the findings from the study by using the recommendations from the study to reduce any possible accidents. Thirdly, scholars in Occupational Health and Safety, Preventive Medicine, Public Health and Electrical Engineering Design will benefit from the study findings by expanding their knowledge and practice in analyzing the OHS programme's effectiveness on the LMCP's performance within the County of Nakuru.

1.6 Scope of the study

Goal-Freedom Alertness Theory, Domino Theory, Social Cognitive Theory and Social Change Theory is adopted to anchor the study. The study adopted descriptive research design using

Nassiuma (2000) and Yamane (1967) sampling formulas to arrive at the sample representative of the study's population. This study was conducted among Kenya Power Employees working in Last Mile Connectivity Project and Customers who have been connected in the project in Nakuru County. The study analyzed the effectiveness of Occupational Health and Safety Programme on Kenya power Last Mile Connectivity Project performance in Nakuru County, Kenya by specifically looking at effect of training, employees help, ergonomics programme and Occupational Health and Safety Last Mile Connectivity Project performance.

1.7 Assumptions of the Study

Maximum cooperation from the respondents is assumed in the study. This is as far correct and objective answering of the questions is concerned. It consequently assumed in the study that is a proper understanding of OHS Programme run by Kenya Power, as well as the OSHA 2007.

1.8 Limitations of the Study

To generalize the findings, there might be a small sample size of selected KPLC Limited contractors and beneficiaries of LMCP which is inadequate to generalize all the parts of the country where the project is being implemented. The small sample was due to financial constraints. In addressing this problem, the study ensured a true representation of the sample and selected one featured by varying characteristics. Sensitivity of some information certainly leads to non-responses. In some cases, respondents were led by the curiosity to comprehensively grasp the motivation behind the study. They respondents had to be assured that the research was for academics thus confidentiality of the provided information had to be maintained. They were also assured that the study was purely academic and the information provided is treated with utmost confidential and their identity was kept anonymous. The study was time constrained to a single semester. Therefore, the investigation was restricted to the County of Nakuru.

1.9 Delimitations of the Study.

The study scope was narrowed to the effectiveness of OHS Programme on LMCP's performance in Nakuru County, Kenya by specifically looking at effect of training, employees help, ergonomics programme and OHS in LMCP's performance. As stated previously, the study was delimited to LMC contractors and customers who were the beneficiaries of the project.

1.10 Structure of the Study.

The study is organized into five distinct chapters where the first chapter presents the background of the study, problem statement, the study objectives, hypotheses, the value of the study, the scope, limitations of the study and delimitations of the study and finally the definition of terms. The second chapter contains the literature review including, theories relevant to the study, empirical review, research gap and conceptual framework. In chapter three, the research methodology applied is elaborated. It includes the population, research design, the methods for sampling, tools for data collection and the analysis of data. Chapter four presents findings from the field investigation and discussion on the various themes and lastly chapter five presents the study's summary, conclusions, recommendations and areas of further research.

1.11 Operational Definition of Terms

Ergonomics: Adaptation to a job or workplace by the design of tasks, and workstations: this includes adaptation to work equipment and tools in relation to limits and abilities of a worker (Schwinn, 1995).

Last Mile Connectivity Project: KPLC Limited's project that is expected to extend power supply connectivity to over 1.2 million customers at low affordable cost.

Occupational Health and Safety Programme: procedures, actions and plans, guiding an organization. This ensures systematic management of the business related health and safety risks (ILO-OSH, 2001).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on theories adopted for the study. They include Goal Freedom Alertness Theory, Domino Theory and Social Cognitive Theory. The section also presents the empirical Review on analysis of effectiveness of OHS Programme on LMCP's performance within the County of Nakuru Kenya, as well as the conceptual framework and knowledge gap regarding LMCP.

2.2 Theories pertinent to the study

2.2.1 Goal-Freedom Alertness Theory

This theory was derived by Kerr, (1954) highlighting that workers are only safe with a condition that they operate in a psychologically friendly surrounding, where the managing team aims at alleviating hazardous conditions such as perils, accidents and illnesses related to work. This boosts the morale of workers thus increasing output.

Health and safety is identified by situational characteristic. It further opined (as in the Distractions Theory) that health and safety as a compound of two features; the first dealing with possible hazards from perilous working conditions, and the concerned with ex-occupational duties. There is therefore a need for the KPLC in Kenya to ensure availability of health and safety conditions ranging from the customers, employees, management team and the stakeholders. Certainly, this affirms compatibility between the study and this theory.

2.2.2 Distractions Theory

This theory derived by Hinze, (1997) emphasizes on the impact of making work a rewarding activity to workers by use of techniques such as "goal setting participative management," positive reinforcement to employees and through clear duties allocations. It is elucidated that this theory is further seconded by Heinrich et.al (1980) who supports conducive environment as a contribution factor directing workers' attention to safe performance contrary to hazardous environment diverting workers' attention to perilous outcome suspicions.

Added by Heinrich et al (1980), active participation of management team and supervisors easily results to alleviation of these hazardous working conditions for the workers must always react to

a good or worse conditions. As discussed above, in is pretty clear that this theory is relevant in the OHS Ergonomics' analysis: OHS Ergonomics resulting into hazards at work.

2.2.3 Domino Theory

This 1930's theory by Heinrich aims at expounding on acts, accidents prevention measures, costs at loss, and efficiency effects of man-machine interactions. This theory has five dominoes; person's fault, hazardous conditions and acts, injuries, accidents, and social environment and ancestry. These five dominoes provide possibilities of conditioned inheriting perilous qualities or techniques resulting into injuries, accidents or death (Abdel Hamid and Everett, 2000).

For every effect (accident) there is a fundamental cause: majorly ignorance and management must prevent accidents through proper measures, are the two major points in this theory. A new view on this theory was developed by Bird before the 1970's. This reflected on incidences and accidents' causal-effect relation in connection to a business management and operation (Heinrich et. al, 1980). This Bird's new theory relates to Heinrich's dominoes concept however different in the five dominoes since Bird updated the elements as; property loss, route cause, lack of "control management," symptoms of immediate cause, and "incident contact" emphasizing on the role of management to cub losses.

Armstrong, (2009) similarly updated the theory. He however slightly differed from Bird's view by emphasizing the management setup of a firm. It opines that objectives: work plan and execution in an organization similarly impact on prevention of accidents (Heinrich et al., 1980). There is a similarity between 'elements' of Weaver and those of Heinrich. Weaver however had emphasis on identification of the principle reasons for the hazardous conditions and acts thus emphasizing on management roles in avoiding accidents (Heinrich et al., 1980). As the KPLC Limited contractors are exposed to occupational accidents in the LMCP, this theory is deemed relevant to the study

2.2.4 Social Cognitive Theory

The behaviors of individuals are affected by their thoughts, feelings, and beliefs. This theory highlights that no automatic factors or inner forces drive an individual to act, but are results of environmental influences. One's choice plays a greater role in their actions, motives and development. These interactions influences occur in reciprocation. Bandura, (1989) further opines that every individual posses this trait depending on one's capability. It is noted that the changes and dynamic in the social environment affects behavior: thus its application in safety amelioration. In this theory, there is what is termed as "Reciprocal Determinism" at work referring to a triad

interaction of personality, behavior and environment. In this definition, environment entails every factor capable of affecting behavior such as color, dust, and lighting, among other possible factors. Cognition in this theory covers imagination, reality or distorted imagination.

Relationships among the organization, employees, community and customers' plays a major role in success of an organization. This is idealized by Ballard, (2012) in his speech on programmes for healthy conditions at work. This ensures sustainability of good performance that is kept learning the "sense of time. Relationships among the organization, employees, community and customers' plays a major role in success of an organization.

This theory explains that health at work involves the oriented leading aspects. Health also implies the alignment, execution, and renewal faster than competition, this leads to performance sustenance. It entails capacities and kills like external orientation and coordination: relevant in leadership. The discussed theory is applied in analyzing physical and environmental conditions under which the KPLC operates. This is possible since the contractors are exposed to occupational accidents during the LMCP's Implementation.

2.2.4 Social Change Theory

Paulo Freire from Brazil related this theory to his study. According to Freire, (1992) communities were seeking methods of eradicating social injustices and poverty and this was the interest of Freire, and in East Africa, Julius Nyerere associated to this theory (Freire, 1973).

Freire emphasizes on critical thinking and dialogue in his theory as tools for mobilizing the mass (Vaughan, 2010). He adds this activity is conducted by an external agent for change who provides an empowering reflection on possible projects to the vulnerable population in the society (Rifkin and Pridmore, 2001).

There are local activists serving as the change agents. They have goals, strategies and identities capable of ensuring society transformation. This theory emphasizes on bringing change through empowering of the vulnerable via participation. This enhances proper coordination, surveillance, and capacity building and planned development agenda. This is termed as the bottom up approach of project implementing and contrary to the previous projects, it positively affects sustainability of a project. There is need for diligence as far as monitoring and evaluation is concerned: when coordinating, during capacity building, planning, during research, and surveillance, among other related duties. These should be undertaken responsibly and ethically.

Members of a given community only participate in a given community project for purposes of gaining. In Kenya currently there has been a propensity to involve target groups in project work right from initiation, formulation, implementation, monitoring and evaluation up to project closure.

This approach is in stark contrast to what was hitherto practiced before 1980s when the government was solely responsible for initiating and implementing development to the people unlike the position taken by leading social change theorists such as Freire (1973) who advocated that it was necessary to empower people to participate in their own development. Further Freire "pedagogy on the oppressed" provided a basis or discussion on empowerment. Many people view that Freire's concept of using the mass by mobilizing the members of a given community for change is a method applied to extend control in target setting by the new liberal agencies for development (Cooke and Kothari, 2001).

2.3 Occupation and Health Safety Programme

Protection of employee Safety and Health are the functions of OHS management. ILO and WHO committees held a joint session in 1950 adopted and revised in 1995 occupational health's definition. They defined it as a committee that promotes and maintains workers' fitness-mentally, physically and socially-at work. This implies that the workers are protected against possible work related psychological and physiological health disorders (Guidotti, 2011).
Reynolds, (2011) defines OHS management as a practice that protects and preserves capital and human resource at work.

The aim of this practice includes safety and protection of family members, co-workers, suppliers, the public, employers and the nearby community within the working environment (OHS Act of Kenya number 154, 2007). Annually, families spend hundreds of billions of dollars on occupational injuries, perils and accidents, this negatively impact on the families emotionally and financially (International Labor Organization, 2013).

Legislative, regulatory and enforcement approaches to the OHS differ from country to country. This extends to economic incentives to adherence to rules and OHS's general practice. For instance, this difference is evident in the European Union where grants and subsidies are provided by some members while others prefer taxation as incentives to the OHS's investment.

They appoint authorities to ensure that the OHS's legal requirements are enforced and achieved. Furthermore, cooperation among the employee and employer unions is evident in almost all the member states of the European Union thus good performance in the OHS.
National legislation in different member states is therefore an advanced method for establishment of the OHS's minimum standards.

It is the duty of the local authorities and executive of OHS to enforce the OHS's rules and regulations in the United Kingdom. However, it is reported that the trend is away from prescriptive rules while embarking on methods of risk assessment. According to the Health and Safety Act, (1974) laws governing management of fire safety and asbestos have changed and presently embrace risk assessment concept. The OHS in Denmark consequently is regulated by the "Danish Act on Working Environment and Cooperation" in areas of work. This regulatory body inspects companies, makes health and safety related rules and inform on health and safety of workers at workplaces (Working Environment and Cooperation Act of Denmark, 1969).

The OHS administration and the National Institute for Occupational Safety were created in 1970 by the OHS Act in the United States. The OHS administration enforces and develops rules while the National Institute of Occupational Safety and Health trains, educates, informs, conducts research on OHS. It is depicted that many industries lacked defined rules before then for nations independently had general rules and regulations.

The department of OHS falls under the Ministry of Human Resource in Malaysia. This department upholds the welfare-both in the private and public sectors-and it ensures safety and healthy working conditions for workers (Occupational Safety and Health Act of Malaysia, 1994). Being in her initial stages of OHS administration, China is ranked behind the United Kingdom and the United States in preventing work related epidemics. To ensue, the Ministry of Health prevents work related diseases, and ensures safe and healthy working conditions for workers as its duty. There are also health supervisors and local bureau for work safety in the China's municipalities and provinces (Work Safety Act of Peoples Republic of China, 2002).

The department of OHS in Kenya in under the Ministry of Labor. This department operates according to the directives provided in Chapter 254 of the Factories Act (now repealed) and OSHA, 2007. It ensures that the workers' welfare, health and safety are ascertained at places of work. The focus is on maintenance of the machines, electricity faults, educating on safety devices and precautions, provision of fire extinguishers, and other equipment. Vast organizations currently face safety management challenges. If the standards are met by financing then results a positive performance.

Provision for all workplaces and factories safety committee in Kenya was as a result of a 2014 subsidiary legislation (Legal Notice of Kenya Number 30, 2004).
It deals with safety and health issues and undertake audits. According to the Ministry of Labor reports over 50% of unreported occupational injuries and accidents.

The Ministry highlighted that injuries and fatalities in the year 2004, 2003, 2002, 2001 and 2000 are as follows; 1387, 1599, 1332, 1923 and 1528 respectively. This demanded a mandatory registration with the OHS department. It was recorded that barely 11,387 enterprises had registered. This figure excludes the then micro enterprises and small firms tallying to 1.3 million. The OHS aims at the knowledge of the causal agents and reduction of accidents. They reduce accident effects as they enhance safety (Verman and Mohan, 2010).

One of the methods applied in these programme include surveillance (Occupation Health Surveillance) a technique that detects hazardous conditions and their possible health problems. This systematic and practical process: surveillance, touches the fields of; medicine, epidemiology, the environment, and 'biological monitoring' (Foot and Hook, 2008). The workplace is the area of concern thus the monitored considering possible health factors affecting workers and thus exposure to hazardous conditions (ILO, 2001).

In an organization, hazard control and prevention measures require policies that are well-defined, implementable, and clear (Foot and Hook, 2008). It is depicted that the praxis, processes and policies of OHS are detailed in the OHS Audit. Safety advisers or specialists conduct audits. There should be a larger representation of the workers, management team and employers for a better audit (Jackson et. al 2009). Health and safety committee auspices conducts the exercise with active participants (Cole, 2005).

2.4.1 Health and Safety Training and LMCP Performance

Preventive programme theories and practices found in OHS training equip individuals with knowledge to maintain a safe and healthy working environment and ensures environmental and business success and integrity (Millmore et. al, 2007).

The goal of this training is to satisfy workers' needs for hazards, rules, precautions to dangers are addressed. This training therefore targets majorly the managerial, supervisory and the working staff (Armstrong, 2006).

The training for Armstrong, (2006) in its preventive mandate includes an initial course: induction, into a new duty or to a new employee and a special refresher course related to one's work.
Alli, (2008) opines the essence of educating and training individuals on relevant and specific areas of OHS in an organization. The participants must identify the purpose of ensuring safety and health. Two years according to the OHS National Policy, (2009) should not pass without a single training in an organization thus avoiding injuries.

Technical workers (in production processes) should be endowed with proper skills, a component of OHS programme. OHS training should not isolated rather considered a job training and work, incorporating it into the daily shop floor procedures (Alli, 2008). According to Oluoch (2005), staff are trained on OHS at workplace by their employers as an obligation. They hence impact experience and knowledge on the trainees, identifying importance and facts about accidents and injuries, taking right precautions independently by training method. The training should enlighten the workers to advocate for compulsory training, measures and equipment to cub hazard (O'Connor et. al, (2014).

2.4.2 Employees Assistance Programme and LMCP Performance

Occupational medicine and hygiene are the two categorized elements involved in the OHS programme's attempt to promote workplace health and safety. The medical perspective diagnoses hazardous conditions, manage its related stress, prevent and cure possible work associated illnesses. On the other hand, the 'hygiene' measures and controls hazards. It therefore serves as an engineering province and chemist.

It noteworthy that the OHS programme both prevents and reduces damages, losses, and mortality at workplaces. In addition, inasmuch as methods and aims are intertwined, the programme applies widely to work systems than to the environment (Armstrong, 2009). Philosophy and composition of organizations on the other hand differ depending on a given organization's mission, visions, aims and needs. To respond to the OHS challenges, global organizations have adapted to the new trends and acquiring essential components relating to Health and safety. The health professionals have contextualized these to improve the future of companies by providing effective management and operations of OHS programmes. This is a "new way of doing business" and a reason to start a firm (Shepherd, et. al, 2001).

For a long time now, exists a support programme for employees: the EAP (Employee Assistance Programme) aiming at boosting performance practically and emotionally. This occurs with focus on the mental, emotional and physical challenges of the employees that led to low output (Bearwell, 2004).

The EAP applies different formal techniques to achieve it aim. It addresses family or marital problems and drug abuse, among other avenues. However, such assistance programmes are formed to only fit the legal, ethical and obligatory OHS requirements (Mejia et. al, 2010).
Additionally, employers reluctantly form the OHS committees in Tanzania as a result of fear that the OHS representatives will expose accident occurrence, illnesses and hazardous working conditions at workplaces.

Additionally, employers reluctantly form the OHS committees in Tanzania as a result of fear that the OHS representatives will expose accident occurrence, illnesses and hazardous working conditions at workplaces to OSHA who will sanction them. This is reported by the Tanzanian

National Occupational Audit (2012) on OHS. This is purely ignorance of the essence, sustainability role and effectiveness of OHS programmes at workplaces.

According to a study by Musyoka, (2014) in Mombasa County in Kenya, application of the OHS programmes in an organization certainly impact on performance. He deduced by referring to the manufacturing companies he investigated to find a causal-effect relation between performance verses OHS programmes. To ensue, he investigated on four programmes that directly affected employees performance at work. They are as follows; social welfare, accidents prevention, health programme, and health and safety programmes. The conclusion of the study was that a firm should implement the OHS programmes since they are essential and improve workers' performance.

Jelimo, (2013) studied and asserted that positive and negative relationships exist between OHS practices and productivity. To her, exist a relationship between protection and prevention of fire, ventilation and lighting, proper housekeeping and personal protection equipment which are positively related. On the hand, equipment like first aid kit and hospital, and sanitation equipment and drinking water relate negatively. It was concluded in the study that it only with the implementation of the OHS practices that productivity of the employees will rise. Without the practices, an organization will frequency experience cases of absentees, turnovers, injuries, high medical bills, and insurance claims, and many cases of accident. A perpetual OHS improvement was recommended in the study for satisfaction, commitment, and high output.

2.4.3 Health and Safety Audit and LMCP Performance

OHS committee aims for a cooperative working environment among the workers and their employers. This is crucial during development, investigation, and application of the OHS measures in workplaces. Ergonomics as a practical science for studying 'human-environment' interactions emphasizes on an appropriate job for a worker.

It further studies the job, and the environment of work addressing human demands (physical and physiological). It is alluded that elements including control and outlook of tools and equipment, stress, and fatigue are explained in Ergonomics (Robert and John, 2004). The aim of Ergonomics is for job comfortability and safety reasons. New changes in relation to one's capabilities and limits, in mind and complexion, are considered in Ergonomic studies (Jackson et. al, 2009).

The duty of the OHS Inspection programmes are for defining and locating errors in an organization. The process includes faulty machines, tools, equipment and plant identification. These inspections are to be systematically and regularly conducted to reduce accidents and illnesses (Price, 2007).

It is not only the above discussed safety and health inspection programmes that work to prevent work related accidents. The safety committee also serves a similar purpose where they both advocate for good work relationship among the employee and the employer (or their representatives) to enhance increased output and OHS needs in cooperation with the OHS expectations are discussed and practiced (Dessler, 2008). This process is coordinated by the human resource manager involving many employees (or their representatives); the union requires representatives (Jackson et. al, 2000). According to Armstrong, (2012) the duty of the safety committee/union is to assess and audit, risks and safety respectively hence provide suggestions for better OHS. Representatives from the Union for workers is to be consulted and notice to colleagues on the selected committee members made and their duties elaborated.

Armstrong, (2006) encourages regular inspections characterized by advisory services from supervisory and management teams. Inspections should the purpose of identification and definition of faults in the systems and processes within a working organizational environment and prevents hazard. This is by definition errors on equipment and too, among other areas.

For Noe et. al, (2008) in Kenya, inspections of OHS audits are duties mandated to the Ministry of Labor assigning agents: "compliance officers" who inspects and investigates strictly without prior notice the concerned in the organization according to the OHS audit regulations. According to Luis et.al, (2007) OHSA has the power to conduct work place inspections to make sure that organization comply with OHSA standards. Because it could be impossible to conduct inspection of each of the thousands of affected workplaces each year, there was establishment of a system by OHS Audit adhering to this order' (1) danger occasions at work place (2) Over five casualties or deaths to workers (3) follow-up of employee complaint of unsafe or unhealthy working condition (4) high hazard industries and occupations. This inspection process happens without noticing the concerned individuals since inspections team is authorized to perform so without prior notice (ibid).

The following are the steps applied in inspection; Duty allocation; points definition; sub-departments and their duties establishment; average covered points per day in sensitive areas identification; referring to the check-list; random sampling; special cases check; devising a report methodology; taking notes on the results; formation of monitoring team on the entire process to check on the authenticity of activities and schedules (Greepherson, 2013).

Protection of employees is major concern of the OHS. Among the expectations of the OHS are; hazard free environment for work and this protects consumers, and work colleagues, among other relevant individuals. WHO and ILO provides a OHS definition as a body aiming at high standards of the socio-physical and mental affairs of humans at work areas. This protects the workers from hazardous conditions, and risks, affecting health (Reynolds, 2011).

To ensue, an appropriate culture whereby the level of illness, accidents, and absenteeism is reduced as the level of production, profits and performance increases is developed. This maintains organizational outcomes and targets in the most effective and efficient way. The organizations should introduce an organizational performance process that is designed to assist people and their organizations to achieve occupational health and safety performance as a competitive advantage (Noel et al., 2008). Bokinni, (2006) describes safety to be a method of controlling known hazardous conditions. This ensures a reasonable risk level. Safety is a factor that goes beyond the control of hazards.

2.4.4 Health and Safety Ergonomics

A combination of rigidity at work and insufficient (poor) tools, equipment, and lighting system, negatively affect performance. This is as a result of stress, thus workers' unsatisfaction (Zafir et. al, 2008). Shikdar and Sawaqed, (2003) together with Shaliza et. al, (2009) advocate that organizations poorly perform and produce due to unsuitability of the workers to given duties or work.

Almost 29 million Malaysians, equivalent to over 25% of the citizens, require OHS services. This aims at reducing work related accidents and hazards among workers. Previously, it is depicted that

organizations did not implement Ergonomic concerns leading to tension in workers (Mc-Hugh, and McCrory, 2009; Zafir et. al, 2008 and Zalinda; Mohzani, 2009).

To enhance health and safety, boost productivity, Loo and Richardson, (2012) suggest Ergonomic Studies. Other firms also perceive the role of ergonomics in hazard and risk reduction (Hermans and Peterson, 2006). It can therefore be deduced that application of ergonomic studies and OHS is reflected in general firms' productivity.

Individuals' limits, abilities, and behaviors, application in designing safety, health, tools, jobs, environment and machine to enhance safety and affectivity is the focus of ergonomic studies (Ashraf, Saedd and Bill, 2002; Carayon, ,2009; Shaliza et. al, 2009).Therefore, it is essential that ergonomics at work is treated seriously, as a way of avoiding OSH problems.

Poor ergonomic designs in addition to lack of training, participation and social support, all serve to increase the chance of worker's sickness and stress (Melamed, Luz, Najenson, Jucha, & Green, 2008). For example, organizations with workers experiencing serious commitments and participation in ergonomic related activities have high level of stability, productivity and safety during work., in turn lowering the prevalence of stress (Matthews, Gallus, & Henning, 2011). Ask a result, it decreases the accident occurrences in at work, and also reduces absenteeism rates, thereby ultimately optimizing worker performance (Selamat & Surienty, 2012). It is clear, therefore, that ergonomics plays a meaningful role in enhancing worker safety, and as a result, performance at the workplace.

While ergonomics is clearly a vital workplace issue, studies on the matter are extremely limited by other companies' operations (Aziah, 2003; Gundega, Janis, Zenija, Valdis, &Henrijs, 2014). Investigating the connection between aspects of ergonomic and Last Mile Connectivity Project of Kenya Power and Lighting Company Limited would unquestionably and significantly lead to contribution of insights and broadening the scope of ergonomic studies.

Concern for the psychological and physical well-being of workers is a symbol of valuing the workers. This is idealized by the strategies of the "Higher Performance HR" (Pilbeam and Corbridge, 2010). Presence of insufficient OHS practices results exposure of patients,

administrators, medical practitioners and support staff into hazardous and risky working conditions. This was according to the study on OHS assessment in Ghana by Sikpa, (2011) at Tetteh Quarshire Hospital. In the conclusion of the study, it was identified that an individual realizes the OHS practices at work only by performing one's specific responsibility. It also emphasized joint effort to curb the OHS related risks and accident since they lead to losses, psychological and financial among workers and their relatives.

2.4.5 Health and Safety Policy

Participation of workers in Kenya serves a great role in OHS practices. They legislate and make policies (Ministry of Labor, Kenya 2012). Ferrett, (2011) opines that these processes are best performed with exemplary managers "leading while others follow." This implies that there is lack of enforcement with failure to exhibit proper example. The staff, and OHS unions must be involved in order to adhere to the stipulated regulations (Kaplan Financial Times, 2009).

According to Armstrong, (2009) OHS policies should focus on protecting workers against hazards, indicating how the protection policies operate. Its implementation involves the following steps; one's intention must be declared; method of realization of the intent be defined; and guideline statement be issued to the employed. Armstrong, (2009) further critiqued underestimation of OHS practices by managers and employees in business organizations.

He suggests the following guidelines for a proper OHS policy encompassing the structure of the organization. It should; be in writing, designate duties; be informative to the supervisory, managerial and working members; highlight OHS for an employee's surveillance policies at place of work. The vision and mission of the organization to him are the projections of the policy. This document thus expresses OHS values in places of work. Job description of the OHS team leader (head of department) or the principal agent in policy translation, should be defined appropriately (Armstrong, 2009).

Continuous reviews of the policy keeps it alive. Exposure to new changes, experiences, and perils or hazards in an organization triggers frequent policy reviews. This happens with changes in type of work or with an introduction of new hazards in the place of work. Simultaneously, it is important to introduce relevant laws, guidelines, codes, rule and regulations in the firm with the current realities (Greepherson, 2013).

KPLC Limited has developed policies, guidelines and programs on OHS that are applied and implemented across the board to all employees. Similarly, there is cost increment in health maintenance. This is because companies aim at increasing productivity and work efficiency together with the workers' demands and rights. This protects employees from hazardous conditions and accidents in the work area. Absenteeism for health reasons was also cited by the audit report as among the many reasons which often disrupts performance of individual employees as sick or injured employees are likely to perform less if they do try to work (Kenya Power, 2016).

2.5 Last Mile Connectivity Project Performance

The GOK through the LMCP create jobs and improves economy for the benefit of Kenyans. The project receives grants and fund from external donors and funds thus stimulating the KPLC electricity connection and installation. The Kenya Power supplies electricity at subsidized charges thus accommodating both low- and high-income earners and simultaneously the power limited implements "the Stima Loan" model paying electricity bills. The LMCP provided electricity meters before the customers made payments. Among the expected advantages of the project was large connection within a short time frame (Kenya Power, 2016). It was tiresome working on terrains characterized by features like rivers, plateaus and valleys.

However, the major LMCP's mission had to be accomplished. This was to ensure improved electric power access through improve construction standards, and to provide new supply to new customers in a short span. Long term network expansion would be achieved in this project. The LMCP's fourth lot (Lot 4) occurred in the Central Rift Kenyan counties. These counties consist the County Governments of Nakuru, Narok, Samburu and Nyandarua. Electricity Connectivity within the County Government of Nakuru comprises; Nakuru Town West, Nakuru Town East, Subukia, Rongai, Kuresoi, Kuresoi South, Gilgil and Njoro areas. According to the Kenya Power report, the topography related features within the County of Nakuru include terrains, volcanoes, rivers and relief systems, lakes, among other features. Some of the features are; the Mau Escarpment, the Rift Valley, Akira Plains, Menengai Crater, Ol Doinyo Eburru, Crater, Lake Naivasha, Nakuru, and Baringo, River Njoro, Makalia, Malewa and Molo. The rivers drain their waters into the lakes within the Rift Valley and these features and processes author vast OHS related challenges during the electricity connectivity and installation projects. Among the

highlighted problems include poor access roads, wayleaves, steep and rugged terrains (Kenya Power, 2016).

2.6 Conceptual Framework

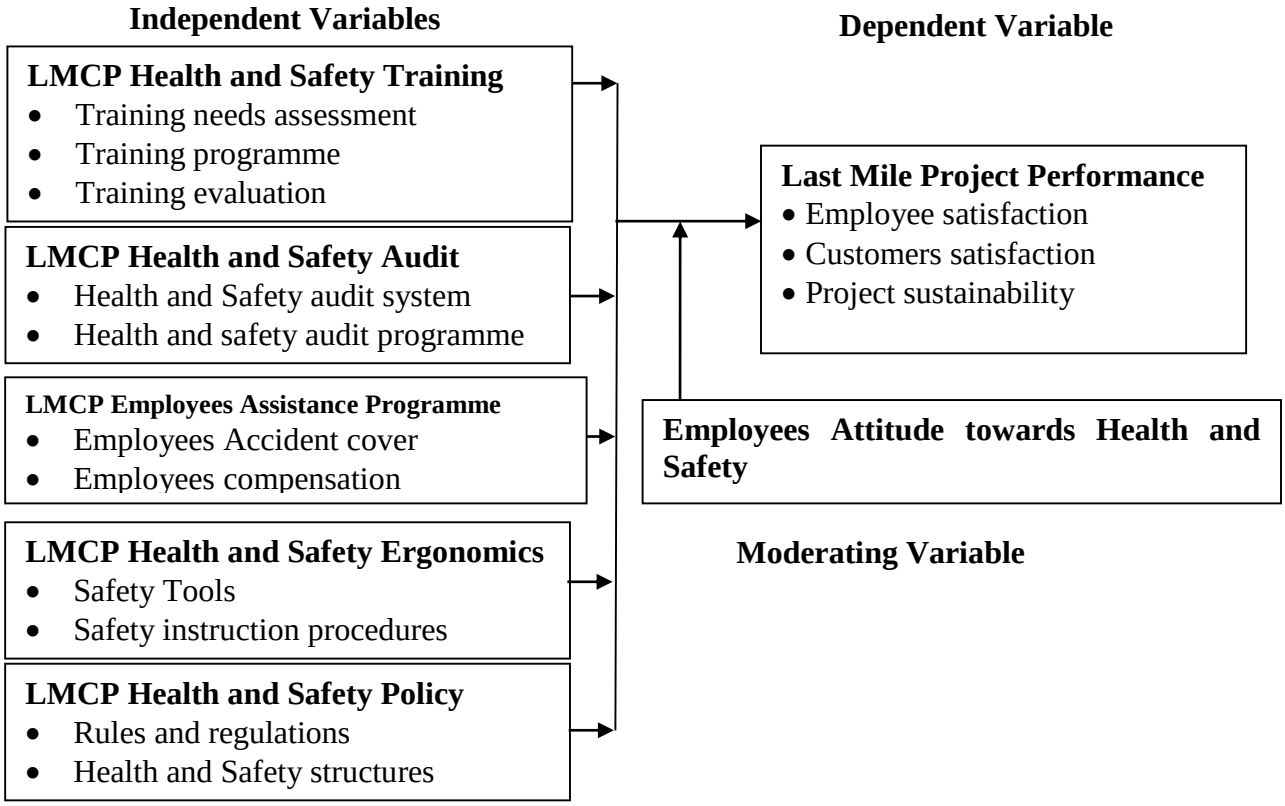


Figure 2.1: Conceptual Framework

Source: (Author, 2019).

The independent variables of the study included: LMCP's OHS training measured in terms of training needs assessment, training programme and training evaluation. The second independent variable is LMCP's OHS audit which was measured in terms of Kenya Power's audit system and audit programme. The third variable employees' assistant programme was measured in terms of accident cover and compensations. The fourth variable is ergonomics measured in terms of safety tools and instructional procedure. The fifth independent variable is LMCP's OHS policy measured in terms of rules and regulation during LMCP implementation and existence of health and safety

structures. The dependent variable is LMCP performance measured in terms of timely delivery, cost of delivery and customers' satisfaction. The moderating variable is employees' attitude towards LMP's OHS. The study hypotheses implied that if Kenya Power and Lighting Company Limited implemented effective health and safety programme in the LMCP then the project performance in terms of timely delivery within budget, customer and employee satisfaction will increase and vice versa.

2.7 Research Gaps

It is evident in the literature review that there is research gap in the area of analyzing of effectiveness of OHS Programme on LMCP performance within the County of Nakuru. Specifically, no literature addressed the following areas which is the research interest of this study;

2.7.1 Gaps on OHS training programme and LMC project Performance

There is no literature that analyzed effect of OHS Training Programme on LMCP performance in the County of Nakuru.

2.7.2 Gaps on OHS audit programme and LMC project Performance

There were no empirical findings in the reviewed literature that analyzed the effect of OHS Audit Programme on LMCP performance in the County of Nakuru.

2.7.3 Gaps on employee assistance programme and LMC project Performance

There is no empirical study that analyzed the effect of employee assistance Programme on Last Mile Connectivity Project performance within the County of Nakuru, Kenya.

2.7.4 Gaps on Ergonomics programme and LMC project Performance

There were no empirical findings in the reviewed literature that analyzed the effect of OHS ergonomics Programme on the LMCP's performance within the County of Nakuru, Kenya.

2.7.5 Gaps on OHS Policy and LMC project Performance

There were no empirical findings in the reviewed literature that analyzed effect of OHS Policy on the LMCP's performance within the County of Nakuru, Kenya.

2.8 Conclusion

The literature reviewed in this chapter covered; the theories pertinent to the study and where they were applied. The OHS Programme, was discussed in relation to LMCP. An empirical review of the key areas of the study was undertaken. The conceptual framework was provided and the research gaps were identified. The research gaps have been addressed in this study, where new ground was broken. This effort indicates the contribution of this study to the research field of OHS within the County of Nakuru.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

In this third chapter, the methodology of collecting and data, are presented. These include; the study location and the population; research design and instruments; sample size, data collection and sampling procedures; data and unit of analysis; research validity and reliability; ethical considerations.

3.2 Research Design

For the effective assessment of current situation, a descriptive approach is adopted by the study. This type of design is effective for the study of "self-reported facts" concerning the respondents' background, opinion and emotions (feelings). It also makes it possible to study population and other field concerns for description of general happenings. According to Wiersma, (1986) this design of research is essential in data collection "in a one-short basis" thus its efficiency and economic friendly. Responses captured in a closed ended questionnaire and in an observation schedule can be gathered by this design. Movements' approaches, concepts, theories and development used in this research are the foci applied by historical researchers. The design provided necessary information that led to the successful investigation of the performance effectiveness of OHS and LMC Projects. Quantitative research method was employed to generate and analyze numerical data on the respondents' perception on the project performance using closed ended questionnaires.

3.3 The Target Population

Target population is the aggregate of all persons and items that conform to a given specification (Mugenda and Mugenda, 2003). The target population of the study was 200 contractors employed to work at different categories within the County of Nakuru's LMCP and 2,289 customers connected under LMCP, totaling to 2,489 which the study took as the target population of the study. The sampling frame was obtained from KPLC Limited Last Mile Connection Progress Report of 2018. The target population was appropriate for the research since the contractors are exposed to occupation hazards while electricity connection also predisposes customers to occupation accidents. This is in line

with OSHA (2007) which provides for the OHS and welfare at places of work. The customers' homes and the vicinity were treated as work places and the contractors as workers while the customers were persons lawfully present at the site by nature of them being their dwellings. This population is important because it gave information on the status of their premises and OHS Issues in the due course of the project.

3.4 Sampling Procedures and Sample Size

The study used both systematic and random sampling techniques. In the sampling of the 200 contractors employed by Kenya Power to do installation of electricity at different locations in Last Mile Connectivity Project, the study used a systematic sampling technique whereas to sample the 2,289 customers connected through the Last Mile Connection Project, the study used a simple random sampling technique. Systematic technique was appropriate because contractors are organized and have some unique identification that can be used in systematic sampling whereas customers are located in different places, hence the choice of random sampling.

The sampled size of selected Kenya Power and Lighting Company Ltd contractors and beneficiaries of LMCP was good enough to enable generalization of the finding to all the parts of the country where the project is being implemented. To address the limitation of sample size, the study selected a sample that was truly representative of the population, and the sample included respondents with high variability. There was some non-response especially because of the sensitive information of related to the implementation of the project. In some cases, some respondents were apprehensive about the motive of the study. The researcher guaranteed the respondents that the study was purely academic and the information provided would be treated with utmost confidentiality and their identity would be kept anonymous. The study also faced limitation of time as it was to be conducted within 3 months amidst financial constraints. The researcher further mitigated this limitation by strictly adhering to the set sample size.

To arrive at contractors' sample size, the study adopted sampling formula recommended by Nassiuma (2000). Nassiuma (2000) asserts that in most surveys or experiments, a coefficient of variation in the range of 21% to 30% and a standard error in the range of 2% to 5% is usually acceptable. The lower threshold for the standard error was preferred because there was a high likelihood that any sample taken would represent similar population characteristics hence high

confidence levels. The lower threshold of the coefficient of variation was adopted in order to have a more precise and representative samples size for purposes of this research.

$$S = \frac{N(Cv)^2}{(Cv)^2 + (N-1)e^2}$$

Where S = the sample size

N = the population size

Cv = the Coefficient of Variation

e = standard error

Therefore, the sample size was:

$$S = \frac{200(0.21^2) = 71.3015}{0.21^2 + (200\text{-}1)\ 0.02^2} \approx 71$$ contractors working in Nakuru County.

Further, the researcher adopted the Yamane, (1967) formula that can be used to calculate a suitable sample for studies with large population, in this case customers connected through Last Mile Connection Project.

$$n = \frac{N}{1 + Ne^2}$$

Where n = Minimum Sample Size; N = population size: - e = precision set at 95 % (5%=0.05)

2,289 (Study population) 0.5 x0.5 = 0.0025, therefore

$$n = \frac{2{,}289,}{1+2{,}289(0.0025)}$$

n = 340.498 ≈ 341 Beneficiaries.

The sample size for the customers was 341customers from the Last Mile Connection project. The study population size for the study including contractors and customers in the Last Mile Connectivity Project was 2,489 people (2289 customers and 200 contractors). The results from the study can be generalized to other areas where LMCP have been implemented. The unit of analysis was the individual contractor and the individual customer in LMCP.

3.5 Research Instruments

The researcher distributed the questionnaires in collecting data. The design of the questionnaires follow the questionnaire outline of Oppenheim, (2000). This type of questionnaire is simple in administering the questions receiving response from the respondents by use of a 5-point Likert Scale (Cohen, Manion, and Morrison, 2007). The scale is designed in a way that it can capture all sorts of views including no opinion at all on the parameters. This design of questionnaire ensures consistency of the responses (Denscombe, 2007). Closed ended questions are contained in the questionnaires that the respondents personally fill because of their literacy. It also allows for both ambiguous and literate responses thus minimizing discrimination (Brinkmann and Scale, 2009; Leung, 2015). Because where there is a high possibility of variability, the open-ended questionnaires are not applied. They could also not be gauged on the Likert Scale.

3.6 Unit of Analysis

The individual contractor and individual customer were the unit of analysis and the target respondents were the contractors of LMC project and customers connected through LMC project. The contractors responded to questions related to OHS training, health and safety employees programme health and safety ergonomics programme and policy. Customers on the other hand responded to questions on whether they received OHS training and also the ergonomics of their premises as far as LMC project is concern.

3.7 Data Collection Procedure

The process of data collection was conducted, first by obtaining an introductory letter from University of Nairobi, School of the Built Environment, Department of Real Estate and Construction Management which was used to obtain permission from Kenya Power and Lighting Company Limited for data collection. The researcher trained and hired the services of four research assistants to help in data collection. The researcher leads the data collection process by supervising the data collection activities carried out by the research assistants. The researcher then collected data from 71 employees and 341 customers connected through LMCP. The questionnaire was self-administered and a respondent was asked to personally fill their responses.

3.8 Validity and Reliability of Research Instruments

According to Kathuri and Pals, (1993) validity is the level of appropriate measurement by an instrument. Relevance (in content coverage) to a given study is a component of this validity.

These factors include consistency, valid content, construct, and logic. These are essential in research instruments. It is noteworthy that what precedes the pilot study is the dialogue between the researcher and the supervisory team that validates the appropriateness of the Instruments to be applied in research. A Pilot study was conducted on 10 employees on similar job category as the study target population who were randomly picked from Kenya Power contractors working in Kericho County and on 10 customers in Last Mile Connection Project in the same County. The choice of Kericho County was to avoid information redundancy if the pilot study was to be conducted in the same area the actual study would be conducted. Pilot study results improved the research instruments.

The data obtained from a pilot study was used to estimate and improve reliability of the instruments (questionnaires). Cronbach`s alpha coefficient was used to estimate reliability of the two questionnaires. This is because all the two instruments are rating scales which have a range of scores. Reliability coefficient of 0.70 and above was considered reliable enough in achieving the objectives of the study (Frankel and Wallen, 2000). The data collected using both questionnaires were aggregated, mean values calculated and the Cronbach Alpha of 0.87 was obtained which was deemed to reliable enough.

The research employed the use of research assistants to aid in administering questionnaires and data analysis. This was done after taking them through sufficient training by use of simulations and taking part in the pilot study.

3.8 Data Analysis and Presentation

Analysis of data involved application of median, mean, frequency tables, percentages and standard deviation. These are techniques of descriptive statistics. The SPSS (Statistical Package for Social Sciences Version 21.0), a computer application was used to analyze data. The study tested the effectiveness of the Last Mile Connection Project Occupational Health and Safety Programme on LMCP perceived performance using the regression model that tested which programme contributed more to LMCP performance. The regression model relating to the dependent variable to the independent variables identified on page 28 was:

$$y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

Where;

Y= LMCP's Performance

X_1= OHS Training Programme

X_2 = OHS Audit Programme

X_3 = OHS Employees Assistant Programme

X_4 = OHS Ergonomics Programme

X_5 = OHS Policy Programme

ε is the error of prediction

The moderating effect of employees' attitude towards OHS programme (see conceptual framework on page 28) on Last Mile Connectivity Project was factored into the model and tested to give the model below;

$$y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_{6+} \varepsilon$$

$X_{1...}X_5$= OHS Programme

β_6…..Regression Coefficients of moderating variable (employees attitude)

X_6= employees attitude

3.8 Ethical Considerations

There was a strict observation of discretion during the study. The researcher had to protect the respondents' identities and private life. To ensue, they were assured of confidentiality of the responses and the academic nature of the research. Therefore, there was neither any inducement nor pressure on the respondents to partake in the research. Freedom of departure and withdrawal at one's wish was also guaranteed. The exemplary researcher exhibited high ethical and integral standards before and during the study.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS

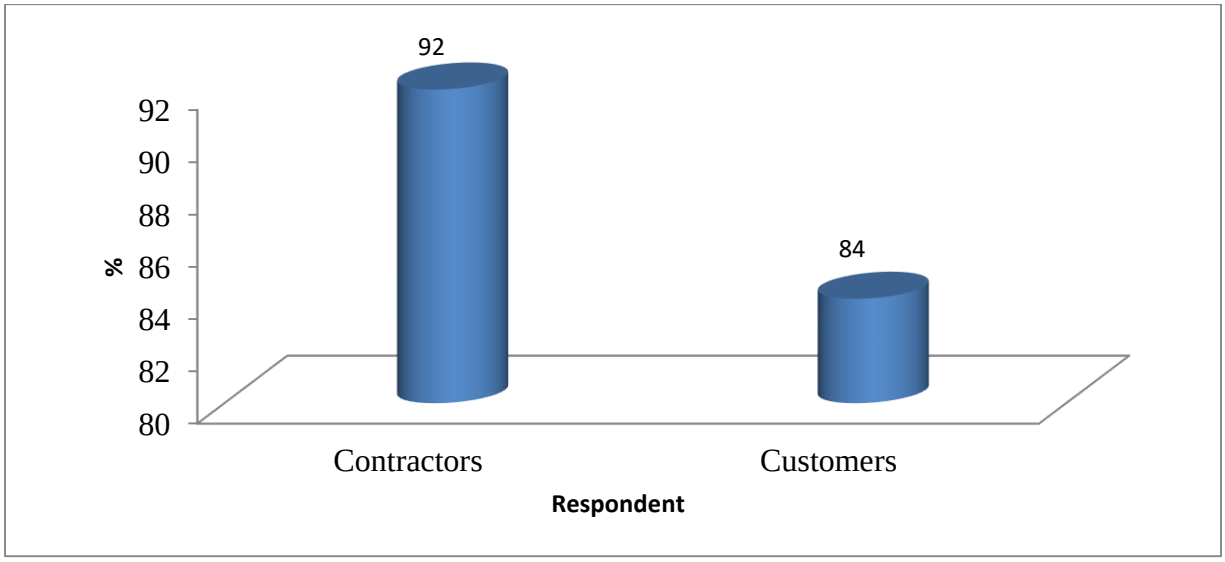
4.1 Introduction

This chapter contains data on investigation of the perceived effectiveness of OHS programme on the LMCP's performance within the County of Nakuru in Kenya. Questionnaires and interviews were the mode of collecting data. The data was organized in broad themes as per the research objectives; OHS training and audit, employees' assistance programme, OHS ergonomics and policy.

4.1.1 Response Rate

The researcher distributed 71 questionnaires to LMCP contractors including their employees and managed to collect 65 questionnaires returned represented 92%. Whereas 341 questionnaires were distributed and 286 questionnaires returned represented 84% return rates which were both excellent to answer the set objectives as displayed in figure 4.1 below. Mugenda and Mugenda (2003) highlight that a questionnaire with over 50% return rate is eligible for reporting and analyzing data; 60% and above 70% are good and very good respectively.

Figure 4.1: Questionnaire Return Rate

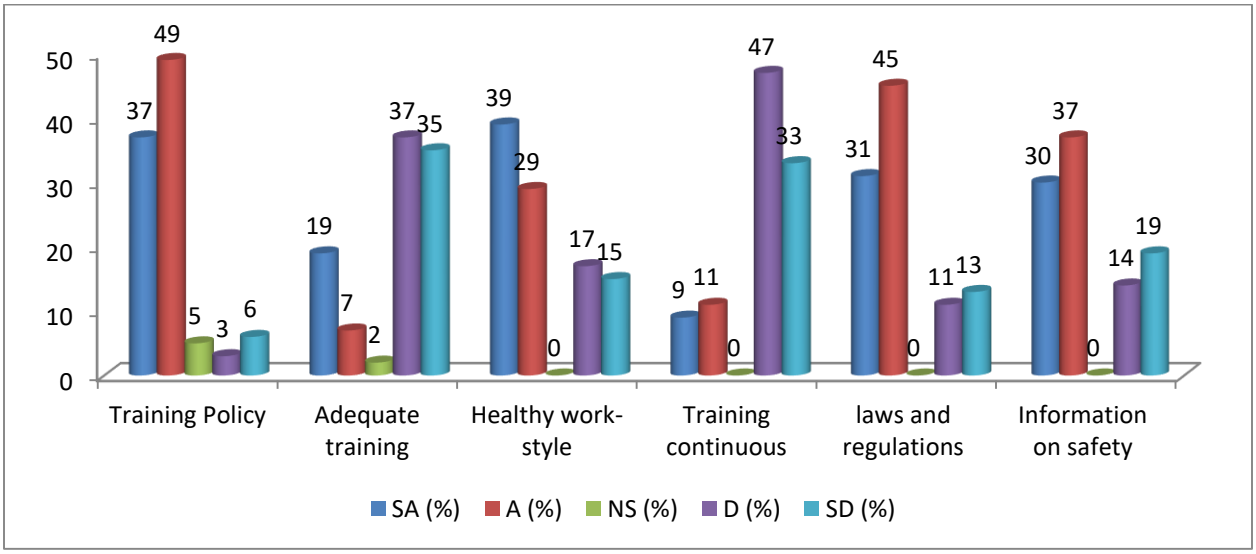


(Source: Author,2019)

4.2LMCP Health and Safety Training

This section provides results for the descriptive statistics of LMCP's OHS training within the County of Nakuru. The parameters analyzed include; KPLC Limited has Health and Safety Training Policy; there is sufficient OHS training concerning LMCP; the employees are educated on a healthy ways of living and working while undertaking duties in the LMCP; OHS training is continuous; laws and rules if operation are explained during training in the project and if there is open sharing of provision and result information on safety and health provisions to employees. The responses to these are depicted in Table 4.1 below. The study used a 5 Point Likert Scale in establishing the respondents' level of agreement where SA – Strongly Agree, A- Agree, NS – Not Sure, D – Disagree and SD - Strongly Disagree. In order to establish the respondent agreement, the findings on Strongly Agree and that of Agree were added together. Level of disagreement was obtained by adding Strongly Agree and Disagree together.

Figure 4.2: Contractors LMCP Health and Safety Training

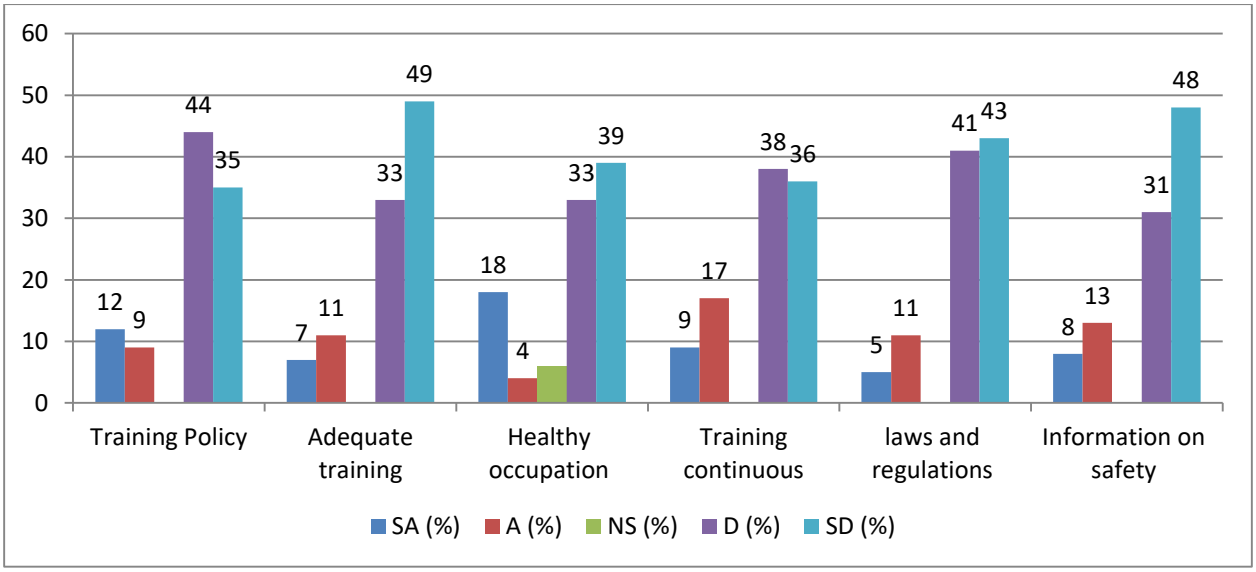


(Source: Author,2019)

Figure 4.2 presents the results of the responses on Contractors LMCP Health and Safety Training. The results on training policy reveals that 86% of the respondents agreed that Kenya Power Company has Health and Safety Training Programme Policy in comparison to 9% disagreeing and 5% not sure. Findings on adequacy of training established 72% of respondents disagreed that majority of the respondent employees were provided with adequate OHS training concerning the

Last Mile Connection Project compared to 26% who agreed and 2% who were undecided. Further findings on healthy work style established 68% of respondents agreed that company take part in educating workers on OHS while undertaking activities of Last Mile Connection Project 32% who disagreed. Further findings on OHS continuous training revealed that majority of respondents 80% disagreed that occupation health and safety training programme was continuous compared to 20% who agreed. Findings on relevant laws and regulation established majority of respondents 76% agreed that applicable laws, rule and regulations are elaborated in the training in the Last Mile Connection Project and Information about safety compared to 24% who disagreed. Last, findings on OHS information and safety established 67%of the respondents agreeing that there is open sharing of the provision and outcomes of health practices to employed workers with employees 33% disagreeing.

Figure 4.3: Customers LMCP Health and Safety Training



(Source: Author,2019)

Figure 4.3 presents the results of the responses on customers LMCP Health and Safety Training. The results on training policy reveals 79% of respondents disagreeing that KPLC has OHS Training Programme Policy compared to 21% agreeing. Findings on adequacy of training depicted 82% of the respondents (majority) disagreeing that the employees were provided with adequate occupation health and safety training concerning Last Mile Connection Project compared 19% who agreed. Further findings on healthy work style exhibits 72% of the respondents disagreeing that KPLC limited educating employees on a healthy styles of work and lifestyle is false while undertaking activities of Last Mile Connection Project 22% who agreed. Further findings on OHS

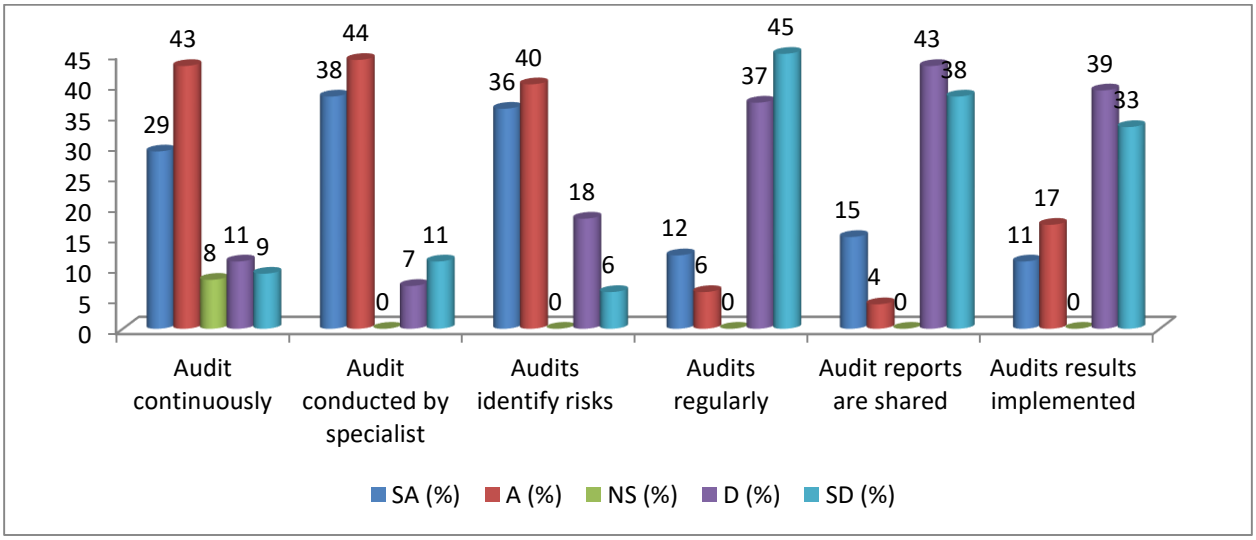
continuous training revealed 74% of the respondents disagreeing that OHS training programme was continuous compared to 26% agreeing. Findings on relevant laws and regulation established majority of respondents 73% disagreed that relevant laws and regulations are explained during training in the Last Mile Connection Project and Information about safety compared to 27% who agreed. Last, findings on OHS information and safety established 79% of the respondents disagreeing that there is no open sharing on the outcomes and provisions of health with employees compared to 21% agreeing.

This findings reveal that OHS training among contractors in the LMCP adequately trained workers on Last Mile Connection Project and that the training programme is continuous. Results on OHS training among customers reveal their unawareness of Kenya Power's OHS Training Programme Policy; customers were not provided with adequate occupation health and safety training concerning Last Mile Connection Project; Kenya Power Company did not educate customers on a healthy working styles and on the way to live while undertaking activities of Last Mile Connection Project; occupation health and safety training programme was not continuous; regulations, rules and laws applicable to OHS were not explained during training in the Last Mile Connection Project and there was no open sharing of the information OHS' outcomes and provisions with/to employees. Possible reason for the situation was inadequate application of OHS practices in LMCP
.

4.3 Occupational Health and Safety Audit

This section presents finding on OHS Audit in LMCP of the Kenya Power. Key parameters analyzed include; safety audit is conducted continuously, in LMCP, the advisory and management team, HR expertise and employees representative did the auditing; They are regularly performed audits and thus identifies risks at work place; there is sharing of the LMCP audit reports to employees and the recommended areas in the LMCP undergo implementation in OHS development.

Figure 4.4: Contractors' View on Occupational Health and Safety Audit



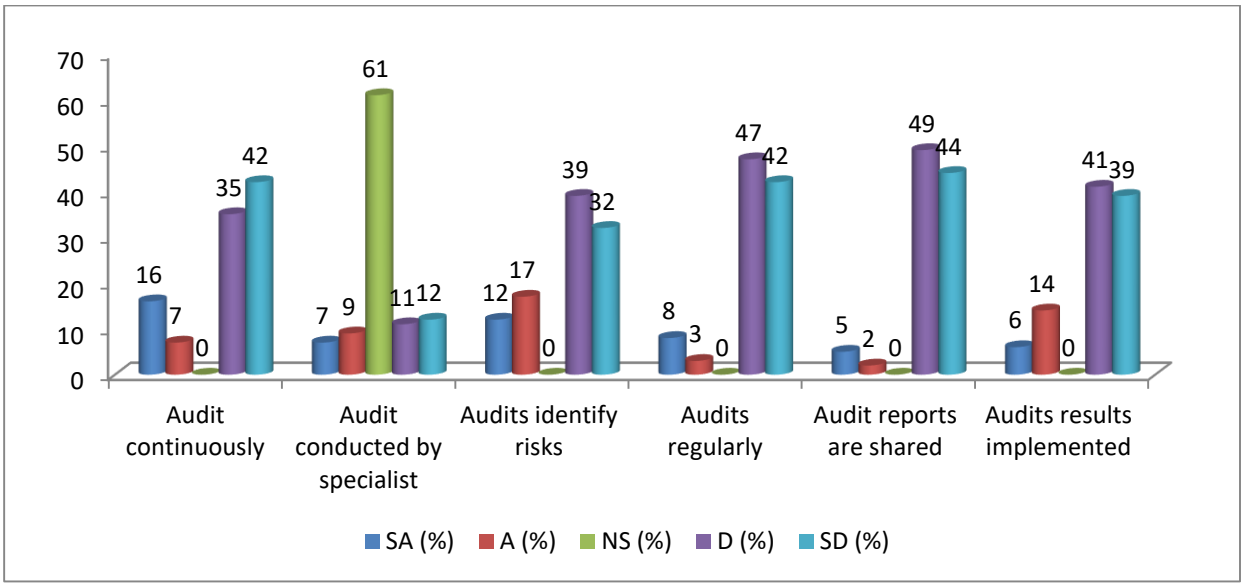
(Source: Author,2019)

Figure 4.4 presents the results of the findings on contractors' view on LMCP Health and Safety audit. The study shows 62% of respondents agreeing that OHS audit was conducted continuously compared to 20% disagreed and 8% who were not sure. Findings on who conduct the audit reveals that majority of respondents 82% agreed that Last Mile Connectivity Project OHS audit was conducted by advisory team on safety, HR expertise, manegerial team and employees' representatives compared to 18% disagreeing. Majority, 76% of respondents were agreeing that Last Mile Connectivity Project Safety audits were used in risk identification in the company contrary to 24% disagreeing. There were 82% of the respondents disagreeing that Last Mile Connectivity Project Health and Safety audits were conducted regularly compared to 18% who agreed. Findings on sharing of audit report reveals 81% of the respondents agreeing that Last Mile Connectivity Project Audit reports were shared with all the contractors compared to 19% disagreeing. Additionally, 72% of the respondents were agreeing that implementation of the recommended areas on Last Mile Connectivity Project audits are done for improvement of OHS compared to 28% agreeing.

The key parameters analyzed on customers views on LMCP auditing include: Safety audit is conducted continuously in our premises; Last Mile Connectivity Project Safety audit are conducted by various specialist; Last Mile Connectivity Project Safety audits identify risks in customers

premises; Last Mile Connectivity Project Health and there is regular conducting of Safety audits; Last Mile Connectivity Project Audit reports are shared to all the customers and there is implementation of the recommended areas of LMCP audits are implemented in the work premises for improvement of OHS.

Figure 4.5: Customers' View on Occupational Health and Safety Audit



(Source: Author, 2019)

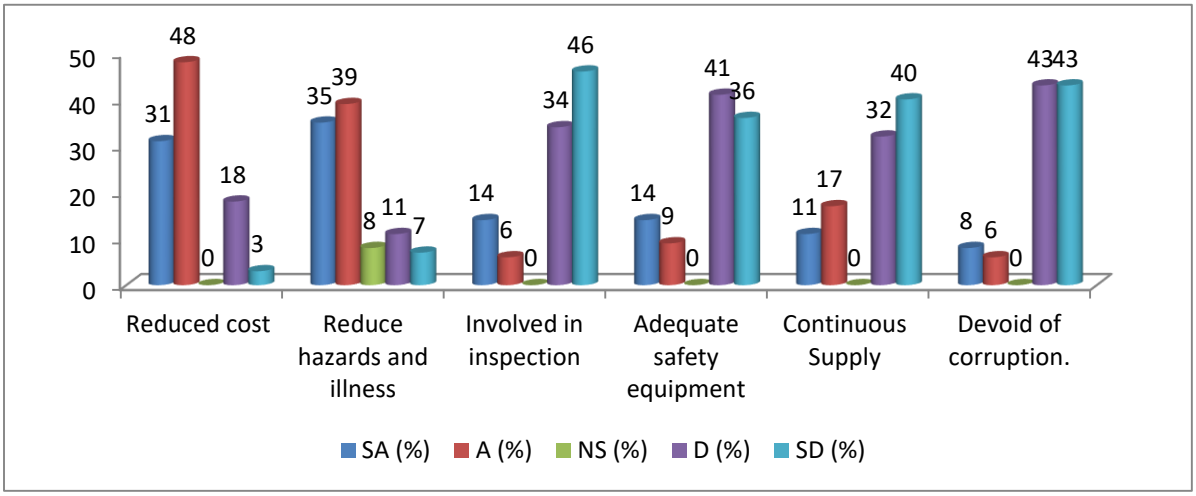
Figure 4.5 presents the results of the response on customers view on LMCP Health and Safety audit. Findings on continuous audit reveals 77% of respondents disagreeing that safety audit was conducted continuously in our premises compared to 23% agreeing. Concerning who conducts the audit, the study established 61% of respondents not sure whether Last Mile Connectivity Project Safety audits were conducted by various specialists compared to 23% disagreeing and 16% agreeing. Findings on audit used to identify risks revealed 71% of the respondents disagreeing that Last Mile Connectivity Project Safety audits identify risks in customers' premises compared to 29% who agreed. Further findings frequency of the audit established 89% of respondents disagreeing that Last Mile Connectivity Project Health and Safety audits were conducted regularly while 11% were agreeing. Findings on sharing of audit report reveals that 93% disagreed that there is open sharing of audit reports in Last Mile Connectivity Project Audit to customers compared to 7% who agreed. Last, concerning implementation of audit report revealed that majority of respondents 80% disagreed that Last Mile Connectivity Project audit recommendations' implementation occur in premise for improvement of OHS

The findings indicated that the following aspects of Last Mile Connectivity Project the audits were conducted as was observed by the contractors; safety audit is conducted continuously, Last Mile Connectivity Project safety audit one was done by experts on safety, HR expertise, managerial team and representatives of the employees. On the other hand, according to customers' view on Last Mile Connectivity Project audits was not adequately done in the customer's premises. This was because; Safety audit was not conducted continuously in our premises, Last Mile Connectivity Project Safety audit were not conducted by various specialist, Last Mile Connectivity Project Safety audits did not identify risks in customer's premises, Last Mile Connectivity Project Health and Safety audits were not conducted regularly, Last Mile Connectivity Project Audit reports were not shared to all the customers and Last Mile Connectivity Project recommendations of the audits were not implemented in our premises to improve OHS.

4.4Occupational Health and Safety Employee Assistance Programme

This section presents the responses on Occupational Health and Safety Employee Assistance Programme. The main parameters analyzed include; There is reduction of health care cost through Last Mile Connectivity Project employees assistant programme; OHS related illnesses,accidents, and hazards to employees are minimal because of wellness programmes; Employees assist in inspecting the Last Mile Connectivity Project activities; Employees have adequate safety equipment; Safety equipment supply is continuous, Last Mile Connectivity Project employee assistance programme is devoid of corruption.

Figure 4.6: Occupational Health and Safety Employees Assistance Programme



(Source: Author, 2019)

Figure 4.6 presents results of responses on Occupational Health and Safety Employees Assistance Programme. Findings on reduction on the cost of occupation health revealed 79% of the respondents agreeing that there was reduction of health care cost through Last Mile Connectivity Project employees' assistant programme compared to 21% disagreeing. Findings on reduction on hazards and illness established 74% of the respondents agreeing that wellness programs reduced employees' health hazards and illness while 18% disagreeing and 8% not sure. Further findings on involvement in inspection revealed 80% of the respondents disagreeing that employees were involved in the inspection process in Last Mile Connectivity Project while 20% agreeing. Findings on adequacy on equipment established that 77% disagreed that employees had adequate safety equipment compared to 23% who agreed. Further findings on equipment continuous supply established 72% of respondents disagreeing that safety equipment supply was continuous compared to 28% disagreeing. Lastly, concerning corruption in employees' assistance programme, the study established 86% of the respondents disagreeing that Last Mile Connectivity Project employee assistance programme is devoid of corruption.

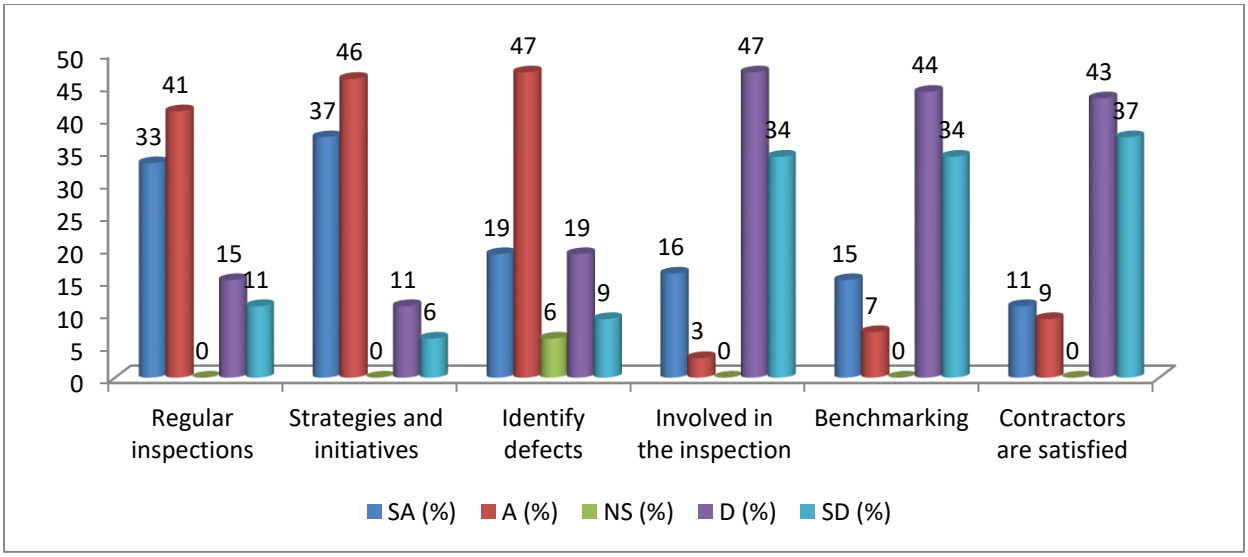
The finding on Employees' Assistance Programme indicated that Kenya Power had only achieved reduction of health care cost through Last Mile Connectivity Project employees assistance programme and reduced employees' health hazards and illness. The company was still struggling with such challenges as; employees' involvement in the inspection process in Last Mile Connectivity Project, supply of continuous and adequate safety equipment and fighting corruption in the Last Mile Connectivity Project employees assistance programme.

4.5 Occupational Health and Safety Ergonomics

This section present results of responses on OHS Ergonomics as per the views of the contractors and customers. The analyzed parameters on OHS Ergonomics as per the views of the contractors include; The company conducts regular inspections of machines, tools and equipment used in Last Mile Connectivity Project; that the process of inspection the practices contribute to development of OHS health initiating and strategizing practices focusing on equipment, machine, and tool usage in Last Mile Connectivity Project; inspections identify defective machines; tools and equipment used in Last Mile Connectivity Project, contractors participated in inspection of machines; tools and equipment used in Last Mile Connectivity Project, contractors benchmark with international

electricity distribution and transmission machines; tools and equipment to improve ergonomics and contractors are satisfied with ergonomics practices at Kenya Power Company.

Figure 4.7: Contractors' View on Occupational Health and Safety Ergonomics



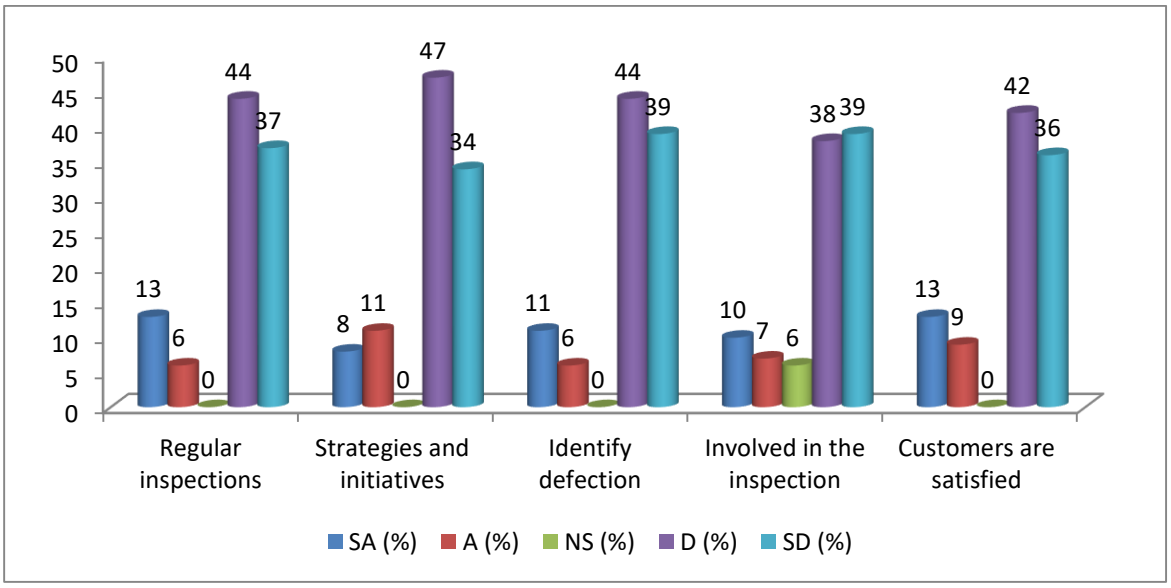
(Source: Author, 2019)

Figure 4.7 presents responses on contractors' OHS ergonomics view. Findings on regular inspection revealed 74% of respondents agreeing that KPLC limited conducted regular inspections of machines, tools and equipment used in Last Mile Connectivity Project compared to 26% who disagreed. Findings on strategies and initiative revealed that majority 83% agreed that the inspections helped in OHS strategies and initiatives for development focusing on tool, machine and equipment use in Last Mile Connectivity Project.

Findings on identification of defects established that 63% agreed that inspections identified defective machines, tools and equipment used in Last Mile Connectivity Project compared to 37% who disagreed. Further findings on involvement in inspection established 81% of respondents disagreeing that contractors are involved in the inspection process of equipment, tool and machine use in Last Mile Connectivity Project compared to 19% agreeing. Concerning benchmarking, the study established 77% of the respondents disagreeing that contractors benchmarked with international electricity distribution and transmission machines, tools and equipment to improve ergonomics compared to 23% agreeing. Last, further findings on contractors' satisfaction revealed 80% of respondents disagreeing that contractors were satisfied with ergonomics practices at Kenya Power and Lighting Company Limited compared to 20% who were not satisfied.

Concerning customers views on ergonomics, the following parameters were analyzed; the company conducts regular inspections of electrical appliances use by customers in their premises; the process ensured development of strategic and initiating ideas towards OHS thus benefitting customers; inspections identify defective and below standards appliances that we use in our premises; customers participate in the inspection and that customers are satisfied with safety practices at Kenya Power and Lighting Company Limited.

Figure 4.8: Customers' View on Occupational Health and Safety Ergonomics



(Source: Author, 2019)

Figure 4.8 presents results of responses on customers' view on OHS ergonomics. Findings on regular inspection, strategies and initiatives revealed 81% of the respondents disagreeing that the KPLC limited conducts regular inspections of electrical appliances use by customers in their premises and that the inspections aid development of initiative and strategic OHS ideas for benefitting customers respectively compared to 19% who agreed. Findings on identification of defects showed 83% of respondents disagreeing that inspections identified defective and below standards appliances that we use in our premises compared to 17% who agreed. Further findings on customers' involvement revealed 77% of the respondents disagreeing that customers were involved in the inspection process compared to 23% agreeing. Last, findings on customers'

satisfaction established 78% of respondents disagreeing that customers were satisfied with safety practices at KPLC compared to 22% who disagreed.

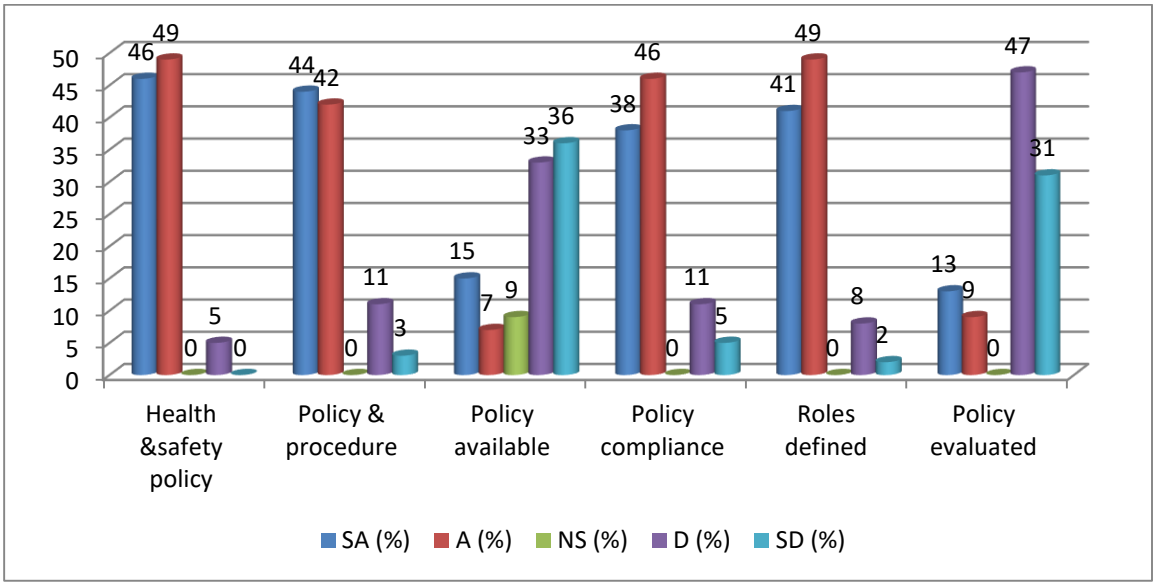
The findings on ergonomics, based on contractors view, established that KPLC had achieved some milestones in ergonomics as far as LMCP was concerned; the company conducted regular inspections of machines, tools and equipment used in Last Mile Connectivity Project, inspections aid development of initiative and strategic OHS ideas on machine, equipment and tool usage in Last Mile Connectivity Project, inspections identified defective machines, tools and equipment used in Last Mile Connectivity Project. To the contrary, contractors were not involved in the inspection process of machines, tools and equipment used in Last Mile Connectivity Project, contractors did not benchmark with international electricity distribution and transmission machines, tools and equipment to improve ergonomics and contractors were not satisfied with ergonomics practices at KPLC.

The findings on ergonomics based on customers view established that the company did not achieve many milestones in ergonomics as far as LMCP was concerned. This was because the company did not conduct regular inspections of electrical appliances use by customers in their premises, inspections did not aid development of initiative and strategic OHS ideas for benefitting customers, inspections did not identify defective and below standards appliances that we use customers' premises, customers did not participate in the inspection and that customers were not satisfied with safety practices at the company.

4.6 Occupational Health and Safety Policy

This section provides results of responses on OHS Policy with the following variables analyzed; KPLC limited has OHS policy for promoting safety and a healthy culture in Last Mile Connectivity Project; complaints addressing techniques and procedures on OHS are elaborated on by the policy in Last Mile Connectivity Project; the policy has been made available to all Last Mile Connectivity Project contractors for transparency purposes; OSH Audit Act 2007 are followed for transparency; duty and role allocation for workers and management team in the Last Mile Connectivity Project are stipulated in the policy; that the policy is evaluated alongside Last Mile Connectivity Project progress report.

Figure 4.9: Responses on Occupational Health and Safety Policy



(Source: Author, 2019)

Results of responses on OHS Policy are presented in Figure 4.9 Findings on health and safety policy revealed 95% of the respondents agreeing that the company possess a OHS policy to promote OHS practices and tradition in Last Mile Connectivity Project compared to 5% who disagreed. Findings on policy defining the procedures revealed that majority of respondents 86% agreed that the policy provides defined procedures in addressing OHS complaints in Last Mile Connectivity Project compared to 14% who disagreed. Further findings on availability of the policy established 69% of the respondents disagreeing that the policy has been made available to all Last Mile Connectivity Project contractors for transparency purposes compared to 31% who agreed.

Further findings on compliance of the policy revealed, 84% of the respondents agreeing that the policy adheres to OSHA Act 2007 compared 16% who disagreed. Concerning roles and responsibilities, the study established, 90% of the respondents agreeing that duties or roles of workers and managers in the LMCP are contained in the policy contrary to 10% who disagreed. Lastly, findings on evaluation of the policy revealed, 78% of the respondents disagreeing that the policy is evaluated alongside LMCP progress report compared to 22% who agreed.

The findings on the company OHS Policy indicated that; the company has OHS policy focusing on OHS promotion tendency in LMCP, the policy stipulated the OHS complaint addressing procedures in LMCP, there is the policy adherence to OSHA Act 2007, there is employee and employer role and responsibility definition within the policy in the LMCP. Additionally, the policy has been made available to all Last Mile Connectivity Project contractors for transparency purposes and the policy is evaluated alongside LMCP progress report.

4.8 Data Interpretation using Inferential Statistics

This section presents results of the data analysis using inferential statistics on investigation of the perceived effectiveness of OHS Programme on the LMCP's performance within the County of Nakuru in Kenya. Both bivariate and multivariate regression applied in establishing the nature of the relationship between OHS practiced in the LMCP and the project performance. Bivariate analysis was applied in establishing the relation between individual aspects of OHS practiced and LMCP performance whereas multivariate regression was used to analyze the relationship between all the aspects of OHS practiced and LMCP performance. Here, the study objectives are presented and questionnaires answered as per the analyzed data.

4.8.1 Effectiveness of Occupational Health and Safety training on LMCP Performance

The study objective was evaluation of OHS training effectiveness on the LMCP's perceived performance within the County of Nakuru in Kenya. The parameters (components) of the independent variable of OHS training analyzed were; KPLC has Health and Safety Training Programme Policy; Employees received sufficient OHS trainings concerning Last Mile Connection Project; there is education offered by the firm to the employees on healthy working-style and living-style while undertaking activities of Last Mile Connection Project; occupation health and safety training programme is continuous; there is explanation of OHS related laws and regulations during training in the Last Mile Connection Project and Information about OHS outcome and provisions are shared freely with employees.

Whereas the elements of dependent variables analyzed were; The Last Mile Connectivity project accomplished on time, The Last Mile Connectivity project ended on budget, the Last Mile Connectivity project satisfied the intended customers, more electricity consumers have connected since the inception of Last Mile Connectivity Project, customers' bills payment has increased since the inception of Last Mile Connectivity Project, there is maximization in the use of Kenya Power

transformers since inception of LMCP and the LMCP was sustainable. The model summary and ANOVA analysis are presented in a summary form in Table 4.1 and Table 4.2 below

Table 4.1: Model Summary

Model	R	R^2	Adjusted R Square	Std. Error of the Estimate
1	.742[a]	.517	.496	1.07066

(Source: Author, 2019)

As shown in Table 4.1 above, the R value was 0.742 with the R^2 was 0.517, which indicated an average degree of correlation. The R^2 value indicates 52% was the R Squared, indicating that that the data collected was closely fitted to the regression line between the independent and dependent variables. The R value indicates a strong positive linear correlation between elements of Occupation Health and Safety training practiced at LMCP and project performance. The R^2 indicates that 51.7% of the variance OHS training on LMCP) can predict the outcome of dependent variable (Project Performance).

Table 4.2: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	7.204	11	.655	2.419	.013[b]
Residual	18.140	67	.271		
Total	25.344	78			

(Source: Author, 2019)

Predictors: Kenya Power Company has Health and Safety Training Programme Policy, Employees receive adequate OHS training concerning Last Mile Connection Project, the premise ensures education of employees about a healthy work-style and lifestyle while undertaking activities of Last Mile Connection Project, OHS training programme is continuous, laws and regulations related to OHS are discussed at the training in the Last Mile Connection Project and there is open sharing of OHS provisional and outcomes to workers.

Table 4.2 indicates that the regression model predicted the outcome dependent variable significantly with p= 0.013, which was less than 0.05, and indicated that; overall, the model statistically and significantly predicted the outcome variable.

Table 4.3: Full Regression Model for OHS Training and LMCP performance

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	**Std. Error**	**Beta**	**t**	
(Constant)	2.806	.950		2.955	.005
Training policy	-.130	.145	-.124	-.900	.372
Adequate	.021	.105	.026	.198	.843
Healthy working style	.356	.101	.076	.560	.011
Continuous training	-.017	.095	-.024	-.183	.855
Laws and regulation	-.024	.109	-.028	-.220	.827
Information sharing	.249	.099	.339	2.508	.015

(Source: Author, 2019)

As indicated in Table 4.3 above, the study established insignificant relationship between Training Policy and LMCP performance, r=-0.130, p=0.372>0.05 indicating that Kenya Power OHS Training Policy had no effect on LMCP performance. Training adequacy had insignificant relationship with LMCP performance, r=0.021, p=0.843>0.05 indicating that adequacy of occupational health training did not affect LMCP performance. Findings on healthy working styles established significant relationship with LMCP performance, r=0.356, p=0.0107<0.05 indicating that company educating employees about a healthy work-style and lifestyle while undertaking activities of LMCP affected LMCP performance. Last, the study established a significant relationship between OHS training information sharing with LMCP performance, r=0.249, p=0.015<0.05 indicating that outcomes are shared openly with employees affected LMCP performance.

The hypothesis HO^1that OHS training Programme on Kenya power LMCP's performance within the County of Nakuru, Kenya is not effective was rejected and alternative hypothesis HA^1that OHS training Programme on the LMCP's performance within the County of Nakuru, Kenya is effective accepted. This was supported by the finding that Kenya Power Occupational Health Training Policy had no effect on LMCP performance and further that outcomes are shared openly with employees' affected LMCP performance.

4.8.2 Effectiveness of Occupational Health and Safety Audit on LMCP Performance

The second objective of the study was to analyze effectiveness of OHS audit on the LMCP's performance in the County of Nakuru, Kenya. The parameters of independent variable included: Safety audit is conducted continuously in our premises; Last Mile Connectivity Project Safety audit are conducted by various specialist; Last Mile Connectivity Project Safety audits identify risks in customer's premises, Last Mile Connectivity Project Health and Safety audits are conducted regularly; there is sharing of Last Mile Connectivity Project Audit reports to all the customers and Last Mile Connectivity Project recommended areas of the audits are implemented for improvement of OHS.

Table 4.4: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.480[a]	.230	.166	.52055

(Source: Author, 2019)

As indicated in Table 4.4 above, the R value was 0.480 with the R^2 was 0.230, which indicated an average degree of correlation. The R^2 value indicates 23% was the R Squared, indicating that that the data collected was closely fitted to the regression line between the independent and dependent variables. The R value indicates a strong positive linear correlation between elements of Occupation Health and Safety audit practiced at LMCP and project performance. The R2 indicates that 23% of the variance in the independent variable (Occupational Health and Safety Audit on LMCP) can predict the outcome of dependent variable (Project Performance).

Table 4.5: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	25.2544	6	4.20906153	4.87918	0.00043
Residual	50.0342	58	0.86265812		
Total	75.2885	64			

(Source: Author, 2019)

The predictors are: Safety audit is conducted continuously in our premises, Last Mile Connectivity Project Safety audit are conducted by various specialist, Last Mile Connectivity Project Safety audits identify risks in customer's premises, Last Mile Connectivity Project Health and Safety audits are conducted regularly, Last Mile Connectivity Project Audit reports are shared to all the customers and Last Mile Connectivity Project recommendations of the audits are implemented in our premises to improve health and safety.

Table 4.5 above indicated that the regression model predicted the outcome variable significantly with p= 0.00043, which was less than 0.05, and indicated that; overall, the model statistically and significantly predicted the outcome variable.

Table 4.6: Full Regression Model for OHS Audit and LMCP performance

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	4.184	.826		5.068	.000
Audit – Continuous	.068	.101	.084	.675	.502
Audit - by experts	.414	.110	-.016	-.123	.002
Audit - to identify risks	.819	.107	.023	.176	.000
Audit – regular	.197	.104	-.255	-1.899	.043
Audit - reports shared	-.232	.095	-.322	-2.450	.017
Recommendations implemented	-.025	.092	-.035	-.277	.783

(Source: Author, 2019)

The study established significant relationship between audit done by experts and LMCP performance, r=0.414, p=0.002<0.05 indicating that LMCP safety audit conducted by various specialist affected LMCP performance. Second, the study also established significant relationship between audit used to identify risks and LMCP performance, r=0.819, p=0.000<0.05 indicating that LMCP Safety audits identify risks in customer's premises affected LMCP performance. Last, the study established a significant relationship between sharing of audit reports and LMCP performance, r=-0.232, p=0.017<0.05 indicating that LMCP Audit reports are shared to all the customers affected LMCP performance.

The hypothesis HO^2 that OHS audit of Kenya power Last Mile Connectivity Project performance within the County of Nakuru, Kenya is not effective was rejected and alternative hypothesis HA^2 that OHS audit of Kenya power Last Mile Connectivity Project performance within the County of Nakuru, Kenya was effective accepted. This was supported by the finding that LMCP Safety audit conducted by various specialist affected LMCP performance. Second, LMCP Safety audits identify risks in customer's premises affected LMCP performance. Last, LMCP Audit reports are shared to all the customers affected LMCP performance.

4.8.3 Effectiveness of Occupational Health and Safety Employees Assistant on LMCP Performance.

The third objective of the study was to assess perceived effectiveness of employees assistance programme on the LMCP's performance within the County of Nakuru. The parameters of the independent variables analyzed included; There is reduction of health care cost through Last Mile Connectivity Project employees assistant programme, Wellness programs reduce employees' health hazards and illness, Employees are involved in the inspection process in Last Mile Connectivity Project; Employees have adequate safety equipment; Safety equipment supply is continuous, Last Mile Connectivity Project employees assistance programme is devoid of corruption.

Table 4.7: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.958[a]	.919	.913	.16800

(Source: Author, 2019)

As indicated in Table 4.7 above, the R value was 0.958 with the R^2 was 0.919, which indicated strong positive correlation. The R^2 value indicates 91.5% indicated that 91.5% of the variance of the dependent variable (LMCP Performance) could be predicted from the independent variable (Occupational Health and Safety Employee Assistance Programme).

Table 4.8: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.284	5	4.657	164.994	.000[b]
	Residual	2.060	73	.028		
	Total	25.344	78			

(Source: Author, 2019)

Predictors: There is reduction of health care cost through LMCP employees' assistant programme; Wellness programs reduce employees' hazards and illness; Employees participate in inspection of LMCP; Employees have adequate safety equipment; Safety equipment supply is continuous; LMCP employees' assistance programme is devoid of corruption.

Table 4.8 indicated that the regression model predicted the outcome dependent variable significantly with p= 0.004, which was less than 0.05, and indicated that; overall, the model statistically and significantly predicted the outcome variable.

Table 4.9: Full Regression Model for OHS Employees Assistance Programme and LMCP performance

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	4.736	.632		7.499	.000
Reduced health care cost	.045	.074	.065	.603	.549
Reduced hazards and	-.197	.086	-.260	-2.296	.025
Inspection process	.105	.083	.142	1.271	.209
Adequate equipment	.056	.088	.073	.636	.527
Continuous supply	-.407	.085	-.543	-4.780	.000
No corruption	-.352	.089	-.200	-1.697	.005

(Source: Author, 2019)

As indicated in Table 4.9 above, the study established significant relationship between reduction in hazard and risks and LMCP performance, r=-0.197, p=0.025<0.05 indicating that wellness programs reduce employees' hazards and illness affected LMCP performance. Secondly, the study established relationship between continuous supply and LMCP performance, r=-0.407, p=0.000<0.05 indicating that safety equipment supply being continuous affected LMCP performance. Last, the study established significant relationship between the corruption and LMCP performance, r=-0.352, p=0.005 indicating that LMCP employees assistance programme is devoid of corruption affected LMCP performance.

The hypothesis HO^3 that OHS employees' assistance programme of the LMCP performance within the County of Nakuru Kenya is not effective was rejected and alternative hypothesis HA^3 that OHS audit of LMCP performance within the County of Nakuru is effective accepted. This was supported by the finding that wellness programs reduce employees' health hazards and illness affected LMCP performance. Secondly, safety equipment supply being continuous affected LMCP performance. Lastly, LMCP employees' assistance programme is devoid of corruption affected LMCP performance.

4.8.4 Effectiveness of Occupational Health and Ergonomics on LMCP Performance.

The fourth objective of the study was to analyze perceived effectiveness of OHS ergonomics on LMCP's performance within the County of Nakuru, Kenya. The parameter of the independent variables used to analyze ergonomics included; The company conducts regular inspections of machines; tools and equipment used in LMCP; the inspections help in developing OHS strategies and initiatives that are tailored to the use of machines; tools and equipment used in LMCP; inspections identify defective machines; tools and equipment used in LMCP; contractors are involved in the inspection process of machines, tools and equipment used in LMCP; contractors benchmark with international electricity distribution and transmission machines, tools and equipment to improve ergonomics and contractors are satisfied with ergonomics practices at Kenya Power Company.

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.385[a]	.149	.078	.54745

(Source: Author, 2019)

As indicated in Table 4.10 above, the R value was 0.385 with the R^2 was 0.149, which indicated a positive linear correlation. The R^2 value of14.9% indicated that only 14.9% of the variance in the dependent variable (LMCP Performance) could be explained from independent variable (OHS and Ergonomics).

Table 4.11: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.766	6	.628	2.094	.064[b]
Residual	21.579	72	.300		
Total	25.344	78			

(Source: Author, 2019)

Predictors: The company conducts regular inspections of machines, tools and equipment used in the LMCP; the inspections help in developing OHS strategies and initiatives that are tailored to the use of machines; tools and equipment used in the LMCP; inspections identify defective machines, tools and equipment used in the LMCP; contractors are involved in the inspection process of machines, tools and equipment used in LMCP; contractors benchmark with international electricity distribution and transmission machines; tools and equipment to improve ergonomics and contractors are satisfied with ergonomics practices at Kenya Power Company.

Table 4.11 indicate that the regression model did not predict the outcome independent variable significantly with p= 0.064, which was greater than 0.05, and indicated that; overall, the model did not statistically predicted the outcome variable.

Table 4.12: Full Regression Model for OHS Ergonomics and LMCP performance

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	1.994	.732		2.723	.009
Regular inspection	.164	.093	.225	1.768	.082
Safety strategies	-.131	.091	-.179	-1.440	.155
Defective machines	.031	.090	.044	.345	.732
Employees involvement	.124	.096	.162	1.301	.199
Bench marking	.193	.093	.258	2.086	.141
Employees satisfaction	-.018	.105	-.022	-.174	.862

(Source: Author, 2019)

As indicated in Table 4.12 above, the study established insignificant relationship between ergonomics and LMCP performance with all the variables having p>0.05. The hypothesis HO^4 that OHS ergonomics of LMCP performance within the County of Nakuru, Kenya is not effective was accepted.

4.8.5 Effectiveness of Occupational Health and Policy on LMCP Performance

The fifth objective was to analyze perceived effectiveness of OHS policy on LMCP's performance within the County of Nakuru, Kenya. The key parameters of the independent variables analyzed included: The company has a health and safety policy in place that aims at promoting safety culture in LMCP; the policy defines the procedure for handling complaints on health and safety in Last Mile Connectivity Project; the policy has been made available to all Last Mile Connectivity Project contractors for transparency purposes; the policy complies with OSHA Act 2007; roles and responsibilities of the Last Mile Connectivity Project employees and employer are defined in the policy and that the policy is evaluated alongside Last Mile Connectivity Project progress report.

Table 4.13: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.287[a]	.082	.006	.56837

(Source: Author, 2019)

As indicated in Table 4.13 above, the R value was 0.287 with the R^2 was 0.082, which indicated low positive linear correlation. The R^2of8.2% indicates that only 8.2% of the variance in the dependent variable (LMCP Performance) could be predicted by the independent variable (LMCP Occupational Health and Policy).

Table 4.14: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.085	6	.348	1.076	.385[b]
Residual	23.259	72	.323		
Total	25.344	78			

(Source: Author, 2019)

Predictors: The company has a health and safety policy in place that aims at promoting safety culture in Last Mile Connectivity Project; the policy defines the procedure for handling complaints on health and safety in Last Mile Connectivity Project; the policy has been made available to all Last Mile Connectivity Project contractors for transparency purposes; the policy complies with OSHA Act 2007; roles and responsibilities of the Last Mile Connectivity Project employees and employer are defined in the policy and that the policy is evaluated alongside Last Mile Connectivity Project progress report. Table 4.14 indicates that the regression model did not predict the outcome (dependent) variable significantly with p= 0.385, which was greater than 0.05, and indicated that; overall, the model did not statistically predicted the outcome variable.

Table 4.15: Full Regression Model for OHS Policy and LMCP performance

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	2.666	.944		2.825	.006
Policy in place	.047	.112	.056	.417	.679
Handling complaints	.070	.103	.088	.678	.500
Availed to employees	.123	.095	.169	1.300	.199
Comply with the act	-.070	.103	-.092	-.678	.500
Well defined roles	-.058	.103	-.077	-.565	.574
Policy – Evaluated	.015	.108	.019	.136	.892

(Source: Author, 2019)

As indicated in Table 4.15 above, the study shows insignificant relationship comparing policy and LMCP performance with all the variables having p>0.05. The hypothesis HO^5 that OHS policy of the LMCP's performance within the County, of Nakuru, Kenya is not effective was accepted.

4.8.6 Effectiveness of Occupational Health and Safety on LMCP Performance

This section produces the of effectiveness of OHS on LMCP performance. The main aim of the study was to investigate the perceived effectiveness of OHS Programme on the LMCP's performance in the County of Nakuru, Kenya.

Table 4.16: Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	.982[a]	.964	.961	.11242

(Source: Author, 2019)

As indicated in Table 4.16 above, the R value was 0.982 with the R^2 was 0.964, which indicated a very strong positive correlation. The R^2 value of 96.4% indicates that 96.4% of the variance in the dependent variable (Project Performance) in the study could be predicted by the independent variable (LMCP's OHS Programme) in the study.

Table 4.17: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	24.422	5	4.884	386.464	.000[b]
Residual	.923	73	.013		
Total	25.344	78			

(Source: Author, 2019)

Predictors: Training, audit, employee assistance programme, ergonomics and policy. Table 4.17 indicates that the regression model predicts the outcome (dependent) variable significantly with p= 0.000, which was less than 0.05, and indicated that; overall, the model statistically and significantly predicted the outcome dependent variable.

Table 4.18: Effectiveness of Occupational Health and Safety on LMCP Performance

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
(Constant)	3.167	1.928		1.642	.106
Training	.785	.267	.086	.692	.002
Audit	-.597	.289	-.135	-1.030	.007
Assistance	-.873	.219	-.211	-1.699	.004
Ergonomics	.296	.242	.152	1.226	.225
Policy	.148	.298	.065	.497	.621

(Source: Author, 2019)

As indicated in Table 4.18, the study established significant relationship between training and LMCP performance r=0.785, p=0.002<0.05 indicating that OHS training affected LMCP performance. Second, the study inferred a significant connection between audit and LMCP performance, r=-0.597, p=0.007<0.05 indicating that OHS audit affected LMCP performance indicating that OHS audit affected LMCP performance. Last, the study inferred significant connection comparing employee assistance programme and LMCP performance, r=-0.873, p=0.004 indicating that employee assistance programme affected LMCP performance. However, the study deduced no significant relationship comparing ergonomics and LMCP performance r=0.296, p=0.225>0.05 indicating that OHS Ergonomics did not affect LMCP performance. Similarly the study revealed no significant connection between OHS Policy and LMCP performance; r=0.148, p=0.621>0.05 indicating that OHS Policy did not affect LMCP performance.

On the basis of table 4.18, sub-hypothesis HO^1, HO2, HO3were rejected and ,HO^4 and HO^5, accepted. Consequently, the main null hypothesis HO that OHS Programme on LMCP's performance within the County of Nakuru in Kenya is not effective was rejected. This is because only 2 out of the 5 sub-hypotheses were accepted (Leedy and Ormrod, 2005)

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter describes the summarized findings, recommendations, and areas suggested to research on, and contribution to the scope of investigation of the perceived effectiveness of Occupational Health and Safety Programme on LMCP's performance within the County of Nakuru in Kenya. The recommended and suggested areas are basis of the findings in the chapter one, two, three and four and also the research objectives reached through analysis of responses to the questions during the field research.

5.2 Summary of Findings

The first objective of the study was evaluation of effectiveness of OHS training on the LMCP's performance within the County of Nakuru in Kenya. Findings on OHS training established that OHS training among contractors in the LMCP did deliver adequate OHS training to the employed working staff concerning Last Mile Connection Project and that the training programme is continuous. Results on OHS training among customers since they had no knowledge on the OHS Training Programme Policy, customers were not provided with adequate occupation health and safety training concerning the KPLC limited Last Mile Connection Project; the company did not educate customers about a healthy living and working styles while undertaking activities of Last Mile Connection Project; occupation health and safety training programme was not continuous; applicable rules and laws were unexplained at the training in the Last Mile Connection Project and there was no open sharing, to the employed workers, the facts about OHS expected results and provisions of the OHS.

The second objective was to analyze effectiveness of OHS audit on LMCP's performance within the County of Nakuru in Kenya. Findings on OHS audit revealed that these features of Last Mile Connectivity Project the audit were conducted as was observed by the contractors; safety audit was conducted continuously; this audit was conducted by; HR specialists; safety advisors, employees representatives and the managerial team. On the other hand, according to customers view on Last Mile Connectivity Project audits were not adequately done in the customer's premises. This was because; Safety audits were not conducted continuously in customers'

premises, Last Mile Connectivity Project Safety audit were not conducted by various specialists, Last Mile Connectivity Project Safety audits did not identify risks in customer's premises, Last Mile Connectivity Project Health and Safety audits were not conducted regularly; Last Mile Connectivity Project Audit reports were not shared to all the customers and Last Mile Connectivity Project recommendations of the audits were not implemented in customer's premises to improve health and safety.

The third objective of the study was to assess effectiveness of employees assistance programme on the LMCP's performance in Nakuru County, Kenya. Findings on Employees Assistance Programme established that Kenya Power had only achieved reduction of health care cost through Last Mile Connectivity Project employees' assistant programme and reduced employees' health hazards and illness. The company was still struggling with such challenges as; employees' involvement in the inspection process in Last Mile Connectivity Project, supply of continuous and adequate safety equipment and fighting corruption in the Last Mile Connectivity Project employees assistance programme.

The fourth objective was to analyze effectiveness of health and safety ergonomics on the LMCP's performance within the County of Nakuru in Kenya. Findings on Occupational Health and Safety ergonomics revealed that the findings on ergonomics based on contractors view established that Kenya Power and Lighting Company had achieved some milestones in ergonomics as far as LMCP was concerned; the company conducted regular inspections of machines, tools and equipment used in Last Mile Connectivity Project; the inspections helped in development of OHS strategies and initiatives focusing on use of machines, tools and equipment used in Last Mile Connectivity Project; inspections identified defective machines, tools and equipment used in Last Mile Connectivity Project.

On the contrary, contractors were not involved in the inspection process of machines, tools and equipment used in Last Mile Connectivity Project; contractors' did not benchmark with international electricity distribution and transmission machines, tools and equipment to improve ergonomics; and contractors were not satisfied with ergonomics practices at KPLC Limited.

The findings on ergonomics based on customers view established that the company did not achieve many milestones in ergonomics as far as LMCP was concern. This was because the company did not conduct regular inspections of electrical appliances used by customers in their premises, the inspections contribute in development of OHS strategies and initiatives for benefitting customers, inspections did not identify defective and below standards appliances that were used in customers' premises; customers did not participate in the inspecting the OHS practices; finally, customers were not satisfied with safety practices at KPLC limited.

The fifth objective was to analyze effectiveness of health and safety policy on the LMCP's performance within the County of Nakuru in Kenya. Findings on OHS policy established that the KPLC limited had health and safety policy that aims at promoting safety culture in Last Mile Connectivity Project; the policy defined the directives in addressing complaints on OHS in Last Mile Connectivity Project; the policy adhering to OSHA Act 2007; work description of the Last Mile Connectivity Project participants (managers and workers) were clarified in the policy. On the contrary, the policy had been made available to all LMCP contractors for transparency purposes and the policy is evaluated alongside Last Mile Connectivity Project progress report.

Findings on LMCP's performance revealed that LMCP's performance was achieved on the following aspects; the Last Mile Connectivity project satisfied the intended customers; more electricity consumers had been connected since the inception of LMCP; maximum KPLC limited transformers since inception of LMCP and the LMCP was sustainable.

5.3 Conclusion

The study investigates the perceived effectiveness of OHS Programme on the LMCP's performance in County of Nakuru, Kenya. It aimed to evaluate the effectiveness of OHS training, audit, Employees Assitance Programme, ergonomics and policy the LMCP perceived project performance in the County of Nakuru.

The first sub hypothesis HO^1 that Occupational Health and Safety training Programme on the LMCP's performance within the County Government of Nakuru "is not effective" was rejected and alternative hypothesis HA^1 that Occupational Health and Safety training Programme on LMCP's performance within the County Government of Nakuru "is effective" was accepted.

This was supported by the finding that Kenya Power Occupational Health Training Policy had no effect on LMCP's performance and further that outcome were shared openly with employees affected LMCP's performance.

The second sub hypothesis HO^2 that Occupational Health and Safety audit of LMCP's performance within the County Government of Nakuru "is not effective" was rejected and alternative hypothesis HA^2 that Occupational Health and Safety audit of Kenya power Last Mile Connectivity Project performance within the County Government of Nakuru is effective was accepted. This was supported by the finding that Last Mile Connectivity Project Safety audit conducted by various specialist affected LMCP's performance. Second, Last Mile Connectivity Project Safety audits identify risks in customer's premises affected LMCP's performance. Last, Last Mile Connectivity Project Audit reports are shared to all the customers affected LMCP's performance.

The third sub hypothesis HO^3 that Occupational Health and Safety employees' assistance programme of the LMCP's performance within the County Government of Nakuru "is not effective" was rejected and alternative hypothesis HA^3 that Occupational Health and Safety audit of the LMCP's performance within the County Government of Nakuru "is effective" was accepted. This was supported by the finding that there was reduction of illness and hazards related to OHS due to the wellness programs on employees thus affected LMCP performance. Secondly, 'safety equipment supply being continuous' affected LMCP's performance. Lastly, 'Last Mile Connectivity Project employees' assistance programme is devoid of corruption' affected LMCP's performance.

The fourth sub hypothesis HO^4 that Occupational Health and Safety ergonomics of the LMCP's performance within the County Government of Nakuru "is not effective" was accepted. The fifth sub hypothesis HO^5 that Occupational Health and Safety policy of the LMCP's performance within the County Government of Nakuru is not effective was accepted Thus the main null hypothesis HO that Occupational Health and Safety Programme on LMCP's performance within the County of Nakuru "is not effective" was rejected. The alternative hypothesis H_A Occupational Health and Safety Programme on the LMCP's performance within the County Government of Nakuru "is effective" was accepted.

5.4 Recommendations

First, the study recommends that Kenya Power and Lighting Company Limited should conduct several OHS trainings among contractors in the LMCP. The Company should provide sufficient occupation health and safety training to contractors concerning Last Mile Connection Project and that the training programme should be continuous and it should also target customers. This is because customers were not aware of Kenya Power Company Health and Safety Training Programme Policy and customers were not provided with adequate occupation health and safety training concerning Last Mile Connection Project.

Second, Kenya Power Company should enhance OHS Audit. This is because; Safety audits were not conducted continuously in customers' premises, Last Mile Connectivity Project Safety audits were not conducted by various specialists, Last Mile Connectivity Project Safety audits did not identify risks in customer's premises, Last Mile Connectivity Project Health and Safety audits were not conducted regularly, Last Mile Connectivity Project Audit reports were not shared with all the customers and Last Mile Connectivity Project recommendations of the audits were not implemented in our premises to improving OHS.

Third, the study recommends that the KPLC should enhance employees' assistance programme as a means of enhancing safety among contractors and customers. This is because the company was still struggling with such challenges as; employees' involvement in the examination procedures(inspecting the OHS) in LMCP supply of continuous and adequate safety equipment; and fighting corruption in the LMCP employee assistance programme.

Fourth, work environment ergonomics should be enhanced by the KPLC. This is because the company did not conduct regular inspections of electrical appliances used by customers in their premises, the inspections did not contribute in development of OHS initiative and strategy for benefitting customers: inspections did not identify defective and below standards appliances that we use customers' premises; customers had chance to review process (inspecting the OHS) thus the customers were not satisfied with safety practices at the company.

5.5 Opportunities for Further Research

First an investigation should be carried out on efficiency of OHS programme in Kenya Power Company Sub-Stations focusing on employees' wellbeing and distribution safety. The current study did not investigate safety measures at the sub-stations. Secondly, an investigation should be carried out employees' occupational safety in the KPLC office premises in the various counties where LMCP is being implemented which the current study did not analyze.

Third, the study recommends an investigation be carried out on effect of the use of concrete corrugated poles on OHS practices of contractors in the LMCP. The current study did not analyze this new aspect with some of the poles getting broken in the due course of transmission. Lastly, the Kenyan Government in its bid to have more than 70% of the households connected to electricity should also consider its policy on the use of alternative clean energy to lower the customers consumption costs which has been a complain in the past. Therefore, the Kenyan Government should commission a research in this regard

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APPENDICES

Appendix I: DATA COLLECTION LETTER

Dan Nyatuka
P.O.BOX14857-20100
NAKURU

To Respondent
Nakuru
Dear Sir/Madam,

RE: TO WHOM IT MAY CONCERN

I study at University of Nairobi: taking Masters of Arts in Construction Management. In order to fulfill all the requirements for the award of this degree, it is necessary that I undertake a research project. I am \therefore carrying out a study ***"An Investigation on The effectiveness of Occupational Health and Safety Programme on the Kenya Power and Lighting Company Limited Last Mile Connectivity Project Perceived Performance".*** Information you provide will be confidential and private and will be used only for academics. Your reply will be heartily appreciated.

Thanking you in anticipation.

Yours Faithfully,
Dan.

Appendix II: INTRODUCTION LETTER FROM THE DEPARTMENT

UNIVERSITY OF NAIROBI
DEPARTMENT OF REAL ESTATE AND CONSTRUCTION MANAGEMENT
P.O. Box 30197, 00100 Nairobi, KENYA, ***Tel: No. +254-020-491 3531***
E-mail: *dept-recm@uonbi.ac.ke*

Ref: B53/8538/2017 **Date:** 19th March, 2019

To Whom it May Concern

Dear Sir/Madam,

RE: DAN NYATUKA

This is to confirm that the above named is a second year student in the Department of Real Estate & Construction Management pursuing a course leading to the degree of M.A. Construction Management.

He is carrying out a research entitled "***An Investigation into The Relationship Between Occupational Health Safety Programmes and Kenya Power Last Mile Connectivity Project Perceived Performance***" in partial fulfillment of the requirements for the degree programme.

The purpose of this letter is to request you to allow him access to any kind of material he may require to complete his research. The information will be used for research purposes only.

CHAIRMAN
DEPARTMENT OF REAL ESTATE
AND CONSTRUCTION MANAGEMENT

Isabella N. Wachira -Towey (PhD),
Chair & Senior Lecturer
Department of Real Estate & Construction Management

Appendix III: Contractors Questionnaire on Perception of Effect of LMCP on Project performance

The questionnaire has been structured with the intention to collect data on a research study, "analysis of effectiveness of Occupational Health and Safety Programme on Kenya power Last Mile Connectivity Project perceived performance in Nakuru County, Kenya". Any information collected shall be confidential and will only be used for academic purposesonly. Kindly fill-in and tick where appropriate.

Part I: Occupational Health and Safety Programme

Please indicate using the scale any of the stated **Occupational Health and Safety Programme** you have observed in applied in Last Mile Connection Project. You are required to give your level of agreement on each of the elements by ticking where; 5 – SA – Strongly Agree, 4 – A – Agree, 3 – Not Sure, 2 – Disagree and 1 – Strongly Disagree

Health and Safety Training Programme		5	4	3	2	1
1	Kenya Power Company has Health and Safety Training Programme Policy					
2	There is sufficient OHS training to employees concerning Last Mile Connection Project					
3	Employees were educated on healthy life and work styles by the KPLC while undertaking activities of Last Mile Connection Project					
4	occupation health and safety training programme is continuous					
5	There was explanation to OHS laws and regulating norms at training in the Last Mile Connection Project					
6	There is open sharing of OHS results and provisions to employees.					
	Occupation Health and Safety Audit Programme	**5**	**4**	**3**	**2**	**1**
1	Safety audit is conducted continuously					
2	Last Mile Connectivity Project OHS audit is done by safety advisory, managerial, and HR teams together with workers' representatives					
3	There was risk recognition by the Last Mile Connectivity Project OHS audits in places of work.					
4	There is regular Last Mile Connectivity Project OHS audits					

5	There is report sharing of Last Mile Connectivity Project OHS Audit to all the employees.					
6	There was implementation of recommended LMCP audits in OHS improvement					
	Occupation Health and Safety employees assistance programme	**5**	**4**	**3**	**2**	**1**
1	There is reduction of health care cost through Last Mile Connectivity Project employees assistant programme					
2	Accidents and illness related to work on employees were reduced by "Wellness Programs"					
3	Employees participate in inspecting OHS practices					
4	Employees have adequate safety equipment					
5	Safety equipment supply is continuous					
6	Last Mile Connectivity Project employees assistance programme is devoid of corruption.					
	Occupation Health and Safety Ergonomics Programme	**5**	**4**	**3**	**2**	**1**
1	The company conducts regular inspections of machines, tools and equipment used in Last Mile Connectivity Project					
2	Inspecting OHS practices: checks on machines, tools and equipment used in Last Mile Connectivity Project led to OHS development					
3	Inspections identify defective machines, tools and equipment used in Last Mile Connectivity Project					
4	Employees participate in inspecting OHS practices: checks on machines, tools and equipment used in Last Mile Connectivity Project					
5	Employees benchmark with international electricity distribution and transmission machines, tools and equipment to improve ergonomics					
6	Employees are satisfied with ergonomics practices at Kenya Power Company					
	Occupation Health and Safety (OHS) Policy	**5**	**4**	**3**	**2**	**1**
1	There is OHS policy aiming at safety promotion in Last Mile Connectivity Project					

2	Procedures of addressing complaints on OHS in Last Mile Connectivity Project were elaborated in the policy					
3	For the stakeholder are transparent, the policy has been made available to all Last Mile Connectivity Project workers					
4	The policy adherence to the 2007 OSHA Act					
5	The policy defined individual participants' duties in LMCP					
6	The policy is evaluated alongside Last Mile Connectivity Project progress report					

Appendix IV: Customers Questionnaire on Perception of Effect of LMCP on Project performance

The questionnaire has been structured with the intention to collect data on a research study, "analysis of effectiveness of Occupational Health and Safety Programme on Kenya power Last Mile Connectivity Project perceived performance in Nakuru County, Kenya". Academic use and confidentiality of the provided information gathered will be upheld. Kindly fill-in and tick where appropriate.

Part I: Occupational Health and Safety Programme

Please indicate, using the scale, which of the following **Occupational Health and Safety Programme** you have observed when electricity was connected to your house in the Last Mile Connection Project. You are required to give your level of agreement on each of the elements by ticking where; 5 – SA – Strongly Agree, 4 – A – Agree, 3

Health and Safety Training Programme		5	4	3	2	1
1	Kenya Power Company has Health and Safety Training Programme Policy					
2	I was provided with adequate occupation health and safety training concerning Last Mile Connection Project					
3	Kenya Power educated me on precautions to take on electricity and appliances					
4	We are continuously trained on occupation health and safety programme to protect our premises					
5	Relevant laws and regulations are explained to use during training in the Last Mile Connection Project					
6	There is open sharing of OHS results and provisions to us in the form of brochures and other printed and electronic information.					
	Occupation Health and Safety Audit Programme	**5**	**4**	**3**	**2**	**1**
1	Safety audit is conducted continuously in our premises					
2	Last Mile Connectivity Project Safety audit are conducted by various specialists					
3	Last Mile Connectivity Project Safety audits identify risks in our premises.					

4	There is regular Last Mile Connectivity Project Health and Safety audits done.					
5	There is sharing of reports from Last Mile Connectivity Project audits with all customers.					
6	Last Mile Connectivity Project audit recommendation's implementation occur in our premises in improvement of OHS					
	Occupation Health and Safety Ergonomics Programme	**5**	**4**	**3**	**2**	**1**
1	The company conducts regular inspections of electrical appliances used in my premises					
2	Inspections strategized and initiated OHS development aiming at benefitting customers					
3	Inspections recognized faulty and below standards appliances that we use in our premises					
4	Customers participated in inspecting OHS practices					
6	Customers are satisfied with safety practices at Kenya Power Company					