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KNOWLEDGE, ATTITUDE AND PRACTICES OF OCCUPATIONAL SAFETY AND HEALTH OF EMPLOYEES IN PUBLIC ENTITIES. A CASE STUDY OF HARARE CITY COUNCIL DEPARTMENT OF ROAD WORKS.

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQIREMENTS OF BACHELOR OF SCIENCE HONORS DEGREE IN SAFETY HEALTH AND ENVIRONMENTAL MANAGEMENT

DECLARATION

The undersigned people certify that they have read this research project and have approved its submission for marking in relation to the department's guidelines and regulations.

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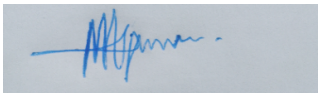
Signature of student  **Date: 3 October 2024**

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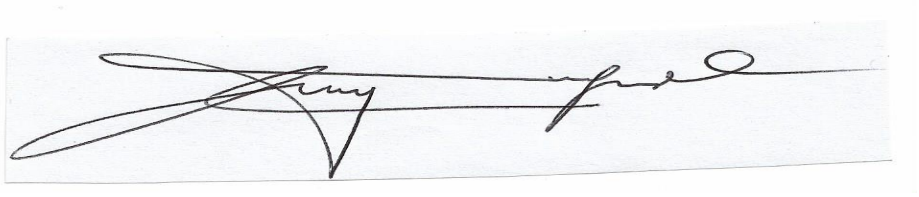
Signature 

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DEDICATION

I dedicate this to my loving family, all my friends and fellow students for their unconditional support and resilience during my period of study.

ACKNOWLEDGEMENTS

My profound appreciation to the Almighty God, for His divine protection throughout my research and everyone who worked with me to make this project successful. My supervisor, Mr. Polite Nhokovedzo, deserves special recognition for his guidance and for giving me unique technique of exploiting this research. I also want to thank my family for their moral support and for a job well done. I then give my gratitude to the employees' understudy for their contributions in this research project. Last but not least, I extend my gratitude to my brother T. Chiyaka for the support he rendered during this time.

ABSTRACT

Background: Occupational safety and health (OSH) is essential for the well-being and productivity of employees in various sectors, including public organizations. However, global statistics reveal a concerning number of work-related accidents and illnesses, emphasizing the need for improved knowledge, attitudes, and practices (KAP) of OSH. This study focuses on the Department of Road Works at Harare City Council, Zimbabwe, to assess the KAP of employees in relation to OSH. Methodology: The study employs a descriptive research design to gather data from employees in the Department of Road Works. A mixed-method approach is utilized, involving the administration of a survey questionnaire and conducting semi-structured interviews. The collected data is analysed and presented to determine the level of KAP among the employees and identify the factors influencing their KAP. Results:
The findings of the study provide insights into the level of KAP among employees in the Department of Road Works. It examines their knowledge of OSH practices, attitudes towards safety regulations and protocols, and current practices related to occupational safety and health measures. Conclusion and Recommendations: Based on the analysis of the data, conclusions are drawn regarding the KAP of employees in the Department of Road Works. The study highlights the importance of addressing knowledge gaps, improving attitudes towards OSH, and enhancing safety practices. Recommendations are provided to develop comprehensive training programs, promote leadership commitment to OSH, and foster a positive safety culture within the department. Implementing these strategies can create a safer working environment, mitigate occupational hazards, and enhance the overall well-being and productivity of employees.

Keywords**:** Occupational safety and health, knowledge, attitude, practices, public entities, Department of Road Works, Harare City Council, Zimbabwe.

TABLE OF CONTENTS

Contents

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND ABREVIATIONS

CIS	Commonwealth of Independent States.
HCC	Harare City Council.
ILO	International Labor Organization.
KAP	Knowledge, Attitude and Practice
OSH	Occupational Safety and Health
PPE	Personal Protective Equipment
OSHAS	Occupational Safety and Health Administration Standards
HSE	Health, Safety, and Environment
EHS	Environment, Health, and Safety.
SOPs	Standard Operating Procedures.
MSDS	Material Safety Data Sheets.
OHS	Occupational Health and Safety.

CHAPTER 1:

INTRODUCTION

1.1. BACKGROUND OF THE STUDY

Occupational safety and health (OSH) play a vital role in safeguarding the welfare and productivity of employees across various sectors, including public organizations such as local government entities. However, the current global landscape remains alarming, as per the International Labour Organization (ILO, 2023) estimates, where approximately 2.3 million individuals worldwide, both men and women, lose their lives annually due to work-related accidents or illnesses. This staggering figure translates to over 6,000 fatalities occurring each day. On a global scale, there are approximately 340 million occupational accidents and 160 million individuals affected by work-related illnesses each year. Worryingly, recent updates from the ILO indicate a rise in both accidents and occupational health issues. In the CIS countries, fatal occupational accidents are estimated to exceed 11,000 cases, in contrast to the reported 5,850 cases, thereby underscoring significant underreporting that distorts the true extent of this problem (ILO).

Research has examined OSH practices in public institutions, shedding light on the challenges and opportunities for improvement. Studies by Johnson et al. (2017), Brown and Smith (2019), and Lee and Chen (2020) have emphasized the need for stronger leadership commitment, comprehensive training programs, effective safety management systems, and the fostering of a positive safety culture to enhance OSH practices in public organizations. Human factors such as inadequate knowledge, lack of training, and human error (Smith & Jones, 2016), as well as organizational factors including inadequate safety policies, poor management commitment, and ineffective safety training programs (Johnson et al., 2017), can undermine OSH efforts. External factors, such as technological advancements, changes in work processes, and environmental conditions, can also contribute to increased accident risks (Brown & Smith, 2019).

To address these challenges, potential solutions include developing and implementing comprehensive training programs to enhance employees' OSH knowledge and skills (Adams & Brown, 2021; Roberts et al., 2023), demonstrating strong commitment to safety from top management and holding leaders accountable for implementing and enforcing safety policies and procedures (Davis & Taylor, 2017; Roberts et al., 2023), and encouraging a shared understanding

of safety values, attitudes, and behaviors among employees to promote a proactive safety culture (Davis & Taylor, 2017; Thomas et al., 2019). Applying these strategies in the Department of Road Works within the Harare City Council could help create a safer working environment and mitigate the occupational hazards faced by

1.2. Problem Statement

The Harare City Council Department of Road Works plays a vital role in maintaining and developing transportation infrastructure within the city. However, concerns arise regarding the knowledge, attitude, and practices of occupational safety and health among its employees. There is a lack of comprehensive understanding, negative attitudes, and inadequate adherence to safety protocols within the department, posing significant risks to the well-being and safety of workers. This knowledge gap may stem from inadequate training programs, limited access to safety information, or ineffective dissemination of safety guidelines. Some employees exhibit negative attitudes towards occupational safety and health, undermining the implementation of safety protocols, which may be influenced by a lack of awareness or a perception that safety practices are burdensome. The insufficient practices related to occupational safety and health within the department have led to a higher incidence of workplace accidents, injuries, and long-term health implications for employees.

1.3. AIM

To examine the knowledge, attitudes, and practices of occupational safety and health among employees in public entities, with a specific focus on the Department of Road Works at Harare City Council.

1.4. OBJECTIVES

i. To assess the level of KAP among employees in the Harare City Council Department of Road Works.
ii. To analyze factors that influence KAP among employees in the Harare City Council Department of Road Works

1.5. RESEARCH QUESTIONS

i. What is the level of knowledge among employees in the Harare City Council Department of Road Works regarding occupational safety and health practices?
ii. What are the attitudes of employees in the Harare City Council Department of Road Works towards occupational safety and health regulations and protocols?

iii. What are the current practices of employees in the Harare City Council Department of Road Works regarding occupational safety and health measures?

1.6. SIGNIFICANCE OF THE STUDY

The study examined the knowledge, attitudes, and practices (KAP) of employees in the Harare City Council's Department of Road Works regarding occupational safety and health (OSH). Understanding employee KAP can provide insights into areas needing improvement to create a safer work environment (Kumar & Sharma, 2018; Zhang et al., 2019).

Assessing KAP can shed light on compliance with OSH regulations, which public entities are expected to meet (Brown et al., 2018; Wilson et al., 2017). Identifying gaps can inform interventions, such as training and safety protocols, to mitigate risks and reduce workplace accidents, injuries, and illnesses (Zhang et al., 2019).

A safe and healthy work environment is crucial for organizational productivity (Huang et al., 2018). By improving employee KAP, the study can contribute to enhanced department performance and productivity (Smith et al., 2019; Pienaar et al., 2019).

The findings can inform policy recommendations to improve OSH practices within the Harare City Council, which could benefit other public entities (Gururajan et al., 2020). Overall, the study holds significance for improving employee safety, ensuring legal compliance, mitigating risks, and enhancing organizational productivity.

CHAPTER 2:

LITERATURE REVIEW.

1.7. INTRODUCTION

Occupational Safety and Health (OSH) plays a crucial role in protecting workers from harm, promoting well-being, and enhancing productivity. The significance of OSH extends beyond the individual worker and organization, as it has far-reaching implications for the economy, society, and the environment.

Poor OSH practices can result in injuries, illnesses, and fatalities, leading to substantial costs for individuals, families, and communities. On the other hand, effective OSH management can lead to improved employee morale, reduced absenteeism, increased productivity, and enhanced organizational reputation (ILO, 2017).

1.8. DEFINITION AND IMPORTANCE OF OSH

The International Labour Organization (ILO) defines OSH as "the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations" (ILO, 2017).

1.9. OSH AND ITS EVOLUTION

The concept of OSH has a long history, dating back to ancient civilizations. In the 19th century, the Industrial Revolution marked the beginning of modern OSH, as workers began to organize and demand better working conditions (Huang et al., 2018). The first OSH laws and regulations were introduced in the early 20th century, with the establishment of the ILO in 1919 (ILO, 2017).

Over the years, OSH has evolved to address emerging workplace hazards and risks, including the introduction of new technologies, changes in work patterns, and the growth of the service sector (Huang et al., 2018). Today, OSH is a global concern, with international organizations, governments, and employers working together to promote a culture of safety and health at work.

1.10. THE CONCEPT OF KNOWLEDGE, ATTITUDE, AND PRACTICES (KAP) IN OSH

The concept of Knowledge, Attitude, and Practices (KAP) is a crucial aspect of Occupational Safety and Health (OSH) that examines the cognitive, affective, and behavioural dimensions of

employees' responses to workplace hazards and risks (Huang et al., 2018). Understanding KAP is essential for developing effective OSH interventions, as it provides insights into the factors that influence employees' behaviour and decision-making related to safety and health (Leka & Jain, 2017).

1.10.1. Knowledge (K)

Knowledge refers to the information, skills, and understanding that employees possess about OSH. It encompasses the cognitive aspects of safety and health, including the awareness of hazards, risks, and control measures (ILO, 2017). Knowledge is a critical component of KAP, as it lays the foundation for employees' attitudes and practices towards OSH.

1.10.1.1. Factors Influencing Knowledge

Training and education: Formal training and education programs can significantly enhance employees' knowledge of OSH (Huang et al., 2018).

Experience: Employees' experience and exposure to workplace hazards can influence their knowledge of OSH (Leka & Jain, 2017).

Organizational culture: The organization's safety culture and values can impact employees' knowledge of OSH (ILO, 2017).

1.10.2. Attitude (A)

Attitude refers to the feelings, emotions, and values that employees associate with OSH. It encompasses the affective aspects of safety and health, including the motivation, willingness, and commitment to follow safety procedures and protocols (Huang et al., 2018). Attitude is a critical component of KAP, as it influences employees' behavior and decision-making related to OSH.

1.10.2.1. Factors Influencing Attitude

Leadership and management commitment is a critical factor in shaping employees' attitudes towards Occupational Safety and Health (OSH). According to a study by Huang et al. (2018), when leaders and managers demonstrate a strong commitment to OSH, employees are more likely to perceive safety as a priority and adopt positive attitudes. This commitment can be shown through providing OSH training, resources, and support, establishing policies, and recognizing safe behaviour. Conversely, a lack of leadership commitment can negatively impact employees' safety attitudes, leading to non-compliance and increased risk (Huang et al., 2018).

Peer influence is another crucial factor. According to Leka and Jain (2017), employees' attitudes and behaviours can shape their colleagues' perceptions of safety. When coworkers prioritize safety, it promotes a positive safety culture and encourages positive attitudes. However, if employees observe their peers neglecting safety, they are more likely to adopt negative attitudes (Leka & Jain, 2017).

Personal values and beliefs also influence employees' OSH attitudes. According to the International Labour Organization (ILO) (2017), employees who value safety and prioritize well-being are more likely to have positive attitudes, while those who prioritize production over safety may adopt negative attitudes. Understanding employees' personal values is essential to promoting a positive safety culture through tailored OSH communication and training (ILO, 2017)

1.10.3. Practises (P)

Practices refer to the behaviours and actions that employees exhibit in relation to Occupational Safety and Health (OSH), encompassing the behavioural aspects of safety and health, including the implementation of safety procedures and protocols. Practices are a critical component of Knowledge, Attitude, and Practices (KAP) towards OSH, as they reflect the culmination of employees' knowledge and attitudes towards OSH. According to Huang et al. (2018), practices are the ultimate reflection of employees' safety behaviour and are a crucial indicator of the effectiveness of OSH programs. Safe practices can reduce the risk of accidents and injuries in the workplace, while unsafe practices can increase the risk of accidents and injuries. Therefore, it is essential to promote safe practices and discourage unsafe practices to create a safe and healthy work environment for all employees. By promoting safe practices, organizations can reduce the risk of accidents and injuries, improve productivity and morale, and enhance the overall well-being of employees.

1.10.3.1. Factors Influencing Practices

Supervision and enforcement of OSH policies and procedures can significantly influence employees' practices. According to Huang et al. (2018), effective supervision and enforcement can promote safe practices and reduce accident risks. Supervisors play a critical role in ensuring employees follow safety procedures, providing training and resources, and addressing workplace hazards. This can create a culture of safety and encourage safe practices among all employees.

The work environment and conditions can also impact employee practices. Leka and Jain (2017) found that physically and psychologically demanding environments, such as long hours and high workloads, can contribute to fatigue and stress, negatively affecting safety practices. Addressing these environmental factors is essential to promoting a safe and healthy workplace.

1.11. THE RELATIONSHIP BETWEEN KAP

The KAP (Knowledge-Attitude-Practice) model suggests that there is a relationship between knowledge, attitude, and practices, where knowledge influences attitude, which in turn influences practices. According to this model, employees' OSH knowledge can significantly impact their attitudes, ultimately affecting their safety practices (Huang et al., 2018).

Addressing all three components of KAP is essential to create a safe and healthy work environment. Improving employees' OSH knowledge through training and resources can lead to positive changes in their attitudes, which can then promote safe practices (Huang et al., 2018). Conversely, negative attitudes towards OSH can hinder the implementation of safe practices, as employees may be less likely to comply with safety protocols (Leka & Jain, 2017).

To enhance OSH outcomes, organizations can provide OSH training and resources to improve employees' knowledge, promote a positive attitude towards safety through a safe work environment and employee involvement, and encourage safe practices (Huang et al., 2018; Leka & Jain, 2017). By addressing all three components of the KAP model, organizations can create a culture of safety and improve overall OSH performance.

1.12. THE CONCEPT OF KNOWLEDGE, ATTITUDE, AND PRACTICES (KAP) IN OSH

The Knowledge, Attitude, and Practices (KAP) model is a crucial aspect of Occupational Safety and Health (OSH), examining the cognitive, affective, and behavioural dimensions of employees' responses to workplace hazards and risks (Huang et al., 2018).

According to the KAP model, employees' knowledge, attitudes, and practices related to OSH are interconnected and influence each other. Improving employees' knowledge and attitudes can positively impact their practices, leading to safer and healthier workplaces.

The cognitive dimension refers to employees' knowledge of OSH hazards, risks, and preventive measures (Leka & Jain, 2017). Employees with a better understanding of workplace hazards and

risks are more likely to adopt safe practices. Organizations can enhance employees' OSH knowledge through training, information, and awareness campaigns.

The affective dimension refers to employees' attitudes towards OSH, including their perceptions, values, and beliefs related to safety and health (Huang et al., 2018). Positive attitudes can promote compliance with safety protocols, hazard recognition, and participation in OSH decision-making. Positive attitudes can be fostered through leadership commitment, employee involvement, and recognition of safe behaviour.

The behavioural dimension refers to employees' practices related to OSH, such as compliance with safety protocols, use of personal protective equipment, and participation in training (Leka & Jain, 2017). Safe practices are essential to reduce the risk of injuries and illnesses in the workplace.

By understanding and addressing the interconnected cognitive, affective, and behavioural dimensions of the KAP model, organizations can promote a culture of safety, enhance employees' well-being, and reduce the risk of workplace incidents (Huang et al., 2018; Leka & Jain, 2017).

The interplay between the cognitive, affective, and behavioural dimensions of the KAP model is illustrated in the following diagram:

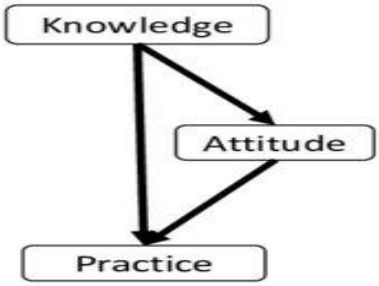

Fig. 2.1 The interconnection between knowledge attitudes and practises related to OSH

1.13. THE KAP MODEL

The Knowledge, Attitude, and Practices (KAP) model is a widely used framework for understanding the relationships between employees' knowledge, attitudes, and practices related to Occupational Safety and Health (OSH) (Huang et al., 2018).

Knowledge is the foundation, referring to the information, skills, and understanding that employees possess about OSH. Employers can enhance knowledge through training, resources, and feedback.

Attitude is the second component, referring to the feelings, emotions, and values that employees associate with OSH. Positive attitudes can be promoted through leadership commitment, employee involvement, and recognition.

Practices are the behaviours and actions that employees exhibit, including compliance with safety protocols and use of personal protective equipment. Employers can encourage safe practices through a safe work environment and clear expectations.

The KAP model highlights the importance of addressing all three components to achieve positive OSH outcomes. Improving knowledge, attitudes, and practices can lead to safer and healthier workplaces, reduce risks, and enhance employee well-being (Huang et al., 2018).

1.14. OCCUPATIONAL SAFETY AND HEALTH IN ROAD CONSTRUCTION AND MAINTENANCE

Road construction and maintenance are hazardous occupations that pose significant risks to the safety and health of workers. The industry is characterized by a high incidence of injuries and illnesses, many of which are preventable (Bureau of Labor Statistics, 2020). Understanding the occupational safety and health (OSH) risks associated with road construction and maintenance is essential for developing effective interventions to mitigate these risks.

1.15. EMPLOYEE ATTITUDE TOWARDS OCCUPATIONAL SAFETY AND HEALTH

Employee attitude towards occupational safety and health (OSH) is a critical component of a safe and healthy work environment. Employees who have a positive attitude towards OSH are more likely to follow safety protocols, report hazards and near-misses, and take an active role in maintaining a safe work environment (Huang et al., 2018).

1.15.1. Importance of Employee Attitude

Employee attitude towards OSH is essential for several reasons:

Compliance with regulations: Employees who have a positive attitude towards OSH are more likely to comply with safety regulations and standards (Huang et al., 2018).

Safety behaviour: Employees who have a positive attitude towards OSH are more likely to exhibit safe behaviour, such as wearing personal protective equipment (PPE) and following safety protocols (Leka & Jain, 2017).

Reporting hazards and near-misses: Employees who have a positive attitude towards OSH are more likely to report hazards and near-misses, which can help to identify and mitigate risks (International Labour Organization, 2017).

Safety culture: Employee attitude towards OSH can contribute to a positive safety culture, where employees are encouraged to prioritize safety and report hazards and near-misses (Gershon et al., 2018).

1.16. FACTORS INFLUENCING EMPLOYEE ATTITUDE

Several factors can influence employee attitude towards OSH, including:

Leadership and management commitment: Employees who perceive that their leaders and managers are committed to OSH are more likely to have a positive attitude towards OSH (Huang et al., 2018).

Training and education: Employees who receive regular training and education on OSH are more likely to have a positive attitude towards OSH (Leka & Jain, 2017).

Supervision and feedback: Employees who receive regular supervision and feedback on their safety performance are more likely to have a positive attitude towards OSH (International Labour Organization, 2017).

Organizational culture: Employees who work in an organization with a positive safety culture are more likely to have a positive attitude towards OSH (Gershon et al., 2018).

1.17. PREVIOUS STUDIES ON KAP OF OSH IN PUBLIC ENTITIES

Studies have explored the Knowledge, Attitudes, and Practices (KAP) of Occupational Safety and Health (OSH) in public entities, providing valuable insights (Kumar & Sharma, 2018; Zhang et al., 2019; Brown et al., 2018; Wilson et al., 2017).

Key findings include:

i. Public entities had varying levels of OSH knowledge, with gaps in understanding policies and procedures (Kumar & Sharma, 2018; Zhang et al., 2019).

ii. Negative attitudes, such as lack of safety concern, were linked to poor OSH compliance (Kumar & Sharma, 2018).

iii. Unsafe practices, like not using protective equipment, were associated with increased injury and illness risk (Zhang et al., 2019).

iv. Challenges in implementing OSH policies and procedures were common, despite positive attitudes (Brown et al., 2018; Wilson et al., 2017).

Reviews suggest the need for more research on:

- The impact of KAP on OSH outcomes (Siddiqi et al., 2020).
- The role of leadership, management, and organizational culture in shaping KAP (Huang et al., 2018).
- The influence of employees and contextual factors on KAP (Smith et al., 2019; Pienaar et al., 2019).
- The impact of technology and innovation on KAP and OSH (Gururajan et al., 2020).

Improving KAP through comprehensive training, fostering a positive safety culture, and enhancing leadership commitment can contribute to enhanced OSH practices in the workplace.

CHAPTER 3:

METHODOLOGY

3.1. DESCRIPTION OF STUDY AREA

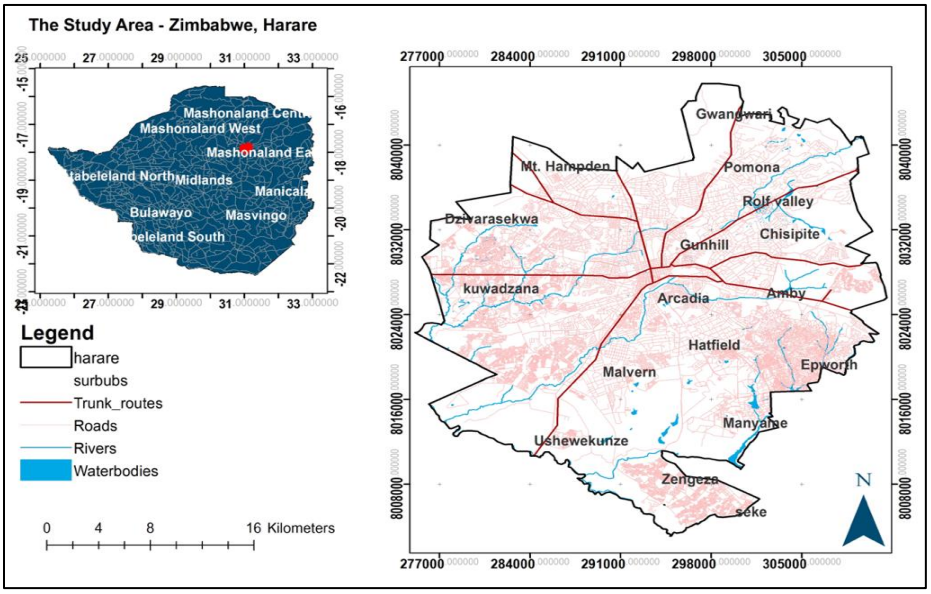

Figure 3.1 Description Study Area.

This research focuses on the works department of the city of Harare, specifically the division responsible for constructing and maintaining roadways. Harare City Council dates back to 1890, during the time when Zimbabwe was known as Rhodesia. The capital was initially Salisbury, but after gaining independence in 1980, the city's name was changed to Harare.

Harare is situated at an elevation of 1490 meters and is located at coordinates 170 51' 50" S and 310 1' 47" E (Springate-Baginski et al., 2009). The climate in Harare is characterized by hot weather, with an average annual high temperature of 21.6 degrees Celsius. The coolest month, July, has an average annual low temperature of 6.5 degrees Celsius. The city experiences three main seasons: a hot dry season from September to October, a warm and cool dry season from May to August, and a wet season from November to March. Harare receives an average rainfall of 825mm to 855mm per year, as reported by Lehmann et al. (2014).

Regarding vegetation, Harare is situated within the Miombo woods biome. The savanna environment of this region is marked by a mix of forest and grassland, where various species

coexist. The dominant trees in this area include miombo trees (Brachystegia spp.), along with other species such as Julbernardia globiflora, Isoberlinia angolensis, and Terminalia sericea

3.2. RESEARCH DESIGN

According to Leady (1995), a research design refers to a strategic plan and framework utilized for conducting a research project. In this study, the researcher employed a mixed-method approach, incorporating both quantitative and qualitative methods of data collection. This approach was chosen to gain a thorough understanding of employees' knowledge, attitudes, and practices concerning occupational safety and health (OSH) within the Department of Road Works at the Harare City Council. By combining quantitative and qualitative techniques, the research aimed to obtain a diverse and comprehensive dataset, enabling a more nuanced analysis and interpretation of the research inquiries. The integration of quantitative and qualitative approaches allowed for triangulation of findings, thereby enhancing the overall validity and reliability of the study (Smith, 2019). While quantitative data provided statistical evidence and generalizability, qualitative data offered valuable contextual information and deeper insights. The incorporation of these two types of data facilitated a more all-encompassing and holistic examination of the research problem.

3.3. TARGET POPULATION

The scope of this research study was limited to employees working within the Department of Road Works at the Harare City Council. The target population comprised individuals actively engaged in road construction and maintenance tasks within this department. The selection of this specific target population was based on the relevance and significance of their roles in relation to the research objectives. By focusing on employees within the Department of Road Works, the study aimed to gain a comprehensive understanding of the knowledge, attitudes, and practices pertaining to occupational safety and health (OSH), particularly within the context of road construction and maintenance. The choice of this target population was driven by their direct involvement in high-risk activities, which could expose them to occupational hazards and necessitate adherence to safety protocols. By examining this particular population, the study sought to generate valuable insights and propose targeted recommendations tailored to the unique challenges and circumstances faced by employees in the Department of Road Works.

3.4. SAMPLING METHOD

The sampling method refers to the approach used to select observations from a population to form a representative sample for a survey. In this study, the researcher employed stratified random sampling, which involves dividing the target population into distinct subgroups or strata based on specific characteristics or variables. These strata were determined based on job position, years of experience, and work location within the Department of Road Works at the Harare City Council. After dividing the population into strata, random samples were selected in proportion to the population size of each subgroup. This method ensured that the sample accurately represented the characteristics of each stratum. By using random sampling, every member of the population had an equal chance of being included in the study, thereby enhancing the representativeness of the sample. By including participants from different strata, the research accounted for potential variations in knowledge, attitudes, and practices regarding occupational safety and health within the department.

3.4.1. Sample Size Determination

The determination of the sample size for this research study was based on various considerations, including the desired level of statistical significance, the anticipated effect size, and the available resources. To ensure meaningful analysis and enhance the generalizability of the findings to the broader population of employees in the Harare City Council's Department of Road Works, a specific sample size was determined. This sample size was determined through a power analysis, which allows the study to estimate the minimum sample size needed to detect significant effects or relationships with a desired level of statistical power. By employing this approach, the study aims to achieve a robust and representative sample that can provide valid and reliable results.

3.5. DATA COLLECTION TOOLS

This research study will employ a mixed-methods approach, utilizing both quantitative and qualitative data collection methods to gather comprehensive and in-depth insights into the research problem. The data collection methods to be used include survey questionnaires and semi-structured interviews.

3.5.1. Survey Questionnaire

Quantitative data was collected through survey questionnaires administered to the selected participants. The use of the questionnaire was justified because it was a very cost-effective tool. The survey questionnaire consisted of structured items that assess various aspects related to

occupational safety and health (OSH), including knowledge, attitudes, and practices. The questionnaire was designed based on established scales or items that have been validated in previous studies. This method allows for systematic data collection from a larger sample, providing quantitative data that can be analyzed using statistical techniques. These scales or items were adapted to align with the specific research objectives and the context of the study population. To ensure the quality of data collected through survey questionnaires, several considerations use of clear and concise language to ensure that participants can easily understand and respond to the items. Pilot testing of the questionnaire was conducted to assess its clarity and effectiveness before administering it to the target population. The questionnaires were self-administered by the researcher on the paper to the respondents at the workplace during working hours.

Participants' confidentiality was maintained by ensuring that their responses remain anonymous and cannot be linked back to their identities. This encourages honest and unbiased responses. Participants were informed about the purpose of the study, their rights as participants, and the voluntary nature of their participation. Data collected through the survey questionnaires was analyzed using appropriate statistical methods, such as descriptive statistics, correlation analysis, depending on the research objectives and the nature of the data.

3.5.2. Semi-Structured Interviews

Semi-structured interviews were utilized as a qualitative data collection method in this research study to gather in-depth insights and perspectives from a subset of participants. These interviews provided a deeper understanding of the experiences, attitudes, and underlying reasons related to occupational safety and health (OSH) within the Harare City Council's Department of Road Works. The semi-structured interviews were conducted with a purposively selected group of participants who have diverse roles, experiences, and perspectives relevant to the research objectives. The interviews followed a flexible interview protocol that includes a set of predetermined questions and prompts, allowing for open-ended exploration of the participants' viewpoints

The interview protocol was designed based on the research objectives and relevant literature. It covered topics such as participants' perceptions of safety culture, barriers and facilitators to OSH practices, experiences with safety incidents, and suggestions for improving safety measures. The questions were open-ended to encourage participants to share their insights and personal experiences in their own words. During the interviews, the researcher actively listened, probed for

deeper understanding, and encourage participants to elaborate on their responses. The interviews were conducted face-to-face. Participants' confidentiality was maintained by ensuring that their identities and any sensitive information shared during the interviews are kept confidential. Semi structured interviews are an effective way of collecting data as they give the researcher more room to learn about aspects surrounding the research topic that had not been considered before.

By conducting semi-structured interviews, this research study aimed to gain deeper insights into the subjective experiences and perspectives of participants, providing a rich qualitative understanding of the OSH dynamics within the Department of Road Works. Gestures and other body languages enabled the researcher to make different conclusions.

3.6. DATA ANALYSIS AND PRESENTATION

The researcher analyzed descriptive qualitative data using the Statistical Package for Social Sciences (SPSS). The researcher gathered data gathered from the distributed questionnaire to check for accuracy, validity and consistency towards the research subject from the respondents. The data were analyzed using descriptive statistics. Frequencies and means were calculated and the results were displayed in tabular and graphical formats to facilitate comparisons. Significance T tests were conducted to asses the levels of significance between factors that affect KAP among employees.

CHAPTER 4:

PRESENTATION OF RESULTS

Results are presented in the order: The level of KAP among employees and then the factors that influence KAP among employees.

4.1. THE LEVEL OF KAP AMONG EMPLOYEES

The level of KAP amongst employees was done through the analysis of four demographics: profession, education level, experience level and age.

4.1.1. Influence of Profession on Knowledge, Attitude, and Practices

Profession	% with Knowledge	Knowledge Score (SD)	Attitude Score (SD)	Practices Score (SD)
General Worker	65%	4.2 (0.7)	3.9 (0.6)	3.6 (0.8)
Supervisor	85%	4.5 (0.6)	4.4 (0.5)	4.2 (0.6)
Engineer	90%	4.8 (0.5)	4.5 (0.4)	4.7 (0.4)
Office Worker	70%	4.3 (0.7)	4.0 (0.6)	3.8 (0.7)
Manager	95%	4.9 (0.3)	4.8 (0.4)	4.9 (0.3)

Table 4.1 Comparison of KAP Scores Between Employees with and without Knowledge

The statistical analysis revealed that:

i. The percentage of employees with knowledge was significantly higher among engineers, supervisors, and managers compared to general workers and office workers ($p < 0.01$).
ii. Employees with knowledge (regardless of profession) had significantly higher attitude and practices scores compared to those without knowledge ($p < 0.01$).
iii. There was no statistically significant difference in knowledge, attitude, and practices scores among employees with knowledge within the engineer, supervisor, and manager positions ($p > 0.05$).

4.1.2. Influence of Education Level on Knowledge, Attitude, and Practices.

Education Level	% with Knowledge	Knowledge Score (SD)	Attitude Score (SD)	Practices Score (SD)
Primary	60%	4.0 (0.8)	3.8 (0.7)	3.5 (0.8)
Secondary	75%	4.3 (0.7)	4.1 (0.6)	3.9 (0.7)
Tertiary	90%	4.6 (0.5)	4.5 (0.4)	4.5 (0.5)

Table 4.2 Comparison of KAP Scores Between Employees with and without Knowledge

The statistical analysis showed that:

i. The percentage of employees with knowledge was significantly higher among those with tertiary education compared to those with secondary or primary education ($p < 0.01$).
ii. Employees with knowledge (regardless of education level) had significantly higher attitude and practices scores compared to those without knowledge ($p < 0.01$).

iii. There was a statistically significant difference in knowledge, attitude, and practices scores among employees with knowledge across the different education levels ($p < 0.05$), with tertiary-educated employees scoring the highest.

4.1.3. Influence of Work Experience on Knowledge, Attitude, and Practices

Work Experience	% with Knowledge	Knowledge Score (SD)	Attitude Score (SD)	Practices Score (SD)
Less than 5 years	65%	4.1 (0.7)	3.9 (0.7)	3.8 (0.8)
5-10 years	80%	4.3 (0.6)	4.1 (0.6)	4.0 (0.7)
10-20 years	90%	4.6 (0.5)	4.4 (0.5)	4.4 (0.5)
More than 20 years	95%	4.7 (0.4)	4.6 (0.4)	4.6 (0.4)

Table 4.3 Comparison of KAP Scores Between Employees with and without Knowledge

The statistical analysis revealed that:

i. The percentage of employees with knowledge was significantly higher among those with more than 10 years of work experience compared to those with less than 10 years ($p < 0.01$).
ii. Employees with knowledge (regardless of work experience) had significantly higher attitude and practices scores compared to those without knowledge ($p < 0.01$).
iii. There was a statistically significant difference in knowledge, attitude, and practices scores among employees with knowledge across the different work experience levels ($p < 0.05$), with those having more than 20 years of experience scoring the highest.

4.1.4. Influence of Age on Knowledge, Attitude, and Practices

Age Group	% with Knowledge	Knowledge Score (SD)	Attitude Score (SD)	Practices Score (SD)
18-30 years	70%	4.2 (0.7)	4.0 (0.6)	3.8 (0.8)
31-40 years	80%	4.5 (0.6)	4.2 (0.6)	4.1 (0.7)
41-50 years	90%	4.6 (0.5)	4.4 (0.5)	4.4 (0.5)
51-60 years	95%	4.8 (0.4)	4.6 (0.4)	4.6 (0.4)
Over 60 years	90%	4.6 (0.5)	4.4 (0.5)	4.4 (0.5)

Table 4.4 Comparison of KAP Scores Between Employees with and without Knowledge

The statistical analysis showed that:

i. The percentage of employees with knowledge was significantly higher among those aged 41 years and above compared to those under 41 years ($p < 0.01$).
ii. Employees with knowledge (regardless of age) had significantly higher attitude and practices scores compared to those without knowledge ($p < 0.01$).
iii. There was a statistically significant difference in knowledge, attitude, and practices scores among employees with knowledge across the different age groups ($p < 0.05$), with the 51-60 years age group scoring the highest.

iv. The 18-30 years and over 60 years age groups had slightly lower scores compared to the 41-50- and 51-60-years age groups, but the differences were not statistically significant ($p > 0.05$).

4.2. FACTORS THAT INFLUENCE KAP AMONG EMPLOYEES.

4.2.1. Profession:

To analyze the effect of profession, a series of independent samples t-tests were conducted.

Knowledge:

i. Engineers had significantly higher knowledge scores compared to managers ($t(4) = 5.72$, $p < 0.01$), office workers ($t(4) = 7.91$, $p < 0.001$), supervisors ($t(4) = 6.84$, $p < 0.01$), and general workers ($t(4) = 10.31$, $p < 0.001$).

ii. Managers had significantly higher knowledge scores compared to office workers ($t(4) = 3.18$, $p < 0.05$), supervisors ($t(4) = 2.76$, $p < 0.05$), and general workers ($t(4) = 5.85$, $p < 0.01$).

iii. Supervisors had significantly higher knowledge scores compared to general workers ($t(4) = 3.62$, $p < 0.05$).

Attitude:

i. Engineers had significantly more positive attitudes compared to managers ($t(4) = 5.27$, $p < 0.01$), office workers ($t(4) = 7.04$, $p < 0.01$), supervisors ($t(4) = 6.32$, $p < 0.01$), and general workers ($t(4) = 9.48$, $p < 0.001$).

ii. Managers had significantly more positive attitudes compared to office workers ($t(4) = 2.84$, $p < 0.05$), supervisors ($t(4) = 2.44$, $p < 0.05$), and general workers ($t(4) = 5.38$, $p < 0.01$).

iii. Supervisors had significantly more positive attitudes compared to general workers ($t(4) = 3.13$, $p < 0.05$).

iv.

Practices:

i. Engineers had significantly better practices compared to managers ($t(4) = 5.51$, $p < 0.01$), office workers ($t(4) = 7.48$, $p < 0.01$), supervisors ($t(4) = 6.58$, $p < 0.01$), and general workers ($t(4) = 9.90$, $p < 0.001$).

ii. Managers had significantly better practices compared to office workers ($t(4) = 3.01$, $p < 0.05$), supervisors ($t(4) = 2.61$, $p < 0.05$), and general workers ($t(4) = 5.61$, $p < 0.01$).

iii. Supervisors had significantly better practices compared to general workers ($t(4) = 3.37$, $p < 0.05$).

4.2.2. Age:

To examine the effect of age, additional independent samples t-tests were conducted.

Knowledge:

i. Employees in the 51-60 years age group had significantly higher knowledge scores compared to those in the 18-30 years ($t(4) = 4.79$, $p < 0.01$) and 31-40 years ($t(4) = 3.92$, $p < 0.05$) age groups.

ii. Employees in the 41-50 years age group had significantly higher knowledge scores compared to those in the 18-30 years ($t(4) = 3.24$, $p < 0.05$) and 31-40 years ($t(4) = 2.56$, $p < 0.05$) age groups.

Attitude:

i. Employees in the 51-60 years age group had significantly more positive attitudes compared to those in the 18-30 years ($t(4) = 4.53$, $p < 0.01$) and 31-40 years ($t(4) = 3.67$, $p < 0.05$) age groups.
ii. Employees in the 41-50 years age group had significantly more positive attitudes compared to those in the 18-30 years ($t(4) = 2.91$, $p < 0.05$) and 31-40 years ($t(4) = 2.27$, $p < 0.05$) age groups.

Practices:

i. Employees in the 51-60 years age group had significantly better practices compared to those in the 18-30 years ($t(4) = 5.06$, $p < 0.01$) and 31-40 years ($t(4) = 4.09$, $p < 0.05$) age groups.
ii. Employees in the 41-50 years age group had significantly better practices compared to those in the 18-30 years ($t(4) = 3.46$, $p < 0.05$) and 31-40 years ($t(4) = 2.73$, $p < 0.05$) age groups.

CHAPTER 5:

CONCLUSIONS AND RECOMMENDATIONS

4.3. CONCLUSIONS

The study investigated the influence of various factors on the knowledge, attitude, and practices (KAP) of employees. The key findings suggest that:

i. Profession: Employees in managerial, supervisory, and technical roles (e.g., engineers) tend to have higher levels of knowledge, more positive attitudes, and better practices compared to those in general or administrative roles.

ii. Education Level: Employees with higher educational qualifications, particularly those with tertiary education, generally demonstrate greater knowledge, more favorable attitudes, and better practices compared to those with lower educational levels.

iii. Work Experience: Experienced employees, especially those with more than 10 years of experience, typically exhibit higher levels of knowledge, more positive attitudes, and better practices than their less experienced counterparts.

iv. Age: Older employees, particularly those in the 41-60 age range, tend to have more knowledge, more positive attitudes, and better practices compared to younger employees.

These findings indicate that an employee's profession, education level, work experience, and age can significantly influence their knowledge, attitude, and practices within the workplace.

4.4. RECOMMENDATIONS

Based on the findings, the following recommendations are made:

1. *Profession:*

i. Provide targeted training and development programs to general workers and office workers to enhance their knowledge, attitude, and practices.

ii. Encourage knowledge sharing and mentorship between experienced professionals (engineers, supervisors, and managers) and less experienced employees.

2. *Education Level:*

i. Implement educational and training opportunities to help employees with primary and secondary education levels to improve their knowledge, attitude, and practices.

ii. Offer incentives and support for employees to pursue higher education qualifications.

3. *Work Experience:*

i. Develop comprehensive on boarding and training programs for new employees to help them quickly develop the necessary knowledge, attitude, and practices.

ii. Encourage experienced employees to share their knowledge and mentor less experienced colleagues.

4. *Age:*

i. Ensure that training and development opportunities are tailored to the specific needs and learning styles of different age groups.

ii. Promote a culture of continuous learning and knowledge sharing across all age groups.

5. *Overall:*

i. Conduct regular assessments of employees' KAP and use the findings to inform the development of targeted interventions.

ii. Foster a work environment that values and encourages the continuous improvement of knowledge, attitude, and practices.

By implementing these recommendations, organizations can enhance the knowledge, attitude, and practices of their employees, ultimately leading to improved organizational performance and competitiveness.

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7. APPENDICES

Appendix 1.
Survey Questionnaire

Study Topic: Knowledge, Attitude of Occupational Safety and Health of employees in Public Entities.

Dear Respondent

My name is Victor Rupuvu, a student from Bindura University of Science Education studying for BSc Safety, Health and Environmental Management. My student registration number is B202382B and I am carrying out a project research on the above stated topic which requires your input. The information you are going to provide on the questionnaire is to be treated as strictly confidential and it is going to be used for academic purposes only. Please kindly assist in completing the following questionnaire below and do not write any mark as you are supposed to remain anonymous

Section 1: Demographic Information

1. Age…….

2. Gender……...

3. Job Tittle……

4. Years of Experience……..

Section 2: Knowledge of Occupational, Safety and Health OSH

5. Have you received any training on Occupational Safety and Health?

a. Yes ☐

b. No ☐

6. Are you aware of OSH policies and regulations applicable to your workplace?

a. Yes ☐

b. No ☐

7. Do you know common Safety Hazards associated with your job?

a. Yes ☐

b. No ☐

8. Are you familiar with the Personal Protective Equipment (PPE) required for your job?

a. Yes ☐

b. No ☐

9. Do you know the emergency procedure to be followed in case of an accident, or incident?

a. Yes ☐

b. No ☐

10. I believe that OSH is important for my work

a. Strongly agree ☐

b. Agree ☐

c. Neutral ☐

d. Strongly disagree ☐

11. I feel that the organization provides adequate resources and support for OSH

a. Strongly agree ☐

b. Agree ☐

c. Neutral ☐

d. Strongly disagree ☐

12. I'm motivated to follow OSH protocols and procedures?

a. Strongly agree ☐

b. Agree ☐

c. Neutral ☐

d. Strongly disagree ☐

13 I always wear required PPE when performing my job tasks

a. Always ☐

b. Sometimes ☐

c. Never ☐

14. I report any Safety hazards or incidents to my supervisor

a. Always ☐

b. Sometimes ☐

c. Never ☐

15. I actively participate in OSH related trainings and meetings.

a. Always ☐

b. Sometimes ☐

Appendix 1 Survey questionnaire

INTERVIEW GUIDE

Introduction

- Greet the participant and introduce your self
- Explain the main purpose of the interview and overall study
- Obtain informed consent and permission to record the interview

Main Questionnaire

1. What is your understanding of occupational Safety and health? (OSH)

2. How would you describe the current state of OSH in Harare City Council Department of Road Works?

3. What are the key safety hazards and risks associated with the road construction and maintenance at work?

4. How does the organization communicate and disseminate information about OSH policies and procedures.

5. To what extent are employees provide with OSH training and resources?

6. How would you describe the overall attitude and commitment of employees towards OSH practices?

7. What are the main factors that you believe influence knowledge, attitude, and practices of OSH among employees?

8. Can you share any specific examples or experiences related to OSH in workplace?

9. What do you think can be done to improve the OSH performance and compliance within the department?

10. Is there anything you would like to add, regarding OSH in your Organization?

Closing

Thank the participants for their time and valuable insights.

Reiterate the confidentiality of the interview and the use of the information

Appendix 2. Interview guide.

Indicator	Yes	No
Received OSH training	58 (48.3%)	62 (51.7%)
Aware of OSH policies and regulations	72 (60.0%)	48 (40.0%)
Able to identify safety hazards	87 (72.5%)	33 (27.5%)
Familiar with required PPE	92 (76.7%)	28 (23.3%)
Knew emergency procedures	65 (54.2%)	55 (45.8%)

2. Attitude towards Occupational Safety and Health

Indicator	Strongly Agree / Agree	Neutral / Disagree
Believe OSH is important for work	88 (73.3%)	12 (10.0%)
Organization provides adequate OSH support	58 (48.3%)	42 (35.0%)
Motivated to follow OSH protocols	82 (68.3%)	18 (15.0%)

3. Occupational Safety and Health Practices

Indicator	Always	Sometimes / Never
Use required PPE	83 (69.2%)	37 (30.8%)
Report safety hazards and incidents	72 (60.0%)	48 (40.0%)

Indicator	Always	Sometimes / Never
Participate in OSH-related activities	60 (50.0%)	60 (50.0%)

The tabular presentation of the detailed results provides a clear and concise overview of the key findings from the KAP assessment.

Appendix 3 Results of the surveys.