DETERMINANTS OF COMPLIANCE TO OCCUPATIONAL SAFETY AND HEALTH STANDARDS IN FOOD MANUFACTURING INDUSTRIES THIKA SUB-COUNTY, KIAMBU COUNTY, KENYA

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DECLARATION AND APPROVAL

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I declare that this thesis is my original work and has not been presented to any other training institution.

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DEDICATION

l dedicate my study endeavor to my family, who have been continually emphasizing to me the value of education, May God bless you all.

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ABSTRACT

Under the rule or guideline, such as a specific policy, legislation, or law, workplaces must comply with a minimum of 19 requirements or key dimensions of the standards under OSHA 2007, thereby improving safety in the workplace. Finding out what influences and whether the food manufacturing industries in Thika sub-county Kenya adhere to occupational safety and health requirements is the aim of the research. The research was guided by the following research objectives: to establish the organizational determinants of compliance to OSH standards among employees; to identify the level of awareness of OSH standards among employees; to identify the sociodemographic determinants of compliance to standards among employees in the food manufacturing industries in Thika Sub-County, Kiambu County, Kenya. The study employed an analytical cross-sectional study design technique where qualitative and quantitative methods of data gathering were employed. A stratified sampling method was used to form food manufacturing industry strata which were grouped according to the industries with similar final products and the target respondents were the employees where 317 respondents were proportionately sampled to participate in the study Additionally all 34 employers, Occupation safety officer, and public health expert were the key informants. A questionnaire, a key informant guide, and an observational checklist were used as research tools to collect data. Data that was verified, coded, and analyzed with SPSS version 26 and NVIVO v.10 was used to analyze qualitative data recorded. Both the Chi-square test for independence and binary logistic regression analyses were applied to evaluate the degree of association between determinants of compliance with occupational safety and health standards. For the statistical analysis, the level of significance was set at$\leq$ 0.05. According to this study, the rate of adherence to occupational safety and health standards was 76.5%, far lower than the 100% target compliance rate set by the Occupational Health and Safety standards. According to the second objective on sociodemographic determinants of adherence with standards for workplace health and safety, male gender(OR=2.1,95%CI=1.12-3.92) and having a primary level education(OR=8.3%,95%CI=2.28-30.53) decreased the likelihood of complying with occupational safety and health standards, whereas having 1-4 years of work experience(OR=5.9,95%CI=0.06-0.49) increased the likelihood of complying. According to the third objective on organizational factors influencing adherence to occupational safety and health standards, having safe working conditions (OR=3,95%CI=0.18-0.59)and providing personal protective equipment (PPE)(OR=2,95%CI=0.29-0.96) enhanced the likelihood of following OSH regulations, whereas keeping employees out of OSH related activities(OR=1.89,95%CI=1.04-3.45) decreased the likelihood of following OSH regulations. Finally, according to the fourth objective adherence to standards for workplace health and safety was more likely when people were aware of OSH standards(OR=2,95%CI=0.31-0.94). Adherence to OSH standards was 76.5%, falling short of the 100% target. Compliance was higher with work experience, safe conditions, PPE, and OSH awareness but lower among males and those with less education. Enhancing OSH training, improving workplace safety, providing PPE, and encouraging employee involvement in OSH activities for better compliance is needed in Kiambu County.

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LIST OF ABBREVIATIONS AND ACRONYMS

CDC Center for Disease Control.

DOSHS Directorate of Occupational Safety and Health.

FGD Focus Group Discussion.

GDP Gross Domestic Product.

DALYs Disability Adjusted Life Years.

GNP Gross National Product.

IERC Institutional of Ethics and Review Committee.

ILO International Labor Organisation.

KII Key Informant Interview.

KNBS Kenya National Bureau Of Statistics.

NACOSTI National Commission for Science Technology and Innovation.

OSH Occupational Safety and Health.

OSHA Occupational Safety and Health Act.

PPE Personal Protective Equipment.

SPSS Statistical Package for the Social Sciences.

WHO World Health Organisation.

CHAPTER ONE.

INTRODUCTION.

1.0 introduction

This section provides the study background, problem statement, investigation objectives, and questions, significance and justification of the investigation, scope, limitation, and delimitation of the study.

1.1 Background of the Research

The act of adhering to regulations or recommendations, such as particular policies, laws, or legislation, to satisfy Occupational Safety and Health (OSH) standards (OSHA, 2007). Workers are protected by National and occupational safety and health policy. The policy provides a framework to improve safety and safeguard health (GOK, 2018a). Under OSHA 2007, workplaces must comply with 19 key safety and health requirements. These include maintaining cleanliness, proper ventilation, lighting, and drainage, as well as providing sanitary conveniences, washing facilities, and safe drinking water(ILO, 2017). Employers must ensure fire safety, first aid, protective equipment, safe access, and ergonomics. Adequate seating, clothing storage, medical surveillance, welfare facilities, and emergency preparedness are essential. Proper training, supervision, and employee awareness enhance compliance(ILO, 2017). Adhering to these standards minimizes workplace hazards, promotes employee well-being, and fosters a safe working environment, ultimately improving productivity and reducing occupational risks in various industries.

With great economic benefit played by food manufacturing industries highly contributing to GDP. Nevertheless, notwithstanding the substantial economic advantages of the worldwide food manufacturing industries, reports indicate that underinvesting in workplace safety and

health has a financial cost (ILO, 2017). According to a 2017 analysis by Hämäläinen, Takala, and Tan, 2.78 million deaths among employees take place each year due to factors associated to their jobs. Out of them, 2.4 million deaths, or 86.3 percent, were caused by occupational diseases, while 380,000 deaths, or 13.7%, were caused by occupational accidents. Additionally, there were 3.74 million non-fatal accidents, and 123 million DALYs were lost because of illnesses, disorders, and work-related injuries (Hämäläinen, 2017).

DALYs are a composite measure, based on reported cases, of the global burden of illness (GBD) and financial damage. All work-related illnesses, harm, and illnesses contributed to 2020 GBD, which was 4.94%. These disturbing figures suggest that over 3.2 billion workers do not have sufficient access to the entire spectrum of occupational safety and health services (IHME/GDB Risk Factors and Collaborators 2020). Furthermore, most workers worldwide do not have conditions of employment that fulfill the requirements set by the UN's International Labor Organization (ILO, 2017), even though the majority of countries have established sensible laws and their enforcement mechanisms. ILO estimates show that the burden of occupational diseases and deaths varies around the world, with Sub-Africa accounting for 11.8% of cases per year as a result of subpar OSH standards compliance (I LO, 2019).

In the world, businesses employ about 80% of the labor force. The lack of qualified personnel, training, and education in the area of workplace security and well-being in Africa negatively impacts employees' access to these OSH services(Eyiah et al., 2019). More specifically, a study done by Ayim found that a number of businesses and medical professionals neglect to collect thorough occupational histories, conduct systematic tests for diseases associated with the workplace, and monitor safety and health(Ayim Gyekye, 2015).

According to research conducted in Tanzania's Sekou Touré Hospital in the Mwanza Municipality, there is little compliance with workplace safety and health regulations among medical professionals. This necessitates that recommendations be followed (Neema, 2015).

There has been a growing interest in Kenya's occupational health and safety over time. At the moment, the Ministry of Labor and Social Security Administration and Services of the Kenyan government has given DOSHS permission to handle OSH regulations. Additionally, the Factories' Ordnance Act of 1951, which eventually evolved into Kenya's Factories Act Cap 514 regulations, is where occupational safety and health in that country first appeared. OSHA, which was established in 2007 to provide a more thorough approach to OSH issues, still has gaps, as demonstrated by studies revealing that over fifty percent of injuries and illnesses related to work are undocumented or are not seriously considered. Only 4,000, or 2.9% of the intended 140,000 workplaces in Kenya, were actually examined by the Director, according to ILO data(ILO, 2013a)

Based on the results of the nation's most recent census, 47.5 million people call Kenya home (KNBS, 2019). Three million of the 18 million people in the labor force are employed in the formal economy, while a hundred million are employed in the unorganized sector (KNBS, 2019).Only 29% of the technical capacity to evaluate the OSH policy's 2007 inspection of 140,000 establishments for compliance with OSHA requirements is adequate (Moaddel et al., 2021). In addition, there are certain implementation gaps and difficulties in occupational safety and health, which limits coverage to only 2.8% of workplaces (4,000), leaving a significant portion (97.1%) uninspected each year due to staffing issues. Due to the insufficient inspection coverage, there is a culture of OSH standard non-compliance (Debela et al., 2023).When compared to other developed nations, Kenya's workplace application of

occupational safety and health requirements is utterly appalling(Kirombo, 2012). According to estimates, there were 6796 work-related accidents in Kenya in 2015(DOSHS, 2015).

It is necessary that hygiene standards be maintained at all workplaces; an investigation carried out in Nairobi revealed that 66.05% of workplaces were in compliance with hygiene requirements, compared to 33.95% who were not. With only 66.05% compliance on hygienic matters, one third of the workers are still exposed to and vulnerable to occupational diseases, so the level of compliance is an area of interest to be addressed to reduce the negative impact (Abanga et al., 2023).

Kiambu County was included as one of the afflicted counties in a report on the first quarter of 2015 that was completed (GOK, 2018b) According to a survey from 2014, there were 58 industries in the Thika subcounty, and 32% of the workers there claimed falls, wounds, and burns as the cause of the accident (Kamau, 2014). Kiambu County has at least 84 registered and licensed food and nonfood manufacturing industries, whereby in Thika sub county in Kiambu County there are more registered and licensed than in other Sub County, where 34 of the 43 licensed food manufacturing businesses are located (DHIS for Kiambu County, 2022).

1.2 Statement of the problem

Laws pertaining to occupational health and safety are crucial to the management of businesses and organizations. For any company, adhering to the law is their first priority. Despite being a simple safety approach, this is the first line of defense for any organization (Mayanja et al., 2022). Furthermore, the protection of others from the workplace environment is provided by occupational safety and health, including clients, employers, supporters, local communities, and the general public (Nwankwo et al., 2017)

Globally a total of 3.74 million non-fatal accidents, 3.74 million fatal collisions, and approximately 380,000 total fatalities happens as a result of accidents received on the job, according to the Takala report from 2019. These numbers were the result of insufficient funding for workplace safety and health (I LO, 2019).

In Sub-Saharan Africa workers' access to health and safety at work services is negatively impacted by the region's lack of human resource assets, instruction, and education in this area. In Kenya's workplace implementation of regulations pertaining to occupational health and safety is absolutely appalling in study that was done in the vehicle body manufacturing industry in Kenya, compliance with OSH measures at the workplace shown that (37.7%) was always practiced by the respondents(Abanga et al., 2023). In addition, compliance with OSH measures that were always practiced by following proper work procedures was (39.2%), washing hands after work was at (31.9%), and reading all instructions before doing dangerous work was at (24.2%)(Abanga et al., 2023).

According to another research study conducted in Nairobi, One-third of the workforce is still exposed to and susceptible to occupational diseases, therefore 66.05% compliance on hygienic matters is insufficient. As a result, it is important to address the degree of compliance to reduce the negative impact (Lawrence, 2012). Non-compliance with OSHA 2007 leads to legal penalties, workplace accidents, financial losses, and reputational damage. Employers may face fines or imprisonment, while unsafe conditions increase injuries and fatalities. Businesses risk compensation claims and operational shutdowns. Poor safety practices also harm the company's reputation, affecting employee morale and business opportunities (OSHA, 2007).

In Kenya, a significant of those in employment will still face the challenge of unsafe and unhealthy workplaces. A recent report by DOSHS indicates Kiambu County had a total of 456 work-related injuries which is a clear indication of poor compliance with occupational safety regulations(MOL, 2018). The majority of these accidents can be avoided if necessary occupational and safety health measures are taken seriously. In addition, majority of these accidents were noted to occur in non-registered workplaces compared to those that are registered. Studies has been conducted on determinants with compliance with OSH regulations from other manufacturing industries Thika sub-county, but none of these studies have focused on food industries. Despite this, there is a dearth of information available regarding the degree of adherence to workplace health and safety laws in food production companies, especially in the Thika sub-county.

The measures implemented to maintain the workplace's security are what ultimately determine its level of safety. Collaboration between management as well as stakeholders is necessary to enhance workplace safety. A study focusing on registered workplaces in Nairobi revealed a compliance rate of 64.49% with Occupational Safety and Health (OSH) regulations, leaving a significant 35.51% non-compliance gap(Ayubu, 2010). OSHA 2007 compliance rates for Kenyan workplaces, however, have not been adequately disclosed. Most workers in the food production industry are vulnerable to workplace mishaps, and neither employers nor employees prioritize employee health and safety. This study focused on determinants of compliance of occupational safety and health standards among employees in food manufacturing industries in the Thika sub-county of Kiambu County, Kenya.

1. 3 Objectives of the Study

1.3.1 Broad Objective

To assess the determinants of compliance with occupational safety and health standards in food manufacturing industries in the Thika sub-county, Kiambu County, Kenya

1.3.2 Specific Objectives.

1. To determine the level of compliance among employees to occupational safety and health standards in food manufacturing industries in Thika Sub-county Kiambu county.
2. To assess the sociodemographic determinants of compliance to occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county Kiambu county.
3. To evaluate the organizational determinants of compliance to occupation safety and health standard among employees in food manufacturing industries in Thika Sub-county Kiambu County.
4. To assess the level of awareness on occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county, Kiambu County.

1.4 Research Questions

1. What is the level of compliance among employees to occupational safety and health standards in food manufacturing industries in Thika Sub-county Kiambu County?

2. What are the social demographic determinants of compliance with occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county Kiambu County?
3. What are the organizational determinants of compliance with occupation safety and health standards among employees in food manufacturing industries in Thika Sub-county Kiambu County?
4. What is the level of awareness of occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county, Kiambu County?

1.5 Justification of the Study

In Food manufacturing industries reports have indicated that it has the greatest work injury and occupational diseases rating with other industries for example slips, trips, manual handling, being hit by falling objects and repetitive motion are the most common sources (Ebi et al., 2017). Services for workplace safety and health are provided to protect workers' health and advance the creation of a toxic-free workplace (Ayim Gyekye, 2015) .

Katsuro et al. (2010) found that inadequate occupational health and safety protocols in food manufacturers reduce worker productivity by decreasing their efficiency. This is in line with a study that was carried out in a tea factory in Kenya as well as discovered that everyone has a basic right to fair and pleasant employment conditions. Article 23 of the Universal Declaration of Human Rights as well as Article 7 of the United Nations Framework Convention on Economic, Social, and Cultural Rights are two of the many places this right is guaranteed. The 2030 Agenda for Sustainable Development's Sustainable Development Goals, also known as SDGs, 3 and 8 must be met in order for the health and safety of employees to improve. SDG 3 aims to guarantee everyone, at all ages, a healthy life and to promote overall well-being. SDG 8 advocates for decent work for all, employment, and equitable and sustainable growth in the economy. Consequently, funding OSH assisted with this (Rotich & Kwasira, 2015).

1.6 Scope of the Study

The study aimed to assess the level of Compliance with occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county Kiambu County. In addition, the study examined the social demographic, awareness, and organizational factors influencing compliance with occupational safety and health standards. This research was carried out among 317 employees in food manufacturing industries in Thika Sub-county Kiambu County (geographic scope), the study utilized two months for data collection purposes while the entire research took one year to be completed (time scope). Published articles on compliance with occupational safety and health standards, social demographics, awareness, and organizational factors influencing compliance with occupational safety and health standards were reviewed(thematic scope).

1.7 Study limitations

The standards for workplace health and safety in the food production industries are poorly documented. However, this was avoided by utilizing public health officers' data on workplace safety and health as well as occupational safety and health experts. Recall bias was overcome by a clear definition of the research and the use of random sampling techniques to gather information. Time limit for those who were working night shifts which was overcome by interviewing them before the shift starts or after the shift.

1.8 Delimitations

A total of 317 study participants participated in the study. The study was also restricted to four research questions and objectives that are concerned with compliance with occupational safety and health standards among employees in food manufacturing industries in Thika Sub-county Kiambu County as well as social demographic, awareness, and organizational factors influencing compliance with occupational safety and health standards. Employees in food

manufacturing industries in Thika Sub-county Kiambu County were the only subjects of the investigation.

1.9 Assumptions of the study

1. Research subjects would give truthful answers.
2. Study participants were willing to participate in the study without demanding any kind of insentives.

1.10 Operational Definition of Key Terms.

Accident: any unforeseen, unexpected event that results in human injury or environmental harm to buildings, plants, materials, or the environment.

Compliance: is defined as adhering to the health and safety regulations outlined in OSHA's 2007 Occupational Safety and Health Policy.

Employee: refers to an individual who is employed under a contract, and comparable terms must have the same meaning;(OSHA, 2007)

Employer: is anyone, with the possible exception of a labor broker as specified in section 1(1) of the Labor Relations Act of 1956, who hires someone, offers them a job, pays them, or expressly or implicitly concurs to pay them (Act No. 28 of 1956).

Food manufacturing industries: these businesses produce a variety of packaged goods for consumers. It also includes slaughterhouses and other facilities for processing animals. Additionally, spirits and non-alcoholic beverages are blended and distilled (Tomoda, 1993)

General register: it's a workplace record that is maintained and all injuries at the workplace are recorded.

Health: is more than simply being free from illness or disability; it also includes one's physical, mental, social, emotional, and spiritual wellbeing.

Medical surveillance: It is a schedule of standard worker examinations conducted by an approved healthcare provider or professional medical practitioner, which may involve biological monitoring, clinical examinations, or medical diagnostics (GOK, 2012d)

Occupier: its anyone who is actually occupying property, regardless of the title under which he does so, and, in the case of property that has been divided into multiple units and rented to different tenants, anyone who is receiving the rent due from those tenants, whether on his own behalf or on behalf of a party who is entitled to it or has an interest in it; (GOK, 2012d)

Risk assessment: In a risk assessment, the danger is first identified, after which the severity and likelihood of harm caused by that hazard are estimated. The employer can then implement risk-reduction strategies or assess whether sufficient safety steps have been taken to avoid harm.

Risk: Risk is the combination of the possibility that the danger will cause harm as well as the degree of that harm. The number of persons exposed to the threat also affects risk.

Safety is a condition when risks and circumstances that could endanger people's physical, psychological, or material welfare are managed to protect both their health and wellbeing as well as the wellbeing of the community as a whole.

Worker: means any anyone who is employed by, works for, is entitled to receive compensation from, or is otherwise subject to the control of, an employer or another individual.

Workplace: is any place or set of premises where an individual works while employed.

CHAPTER TWO

LITERATURE REVIEW

2.0 Preamble

This section provides the literature review on compliance with occupational safety and health standards and the social demographic, and organizational factors as well as the awareness of OSHA standards. This section also provides a summary of the literature and research gap identification, theories applicable to the study as well as the conceptual framework.

2.1 Compliance of occupational safety and health standards.

OSHA 2007 aims to ensure the security, well-being, and safety of the individuals who work there while also protecting unemployed people from threats to their safety and well-being resulting from or related to the actions of those who are employed. Part II of the Act outlines the fundamental responsibilities under the OSH Act, which are further reinforced by regulations, codes of execution, and other Act requirements. It is frequently expected of employers to interact with and cooperate with advocates for workers' safety and health (OSHA, 2007). The Act also offers a framework that supports the general obligation of care—which functions as the overarching principle for all Act provisions—through laws, codes of conduct, place of employment standards, and dispute resolution processes. Employers, employees, freelancers, and anyone else who manages workplaces, designs and constructs structures, or runs production and distribution facilities are all accountable for workplace safety and health under the Act. The Department of Labor's Directorate of Occupational Health & Safety Services, the federal government's enforcement arm, as well as the employee and employer are all clearly outlined in the Act as having obligations to uphold its requirements. To ensure that national laws and best practices are followed,

employers develop OSH policies, which may include setting up Occupational Health and Safety Committees. Employee collaborated with the business to ensure the effectiveness of the policy (OSHA, 2007).

It is the employer's responsibility to comply with national laws and regulations regarding OSH requirements, according to the ILO's National Profile on Workplace Health and Safety for Kenya. In addition to committing to OSH initiatives at work and exhibiting sound management, the employer must also take the required actions to establish a system for managing OSH (ILO, 2013b). The OSHA act is supplemented in Kenya by a number of subject-specific subsidiary laws that take the form of legal notifications and contain regulations on first aid, hazardous materials, fire safety, medical examinations, safety committees, noise surveys, and plant and equipment inspection. The obligations of the occupier are clearly outlined in Section 6 of the Act and include conducting risk assessments, providing safe and healthy workplaces, and putting in place the necessary preventative and protective measures based on the results of the assessment. In order to create a proper policy statement, management must also be committed to staff and other stakeholders' OSH issues (OSHA, 2007).

2.1.1: Registration and renewal of workplace certificate

The OSH Act's Section 2 defines places of work as any land, vessel, location, premises, or thing that a worker is on while doing their duties. According to Section 44(1) of the OSH Act, 2007, each occupier must send a written notice to the DOSH to apply for registration of the premises before they occupy or begin activities. This notification must include the information listed in the Fourth Schedule. After receiving the notice, the Director shall take any required steps to ascertain whether the property is fit to be utilized as the type of

workplace specified in the notice. When contented, the Director must register the property and grant the applicant access to the property in exchange for payment. Anyone who uses a location as a workplace lacking a certificate of registration obtained under paragraph (2) is breaking the law and, if found guilty, suffers a fine of up to 100,000 Kenya shillings, up to three months in jail, or both (OSHA, 2007).

OSHA (2007) states that all businesses must register their workplaces; failure to do so indicates non-compliance. The 2007 Workplace Health and Safety Act of Kenya offers detailed information on safety rules, work authorization, and work practices for a range of work operations. Nevertheless, an investigation conducted at the mining sites found that, even though they were still in functioning, they weren't registered with OSHA as workplaces. It also revealed that there was noncompliance with the mining site's administrative, the County Director of Environment, and the County, despite the recommendations of which are occasionally not followed (Ayoo & Moronge, 2019).

2.1.2: Safety and health policy formulation

Safety and health are essential for the community to be able to operate successfully, but this is only possible when everyone in the community is aware of these issues. OSHA Section 7 requires management to prepare and maintain a written document outlining its overall strategy for guaranteeing the well-being and security of its workers while they are at work. The statement, along with any updates, must be distributed to every employee (OSHA, 2007). Therefore, it is required that all employers who employ more than four (4) people have an employee health and safety policy (OSHA, 2007).

A 2009 Kenyan Standard on the safety and health of employees Management System was created, according to KEBS, to ensure a comprehensive framework in OSH. This was carried

out to support workplace safety, wellness, and accident prevention. This standard suggests requiring an OHS management system to allow management to create policies and goals while taking into account legal requirements and significant information on risks and hazards that management can anticipate, manage, and protect its employees and anyone else who may be impacted by workplace activities. Additionally, this policy provides helpful advice on how to use the specification (KEBS, 2014).

Service NL (2014) said that while it is the employer's responsibility to participate in policy development, workers or safety committees must be involved at every level for the policy to be successful. Armstrong states that safety and health policies have to clearly demonstrate management's commitment to the well-being of its workforce. Thus, they are as follows: a statement of purpose, followed by an explanation of the strategies to be employed in order to accomplish that purpose, and lastly, a statement of the guidelines that all parties involved, including employees, must follow in order to implement the policy (Armstrong, 2010).

Due to a lack of policy, the study conducted at Sekou Toure Hospital in Mwanza discovered that there was very little successful promotion of safety and health concerns at work, putting employees at risk of incidents at work irrespective of the suggestion (Neema, 2015).

In spite of the OSHA 2007 recommendations, Makori et al., investigated how OHS affected the output of manufacturing firms in Kenya and discovered that many of these businesses lacked the policies and mechanisms required to increase workplace health and safety. As a result, businesses and industries wait to form ad hoc committees until an incident occurs (Makori et al., 2012).

2.1.3: OSH risk assessment

Hazard evaluation is a purposeful technique used to define and assess the extent of exposure to adverse human health consequences (how probable or unlikely it is that the detrimental impact occur) when a hazardous chemical or other danger is exposed (WHO, 2010). The amount and quality of data that were used in the evaluation established the method's dependability and consistency. Setting the scene, determining, analyzing, treating, tracking, and distributing information about the risks connected to the procedures or processes were all done in a methodical and logical manner by the management, which decreased losses and increased possibilities (GOK, 2014)

In order to ensure that all aspects of the devices, resources, chemicals, devices, and processes are under the direction of management and that the place of employment is safe and does not present a risk to health, employers are required by the OSHA act to conduct adequate risk evaluations based on the well-being and safety of their employees. Based on the results of these examinations, employers must then implement interventions (OSHA, 2007).

By implementing prevention and control measures, the risk assessment aims to remove hazards or lower the degree of risk, creating a safer and more favorable working environment (GOK, 2014).Risk analysis, risk evaluation, risk analysis, and risk treatment/control measures are the four steps of risk assessment, in Monaru's view. Therefore, when the hazards are known beforehand, this reduced the likelihood of injury. The effectiveness of the implemented intervention methods must be routinely assessed (Moraru, 2012). Research evaluating Kenyan food sector compliance with Occupational Safety and Health Act (OSHA) criteria show different degrees of adherence. With a 64.49% compliance percentage with OSH rules, a research concentrating on registered companies in Nairobi found a notable 35.51% non-compliance gap (Ayubu, 2010).

Research conducted within industrial companies—including those in the food-related sectors—showing a 71.7% compliance rating in Mombasa County revealed a 28.3% non-compliance margin (Gatithi Alice Wambui, 2012). Specifically, in Nairobi's restaurant industry, severe gaps were observed in food temperature control across all handling stages, with just 65.5% of food handlers routinely checking refrigerator and freezer temperatures daily(LILIAN Mosota, 2023).

2.1.4: Noise survey

Guidelines for preventing and minimizing noise 2005. L. No. 25 According to this regulation, none of the employees shall be subjected to noise levels at any time that are higher than the continuous equivalent of 90 dB (A) in eight hours or 140 dB (A) in a 24-hour peak. There can be no intermittent exposure to noise louder than 90 dB for a total of eight hours out of each twenty-four (A). The suggested noise levels for non-production offices are 50 dB (A) throughout the day and 45 dB (A) at night. Any noise level higher than 85 dB for more than eight hours should have a protocol in place for noise protection, which includes wearing earmuffs or earplugs to protect one's hearing (GOK, 2005). Studies in food processing sectors have found notable noise levels, often higher than advised exposure limits. Noise levels between 56 dB and 99.4 dB were found in research conducted in a wheat processing plant in Ilorin, Nigeria; highest levels were near pressure blowers (Ajao, 2016). Flour mills in Nairobi, Kenya, showed noise levels ranging from 94.5 dB to 112.3 dB, above recommended safe exposure levels (Gongi et al., 2016).

If mitigation measures are not taken and workers in the washing clothes and linen service are subjected to excessive vibration, high noise emissions may result in mild, severe, or overall hearing loss, depending on the intensity of the exposure to sunlight. This is supported by a

study assessing occupational health practices in the washing clothes and linen sector. It is recommended to implement engineering and administrative controls in order to reduce noise exposure at work. Engineering controls have been found to be effective when equipment is modified, replaced, or adopted, and occupational noise exposure is kept to a minimum. Choosing tools and equipment with low noise levels, lubricating and running maintenance of machinery, erecting a wall between the worker and the noise source, and isolating or enclosing the noise source are a few examples of how to do this. Adjustments that lower workplace risk must be made in administrative control, such as scheduling that may lessen or entirely eliminate employee noise exposure. This could involve having noisy machines run in shifts, limiting the amount of time workers are exposed to the source of the noise, and providing quiet locations for them to rest in (Jebet, 2022).

2.1.5: Health and safety audit

A particular and thorough method of monitoring the application and effectiveness of OHS policies is auditing. OSHA's Section 11 mandates that a safety and health expert conduct a complete audit of the business's work environment at least once during each calendar year. After receiving the necessary payment, the advisor gave a copy of the audit report towards the director and sent one to the occupier. The aforementioned audit report needs to be kept on file and made accessible for review by the workplace health and safety officer. When an occupier violates a duty imposed on him by this section, he commits a crime for which he faces a maximum fine of 500,000 shillings, a maximum jail sentence of six months, or both (OSHA, 2007).

The organization was able to track and evaluate its progress in promoting wellness and security on a regular basis with the creation of a commission and system for health and safety.

To improve the general safety and health of production, raise awareness of the efficacy of the organization's security and well-being measures, make sure that sufficient steps are taken to enhance risk monitoring regarding particular hazards, and develop health and safety regulations and procedures, the organization must assess its accomplishments in these areas. The management board and senior management of the organization should be in charge of overseeing auditing and ensuring that it is successfully implemented. The type of hazards, the unfavorable audit, and any regulatory requirements are a few factors to take into account when determining the rate of audits. As a result, the auditors must comprehend their duties and possess the necessary credentials(OSHA, 2007).

An investigation by Ndegwa et al. (2014) that examined the legal framework as a factor in the implementation of OHS programs in Kenya's industry of manufacturing further supported this. When assessing the legal environment, the government's support for the occupational health and safety legislation of 2007, familiarity with OHS regulations, government oversight and auditing, and ease of enactment were all taken into account. The study found that Kenya's industrial sector's OHS program implementation was positively impacted by the legislative environment. However looking to another study found that employees and managers claimed to have risk assessment audits and safety policy statements, they were not recorded or made accessible to employees because they were unable to describe safety standards or state laws controlling occupational safety in their work areas(Cherono, 2011).

2.1.6: Fire safety audit

Regulations for factories as well as other places of employment (Reducing Fire Risk), L.N. No. 59/2007. These rules apply to workplaces, and property owners are expected to install sufficient safety precautions to keep fires from starting on their land. They handle the safe

handling, storage, and transportation of combustible materials. Additionally, they demand that the occupier supply firefighting teams, equipment, fire detection systems, and evacuation routes(GOK, 2007).According to Section 78 of OSHA 2007, all stockpiles of highly flammable materials must be kept outside of any occupied building or in a fire-resistant storage facility. The rules mandate the development of a fire security policy, yearly fire safety audits, and employee education on fire safety matters. With the caveat that, in the unlikely event of an internal fire, no such store may be located in a way that would make it difficult for employees to evacuate the premises or a particular section of it. Second, if it is possible, extremely dangerous liquids must be carried in a workplace via a completely enclosed system which involves pumps, pipework, and other comparable appliances. Highly flammable substances must be shipped in vessels that are made to reduce the chance of spills as much as possible, even if an entirely included system cannot be utilized. Third, every reasonable safety precaution must be taken to ensure that a highly flammable liquid is contained, promptly drained off to an appropriate vessel or a safe area, or otherwise made safe when it is in risk of spilling as well as leaking during a process or operation. Fourth, no equipment that might light up flammable substances or vapours should be present in locations where there is a chance of a dangerous concentration in order of the vapours. Fifth, it is against the law to carry lighters or other flame-causing devices, light matches, smoke, use smoking materials, or work with explosive, highly flammable, or dangerously combustible substances. The occupier is required to take all reasonable measures to ensure that the aforementioned paragraph's provisions are followed. One such measure is to post a prominent sign at each location where the following section is applicable, or as close to it as is practical (OSHA, 2007).

2.1.7: OSH committee

The Safety and Health Committees in Factories and In addition to Places of Work Rules, L.N. No. 31/2004 These laws apply to companies that employ 20 or more people on a regular basis. They want to have health and safety committees to be established with equal staff representation and management. Conducting health and safety inspections, looking into accidents, and recommending ways to promote health and safety in the workplace to occupiers are among the committee's duties (GOK, 2004).

The law also stipulates that if there are 20 or more employees at the place of business, each occupier must create a safety and health committee in accordance with the Minister's rules, or the Director must do so at any other place of employment. The selection of safety representatives, their privileges, and the education of both committee members and safety and health representatives are all subject to regulations that may be established by the Minister. These regulations may also specify the membership, responsibilities, and objectives of safety and health committees. The Government of Canada Labor Program (2014) asserts that health and safety committees and representatives are an essential part of the internal accountability system for preventing work-related illnesses and injuries. This technique raises awareness of workplace occupational health and safety issues by emphasizing cooperation between businesses and employees (Ministry of Justice Canada, 2023). OHS committees and representatives provide a system for workers to be represented and participate in issues related to workplace health and safety, claimed the federal government of Queensland in 2014. Worker representation facilitates employee involvement and gives them a voice in health and safety issues.

In hotels in Eldoret, Kenya, a research on knowledge and prevention of workplace accidents found that the majority of managers (95%) said they did not have a safety committee, and for those that did, it was made up of senior employees (Cherono, 2011).

Looking at Neema 2015 investigation also discovered that the hospital's management did not adequately address the issue of safety committees and representatives because the committees established did not specifically address occupational health and safety at the hospital but rather more general environmental issues. Due to these restrictions on their authority, the committees were unable to devote all of their time to ensuring that workers carried out their tasks in a secure atmosphere. Additionally, few employee problems are brought up to the hospital management because even those that do exist there are not well known to the staff (Neema, 2015).

Another study made the proposal that management should set up a safety committee to handle all issues relating to health and safety. Reviewing safety reports, coming up with ideas for reducing accidents, and looking into accident trends in order to suggest corrective actions should all fall under the purview of the safety committee. The safety committee should suggest new or improved safety measures following examination and discussion of the safety representatives' findings (Mailu, 2016).

2.1.8: Medical examination and surveillance

Cap 254, Sec. 15(i)(b) requires all persons who own, manage, or are in charge of a plant that produces food to take all reasonable steps and precautions to guarantee that all employees have comprehensive medical examinations before beginning work or at regular times of a maximum of twelve months, either by a doctor in charge of health or in a government medical facility, and that each employee's health license as well as medical records include dates and

results; Anybody who disobeys the terms of this section or any rules made under it is breaking the law and faces penalties; regular or individual assessments of health issues from the viewpoints of industrial hygiene and industrial use medicine (GOK, 2012a). Therefore, the employer must arrange for each employee to have a suitable medical examination in order to monitor their health and identify changes in that state brought on by work exposure (WHO, 1994).

Research in slaughterhouses revealed that only 52.6% of workers underwent the mandated medical examinations, indicating a significant gap in compliance(Kumar et al., 2019). A study found that approximately 42% of food handlers lacked valid medical certificates, underscoring the need for stricter enforcement of health regulations(Kariuki, 2012). The flower farms must also conduct periodic and post-employment wellness tests for each employee in order to guarantee conformity with the medical tests Rules of 2005. Management should place a higher priority on health checks and research to determine what circumstances make personnel vulnerable in order to increase adherence to OSH procedures in the increasing farms (Gechemba, 2021).

2.1.9: Evacuation procedure plan

Under section 82 of OSHA 2007. States that Every holder of a workplace is responsible for creating emergency evacuation plans and having them tested on a regular basis. Secondly Every occupier is required to stop any operation as soon as there is an urgent threat to the public's safety or health and to evacuate any workers as necessary. Third Each occupier is required to provide the necessary resources, such as sufficient emergency rooms, to handle crises and mishaps. Moreover, each occupier must take adequate precautions to ensure that

all employees are aware of the fire escape paths and what to do in the event of an emergency, such as a fire (OSHA, 2007).

2.2 Social Demographic Factors Associated with compliance with occupational safety and health standards

2.2.1 Income

Higher-income individuals may have greater access to resources such as personal protective equipment (PPE), safety training programs, and healthcare services. This access can facilitate compliance with OSH standards by enabling workers to take necessary precautions to protect their health and safety on the job(Abanga et al., 2023). From their investigation, Workers with lower incomes were observed to face greater job insecurity, which can lead to a reluctance to report safety concerns or refuse unsafe work conditions for fear of losing their jobs(Abanga et al., 2023). This fear of economic repercussions may compromise compliance with OSH standards, as workers prioritize maintaining employment over safety. In their study, Higher-income individuals were observed to have better access to healthcare services, including medical treatment for work-related injuries and illnesses(Garnica & Barriga, 2018). This access can incentivize compliance with OSH standards by providing workers with the necessary support to address health issues promptly and effectively.

2.2.2 Working experience

Experienced workers often have a deeper understanding of OSH regulations, hazards specific to their industry, and best practices for staying safe on the job. This knowledge can enhance their compliance with OSH standards as they are more likely to recognize potential risks and take appropriate precautions to mitigate them(Debela et al., 2023). Over time, experienced workers develop practical skills and competencies that enable them to perform their jobs safely and effectively. This includes proficiency in operating machinery, handling hazardous

materials, and responding to emergency situations, all of which contribute to better compliance with OSH standards(Eyiah et al., 2019). Leveraging the expertise and experience of seasoned workers while also addressing potential challenges such as fatigue and complacency is essential for promoting sustained compliance with OSH standards in the workplace(Debela et al., 2023). Employers should implement comprehensive OSH training programs, provide ongoing support and resources, and foster a culture of safety that values the contributions of workers at all experience levels.

2.2.3 Education level

Individuals with higher levels of education may have a better understanding of OSH regulations and guidelines due to their advanced literacy and comprehension skills. They are more likely to be aware of their rights and responsibilities regarding workplace safety, leading to improved compliance with OSH standards(Nwankwo et al., 2017). Education can enhance individuals' ability to recognize workplace hazards and assess risks effectively. Those with higher education levels may possess critical thinking skills that enable them to identify potential safety issues and take proactive measures to mitigate them, thus contributing to better compliance with OSH standards(Moaddel et al., 2021). While higher education levels can positively influence compliance with OSH standards, it's essential to recognize that education is just one factor among many that contribute to workplace safety(Nwankwo et al., 2017). Employers should implement comprehensive OSH training programs, provide adequate resources and support, and foster a culture of safety that values the contributions of all employees, regardless of their educational background.

2.2.4 Term of employment

Long-term employees typically receive more extensive training on safety protocols and procedures compared to short-term employees. They have had more time to familiarize

themselves with workplace hazards, safety equipment, and emergency procedures, which can lead to better compliance with OSH standards(Marahatta et al., 2018). Long-term employees often have a stronger commitment to the organization and its values, including safety. They are more likely to adhere to OSH standards out of loyalty to their employer and a desire to maintain a safe working environment for themselves and their colleagues(Mayanja et al., 2022). Temporary workers and those in contingent employment arrangements may face unique challenges regarding compliance with OSH standards. They may be less familiar with workplace hazards and safety protocols, and they may feel less empowered to report safety concerns due to concerns about job security(Marahatta et al., 2018).To promote compliance with OSH standards across all terms of employment, employers should prioritize comprehensive safety training for all workers, regardless of their employment status. This training should emphasize the importance of adhering to safety protocols and encourage a culture of shared responsibility for workplace safety.

2.2: Awareness on occupational safety and health standards

2.2.1: Information on occupational safety and health standards

Occupational safety procedures, rules, policies, and principles should all be understood by workers. In order to train and supervise personnel on safe work practices and the handling of hazardous items, employers must also possess the necessary knowledge. While the specific competencies required may differ between organizations, many positions in this field require competence and practical knowledge of the techniques, techniques, and procedures that are applied by industrial hygienists, safeguarding scientists, fire suppression engineers, and other health and safety staff. Companies must ensure that workers and the representatives responsible for health and safety are informed about all OSH-related is important including

any emergency plans that may be required for their location of employment, according to OSHA 2007. They must also receive the necessary training and have the opportunity to provide feedback. The law also requires the employer to take steps to ensure that employees and their health and safety representatives have the resources and time needed to stay up to date on the processes for establishing, preparing for, carrying out, assessing, and correcting defects in the OSH management system. In spite of this OSHA mandate, a 2017 Oluoch study revealed that 88.2% of participants believed it was critical for employees to comprehend safety at work regulations, 6.5% were not aware of this legal requirement, and 5.3% were unclear of its significance (Oluoch, 2017).

Given that awareness and comprehension of occupational risks, secure places of work, regulations, and control techniques were very low, it is reasonable to conclude that the degree of comprehension of workplace health and safety requirements can be an indicator of Kenya's acceptance of OSHA 2007 (Mong'are, 2019). Furthermore, the ILO requires that OSH instruction and certification be required in compliance with the SEOUL Declaration (ILO,2012).

In another investigation, most employees (80%) said they knew about the safety rules at work; however, when asked if they knew about any other laws pertaining to occupational safety while at work, most (45%) said they didn't know about them, and most of those who said they did knew couldn't think of any. This indicates that employees are not aware of the safety regulations, policies, or laws that are relevant to the hotel industry (Cherono, 2011).

Because they are not aware of the requirements for health and safety in the workplace, the majority of healthcare workers are impacted through different occupational health issues (Neema, 2015).

According to a Gechemba study conducted in a flower farm in 2021, staff members' ability to identify workplace hazards increased when they were trained in health and safety procedures, given thorough guidance on how to work safely for their jobs, and shared knowledge with other staff members. This enhanced level of adherence to OSHA 2007 (Gechemba, 2021).

Examining the study conducted at Sekou Toure Hospital in Mwanza, it can be claimed that certain staff members were unaware of the company's health and safety policy whereas the vast majority were unaware of the actual meaning of work-related safety and health. They ran the risk of having workplace mishaps as a result (Neema, 2015).

2.2.2: Safety and health committee training

Workers that have access to education and growth opportunities improve their decision-making, social, teamwork, and problem-solving abilities. Employee productivity, workplace safety, and organizational development are all positively impacted by these skills because they help staff members know what they should do and when, which lowers the risk of workplace accidents (Rohan and Madhumita 2012).

According to the Oluoch 2017 study, the majority of respondents (44.7%) had no experience with occupational health and safety training, 44.4% had, and the smallest percentage (11.8%) was unclear (Oluoch, 2017). According to Mong'are, the majority of respondents (77%) had no formal educational background, and only 23% had completed a few short courses on safety and health at work. These data show that most respondents from all the sawmills were unaware of their requirements and standards for occupational safety (Mong'are, 2019). In addition, a shortage of OSH knowledge affects both the general population and private

sectors. whereby occupational health services are not adequately integrated into the national health system at all levels (GOK, 2012b).

According to another study, workplace safety training exercises are the most effective way to ensure safety measures because trained employees are less likely to suffer work-related accidents than untrained employees. Employees who have received safety training are better able to control their level of effort, enabling safer performance of job duties (Thombora, 2016). It is essential to maintain employee safety at each location where they work, taking into account the best ways to assure worker protection and health training. He made the case that businesses should implement safety measures to maximize employee safety performance and prevent work-related injuries in the environments where employees are most likely to spend the majority of their time at work (Aquil, 2012).

Armstrong (2010) contends that managers play a crucial part in assisting employees in growing and learning. The majority of learning happens at work, but managers may make it more efficient by meeting their staff's needs for coaching, direction, and support. To accomplish this, they need to understand the processes for personal development planning as well as induction training and how to assure continual learning. When you welcome new employees, you are actively involved in assisting their learning (Armstrong, 2010).

According to Hall, Taylor, and Torrington (2004), there are in fact three primary objectives for safety training: educating staff members about potential risks at work and assisting them in understanding them; ensuring that employees are aware of the rules and regulations pertaining to safety; and pressuring them to adhere to them. Safety training must take place in three settings: the place of employment, periodic refreshers, and the induction. There are numerous training methods that can be used, such as lectures, debates, movies, role-playing,

and presentations. In addition to these techniques, safety rule violations may result in disciplinary action and/or poster campaigns to raise awareness of safety (Taylor et al., 2004).

B. Gechemba claims To comply with Section 99 of OSHA 2007, management should further modify trainings to account for new risks, such as changes to machines or materials. This would improve employee turnout, increase output, increase knowledge of safety and health issues, and decrease incidents involving people or property damage, customer complaints, and the overall number of lost working days (Gechemba, 2021).

According to a study conducted in a supermarket in Kenya, staff performance and productivity are significantly impacted by their lack of training on health and safety procedures. As a result, it shows that the training provided in supermarkets was insufficient due to the length of the instruction. As a result, the management must allocate extra funds for personnel training on health and safety procedures (Kaaria, 2022).

The examination of the food industry in Zimbabwe revealed that workers' introduction to occupational health and safety (OHS) training varied based on their employment status. It was shown that most food businesses do not offer enough OHS induction training. The vast majority of temporary workers acknowledged that their OHS induction training was extremely limited. In comparison to the two contract workers who claimed to have undergone OHS induction, ten out of thirty fixed contract workers claimed to have gotten OHS training upon hire (Katsuro et al., 2010).

A 2016 study by Thombora found that OSHA 2007, which mandates that workers receive safety training at the time about hire and on an ongoing basis throughout their employment, hadn't been properly followed. The study also found that almost all of the organizations tried

had no safety measures in place to address safety training. Lack of training revealed employees' ignorance of safe work practices, safe handling of instruments or materials, safe use of PPE, use of wellness and security controls, safe reporting as well as emergency protocols, in addition to their own responsibilities for their own safety and health (Thombora, 2016).

2.2.3: First aid training for first aiders

Establishing first aid facilities and instructing staff members in the finest first aid techniques for emergencies and accidents are essential. The organization is known for instructing staff members in first aid. The training is overseen by physicians, nurses, and other medical experts. Workplaces are subject to these rules and regulations, and it becomes the occupier's responsibility to put in place the appropriate safety precautions to guarantee that those injured on their duties receive the care they need. According to the total number of employees and the level of training of first-aiders, the Rules specify what ought to be in the emergency care box (GOK, 2018a).

2.2.4: Fire safety training for fire safety team

The law mandates that every employer have fire extinguishing equipment and instruct employees on how to utilize it properly as part of its fire prevention measures. In order to prevent fires, it also specifies storage measures that must be followed while handling highly flammable liquids (GOK, 2007).

2.3: Organizational determinants in food manufacturing industries

2.3.1: Provision of safe work place

The act known as the Occupational Safety and Health Act (OSHA-US) of 1979 established mandatory OSH standards for all industries in the United States. According to the law,

employers must give workers a secure work environment free from occupational illnesses, mishaps, and fatalities (OSHA-US, 2009).

Safe working practices for everyday tasks, security standards for general workplace conduct, and permit employment processes for non-routine, extremely dangerous activities are examples of safe work systems. Along with process and machinery safety, there must also be a senior management-driven system for managing safety in place. To address the problems mentioned above, Kenya's the Act on Occupational Health and Safety of 2007 (OSHA 2007) offers guidelines on how to establish a secure working environment (OSHA, 2007).

To continue to enhance working conditions, occupational health and safety rules might be developed or implemented using the concept of a healthy workplace. On the other hand, a risk-free workplace provides its employees with a vibrant and fulfilling environment. The healthy organization considers all aspects of the workplace's safety and health when developing strategies and initiatives for the well-being of its workers (WHO, 1999).

To improve worker performance, occupiers must provide a secure, safe, and healthy work environment. Many organizations have held the belief that accidents and illnesses at work cannot be prevented. There may still be some business environments in developing countries that use this idea. But in developed nations, where the emphasis has been on implementing preventative and control measures in order to minimize or eradicate workplace hazards, this is no longer a problem. Fortunately, many poor countries' workplaces have serious health and safety issues. Management should look for methods to guarantee that people's general wellbeing is maintained. This would guarantee that workers are safeguarded against risks related to their physical health and welfare (Masso, 2015).

Written instructions and deadlines for cleaning air ducts must be provided, and the staff responsible for doing so must keep records of their work. Since employees are typically

closest to the issues, they provide adequate knowledge sources. The acts contain requirements for ensuring workplace safety, including instructions for conducting risk assessments, workplace inspections, and workplace audits. The act lays out requirements for lighting, ventilation, ergonomic workstations, hygienic amenities, fire protection, and secure storage. The statute also addresses the welfare of workers, ensuring that they have access to potable drinking water, seating areas, first aid supplies, medical oversight, and supervision of less-experienced workers (GOK, 2012c).

2.3.2: Provision PPEs

According to OSHA (2007), personal protective equipment, or PPE, is designed to protect employees from potentially fatal illnesses or injuries that arise from physical, mechanical, electricity, radioactive in nature, chemical, or other risks.It is mandatory for employers to furnish their staff with appropriate personal protective equipment and work-appropriate clothing. Protective clothing used at work includes hard hats, safety goggles, rain gear, safety vests, work protective gloves, detectors for gas detection devices, safety boots, security footwear, flashlights, first aid kits, sanitizers, and cleaners, storm gadgets bags, and incombustible safety cabinets. Work boots along with protection gloves are two common types of safety equipment used in every profession, and numerous of these are customized to the demands of the job, according to a study conducted by Ojiem (OJiem, O, 2012).

The fundamental goal of using protective equipment is to shield workers from harmful workplace illnesses and injuries that could arise from contact with physical, chemical, or radioactive threats (OSHA, 2007).

According to a study by Cherono most managers (53%) claimed they did not give protective clothing or equipment to maintain safety, whereas those who indicated they did give gloves, uniforms, and gumboots that were provided by the company (Cherono, 2011).

2.3.3: Provision of firefighting appliances

The law mandates that every employer have fire extinguishing equipment and instruct employees on how to utilize it properly as part of its fire prevention measures. In order to prevent fires, it also outlines storage procedures that must be followed while handling extremely flammable liquids (GOK, 2018a).

Every workplace or workroom must have the following: equipment for extinguishing fire that is adequate and appropriate given the circumstances of each case, and that is kept up-to-date, prominently displayed, and unobstructed so that it is easy to access; and personnel trained in using the equipment during all working hours. Taking into account the specifics of each situation, every workplace shall have suitable fire escape routes for the people who work there. All escape routes mentioned in subsection must be kept in good repair and unhindered at all times. Any area where furniture is present must be set up such that everyone who uses it has no obstacle to an escape path in the instance of a fire. Last but not least, all exit doors for employees in the office, with the exception of sliding doors, must be built to open outwards (GOK, 2007).

2.3.4: Provision of first aid facilities

Section 95 of OSHA 2007 mandates that each occupier provide and keep an emergency kit or storage space that satisfies the necessary standard.Furthermore, it is legally required to

have a kit for emergencies on hand at work; if there are in excess of 150 employees, an extra box is required for every 150 workers (GOK, 2018a).

The aforementioned regulations pertain to places of employment, and the occupier has to set in place the essential safeguards to guarantee that people hurt on the job receive medical attention that is required. According to the number of workers and the first-aiders' training, the Rules determine the first-aid box's contents.

A discussion on accidents would never be complete without mentioning first aid. The main goal of first-aid facilities is to promptly treat everyone who sustains an injury at work. In every (hotel), at least one first-aid box or closet of the required standard must be provided and kept in good working order in a visible location. Every first-aid box or cabinet needs to be managed by a responsible someone who is constantly accessible throughout working hours. First aid training is essential for whoever is responsible for the box, and a First Aid Certificate from the ambulance service St. John's Association or the British Red Cross Society would be great. Recertification is highly recommended at different times (GOK, 2012c).

2.3.5: Staff participation

When someone is in a group, they are participating when they are mentally and emotionally invested in the group's objectives, which inspires them to share accountability and make contributions. As per OSHA's 2007 regulations, companies are required to ensure that workers and their designated safety and health representatives receive adequate training, guidance, and information on all aspects of occupational safety and health (OSH), including place of employment emergency protocols. Additionally, as mandated by law (OSHA 2007),

the employer must set up a system to guarantee that employees and the representative for health and safety have the time and resources to remain up to date on the processes involved in organizing, planning, executing, monitoring, and taking corrective action for OSH governance improvement.

When employees are involved, OSH systems succeed and a "safety culture" develops at work. Open lines of communication between employees and management help OSH initiatives. Employees offer OSH information because they can spot dangers because they are in the immediate working environment. Workers can utilize this knowledge to offer suggestions for potential solutions. Worker participation in OSH Committees is required by Kenyan law and OSH policy (GOK, 2004).

All of the ILO's OSH standards, such as the ILO Guidelines on OSHMS and the 1981 ILO Convention on Workplace Health and Safety (No. 155) and its proposal (No. 164), specifically call for complete employee participation. The establishment of effective social networks and channels of communication, the involvement of staff members and their representatives in OSH project implementation, and the provision of adequate information and training are all necessary for the success of joint OSH groups that work and related structures. An investigation carried out in Kenyan supermarkets revealed that staff engagement significantly influences the implementation of safety and health protocols in those establishments. The investigation also showed that managers need to engage with staff, that developing special bonds with staff members is more important than safety and health, and that participants thought it was imperative to give staff members more latitude. Safety and health can also be improved by participatory methods. Additionally, the report demonstrates that every store's employees have received training (Kaaria, 2022).

The outcomes are compliant with the law (OSHA 2007), which mandates that the employer take measures to guarantee that workers and representatives responsible for safety and health have the time and means to remain up to date on organizing, planning, executing, assessing, and acting to enhance the OSH management structure (Franklin, 2015).

For companies with 20–100 employees, it mandates the creation of a Health and Safety Committee made up of three representatives from management and the workforce. The steering committee should consist of 5 delegates for an employee base of 100–1000 workers, and 7 delegates for an employees of more than 1000 workers. In addition, the committee is in charge of drafting inspection schedules, conducting occupational health and safety inspections every three months, investigating incidents and making recommendations, identifying potential hazards at work, and compiling information on diseases, incidents, and other dangerous circumstances. The committee's responsibilities include gathering employee complaints, offering advice on health and safety, encouraging good communication, and planning actions to carry out the group's mandate in the working environment (OSHA, 2007). OSHA 2007 mandates which employers make certain that workers and their established safety and health representatives are trained, advised, and informed about all OSH-related matters, such as emergency plans that apply to their position of employment. In compliance with OSHA 2007 regulations, employers must also put policies in place to ensure that employees and the representatives responsible for their well-being and security have the time and means to remain educated about the procedures involved in establishing, arranging, carrying out, assessing, and correcting errors in the OSH management system. Manduku pointed out that employee willingness to embrace the protection program is frequently driven by involvement. The outcomes are in accordance with the rules established by the law (OSHA 2007), which mandate that employers ensure that workers and their representatives

for safety and health have the time and means to remain up to date on organizing, establishing, carrying out, assessing, and improving the workplace health and safety (OSH) management system (Franklin, 2015).

2.3.6: Provision of General register

Any place of employment is obliged to maintain a general register in the format prescribed by law. This register must contain the following details: the workplace's license of registration; any other certificates that the Director may issue in relation to the place of employment under this Act; the prescribed details about washing, minimizing, color cleaning, painting, or coating the workplace; and the particulars of each incident involving an occupational disease that arises at work; any other items that may be prescribed, such as documents and data that must be submitted in or kept in file with the general record in compliance with any requirement of this Act. In order to perform his responsibilities under this Act, an occupational health and safety officer may occasionally request extracts from the overall register from the workplace's occupant. Anyone who infringes these regulations while at work is in violation of the law (OSHA, 2007). The OSHA Act of 2007 mandates that employers maintain a general mistake register in order to record accidents. This indicates that the legislation is being obeyed.

The presence of a meticulously maintained general register not only ensures adherence to legal requirements but also facilitates effective monitoring and management of workplace safety protocols(OSHA, 2007). It enables employers and regulatory bodies to track compliance, identify potential hazards, and implement timely corrective measures, thereby fostering a safer working environment. Neglecting this aspect can lead to regulatory penalties

and increased workplace risks, underscoring its importance in the overall occupational health and safety framework(OSHA, 2007).

Neema's research revealed that the hospital did not have an accident log, which would have documented any incidents that employees might have had while performing their duties for patients. This is in line with the observation that most workers neglected to report incidents they had while on the job to the proper authorities. The lack of an accurate record of the amount of accidents that occurred at the hospital resulted from this, even though many respondents claimed they weren't injured while performing their duties, suggesting that the actual amount of accidents at the the hospital turned out to be fairly low (Neema, 2015).

2.4: Theoretical framework

This study employed two theories; the social ecological model and the health-belief model. However, this study employed the social-ecological model to demonstrate how various factors influence compliance with set standards (OSH).

2.4.1: The Social Ecological Model

The Social Ecological Model (SEM) provides a framework for understanding the various factors that influence individual behavior within the context of their environment. When applied to compliance with occupational safety and health (OSH) standards, it helps to analyze the multilevel influences that affect workers' adherence to these standards(Ingram et al., 2021). A summary of how the SEM can be applied to understand compliance with OSH standards:

Individual Level:

Knowledge and awareness: Individual understanding of OSH standards, including their rights and responsibilities regarding safety at work.

Attitudes and beliefs: Personal beliefs about the importance of adhering to OSH standards and the perceived risks associated with non-compliance.

Perceived self-efficacy: Confidence in one's ability to adhere to OSH standards and perform tasks safely.

Past experiences: Previous encounters with safety incidents or violations can shape individual attitudes and behaviors towards OSH compliance.

Interpersonal Level:

Social norms and support: Influence from colleagues, supervisors, and peers regarding adherence to safety protocols. Positive reinforcement and support from coworkers can encourage compliance.

Communication channels: The quality and effectiveness of communication within the workplace regarding safety procedures and expectations.

Peer pressure: The influence of coworkers on each other's behavior, which can either encourage or discourage compliance with OSH standards.

Organizational Level:

Leadership and management practices: The commitment of management to prioritize and enforce OSH standards, including the allocation of resources for training, equipment, and safety initiatives.

Workplace culture: The prevailing attitudes, values, and norms regarding safety within the organization. A strong safety culture promotes compliance with OSH standards.

Enforcement mechanisms: The consistency and effectiveness of enforcement actions for non-compliance with OSH standards, including disciplinary measures and rewards for adherence.

Community Level:

Regulatory environment: The influence of government regulations and policies on OSH compliance. Strong regulatory frameworks and enforcement can encourage organizations to prioritize safety.

Industry standards and best practices: The adoption of industry-specific standards and best practices can influence organizational policies and procedures regarding OSH compliance.

Societal Level:

Socioeconomic factors: Economic conditions and socio-political factors can impact an organization's ability to invest in safety measures and comply with OSH standards.

Cultural factors: Cultural attitudes towards risk, safety, and work can shape organizational approaches to OSH compliance.

By considering these various levels of influence, stakeholders can develop more comprehensive strategies to promote compliance with OSH standards, ultimately creating safer work environments for employees. This may involve interventions targeting individual behavior, interpersonal dynamics, organizational policies, community regulations, and broader societal factors.

2.4.2: Health Belief Model

It contends that a person's likelihood of engaging in a suggested behavior is influenced by their belief in the effectiveness of the advice, as well as their assessment of their personal

risk of becoming ill. It was developed in the early 1950s by social researchers at the US Public Health Service. Its two main components are the desire to recover from an illness if one already has it or the expectation that taking a specific health measure will prevent or cure it.

Perceived susceptibility – It's the alleged risk of illness. It deals with an employee's individualized assessment of their risk of developing a work-related illness, injury, or disease. The degree to which an individual feels personally vulnerable to an occupational injury, illness, or disease varies greatly.

Perceived severity – What the concept of effect is. This relates to the degree to which a worker considers the likelihood of contracting an illness, injury, or disease related to their work (or the risk of postponing seeking medical attention for such an injury, illness, or disease). People usually weigh the medical (death or impairment) and social (their relatives life or social ties) implications when determining the degree of seriousness. A person's perception of severity can differ greatly.

Perceived benefits – the potential advantages of taking action. This study looks at how workers perceive the efficacy of different interventions meant to lower the risk of illnesses, injuries, and diseases at work (or to treat such disorders). An individual's strategy for preventing (or treating) injuries, accidents, or illnesses at work is determined by how they perceive their perceived vulnerability as well as benefit. If they believe the recommended health activity to be beneficial, they will likely participate in it.

Perceived barriers – This expresses the sentiment of an individual regarding the difficulties they encounter in adhering to a well-being recommendation. The wide range of views among

employees regarding barriers or obstacles forces a cost-benefit analysis. The individual weighs the actions' perceived benefits against their perceived risks, costs, discomfort, difficulties, commitment to time, as well as discomfort.

Cue to action – Finding those variables that drive action. This acts as the impetus required to start the process of making decisions about putting a suggested health measure into action. These indications of danger may be external (newspaper article, family member's illness, suggestions compared to others, etc.) or internal (chest cavity pains, wheezing, etc.).

Self-efficacy - This is connected to how extremely an employee believes they can complete a task effectively. The most recent addition to the model was this element, which was added in mid-1980. Since it directly influences whether someone engages in the recommended activity, confidence in ourselves is a crucial concept in many behavioral hypotheses.

2.5: Conceptual framework

The variables as they are utilized in the literature review were summarized using this conceptual framework. The dependent, independent, and intervening variables are the three variables (measurable traits that fluctuate and are related to one another) that are depicted in the diagram. The independent variables in this study can be summed up as being personal determinants, awareness of OSH standards, and organizational determinants. Dependent variables were the compliance level to occupation safety and health standards on safe work environment according to OSH policy 2007. The study looked at how the independent variables affect its main objective or main area of focus (dependent variables) which is full compliance with occupational safety and health standards. If the independent variables—personal, level of awareness, and organizational determinant—change, those changes would

have an impact on the dependent variables. Depending on the desired outcome, the participant in the study would exert influence over them. The Intervening variables for this study was the availability and implementation of OSH Act

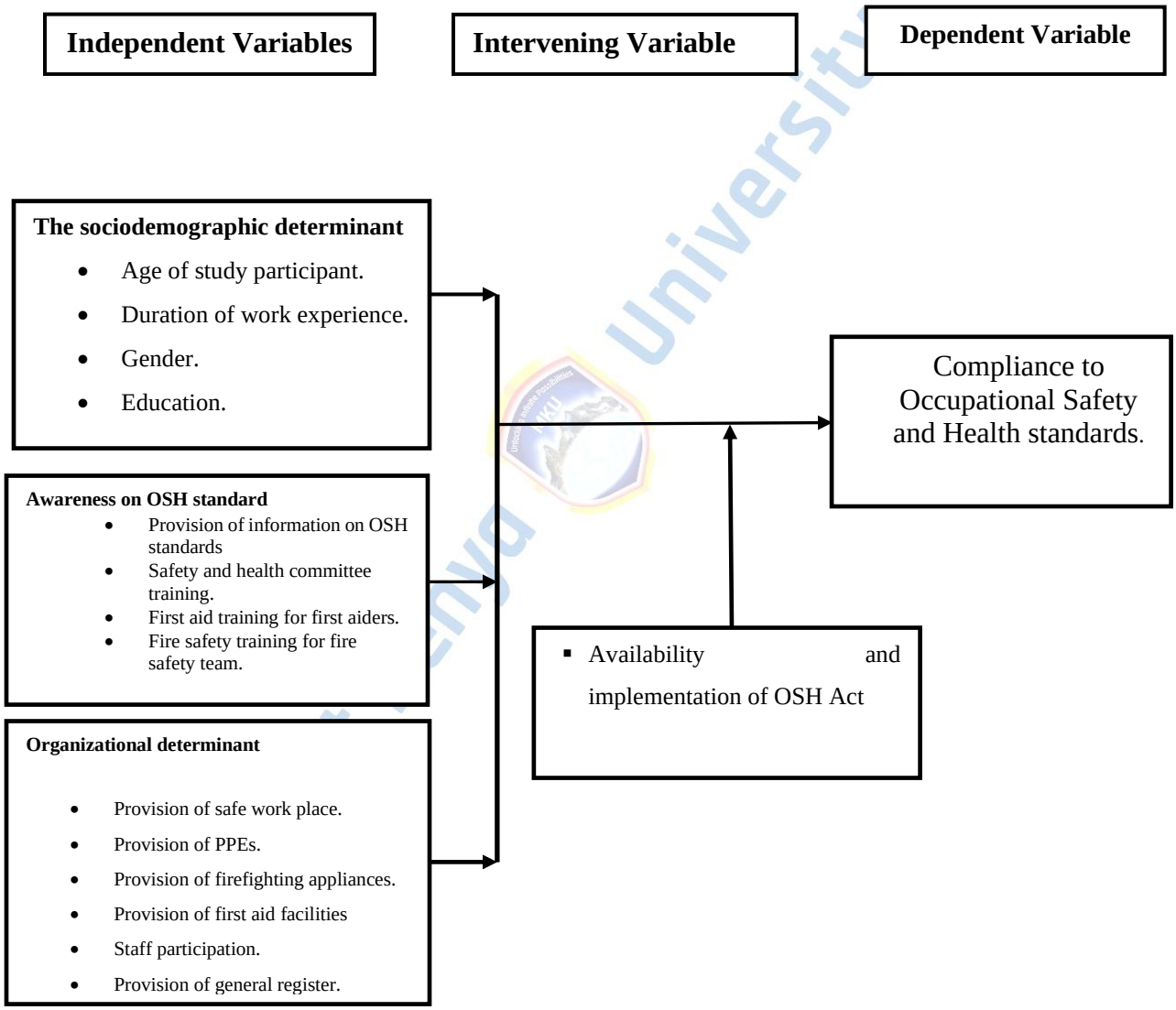

Figure 2: 1:Conceptual Framework

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Preamble.

This chapter provides a detailed overview of the research study's methodology, including information on the study's area, population, sample, sample size calculation, sampling method, data collection, data processing, and presentation methods.

3.1 Location of the study

Thika Sub-county of Kiambu County served as the site of the research study. Kiambu borders the following counties: Nairobi and Kajiado to the south; Machakos to the east; Muranga to the north and northeast; Nyandarua to the north-west; and Nakuru to the west (KNBS, 2019). Kiambu is one of the 47 counties in the country. It is located in the area's middle. It has woodlands on 476.3 km2 of its 2,543.5 km2 area. Kiambu County's geodetic coordinates are 18′46.28″ S and 3657′59.4″ E, respectively.

Thika Sub-County is one of Kiambu County's twelve sub-counties; it is one of the county's five administrative wards and is situated in the western portion. Thika Sub-County had an approximate population of 279,429 as of the 2019 Kenya National Bureau of Statistics Census. Its total area was 217.5 km2, and its elevation was 5,351 feet above sea level. The Sub-County of Thika town is industrial. It has many different industries, including the textile, bakery, food and beverage, steel, chemical, and pharmaceutical industries, as well as the manufacturers of motor vehicle assemblies and BAT manufacturing. As a result, the Sub-County has a high concentration of food manufacturing industries—roughly 43 out of 87

industries in the entire Kiambu County—which highlights the significance of carrying out this kind of investigation in this developed sub-county.

3.2 Study Design

To conduct the targeted research on assessing the level of Occupational Safety and Health standards compliance in food manufacturing companies in Thika sub-county of Kiambu County, the research study used an analytical cross-sectional study design. Both qualitative and quantitative data were used to gather data. The target demographic for this research study was all food manufacturing industries and the researcher generalized the findings to them.

3.3 Target population

Workers in the chosen food production sectors who had been employed for more than six months made up the study population, and employers as well as the public health officer and workplace safety officers served as the primary informants.

3.4 Sampling Technique

As shown in Table 3:1, the investigation used a stratified sampling technique to create industry strata for the food manufacturing sector. The Public Health Office provided the total amount of industries that made up the sampling frame, and the strata had been industries that produced the same product.

Employees from the sampling frame were also sampled using a probability proportional sampling technique, and individuals from the industries were sampled using simple random sampling. Several key informants' interviews were conducted whereby the key informants were purposively selected. The key informants were the employers, the County Occupational Safety Officer, and the Sub County Public Health Officer. Six key informants were involved

in this study and were purposively selected. ***Table 3.1*** shows the distribution of the study participants by the food manufacturing industries.

Table 3:1: Sampling frame

S.No	Licensed Food-manufacturing industries	Number of food manufacturing industries	Number of employees in the industries	Proportionate number of employees per industry
1	Maize/wheat Millers	9	276	57
2	Bakers And Confectioneries	5	334	69
3	Coffee milling	1	98	20
4	Edible Oil And Fats manufacturers	1	39	9
5	Fruit Juice manufacturers	2	78	16
6	Macadamia Nuts Processors	8	309	64
7	Cashew nuts Processors	1	24	6
8	Alcoholic Product manufacturers	1	57	12
9	Avocado Processors	1	69	14
10	Cereals And Grains	4	167	35
11	Pharmaceutical Products manufacturers	1	73	15
TOTAL		**34 employers**	**1524**	**317 employees**

Source: Thika Sub-County Public Health Office January (2023)

3.5 Sample size determination

With a probability level of 95% and a p-value of 0.05, the Yamane formula (1967) was used to determine the smallest possible sample size.

$$n = \frac{N}{1 + N(e)^2}$$

Whereby;

$$n = \frac{1524}{1 + 1524(0.05)^2}$$

N = was the total number of employees (N=1524, obtained from Thika Sub-County Public Health Office)

e = is the degree of precision. (0.05)

then n was be **317 study participants**

3.5.1: Inclusion Criteria

1. The investigation included both male and female employees who have worked more than 6 months in the institution and who gave consent for the study.
2. All industries which were operational for more than 2 months since they had been fully established.

3.5.2: Exclusion Criteria

1. The study excluded Individuals in administrative or managerial positions not directly involved in daily food processing or handling activities.
2. Employees with medical conditions that could impair their ability to participate fully or pose a risk during the study.

3. Individuals currently undergoing training or probation, as their exposure to established safety practices may be limited.

3.6: Data gathering methods and procedures

3.6.1 Questionnaires

The participant's data was collected using survey responses administered by an interviewer. Section 1 of the questionnaire measured the participants' sociodemographic information, while Section 2 assessed their awareness of standards for workplace health and safety ***see Appendix iii***.

3.6.2 Observation Checklist

An observational checklist was used to assess whether the employees have been provided with the minimum requirements as per the OSHA which assisted in measuring the level of compliance. ***See Appendix ii.***

3.6.3 Key Informant Guide

A key informant guide was used to gather qualitative data, which helped determine the extent of adherence to regulations pertaining to workplace health and safety ***see Appendix iv.***

3.7: Testing for Validity and Reliability

3.7.1: Pilot Testing

Pre-testing was conducted in food manufacturing industries and 31 participants (10% of sample size) were randomly selected in a Kiambu town Sub-county. Their views were analyzed, and the results were used to improve the validity of the questions. This is in accordance with Mugenda & Mugenda (1999), that pilot testing constitutes a trial run of the

techniques and the tools that the researcher wants to employ throughout the study, and using a pilot it helped the researcher to avoid making expensive errors.

3.7.2: Validity

Pretesting of the questionnaires was done to make sure they have all the information that is necessary to produce the intended results, without leaving anything out. An expert in occupational health and safety or public health pretested the interview questionnaires.

3.7.3: Reliability

This gauges how well an investigation tool replicates the same results under repeated application to the same conditions. To assess internal consistency, Cronbach's Alpha was used. According to the literature, a reliability level of at least 0.70 is considered good. An instrument is considered reliable if its alpha coefficient is 0.70 or greater. A Cronbach alpha coefficient of 0.85 was found in the present investigation, indicating that the data collection instruments were dependable.

Reliability Statistics

Objectives	Cronbach's Alpha[a]	N of Items
utilization of emergency obstetric care services	.85	15
Socio-demographic	.83	6
Organization factors	.89	6
Level of awareness	.83	11

3.8: Data analysis techniques and procedures

The statistical computer program Statistical Package for Social Studies (SPSS version 26.0) was used to clean, code, and analyze the data acquired for this study. To describe the categorical data frequencies and percentages were employed. Awareness of occupational

safety and health standards was evaluated using a binary scale those who answered yes scored 1 and those with a no scored a zero. After the summation of all the scores were scaled see Table 3:2. The Scale level of compliance with OSHA standards was evaluated using a binary scale, those who answered yes scored 1, and those with a no scored a zero. After the summation of all the scores were scaled see Table 3:2.

The output of descriptive, categorical variables was described in frequency tables and pie charts. The chi-square test was applied to asses for the relationship between the dependent and independent variables. With a significance level set as a p-value of ≤0.05. Binary logistic regression was also be applied for determinants found to be significant in bivariate analysis. Analyzed data was presented using both charts and tables. Qualitative data recorded was transcribed and analyzed thematically using NVIVO v. 10.

Table 3:2: Scale of Compliance

Scale of level awareness on OSHA standards	
Aware	Comprised of those who scored 5-11 minimum requirements under OSHA 2007
Not aware	Comprised of those who scored below 5 minimum requirements under OSHA 2007
Scale of the level of compliance with OSHA standards	
Compliant	comprised of those who had a score of 10-15 as a minimum requirement under OSHA 2007
Not Compliant	comprised of those who scored below 10 minimum requirements under OSHA 2007

3.9: Ethical consideration

The Institutional, Scientific, and Ethical Review Committee (ERC) at Mount Kenya University, as well as the County Government of Kiambu Department of Public Health and Sanitation, were asked for their approval before the research could begin. A formal approval

number and an approval letter were provided. The National Council of Science and Technology (NCST) provided a research authorization letter and a research permit. After getting written or thumbprint approval from the respondents, the questionnaires were given to them. Before obtaining consent, the researcher described the study's goals and reassured participants that the information they provided would be kept private by asking them not to share their names. The respondents' participation in the study was completely voluntary, and to protect their privacy, names, and other identifiers were not utilized when collecting data. The researcher made sure that all data was collected, treated with absolute confidentiality, and used solely for study purposes. The participant had the option to exit from the study. Findings from this study were provided back to the respective industries to improve the level of compliance.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4:0 Preamble

This section includes descriptive, bivariate logistic regression of the degree of adherence to occupational safety and health standards by employees, social demographic factors, organizational determinants of adherence to occupational safety and health standards, and the degree of awareness of these standards. This section also includes the investigation's response rate.

4:1 Response Rate

With a 90% investigation response rate, 285 investigation questionnaires were considered appropriate for data analysis in this research.

4.2 Descriptive Statistics on Compliance to Occupational Safety and Health Standards Score Parameters

The following Table 4.1 presents the descriptive statistics regarding the adherence to the score parameters for occupational safety and health standards. The majority(80.4%) of the study participants reported the presence of the OSHA 2007 Abstract at the work premises and this could linked to OSHA requirements mandating the need to display the abstract. Close to three quarters (73.7%) of the study participants confirmed the presence of a copy of the certificate of registration for a workplace in accordance with the provision of the OSHA 2007 and this could be linked to the necessity of the need to have this certificate at the work premises. Close to three-quarters (71.9%) of the study respondents confirmed there was a presence of OSHA Policy and this could be linked to the necessity of the need to have OSHA policy at the work premises. Only a few (26%) of the study participants reported risk assessment not being done and this could be linked to the nature of their work. Nearly three-

quarters (71.9%) of study participants attested to the presence of health and safety audits, which may have been attributed to the audits' necessity at the workplace. The majority of study participants (75.4%) confirmed that a fire and safety audit was conducted; this finding may be related to the necessity of ensuring worker safety. The majority of study participants (75.1%) attested to the existence of the health and safety committee, which may be explained by OSHA standards being required. Concerning medical examination of workers, the Majority (76.1%) of the study participants confirmed having a medical examination prior to reporting to work and this could be attributed to the requirement of OSHA standards.

The Majority (76.8%) of the study partakers confirmed PPEs being provided to them at their place of work and this could be attributed to the nature of their and the requirement of OSHA. Only a few (23.2%) of the study respondents reported safe work procedures being absent which could be linked to their employers not complying with OSHA requirements and standards. Lastly, close to three-quarters (73.7%) of the study partakers reported the presence of a training /induction program for workers which could be attributed to the need to orient them to the new working environment.

Table 4:1:Compliance with Occupational Safety and Health Standards Score Parameters

Independent variables	Categories	Frequencies	Valid percentage
Presence of OSHA 2007	Yes	229	80.4%
Abstract	No	56	19.6%
copy of the certificate of	Yes	210	73.7%
registration	No	75	26.3%
Presence of OSHA Policy	Yes	205	71.9%
	No	80	28.1%
risk assessment	Yes	211	74%
	No	74	26%
Noise survey	Yes	196	68.8%
	No	89	31.2%
Health and safety audit	Yes	205	71.9%
	No	80	28.1%
fire safety audit	Yes	197	69.1%
	No	88	30.3%
Evacuation procedure plan	Yes	215	75.4%
	No	70	24.6%
health and safety	Yes	214	75.1%
committee	No	71	24.9%
OSHA Training	Yes	191	67%
	No	94	33%
Medical examination	Yes	217	76.1%
	No	68	23.9%
Equipment's maintenance	Yes	213	74.7%
	No	72	25.3%
PPE provision	Yes	219	76.8%
	No	66	23.2%
safe_work_procedures	Yes	219	76.8%
	No	66	23.2%
training_for_workers	Yes	210	73.7%
	No	75	26.3%

4:3 Level of Compliance among Employees to Occupational Safety and Health Standards

The occupational safety and health standard scale of compliance was used to evaluate the overall degree of compliance among employees to these standards. To assess the degree of adherence to Occupational Safety and Health Standards, a fifteen-score scale was used. A score of ten or higher on the OSHA score scale was considered to be in compliance with the standards for occupational safety and health, while a score of less than ten was considered to be out of compliance. Conversely, a score below ten indicated non-compliance with OSHA's standards for occupational safety and health. As indicated in Figure 4.1 below, the compliance rate to occupational safety and health standards was at 76.5% which was way low compared to the Occupational Safety and Health Administration (OSHA) target compliance rate of 100% thus indicating it's a public health concern that needs adequate address which aided to safeguard the wellbeing of employees working in this food industries. The findings from this study were close to those of a study done in Ethiopia(Bekele et al., 2020). However, another study carried out in Uganda recorded a higher average compliance rate of 95.2%(Mayanja et al., 2022). The difference in recorded compliance rates with occupational safety and health standards could be linked to differences in sampling procedures, different study populations, and different study settings.

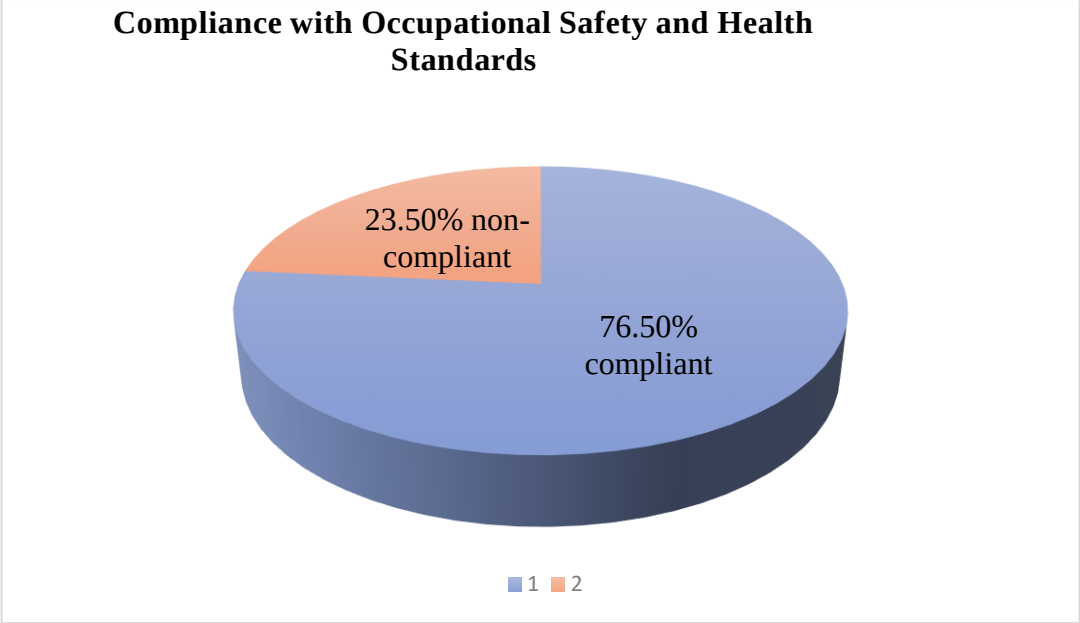

Figure 4:1 Compliance with Occupational Safety and Health Standards

4.4 Sociodemographic Factors Influencing Compliance with occupational safety and health standards

4.4.1 Descriptive Statistics on Social Demographic Characteristics

Descriptive statistics about the social and demographic traits of the study participants are shown in Table 4.2 below. The fact that over half (52.3%) of the study, participants were in the 25–30 age range may be related to the fact that young people frequently decide to work in the food industry for a variety of reasons, reflecting both pragmatic concerns and personal preferences. They also made up the majority because they are the vast majority of the population. Just 9.8% of the study participants were in the 31–36 age range. Close to half(43.9%) of the study partakers had attained a vocational education level qualification and this could be linked to skilled labor needed to work in the selected food industries while only a few(11.9%) of the study partakers had a tertiary level of education. More than a quarter(38.2%) of the study respondents were earning between 10001-20000 Kenyan shillings and this could be linked to their level of qualification and low wages which is a concern in Kenya. only a few(11.2%) of the study participants were earning more than 40000 Kenyan shillings. The majority(62.1%) of the study participants in this study were on a contractual term of employment and this could be linked to the inability of the majority of food industries to employ them on permanent and pensionable bases due to wages concerns, On the contrary, more than quarter(37.1%) of the study respondents were on a permanent term of employment. More than half(51.6%) of the study respondents were males and this could be linked to the technical and strength capabilities they provide in the food industries while close to half(48.4%) of the study respondents were females. More than a quarter(39.3%) of the study partakers had 5-8 years of working experience and this could be

linked to these employees having served or worked in this food industry for a designated period of time. Only a few(9.5%) of the study partakers had a working experience of more than nine years.

Table 4: 2: Descriptive Statistics on Social Demographic Characteristics

Independent variables	Categories	Frequencies	Valid percentage
Age of the Partaker	19-24	61	21.4%
	25-30	149	52.3%
	31-36	28	9.8%
	43-48	47	16.5%
Education level	primary	46	16.1%
	secondary	80	28.1%
	vocational	125	43.9%
	Tertiary education	34	11.9%
Income level	0-10000	34	11.9%
	10001-20000	109	38.2%
	20001-30000	22	7.7%
	30001-40000	88	30.9%
	Above 40000	32	11.2%
Term of employment	Permanent	108	37.9%
	contractual	177	62.1%
Gender	male	147	51.6%
	female	138	48.4%
Years of work experience	<1	57	20%%
	1-4	89	31.2%
	5-8	112	39.3%
	>9	27	9.5%

4.4.2 Bivariate Analysis of Sociodemographic Factors

Table 4.3 provides a bivariate analysis of Sociodemographic Factors Influencing Compliance with occupational safety and health standards. Regarding participant age, only a small percentage (19.1%) of participants aged 43–48 did not comply with occupational safety and health standards, whereas the majority (80.3%) of participants aged 19–24 were in compliance. This may have been due to the participants' recent educational and training experiences. There was no significant statistical association when the chi-square test for independence was done between the age of the study partakers and compliance with occupational safety and health standards ($\chi 2=1.62$, $df=3$,$p=0.66$).

These findings were contrary to the qualitative data where one of the key informants noted that:

"*Long-term exposure to workplace hazards may lead older workers to develop a heightened awareness of safety issues. They may be more likely to adhere to safety guidelines, given their understanding of the potential consequences. Younger workers may not have experienced as many workplace situations, and their attitudes toward safety could be influenced by their perceptions of risk and the culture of safety within the organization……."*(Key informant 5)

The results of this investigation corroborated those of a Kenyan study (Abanga et al., 2023). Age was found to affect the degree of adherence to occupational safety and health standards in another Ugandan study, which contradicted these findings (Mayanja et al., 2022).

In terms of the study participants' educational attainment, the majority of them (88.2%) who had completed their tertiary education were in compliance with standards pertaining to occupational health and safety. This may be related to their awareness of safety issues. Half

(50%) of the study partakers who had a primary level of education were non-compliant with occupational safety and health standards. There was a significant statistical association when the chi-square test for independence was done between the education level of the study partakers and compliance with occupational safety and health standards (*$\chi 2=25.69$, df=3,p=<.001*).

With regard to the participants' duration of employment, the majority of them (83.3%) who were employed permanently complied with standards for workplace health and safety. This could be attributed to their exposure to training and adequate knowledge of safety issues, which is a long-term investment made by the food industry. Among study participants with contractual employment, nearly a quarter (26.7%) did not comply with standards for workplace health and safety. There was a significant statistical association when the chi-square test for independence was done between the term of employment of the study partakers and compliance with occupational safety and health standards (*$\chi 2=4.53$, df=1 p=0.03*). However, These findings were not consistent with the binary logistic regression analysis(p=0.08).

These findings were contrary to the qualitative data where one of the key informants noted that:

"Short-term employees might not be as committed to the organization's long-term safety culture. They might put short-term tasks ahead of long-term safety concerns. Short-term employees may find it difficult for their employers to provide thorough safety training, which could result in a lack of adherence to standards for workplace health and safety……." (Key informant 2).

The results from this study were in agreement with those of a study done in Ethiopia(Bekele et al., 2020). However, another study carried out in the UK was contrary to these findings as workers on permanent terms of employment were more likely to comply with occupational safety and health standards as compared to their counterparts(Walters & Wadsworth, 2021).

From this study, it should be noted that 84.1% of study participants who complied with occupational safety and health standards were female. This finding may be related to cultural norms and societal expectations that shape career decisions. Certain cultures may have predetermined roles and professions that are considered appropriate for women, which could result in a greater representation of women in particular industries. Males made up nearly a quarter (30.6%) of the study participants who did not follow standards for workplace health and safety. There was a significant statistical association when the chi-square test for independence was done between the gender of the study partakers and compliance with occupational safety and health standards ($\chi 2=8.519, df=1, p=0.004$).

With respect to income, 80.7% of study participants who made between 30,001 and 40,000 Kenya Shillings were in adherence to occupational safety and health requirements; this could be related to Higher earners believing that their jobs are more secure, and this belief could encourage them to prioritize workplace safety. Conversely, individuals facing economic insecurity may be more reluctant to raise safety concerns due to fear of job loss. Close to a quarter(31.2%) of the study partakers who were earning above 40000 Kenyan shillings were non-compliant with occupational safety and health standards. There was no significant statistical association when the chi-square test for independence was done between income level and compliance with occupational safety and health standards ($\chi 2=25.56, df=4, p=0.63$).

These findings were contrary to the qualitative data where one of the key informants noted that:

"*Higher-income workers may have better access to quality personal protective equipment (PPE) due to their ability to afford necessary gear. Adequate PPE is a crucial component of OSH compliance. Furthermore, Higher-income workers may have greater access to training programs and resources that focus on safety awareness and compliance. They may be more likely to receive comprehensive safety training, leading to increased awareness and adherence to OSH standards*…."(Key informant 12)

Ncube and Kanda's (2018) study in low- and middle-income countries (LMICs) and the results of this investigation were in agreement. Nwankwo et al. (2017) conducted a study in Rwanda that yielded different results, indicating that there exists a relationship between income level and adherence to standards for workplace health and safety.

From this research, The majority of study participants (91.2%) who had less than a year of work experience complied with standards for workplace health and safety. This could be related to the fact that new hires frequently receive close supervision and mentorship from more seasoned coworkers or supervisors. This recommendation offers chances for clarification and further training while supporting safety procedures. More than half(55.6%) of the study partakers who had more than nine years of working experience were non-compliant with occupational safety and health standards. There was a significant statistical association when the chi-square test for independence was done between years of work experience and compliance with occupational safety and health standards ($\chi 2=23.19$, $df=3$, $p=<.001$).

Table 4:3: Sociodemographic factors influencing compliance with occupational safety and health standards

Independent variables	Categories	Dependent Variable (compliance with occupational safety and health standards)		Statistical Significance (Chi-square Test)
		YES (N=218)	NO (N=67)	
Age of the participant	19-24	49(80.3%)	12(19.7%)	$\chi 2=1.62$
	25-30	110(73.8%)	39(26.2%)	df=3
	31-36	21(75%)	7(25%)	p=0.66
	43-48	38(80.9%)	9(19.1%)	
Education level	primary	23(50%)	23(50%)	$\chi 2=25.69$
	secondary	59(73.8%)	21(26.2%)	df=3
	vocational	106(84.8%)	19(15.2%)	p=<.001
	Tertiary	30(88.2%)	4(11.8%)	
Income level	0-10000	26(76.5%)	8(23.5%)	$\chi 2=25.56$
	10001-20000	81(74.3%)	28(25.7%)	df=4
	20001-30000	18(81.8%)	4(18.2%)	p=0.63
	30001-40000	71(80.7%)	17(19.3%)	
	Above 40000	22(68.8%)	10(31.2%)	
Term of employment	Permanent	90(83.3%)	18(16.7%)	$\chi 2=4.53$
	contractual	128(72.3%)	49(27.7%)	df=1
				p=0.03
Gender	male	102(69.4%)	45(30.6%)	$\chi 2=8.519$
	female	116(84.1%)	22(15.9%)	df=1
				p=0.004
Years of work experience	<1	52(91.2%)	5(8.8%)	$\chi 2=23.19$
	1-4	71(79.8%)	18(20.2%)	df=3
	5-8	83(74.1%)	29(25.9%)	p=<.001
	>9	12(44.4%)	15(55.6%)	

4.4.4 Logistic Regression on Sociodemographic Factors

Table 4.4 provides a logistic regression analysis of Sociodemographic Factors Influencing Compliance with occupational safety and health standards. Education level was found to be an independent factor for compliance with occupational safety and health standards (*p=<.001*). Additionally, study participants with only a primary education were 8.3 times less likely than those with a tertiary education to comply with standards for workplace health and safety. This discrepancy may be due to a lack of awareness about occupational safety and health issues. The findings from this study were in agreement with two other studies carried out in Kenya and Ethiopia(Ayoo & Moronge, 2019; Debela et al., 2023). However, another study carried out in Nigeria was contrary to these findings as education level was found not to be significantly associated with compliance with occupational safety and health standards(Onowhakpor et al., 2017).

Gender was found to be an independent factor for compliance with occupational safety and health standards (*p=0.02*). Moreover, men were twice less as likely to follow rules pertaining to occupational health and safety. There may be a connection between this and variations in risk perception. In comparison to women, men are more likely to take different risks, and this can be influenced by things like experience and personality. This study's findings coincided with those of a study conducted in Kenya (Ayoo & Moronge, 2019). Nonetheless, a different study conducted in India found that men complied with occupational safety and health standards, which ran counter to the findings made by Wagner et al. (2020).

Years of work experience was found to be an independent factor for compliance with occupational safety and health standards (p=<.001). Furthermore, workers with 1-4 years of work experience were 5.9 more likely to comply with occupational safety and health

standards as compared to workers with over 9 years of work experience. New employees typically undergo orientation and onboarding programs that include specific training on safety procedures and protocols. During this initial period, there is a strong emphasis on communicating the importance of workplace safety. The findings of this investigation were in line with those of a Malaysian study (Hamid et al., 2019). Nevertheless, a different study conducted in Kenya found the opposite, finding no correlation between work experience and adherence to occupational safety and health regulations (Abaya et al., 2021).

Table 4:4:Binary logistic regression analysis on sociodemographic factors influencing compliance with occupational safety and health standards

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	**what is your education level**			18.890	3	.000			
	Primary	2.122	.662	10.288	1	.001	8.348	2.283	30.528
	secondary	1.308	.644	4.119	1	.042	3.698	1.046	13.074
	Vocational	.500	.630	.628	1	.428	1.648	.479	5.667
	tertiary						**ref**		
	gender	.741	.320	5.369	1	.020	2.097	1.121	3.924
	female						**ref**		
	years of work experience			16.900	3	.001			
	<1	2.506	.650	14.858	1	.000	.082	.023	.292
	1-4	-1.730	.524	10.913	1	.001	5.9	.063	.495
	5-8	-1.592	.503	10.023	1	.002	5	.076	.545
	>9						**ref**		
	term of employment	-.578	.337	2.942	1	.086	.561	.290	1.086
	contractual						ref		
	Constant	-.867	.694	1.563	1	.211	.420		

4.5 organizational factors influencing compliance with occupational safety and Health standards

4.5.1 Descriptive Statistics on Organizational Factors

Table 4.5 below provides descriptive Statistics on the organization factors of the study partakers. More than half (64.9%) of the study partakes reported being provided with personal protective equipment and this could be linked to the essence of utilizing PPEs at the working premises to minimize exposure to hazards and for protection purposes. However, more than a quarter (35.1%) of the study partaker reported personal protective equipment not being provided. The majority (70.2%) of the study participants reported working on safe working premises and this could be linked to regular inspection by OSHA officials to safeguard the welfare of employees. Close to a quarter (29.8%) of the study partakers reported not working on safe working premises. The majority (78.6%) of the study participants reported first aid equipment being present at the working premises and this could be linked to first aid equipment being a necessity at the working premises as mandated by OSHA. Only a few (21.4%) of the study partakers reported this first aid equipment not being present at the working premises. The majority (81.8%) of the study participants reported firefighting equipment being present, this could be linked to firefighting equipment being a necessity at the working premises as mandated by OSHA. Only a few (18.2%) of the study partakers reported this firefighting equipment not being present at the working premises. Close to a quarter (30.5%) of the study participants reported being involved in OSHA matters this could be linked to few employees acting as representatives among others on matters related to OSHA, while more than half of the study partakers (69.5%) of the study partakers reported not being involved in OSHA matters. Lastly, More than a quarter (38,2%) of the study participants reported the presence of the general register, while more than half (61.8%)

of the study partakers reported the general register being absent, this could be linked to poor adherence to OSHA rules and regulations which mandates the need to document on matters related to occupational safety and health standards.

Table 4: 5:Descriptive Statistics on Organizational Factors

Independent variables	Categories	Frequencies	Valid percentage
Firefighting equipment	Yes	233	81.8%
	No	52	18.2%
First Aid equipment's	Yes	224	78.6%
	No	61	21.4%
PPE provision	Yes	185	64.9%
	No	100	35.1%
General register	Yes	109	38.2%
	No	176	61.8%
Safe workplace	Yes	200	70.2%
	No	85	29.8%
Staff participation on OSHA matters	Yes	87	30.5%
	No	198	69.5%

4.5.2 Bivariate Analysis of Organizational Factors

Table 4.6 provides a bivariate analysis of organization factors, The majority of the study's respondents (81.1%) who claimed that personal protective equipment (PPE) was provided were in compliance with occupational safety and health standards. This finding may be explained by the fact that PPE is essential in encouraging adherence to OSH standards. When used properly, personal protective equipment (PPE) can greatly enhance a safer and healthier work environment by shielding employees from potential hazards at work. Only a few (23.5%)of the study partakers who reported PPEs not being provided were non-compliant with standards for workplace safety and health. There was a significant statistical association when the chi-square test for independence was done between the provision of PPEs and compliance with occupational safety and health standards ($\chi 2=6.17, df=1, p=0.01$).

When it came to the presence of firefighting equipment, over three-quarters (77.3%) of study participants who reported having it were in compliance with standards pertaining to occupational health and safety. This finding may be explained by the fact that having firefighting equipment is an essential component of making sure that standards for workplace health and safety are followed. A safe and secure work environment is greatly aided by the availability and appropriate use of firefighting equipment, which is a basic component of workplace safety. Only a few (26.9%) of the study partakers who reported firefighting equipment not being present were non-compliant with occupational safety and health standards. There was no significant statistical association when the chi-square test for independence was done between the presence of firefighting equipment and compliance with occupational safety and health standards ($\chi 2=0.41, df=1, p=0.52$).

These findings were not consistent with the qualitative data as one of the key informants noted that:

"Firefighting equipment, including fire extinguishers, hoses, and fire blankets, enhances the workplace's emergency preparedness. Having these resources readily available ensures that employees can respond quickly and effectively in the event of a fire, minimizing potential damage and injuries....." (Key Informant 3)

The results of this investigation were consistent with those of an Indian study (Saha, 2018). But these results were refuted by a different Zambian study (Mambwe et al., 2021).

Due to the fact that having a safe workplace is essential to maintaining compliance with standards pertaining to occupational health and safety, the majority of study participants (83.5%) who reported having a safe workplace were compliant with these standards. An organization's dedication to fulfilling and surpassing regulatory requirements is demonstrated by a safe work environment, which also safeguards employees' health and safety. More than a quarter (40%) of the study partakers who reported the absence of a safe workplace were non-compliant with occupational safety and health standards. There was a significant statistical association when the chi-square test for independence was done between the presence of a safe workplace and compliance with occupational safety and health standards ($\chi 2=18.32, df=1, p=<.001$).

Concerning the provision of first t Aid equipment, the majority (78.6%) of the study partakers who reported the provision of first Aid equipment were compliant with standards for workplace safety and health. The provision of first aid equipment is a critical aspect of compliance with occupational safety and health (OSH) standards. First aid equipment is

essential for promptly addressing injuries and illnesses in the workplace, and its availability contributes significantly to creating a safe and healthy work environment. Close to a quarter (31.1%) of the study partakers who reported the absence of first Aid equipment were non-compliant with occupational safety and health standards. There was a significant statistical association when the chi-square test for independence was done between the provision of 1st Aid equipment and compliance with occupational safety and health standards ($\chi 2=2.52, df=1, p=0.11$). The results of this investigation were consistent with those of an Egyptian study (Moaddel et al., 2021). Nevertheless, the results of another study conducted in Rwanda were contrary to these results (Nwankwo et al., 2017).

With respect to staff participation in OSHA matters, the majority of study participants who reported doing so were in compliance with standards relating to workplace health and safety, accounting for 67.8% of the total. The achievement and maintenance of adhering to occupational safety and health standards depend heavily on staff involvement in OSHA-related matters. Employee participation in safety initiatives promotes awareness, accountability, and teamwork, all of which lead to a safer and healthier workplace. Close to a quarter (27.8%) of the study partakers who reported not participating in OSHA matters were non-compliant with occupational safety and health standards. There was a significant statistical association when the chi-square test for independence was done between staff participation in OSHA matters and compliance with occupational safety and health standards ($\chi 2=4.8, df=1, p=0.03$).

Concerning the presence of a general register, the majority (83.5%) of the study partakers who reported the presence of a general register were compliant with occupational safety and health standards. A general register typically includes records of incidents, accidents, and

near misses. Maintaining an exhaustive record of these incidents facilitates the identification of trends, evaluation of underlying reasons, and execution of remedial measures to avert recurrence, in compliance with OSH guidelines. Only a few (16.5%) of the study partakers who reported the presence of a general register were non-compliant with occupational safety and health standards. There was a significant statistical association when the chi-square test for independence was done between the presence of a general register and compliance with occupational safety and health standards ($\chi 2=4.8, df=1, p=0.03$).

Table 4:6:Organizational factors influencing compliance with occupational safety and health standards

Independent variables	Categories	Dependent Variable (compliance with occupational safety and health standards)		Statistical Significance (Chi-square Test)
		YES (N=218)	NO (N=67)	
Firefighting equipment	Yes	180(77.3%)	53(22.7%)	$\chi 2=0.41$
	No	38(73.1)	14(26.9%)	df=1
				p=0.52
First Aid equipment's	Yes	176(78.6%)	48(21.4%)	$\chi 2=2.52$
	No	42(68.9%)	19(31.1%)	df=1
				p=0.11
PPE provision	Yes	150(81.1%)	35(18.9%)	$\chi 2=6.17$
	No	68(76.5%)	32(23.5%)	df=1
				p=0.01
General register	Yes	91(83.5%)	18(16.5%)	$\chi 2=4.8$
	No	127(72.2%)	49(27.8%)	df=1
				p=0.03
Safe workplace	Yes	167(83.5%)	33(16.5%)	$\chi 2=18.32$
	No	51(60%)	34(40%)	df=1
				p=<.001
Staff participation on OSHA matters	Yes	59(67.8%)	28(32.2%)	$\chi 2=5.24$
	No	159(80.3%)	39(19.7%)	df=1
				p=0.02

4.5.3 Logistic Regression On Organizational Factors

Table 4.7 provides a logistic regression analysis of organizational factors. There was no association between the presence of a general register and compliance with occupational safety and health standards(p=0.1*).*

These findings were contrary to the qualitative data where one of the key informants noted that:

"Safety meetings, committee discussions, and any safety-related communications can be recorded in the OSHA register. This provides evidence of ongoing efforts to address safety concerns, promote awareness, and involve employees in safety initiatives, which are essential components of OSH compliance" (Key Informant 7)

The results of this investigation were consistent with those of two other studies conducted in China and Brazil (Chen et al., 2023; Garnica & Barriga, 2018).

The staff participation in OSHA matters was found to be an independent factor for compliance with occupational safety and health standards (p=0.04). Furthermore, study partakers who reported not participating in OSHA matters were 1.9 times less likely to comply with occupational safety and health standards. When employees actively participate in safety discussions, training sessions, and safety committees, they develop a sense of ownership in maintaining a safe work environment. This sense of responsibility promotes compliance with OSH standards as employees are personally invested in safety measures. The results of this investigation were consistent with an investigation conducted in Ghana (Eyiah et al., 2019). Nevertheless, a different study conducted in Ethiopia found the opposite of these conclusions (Debela et al., 2023).

The presence of a safe workplace was found to be an independent factor for compliance with occupational safety and health standards (p=<.001). Furthermore, the presence of a safe workplace increased the odds of complying with occupational safety and health standards by 3. Establishing and maintaining a safe workplace is a legal obligation for employers. Compliance with OSH regulations is crucial to avoiding penalties and legal consequences. Organizations that prioritize safety demonstrate adherence to legal standards. The results of this investigation were consistent with those of two other Tanzanian and Ethiopian studies (Bekele et al., 2020; Mushi, 2019). However, these conclusions were refuted by another systematic review (Zara et al., 2023a).

The provision of Personal Protective Equipment was found to be an independent factor for compliance with occupational safety and health standards (p=0.03). Furthermore, the provision of PPES increased the odds of complying with occupational safety and health standards by 2. PPEs are tailored to specific workplace hazards, such as head protection, eye protection, respiratory protection, and more. Providing appropriate PPE ensures that workers are equipped to mitigate the risks associated with their particular tasks or environments. This study's conclusions concurred with those of two other Malaysian studies (Abdul Hamid et al., 2020; Aziz et al., 2020). Nevertheless, Nwankwo et al. (2017) found that the results of another study conducted in Rwanda were different these findings.

Table 4:7: Binary logistic regression analysis on organization factors influencing compliance with occupational safety and health standards

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.	
								Lower	Upper
Step 1[a]	Provision of PPEs	-.625	.300	4.350	1	.037	2	.297	.963
	No provision of PPEs						ref		
	Provision of a safe workplace	-1.114	.300	13.791	1	.000	3	.182	.591
	Absence of safe workplace						ref		
	Copy of general register	-.526	.322	2.671	1	.102	.591	.314	1.111
	Copy absent						ref		
	Absence of Staff participation on OSHA matters	.638	.307	4.334	1	.037	1.893	1.038	3.452
	Staff participation on OSHA matters						ref		
	Constant	-.131	.311	.178	1	.673	.877		

4.6 awareness of OSH standards influences compliance with occupational safety and health standards

4.6.1 Awareness of OSH standards

The Occupational Safety and Health Standard Scale of Awareness was utilized to evaluate the degree of knowledge regarding OSH regulations. The level of awareness of the Occupational Health and Safety standards was measured using an eleven-score scale. A score of five or higher on the awareness OSH standards score scale indicated knowledge of occupational safety and health standards, whereas a score of less than five indicated unaware of these standards. As indicated in Figure 4.2 below, more than half (66.3%) of the study partakers were aware of Occupational Safety and Health Standards while more than a quarter (33.7%) of the study partakers were unaware of the Occupational Safety and Health Standards which could be linked to lack of regular education seminars as well as training emphasizing the need for observing Occupational Safety and Health Standards.

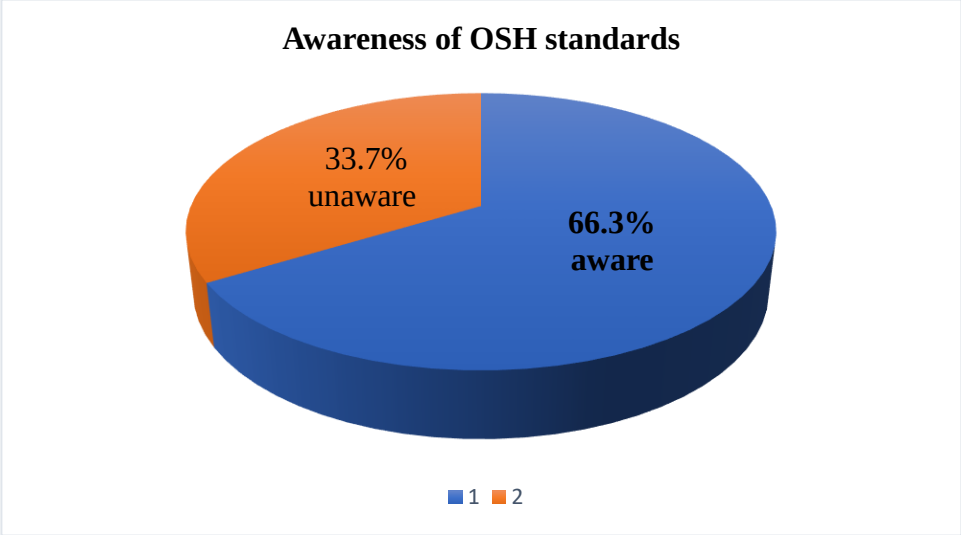

Figure 4:2:Awareness of OSH standards

4.6.2 Bivariate analysis of awareness of OSH standards

In the manner shown in Tables 4.8 and 4.9 below. In terms of knowledge of OSH standards, the majority of study participants (80.4%) who said they were aware of them complied with standards for workplace health and safety. When people and organizations are aware of OSH standards, they can clearly comprehend the particular safety and health regulations that apply to their industry. This knowledge is foundational for creating and implementing effective safety programs. Close to a quarter (31.2%) of the study partakers who reported being unaware of OSH standards were non-compliant with occupational safety and health standards. There was a significant statistical association when the chi-square test for independence was done between awareness of OSH standards and compliance with occupational safety and health standards ($\chi 2=4.82, df=1, p=0.03$).

Table 4:8:Awareness of OSH standards influence compliance with occupational safety and health standards

Independent variables	Categories	Dependent Variable (compliance with occupational safety and health standards)		Statistical Significance (Chi-square Test)
		YES (N=218)	NO (N=67)	
Awareness of OSH standards	Yes	152(80.4%)	37(19.6%)	$\chi 2=4.82$ df=1 p=0.03
	No	66(68.8%)	30(31.2%)	

4.6.3 Logistic Regression on Awareness of OSH Standards

Table 4.9 provides a logistic regression analysis on Awareness of OSH Standards. Adherence to occupational safety and health regulations was independently correlated with knowledge of OSH standards (p=0.02). Furthermore, study partakers who reported awareness of OSH standards were 2 times more likely to comply with occupational safety and health standards. Awareness of OSH standards emphasizes the importance of maintaining accurate records and documentation, as required by regulations. This includes records of safety training, hazard assessments, and injury reports. Proper documentation demonstrates a commitment to compliance.

These findings were also in agreement with the qualitative data where one of the key informants noted that:

"OSH standards are legally mandated, and awareness of these regulations ensures that employers understand their legal obligations to provide a safe and healthy working environment. This awareness motivates organizations to comply with the law to avoid legal consequences such as fines, penalties, and potential legal action…." (Key Informant 6)

The results of this investigation were in line with those of two other studies conducted in Italy and Nepal (Marahatta et al., 2018; Mong'are, 2019), but they were at odds with a systematic review conducted in low- and middle-income countries (LMICs) that found no link between adherence to standards for workplace health and safety and awareness of OSH standards (Zara et al., 2023b).

Table 4:9:Binary logistic regression analysis on how awareness of OSH standards influences compliance with occupational safety and health standards

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I	
								Lower	Upper
Step 1[a]	OSH standards awareness	-.625	.287	4.75	1	.02	2	.305	.939
	Not aware						ref		
	Constant	**-.788**	**.220**	**12.82**	**1**	**.000**	**.455**		

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Preamble

The study's summary, conclusion, and recommendations are all included in this section.

5.1 Summary.

From this study, the compliance rate to occupational safety and health standards was at 76.5% which was way low compared to the Occupational Safety and Health standard target compliance rate of 100% thus indicating it's a public health concern that needs adequate address which aided to safeguard the wellbeing of employs working in this food industries. From the second objective on sociodemographic determinants of compliance with occupational safety and health standards; The following social demographic variables were found to have a significant statistical association with adherence with occupational safety and health standards; when the bivariate analysis was done hence, they were imported for the logistic regression analysis; term of employment, education level, gender, and years of work experience. However, the age of the study respondents and income level didn't reveal a significant statistical association during bivariate analysis. From the third objective on organizational determinants of compliance to occupation safety and health standards; The following organization factors were found to have a significant statistical association with compliance with occupational safety and health standards; when the bivariate analysis was done hence, they were imported for the logistic regression analysis; Presence of general register, PPE provision, Presence of safe working premises, and employee engagement in OSH matters. However, the presence of firefighting equipment and the presence of first aid equipment's didn't reveal a significant statistical association during bivariate analysis. From the fourth objective on the level of awareness of occupational safety and health standards,

more than half (66.3%) of the study partakers were aware of Occupational Safety and Health standards. Additionally, when the bivariate analysis was conducted, there was a statistically significant correlation found between the degree of awareness of OSH standards as well as adherence to health and safety at work standards; this correlation was then imported for the logistic regression analysis.

5.2 Conclusion.

According to this study, the rate of adherence to occupational safety and health standards was 76.5%, far lower than the 100% target compliance rate set by the Administration for Occupational Safety and Health (OSH) standards. According to the second objective on sociodemographic determinants of adherence with standards for workplace health and safety, male gender and having a primary level education decreased the likelihood of complying with occupational safety and health standards as compared to those with a tertiary level of education, whereas having 1-4 years of work experience increased the likelihood of complying as compared to employees with over 9 years of work experience. According to the third goal on organizational factors influencing adherence to occupational safety and health standards, having safe working conditions and providing personal protective equipment (PPE) enhanced the likelihood of following OSH regulations, whereas keeping employees out of OSH-related activities decreased the likelihood of following OSH regulations. Finally, adherence to standards for workplace health and safety was more likely when people were aware of OSH standards, according to the fourth objective.

5:3 Study Recommendations.

5.3.1 Recommendations from the Study

1. The employer, the county government, and other relevant stakeholders should collaborate to ensure employees are provided with safe working premises which will

aid in reducing and doing away with hazards that are likely to pose a danger to workers.

2. The employers and Occupational Safety and Health Administration (OSHA) should collaborate to ensure employees are provided with information on occupational safety and health measures which will aid in increasing compliance with occupational safety and health standards.
3. The employers, the employees, and OSHA should collaborate in the provision of training related to occupational safety and health measures which will in turn increase awareness of occupational safety and health standards.
4. The employees should ensure standard PPEs are provided to them by their employers at the place of work which will aid in safeguarding their wellbeing.
5. The employers and Occupational Safety and Health Administration (OSHA) should ensure workers are engaged on matters related to OSH which will in turn enhance compliance with occupational safety and health standards.

5.3.2 Recommendations for Further Investigation

1. The study recommends an intervention study to examine the role of education programs on awareness of OSH standards towards compliance with occupational safety and health standards.

5.3.3 Reccomendation for policy

1. To enhance workplace safety, it is recommended that employers implement a policy mandating comprehensive and continuous occupational safety and health (OSH) training for all employees. This policy should ensure that training is conducted in a

language and manner that all employees can understand, as emphasized by OSHA's training standards.

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APPENDICES

Appendices 1: Consent Form
Name of the researcher: Teresiah Wangui Njoroge

Research topic: determinant of occupational safety and health standards in food manufacturing industries in Thika subcounty Kiambu county

Invitation to participate in the study

You have been considered to hold suitable position that will give relevant information for the research to attain its goal. Any help and information provided to me to accomplish this study shall be treated confidentially and it will be mainly for academic achievement.

Introduction and aim of the study

Respected sir/madam My name is Teresiah Njoroge, and I attend Mount Kenya University to pursue a master's degree in public health. Researching the factors that influence workplace health and safety conformity in the food manufacturing sector in Thika subcounty, Kiambu county, Kenya.

Research description

In order to evaluate the degree of adherence to occupational safety and health standards, as well as the sociodemographic as well as organizational factors that affect it, as well as the degree of awareness of these standards, the research project intends to contact 34 food processing companies and 317 individuals who participated. In the subcounty of Thika.

Voluntary participation and withdrawal from study.

Participation in this investigation is entirely voluntary, and you are free to stop at any moment without facing any consequences if you feel awkward.

Potential benefits

You won't likely directly benefit from the findings, but they will help determine how best to improve compliance with safety and health rules at work.

Possible risk or discomfort

In case you feel offended by any sensitive question you can decide to skip the question.

Privacy and confidentiality

According to the study introduction and purpose the information gathered will be utilized for the specific reasons. Any information that might identify you such as your name will not be included in the findings, the questionnaire will be destroyed and audio recorded data will be removed soon after the results are presented and published.

Contact information

Please feel free to inquire about whatever inquiries you may have at this time or at any other point during the exercise regarding the research. To get in touch with me, send an email to terenjoroge@gmail.com.Contact the research@mku.ac.ke office of the University of Mount Kenya Institutional Ethical Review Committee (IERC) if you have any questions about how your information is going to be protected during this study or if you might have been put in danger.

Participant statement

Researcher has explained the research objectives, prospective advantages and hazards.

You have may permission to withdraw at any time my involvement is entirely voluntary.

The researcher addressed all of my questions and assured me that my personal information would be kept private

I have decided to participate in the study because I want to help out.

Yes ( )No ( )

Research statement

I made sure to explain the study purpose to each participant in a language they could understand.

Participant signature……. date……

Interview signature…….date…….

Appendix II: observational checklist

A checklist to obtain information about "Compliance with the Occupational Safety and Health standards.

S/NO	OSH requirement	Yes	No
1	A prominently displayed Occupational Safety and Health Act 2007 Abstract, rules, and notes at the workplace. *(prominently displayed)*		
2	Do you possess a copy of certificate of registration for a workplace in accordance to the provision of the OSHA 2007 *(is the copy provided)*		
	If YES, have you renewed		
	If NO why		
3	Is there OSHA Policy in the premises *(is the copy provided)*		
4	Did you conduct risk assessment in the last 12 months?		
	If YES what is the date of the last assessment *(is the copy of the report provided)*		
5	Have you conducted a Noise survey in the past 12 months?		
	If YES, do you have the reports *(is the copy of report provided)*		
	If NO why		
6	Have you done Health and safety audit last 12 months?		
	If YES what is the date of the last assessment *(is the copy of report provided)*		
7	Have you done fire safety audit in the last 12 months? *(is the copy of report provided)*		
8	Do you have Evacuation procedure plan If YES *(is the copy of evacuation plan provided)*		
9	Do you have an active health and safety committee?		
	If YES *provide the latest minutes of the committee meeting*		

	How many committees' members are there? *If YES Provide the copy of Minutes*		
10	In the last 12 months, has the health and security committee attended any training pertaining to occupational safety and well-being? *If YES Provide the copy of attendance*		
11	Is there a medical examination and surveillance program in place? *Provide the copy of scheduled plan*		
12	Has there been an examination of pressurized, lifting, refrigeration and machines at least in the past 6 or 12 months?		
	If YES when…….. *Provide the report*		
13	Have you provided personal protective equipment to employees		
14	Are there safe work procedures safety rules and regulations, warning signs available at work and clearly described? *Provide the copy of issuance register.*		
15	Is there a training /induction programme of the workers? *Provide the copy of attendance*		

Organizational determinants			
S/NO	ITEM	YES	NO
1	Do you have a copy of the General Register for Workplace Health and Safety?		
2	Are there a fully equipped first aid facilities and easily accessible		
3	Are firefighting appliances provided, properly mounted, and regularly serviced?		
4	Are employee wearing proper PPEs		
5	Is safe workplace provided.		
6	Is there staff participation on OSH matters		

Appendix III: Questionnaire
Section 1: Social Demographic Information.

Tick (√) the most appropriate answer.

Respondent Id……

1.Age of the respondent: in years specify

1. 18-29
2. 30-39
3. 40-49
4. 50-59
5. Over 60

2.Gender

1. Male
2. Female

3.Level of education of the respondent.

1. Secondary school
2. Certificate
3. Diploma
4. Higher diploma
5. Undergraduate degree
6. Postgraduate degree

4.Term of employment

1.Permanent

2.Contructual

5.Number of years worked in the industry has been operational.

1.Less than 10

2.10-19

3.20-29

4.More than 30

6.Level of income.

1.0-10000

2.10001-20000

3.20001-30000

4.30001-40000

5.Above 40000

Section 2 level of awareness on occupational safety and health standards

1. Are you familiar with Occupational Safety and Health Act 2007 **YES/NO**

   If **YES**, how did you access the OSHA Act ……

   State one duty of the employees……..
2. Do you know the procedure of accident reporting? **YES/NO**

   If **YES** what the procedure of accident reporting while at work?.....
3. Do you know where you file accident/injury cases **YES/NO**

   If **YES** where……
4. Do you know the penalties related to contravening occupational health and safety? **YES/NO**

   If **YES** which one are the penalties……..
5. Are there risk, of not wearing PPEs **YES/NO**

   If **YES** name any…….
6. Do you know any safety and health training? **YES/NO**

   If **YES** please state which area one can be trained on…….……..
7. Do you know of fire safety procedures? **YES/NO**

   If **YES** explain the procedure…….……
8. Do you know of first aid procedures? **YES/ NO**

   If **YES** explain one of the procedures……

9.Are there advantage of having safety and health committee **YES/NO**

   If **YES** what are the advantages……..

Appendix IV: Key Informant guide
Introduction

Teresiah Njoroge, Am. a Mount Kenya University graduate student studying public health. I am expected to conduct research in my area of specialization as a requirement for receiving the degree honorably. My study will focus on how well the food production industries in Thika Sub-County adhere to regulations pertaining to health and safety at work. Any information you submit will be treated with the utmost privacy and will only be used for academic purposes. If you could give me some of your time so that I can finish this research, I would be very grateful. You will need to dedicate 25 minutes to this interview.

1. Let's begin by introducing yourself. What is you mandate concerning compliance of occupational safety and health?
2. How does your Organisation ensure that the employees are aware of occupational safety and health standards?
3. In your opinion, has food manufacturing industries provided the minimal requirements regarding to occupational safety and health standard compliance?
4. Based on your understanding, what is the future of occupational safety and health level of compliance in food manufacturing industries.
5. What could be the way forward in ensuring the culture of compliance in the food manufacturing industries.

Appendix V: ERC Certificate

Mount Kenya University

REF: **MKU/ISERC/3288** Date: 30 October 2023

TO: **TERESIAH WANGUI NJOROGE**

REG: **MPH/2021/87735**

Dear Sir/Madam,

RE: DETERMINANTS OF COMPLIANCE TO OCCUPATIONAL SAFETY AND HEALTH STANDARDS IN FOOD MANUFACTURING INDUSTRIES THIKA SUB-COUNTY, KENYA.

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2332.** The approval period is **30/10/2023 - 29/10/2024.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

Appendix VI: Introductory Letter

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MPH/2021/87735

31st October, 2023

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki, Upper Kabete
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: TERESIAH WANGUI NJOROGE-REGISTRATION NO. MPH/2021/87735

The purpose of this letter is to introduce the above named student who is pursuing **Master of Public Health** in the department of **Epidemiology and Biostatistics** in the school of **Public Health.**

The title of the research is **"Determinants of Compliance to Occupational Safety and Health Standards in Food Manufacturing Industries Thika Sub-County, Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **November, 2023 and January, 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P. O. Box 342 - 01000, THIKA
Office of the Director,
Graduate Studies

Dr. Samuel M. Karenga, Ph.D.
Director, Graduate Studies
Enc.

Appendix VII: Nacosti License

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **253818**

Date of Issue: **03/November/2023**

RESEARCH LICENSE

This is to Certify that Miss.. TERESIAH WANGUI NJOROGE of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kiambu on the topic: DETERMINANTS OF COMPLIANCE TO OCCUPATIONAL SAFETY AND HEALTH STANDARDS IN FOOD MANUFACTURING INDUSTRIES THIKA SUB-COUNTY, KENYA for the period ending : 03/November/2024.

License No: **NACOSTI/P/23/31259**

253818

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix VII: Research Permit from the Department of Health

COUNTY GOVERNMENT OF KIAMBU

HEALTH SERVICES

Telephone:

E-mail:thikascpho@gmail.com

Ref: TKA/SCPHO/STD/VOL2/06/2023

SUB COUNTY PUBLIC HEALTH OFFICE

P.O. BOX 384

THIKA

23rd November 2023

TO WHOM IT MAY CONCERN

RE: DATA COLLECTION FOR TERESIA WANGUI NJOROGE ID NO 28564151

The purpose of this letter is to introduce the above-named student who is a Public Health Officer and is doing her masters in Epidemiology and Biostatistics She is currently doing data collection for the sole purpose of her study.

Please accord her the necessary assistance

THANK YOU

YOURS

PATRICK I MBURU

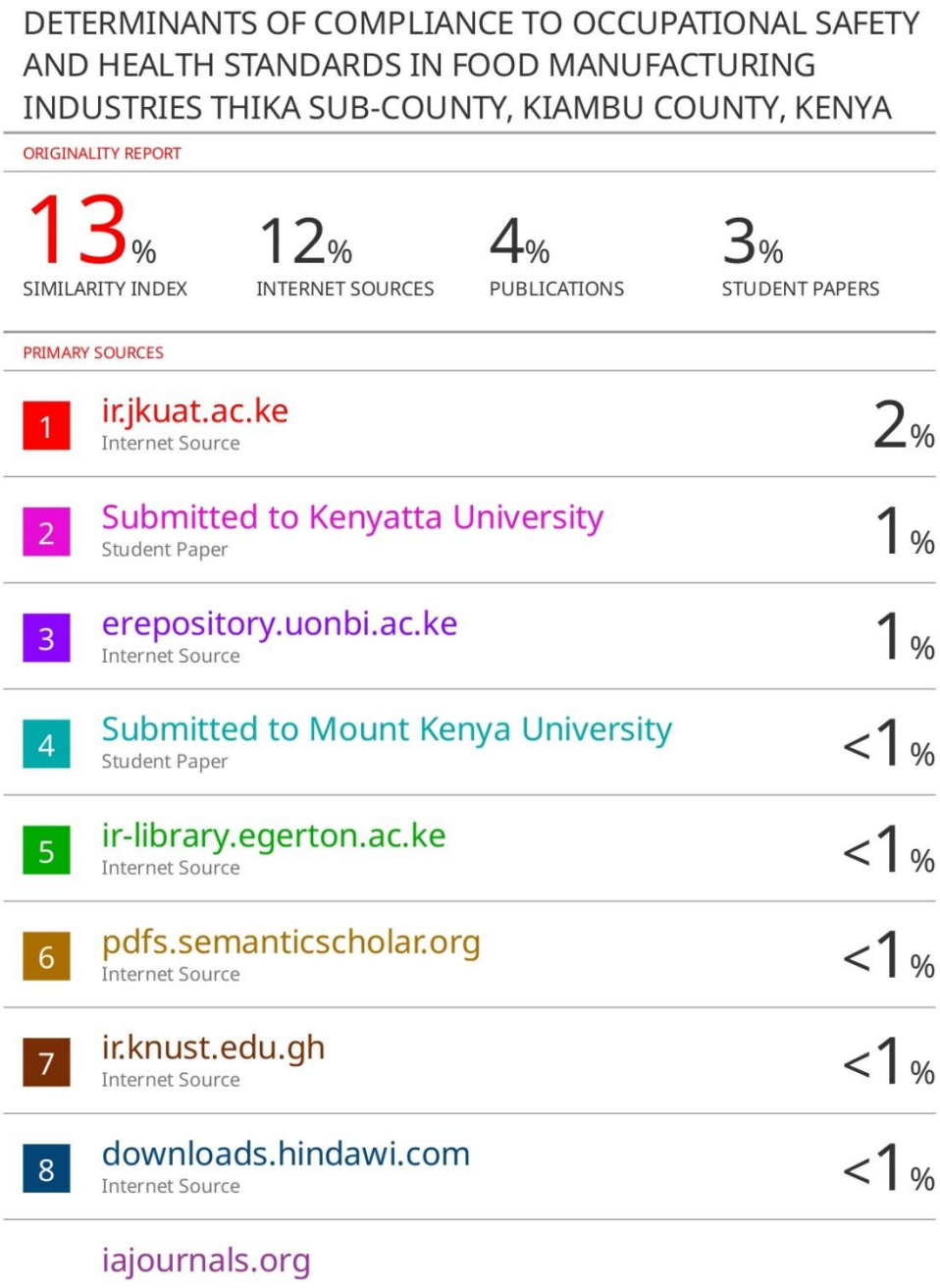
SUB COUNTY HEALTH OFFICER THIKA

Sub County Public Health Officer Thika
P.O Box 384 Thika

23 NOV 2023

Prevention is better than cure.

Appendix IX: Similarity Index Report



DETERMINANTS OF COMPLIANCE TO OCCUPATIONAL SAFETY AND HEALTH STANDARDS IN FOOD MANUFACTURING INDUSTRIES THIKA SUB-COUNTY, KIAMBU COUNTY, KENYA

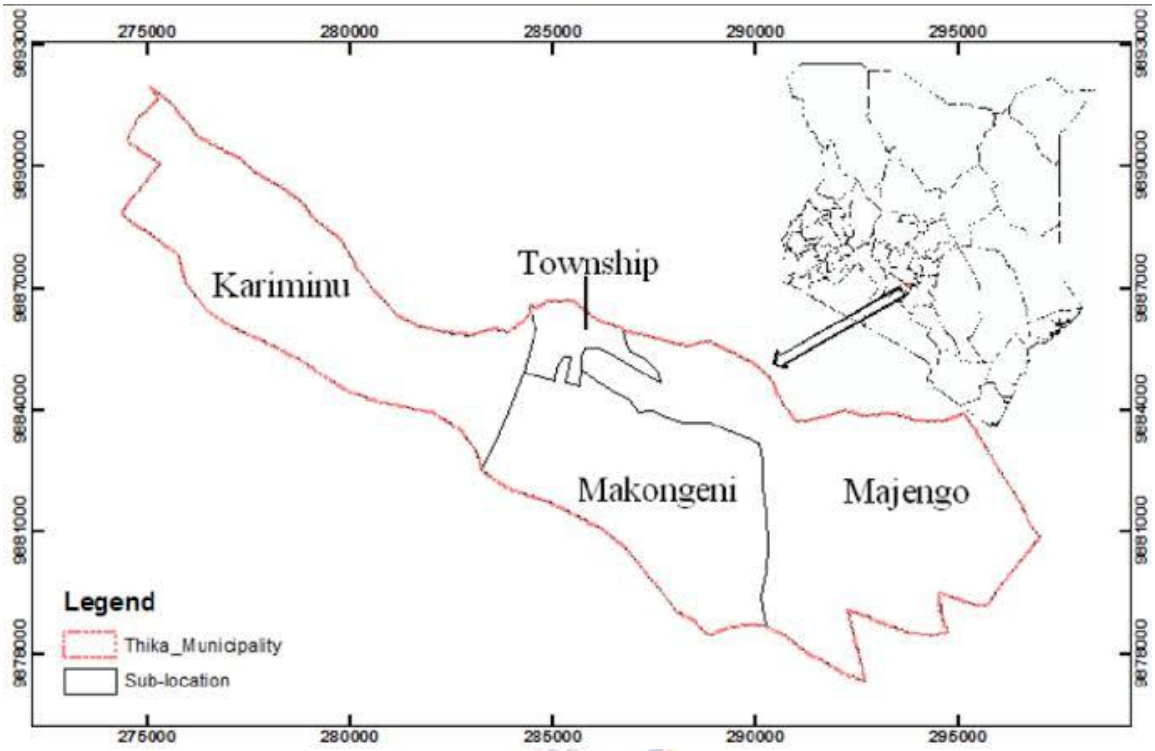
ORIGINALITY REPORT

13%	12%	4%	3%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	ir.jkuat.ac.ke Internet Source	2%
2	Submitted to Kenyatta University Student Paper	1%
3	erepository.uonbi.ac.ke Internet Source	1%
4	Submitted to Mount Kenya University Student Paper	<1%
5	ir-library.egerton.ac.ke Internet Source	<1%
6	pdfs.semanticscholar.org Internet Source	<1%
7	ir.knust.edu.gh Internet Source	<1%
8	downloads.hindawi.com Internet Source	<1%
	iajournals.org	

Appendix X: Map of the Study Area



Source: Thika Municipality Boundary and Sublocations (UTM coordinates)