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AN EVALUATION OF OCCUPATIONAL SAFETY AND HEALTH PRACTICES AT THE BULAWAYO CITY COUNCIL

BY

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Abstract

Occupational Safety and Health (OSH) non-compliance at the Bulawayo City Council (BCC) manifests in preventable workplace injuries, resulting in significant human suffering, avoidable financial costs and operational disruptions. Despite Zimbabwe's enactment of the OSH Bill of 2025 and alignment with the International Labor Organization (ILO) Conventions C155 and C187, a critical implementation gap persists within public sector institutions. The study evaluated OSH compliance levels at the BCC, assessed factors influencing compliance, examined employees' perceptions of safety practices and climate and developed evidence-based recommendations for enhancing compliance and reducing workplace injuries. A convergent parallel mixed-methods design was employed, grounded in the Systems Theory and the ILO OSH-Management System (OSH-MS) framework. Quantitative data were collected through a structured questionnaire administered to 362 employees across high-risk departments. Qualitative data were gathered through in-depth interviews with 14 key informants, including managers, safety officers and Worker Union representatives. Descriptive statistics, bivariate analysis and backward logistic regression were used for quantitative analysis while thematic analysis was applied to qualitative data. The median age of the respondents was 40 years (IQR 31-48), with males comprising 58.0%. The OSH Compliance and Governance Checklist revealed a foundational compliance rate of 84.6% with the Zimbabwe OSH Bill of 2025, yet highlighted critical partial compliance in data management systems OSH management system accreditation and dedicated OSH officer deployment. OSH risk awareness was the strongest independent predictor of compliance (AOR=2.04, 95% CI:1.24-3.35, p=0.005). Significant associations were found for human factors (adherence to OSH procedures OR=1.61, p=0.003; effective management communication OR=1.87, p=0.004), systemic factors (clear hazard reporting mechanism OR1.91,p=0.003), and resource-based factors(OSH budget sufficiency OR=2.08, p-0.017; adequate PPE provision)R 1.91, p=0.008; OSH Officer availability OR=1.87, p=0.021). Qualitative findings revealed systemic weaknesses in policy implementation, chronic resource constraints with procurement delays, reactive safety culture, OSH officers' lack of enforcement authority and limited worker participation in safety governance. Key recommendations include institutionalizing comprehensive, department specific OSH training programs, strengthening worker participation mechanisms, establishing dedicated OSH budgets with streamlined procurement processes, implementing formal OSH management systems and empowering OSH officers with enforcement authority. These interventions aim to transform OSH from a statutory obligation into a lived reality for BCC employees, reducing workplace injuries and fostering a proactive preventative culture.

Keywords: Occupational Safety and Health, Zimbabwe Occupational Safety and Health Bill 2025, compliance, public sector, local government, Bulawayo City Council, mixed-methods.

Declaration

I declare that this dissertation is my original work except where sources have been cited and acknowledged. The work has never been or will it be submitted to another university for the award of a degree

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Dedication

This study is dedicated to the Almighty God, whose grace and guidance have sustained me throughout this journey and to my beloved wife, Fortunate Nyahwema whose unwavering prayers, unconditional love and constant encouragement have been instrumental to my success

List of Acronyms and Abbreviations

AOR	Adjusted Odds Ratio
AUREC	Africa University Research & Ethics Committee
BCC	Bulawayo City Council
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
GOZ	Government of Zimbabwe
HIRA	Hazard Identification and Risk Assessment
ILO	International Labor Organization
ILO-OSH-MS	International Labor Organization Occupational Safety and Health Management System
IQR	Interquartile Range
KI	Key Informant
LMICs	Low- and Middle-Income Countries
MS	Mean Square
NSSA	National Social Security Authority
OR	Odds Ratio
OSH	Occupational Safety and Health
OSH-MS	Occupational Safety and Health Management System
PDCA	Plan-Do-Check-Act
PPE	Personal Protective Equipment
SADC	Southern African Development Community
SDGs	Sustainable Development Goals
UN	United Nations

Definition of Key Terms

International Labor Organization is a specialized agency of the United Nations that sets international labor standards, promotes social protection and fosters decent work for all women and men

Occupational Safety and Health (OSH) are a multidisciplinary field concerned with the safety, health and welfare of people at work. In this study, it refers to the systems, policies, and practices implemented by the Bulawayo City Council to prevent workplace injuries, illnesses and fatalities, as guided by national legislation and international conventions

OSH Management System (OSH-MS) is a systematic, cyclical framework for managing safety and health risks in an organization. It follows a Plan-Do-Check-Act (PDCA) methodology, integrating safety into all levels of an organization's operations and management

Personal Protective Equipment (PPE) is equipment worn by workers to minimize exposure to specific occupational hazards that cannot be eliminated by other means, e.g., gloves safety goggles, helmets, respirators, masks and safety footwear

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CHAPTER 1 INTRODUCTION

1.1 Introduction

Occupational Safety and Health (OSH) is a critical determinant of sustainable organizational performance, directly impacting employee well-being, productivity(Lari, 2024) operational efficiency and financial viability. Globally, the International Labor Organization (ILO) has established that a ‘ safe and healthy working environment’ is a fundamental principle and right at work(ILO, 2023). The safe and healthy working environment is embodied in the ILO’s fundamental conventions: The Occupational Safety and Health Convention of 1981 (No. 155)(Tshoose, 2014) and the Promotional Framework for Occupational Safety and Health Convention of 2006 (No. 187)(ILO, 2022). These conventions provide a foundational structure for member states to develop robust OSH systems aimed at preventing workplace harm, of which Zimbabwe has been member of the ILO since 1980 (ILO, 2024).

In Zimbabwe, OSH has been codified into a modern and comprehensive legal framework through the Occupational Safety and Health Bill of 2025 (GOZ, 2025) that establishes a national preventative safety and health culture by creating a robust national OSH system with clear roles for employers, workers and the National Social Security Authority (NSSA). The Zimbabwean Occupational Safety and Health Bill of 2025(GOZ, 2025) also established a dedicated Department of Occupational Safety and Health within NSSA tasked with promoting OSH, formulating standards and crucially enforcing compliance.

Therefore, in Zimbabwe, NSSA is the primary body governing occupational safety through regulations derived from international standards.

1.2 Background of the Study

The pursuit of safe working environments aligns with broader global agendas, including the United Nations Sustainable Development Goals (SDGs), specifically SDG 8 on decent work and economic growth(UN, 2025). The ILO's fundamental OSH Conventions, C155 and C187 requires member states to formulate, implement and periodically review coherent national policy on safety (ILO, 2023). A key component to this system is an adequate and appropriate inspection to secure enforcement.

The ILO estimated that globally over 2.3million workers die annually from work-related accidents and diseases(ILO, 2019), while millions more suffered non-fatal injuries, representing a significant human and socio-economic burden. Therefore, the success of OSH to prevent these fatalities is contingent upon effective implementation and compliance at an organizational level.

Despite these robust international and national frameworks, a persistent implementation gap was observed especially in low-and middle-income countries (LMICs) and within public sector entities(Sorensen et al., 2017). In Zimbabwe, the local government sector has historically documented challenges in adhering to OSH regulations, often attributed to resource constraints, bureaucratic inertia and a weak safety culture(Mandowa et al., 2025) (Mupanedemo , 2024) (Chazingwa , 2024)

Public sector institutions in Zimbabwe, for example local government municipalities, due to their scale and essential services nature that include sanitation, waste management, road construction and provision of primary health care (Marumahoko et al., 2020), carried a significant responsibility for upholding OSH standards. High workplace injuries not only cause profound human suffering but can lead to increased operational costs, absenteeism and reputational damage, thereby undermining BCC's ability to deliver services effectively and fulfill its duties under the national OSH framework

Despite this global and normative commitment, the implementation of OSH standards remained a challenge, particularly in low to middle income economies (Sorensen et al., 2017) (Mandowa et al., 2025) and within the public sector where resource constraints and bureaucratic inertia can impede progress. In Zimbabwe, the local government sector has historically demonstrated challenges in adhering to OSH regulations (Zhakata, 2025) (Mupanedemo, 2024) (Chazingwa, 2024). The recent tragic examples of council workers' deaths while attending to sewer blockages in Gweru, Harare and Kadoma. Such incidents were a stark reminder of the potentially fatal consequences of non-compliance with the preventative principles enshrined in OSH conventions.

The Bulawayo City Council (BCC), as the second-largest metropolitan authority in Zimbabwe, was a microcosm of this challenge. With a substantial workforce engaged in high-risk departments, BCC's internal records point to a troubling trend of workplace injuries, see Figure 1. While the new national OSH Act and the oversight of NSSA provided the regulatory framework; the specific factors driving non-compliance within BCC's unique operational context remain inadequately understood and documented prior

to this study. This study was motivated by the urgent need to bridge this knowledge gap. As a citizen and ratepayer who was also employed by the BCC in a high-risk department, namely the Health Services Department. The researcher sought to generate evidence that can transform OSH from a statutory obligation into a lived reality for BCC employees.

1.3 Problem Statement

Occupational Safety and Health (OSH) non-compliance at the Bulawayo City Council (BCC) manifested as preventable workplace injuries, resulting in significant human suffering, avoidable financial costs and operational disruptions. Preliminary data from the BCC's accident register of 2025 indicated a concerning frequency of reportable incidents (Figure 1), served as a prima facie indicator of systemic OSH deficiencies. This pattern suggested a critical disconnect between national OSH policy framework and its practical implementation at the organizational level.

Existing literature confirmed that public sector organizations in LMICs struggle with OSH implementation due to resource constraints and bureaucratic challenges (Sorensen et al., 2017) (Mandowa et al., 2025). However, these studies did not provide a granular empirical analysis of the factors driving compliance within complex operational environment of a major Zimbabwean municipality like the BCC.

Consequently, the BCC management operated without a targeted and evidence-based diagnostic of its OSH system. This lack of an analytical framework hindered the development of effective, context-specific interventions, perpetuating high injury rates and stifling the development of the proactive safety culture championed by the OSH Act of 2025(GOZ, 2025).

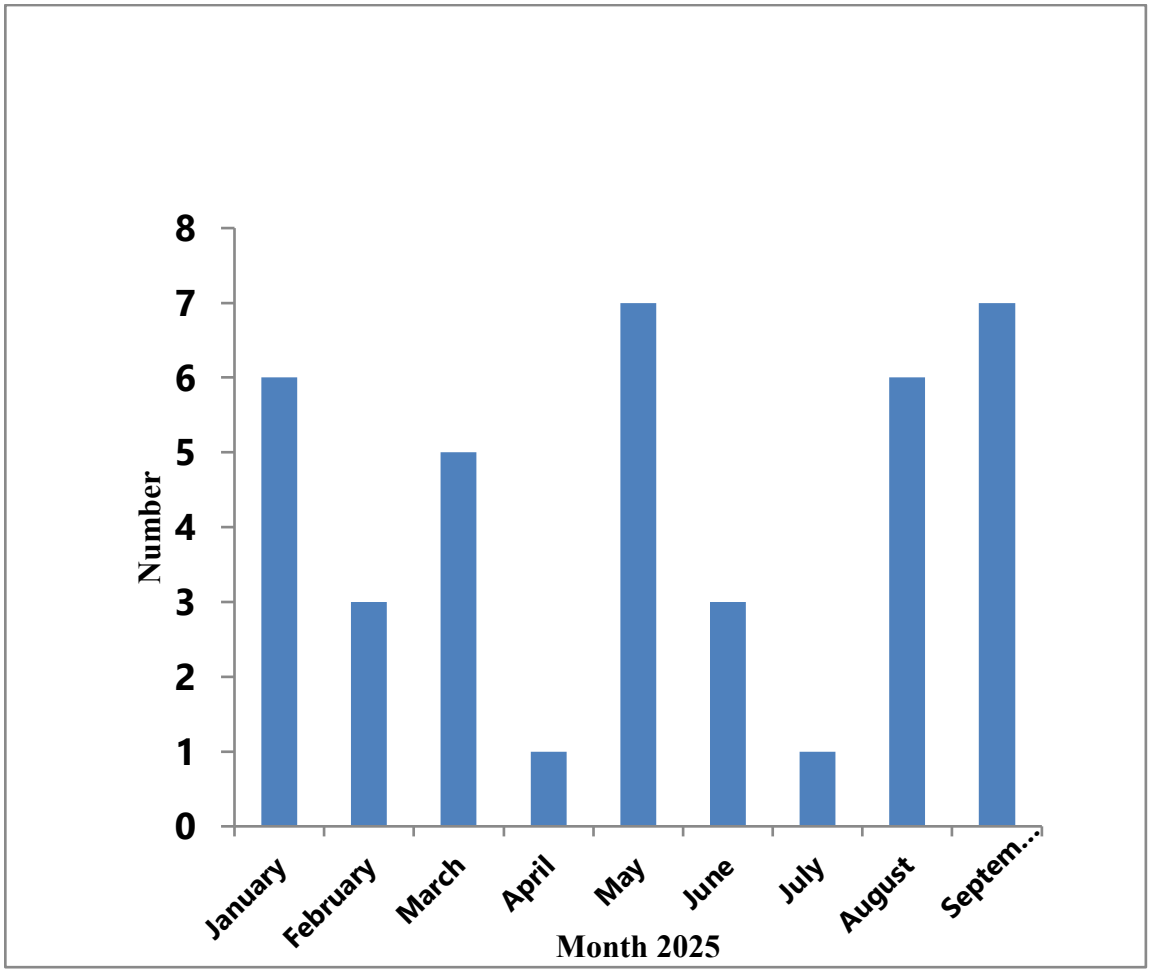

Figure 1. Injuries at the Bulawayo City Council in 2025 adapted from the City of Bulawayo Accident Register of 2025 (City Of Bulawayo, 2025)

1.4 Research Objectives

1.4.1 Broad Objective

- The broad objective of this study was to evaluate the level of Occupational Safety and Health (OSH) administration compliance at the Bulawayo City Council

against the set benchmarks set by the ILO conventions C155 and C187 and the guidelines set by Zimbabwe's Occupational Safety and Health Bill of 2025, and to develop evidence-based recommendations for enhancing compliance and reduce workplace injuries.

1.4.2 Specific Objectives

- To quantitatively assess, using a structured 26-item OSH Compliance and Governance Checklist (derived from Zimbabwe's OSH Bill of 2025) the current state of Occupational Safety and Health (OSH) compliance across 7 high-risk departments (Water& Sanitation, Works, Health Services, Housing & Community Services, Security/Loss Control, Fire, Ambulances departments and sections at the Bulawayo City Council (BCC) by March 2026.
- To examine the perceptions of non-managerial employees in high-risk departments regarding OSH practices, risks and the safety climate during the first quarter of 2026
- To assess the factors influencing the level of OSH compliance at the BCC by March 2026
- To develop and deliver by March 2026, a written evidence-based strategic framework containing actionable recommendations with responsible person, timeline and measurable outcome to improve OSH compliance and reduce workplace injuries at the BCC, based on integrated quantitative and qualitative findings.

1.5 Research Questions

To achieve the research objectives, this study sought to answer the following research questions

- What was the current state of OSH compliance within BCC's high-risk departments?
- How did non-managerial employees in high-risk departments perceive OSH practices, risks and organizational safety climate?
- What were the factors that facilitated or hindered OSH compliance at the BCC?
- What evidence-informed strategies could be formulated to enhance OSH compliance and foster a preventative safety culture at the BCC?

1.6 Research Hypothesis

The researcher used the following hypothesis to assess the factors associated with OSH compliance:

H_0: There were no factors associated with the level of OSH compliance at the BCC

H_1: There were significant factors that were associated with the level of OSH compliance at the BCC

1.7 Significance of the Study

The study was positioned to generate critical, contextual evidence on OSH implementation barriers within a major Zimbabwean municipality. The findings provided BCC management with a diagnostic tool for data-driven decision-making, enabling

targeted resource allocation, system strengthening and strategic planning for OSH. By identifying and advocating for the remediation of key injury risk factors, the study contributed to the safety and well-being of BCC employees.

Furthermore, the study offered a practical case study for other local municipalities in Zimbabwe and similar contexts, informing the adaption and implementation of national OSH policies. Its findings enriched the academic literature on OSH in the public sector in LMICs, addressing a noted gap in empirical, context specific research and contributing new knowledge on the application of the ILO OSH-MS framework in a municipal setting. Ultimately, the study fulfilled academic requirements while developing the researcher's competencies in analytical and strategic management within the public sector context.

1.8 Delimitation of the Study

The scope of this research was delimited to BCC employees only. The geographical boundary of the research was delimited to all facilities under the care of the Bulawayo City Council, including those outside the boundaries of the urban area. The timeframe of the research was delimited to 2025. The methodology of the research was delimited to convergent parallel mixed-methods design with quantitative and qualitative strands

1.9 Limitation of the Study

The study had several limitations. Some potential participants with valuable information might not have been willing to participate due to absence of financial rewards. To mitigate this, the researcher motivated participants by indicating how the results would impact the future of OSH compliance and injury reduction at the BCC. Respondents might have

provided biased answers to avoid victimization by managers and the researcher addressed this by giving assurance of anonymity, privacy and confidentiality.

Time and financial constraints posed limitations to effectively exploring the research due to the academic and work pressures the researcher was undertaking simultaneously. To mitigate these limitations, the researcher adhered to a strict time schedule and used cost-effective strategies. Finally, the limited number of local studies on OSH compliance in a major municipal authority made it difficult to produce a relevant and dedicated local literature review. to mitigate this, the researcher drew literature from similar environments, including research from other low-and middle-income countries (LMICs)

CHAPTER 2 REVIEW OF RELATED LITERATURE

2.1 Introduction

This chapter provides a comprehensive review of existing literature relevant to the evaluation of Occupational Safety and Health (OSH) compliance and practices, with particular focus on public sector and local government contexts. The review was structured to build a theoretical and contextual foundation for the study, drawing from international frameworks, empirical studies and an analysis of systemic, resource-based and human factors influencing OSH outcomes. The synthesis of global best practices and identification of gaps existing in literature, particularly in the Zimbabwean context informed the methodological approach and analytical framework for assessing OSH practices at the Bulawayo City Council (BCC). The literature review was organized to address the research questions concerning the state of OSH compliance, the factors influencing it and employee perceptions of safety practices and climate.

2.2 Theoretical Framework: Systematic Management for OSH

The theoretical foundation of this study was anchored on the Systems Theory and the International Labor Organization's (ILO's) Framework for Occupational Safety and Health Management Systems (OSH-MS). The Systems Theory is an interdisciplinary theory with which phenomena can be investigated from a holistic approach (Harney, 2024). Its key concepts include the notion that systems are made of interdependent

components that interact with each other, emphasizing the examination of an entire system rather than individual parts.

The Systems Theory states that characteristics of a system arise from the interaction of its components and cannot be found in any single part. Systems can use feedback loops to regulate themselves and adapt to changes. When applied to OSH, this means that safety outcomes are not the result of isolated factors but emerge from the dynamic interplay between an organization's structure, culture and processes.

The International Labor Organization (ILO) has stated that the effective management of OSH is no longer viewed as mere regulatory obligation but as a core strategy function that is integral to organizational suitability and performance(ILO, 2016). This perspective is underpinned by systematic management models that provide a structured approach to risk management, and the most prominent of these is Occupational Safety and Health Management System (OSH-MS) (Mtikitiki et al., 2025).

The ILO's OSH-MS provides a practical, systematic model for implementing the Systems Theory. The OHS-MS mandates a continuous cycle of Planning, Doing, Checking and Acting (PDCA) to manage safety and health risks proactively in various settings (Akpan et al., 2025) (Zondo, 2021) (Musungwa & Kowe, 2022) . This framework is not merely a technical tool but a strategic management philosophy that aligns with the principles of strategic business administration, emphasizing that effective OSH is integral to core organizational performance and sustainability

This study therefore maintained that the level of OSH compliance at the BCC was a direct function of the robustness of its internal OHS-MS, as measured against international

standards of the ILO Conventions C155 and C187 and the Zimbabwean OHS Bill of 2025. The theoretical expectation was that weakness or failures of BCC's OSH-MS would manifest as non-compliance and high incidence of workplace related injuries, whether in planning (policies), doing (implementation), checking (monitoring) or acting (corrective action). This theoretical framework moved the analysis from simple checklist violations to a diagnostic evaluation of the underlying managerial system.

2.2.1 Systemic Factors

Systemic Factors represent The Planning and Checking of the OSH-MS. These refer to the formal structures and processes of the OSH-MS and includes the following indicators:

- Existence and quality of OSH policies and procedures
- Effectiveness of management commitment and leadership (ILO, 2016)
- Robust hazard identification
- Risk assessment
- Incident investigation processes
- Efficiency of safety auditing and reporting mechanism

2.2.2 Resource-Based Factors

Resource-Based factors represent the Doing of the OSH-MS and they encompass the tangible and intangible assets allocated to implement OSH-MS. The indicators for resource-based factors include:

- Adequacy of financial allocation for OSH (Grimani et al., 2018)

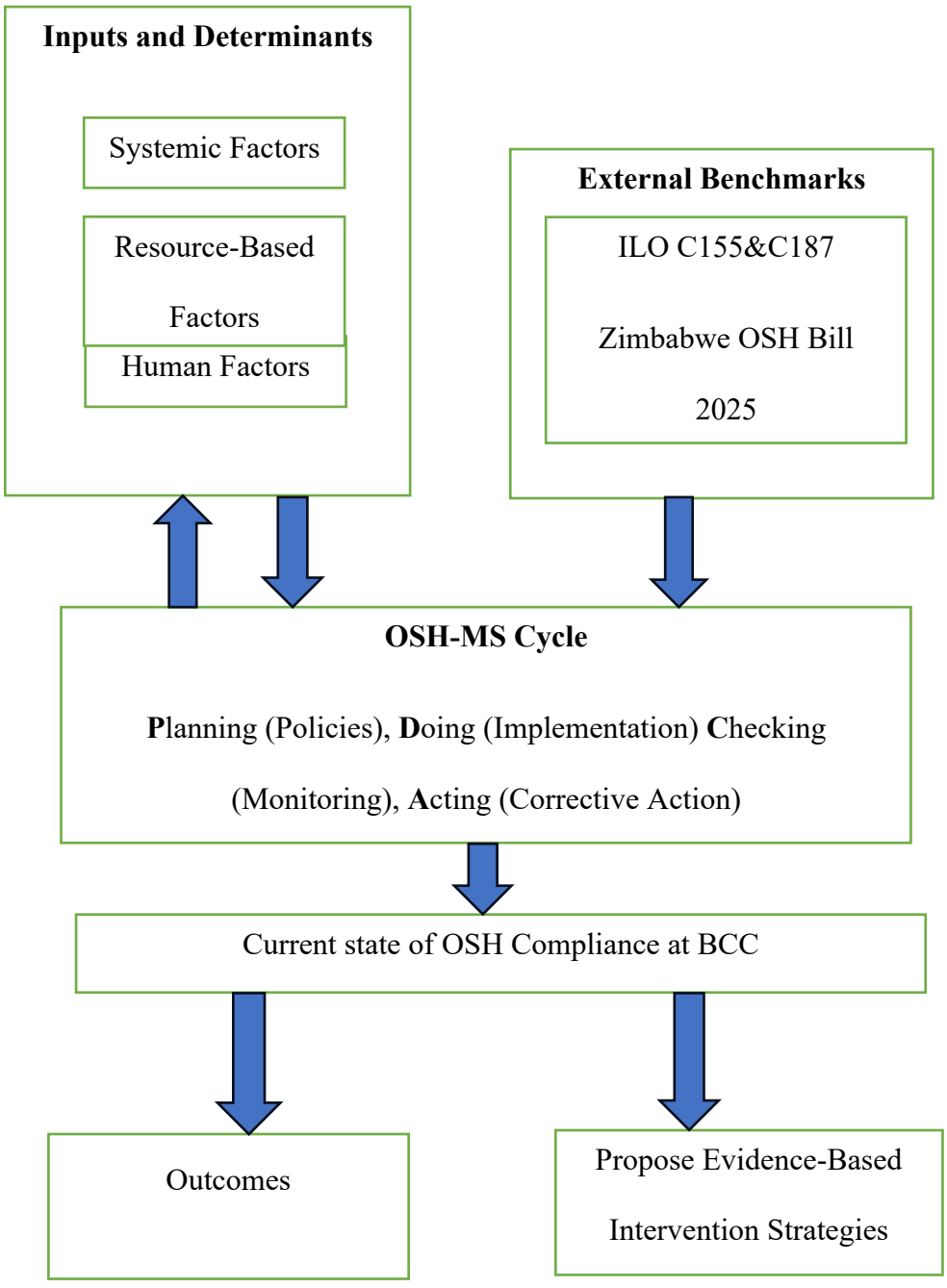

Figure 2. Occupational Safety and Health Conceptual Framework adapted from the Occupational Safety Health -Management System Cycle(ILO, 2016)

- Availability and condition of Personal Protective Equipment (PPE) and safe machinery (Marumahoko, 2020)
- Sufficiency of dedicated and competent OSH personnel (Astutik et al., 2024)

2.2.3 Human Factors

Human factors are the Acting of the OSH-MS. These human factors involve the behavioral, cultural and perceptual elements of the human workforce and the indicators include the level of employee safety awareness and training, the degree of worker participation and consultation (ILO, 2016), the overall organizational safety culture and climate (Kalteh et al., 2021) and individual risk perception and compliance with safety procedures. Workers' subjective assessment of risk influences their safety behavior. If a worker perceives that a risk is low or management does not take safety seriously, they are less likely to comply with safety rules, even if personal protection equipment and procedures are available (Kumar & Bhattacharjee, 2023).

2.2.4 The Intervening Variable

The intervening variable of the OSH-MS Cycle are the Planning, Doing, Checking and Acting (PDCA). They represent the core operational process of the organization's safety and management. The 3 determinants categories directly influence how effectively the OHS-MS cycle functions. The cycle itself is measured against the external benchmarks

2.2.5 The Dependent Variable (Outcome)

The level of OSH compliance at the BCC is the outcome variable that the study seeks to explain. It is defined as the degree to which the BCC's practices and systems align with the benchmarks set by the ILO Conventions and the Zimbabwe OSH Bill of 2025(ILO, 2020) (GOZ, 2025). It will be measured through a combination of documented injury rates, audit findings, and observational and perceptual data gathered from the research.

2.2.6 The External Influence

The external benchmarks namely the ILO Conventions C155 and C187 (Hamzaoui, 2024), and the Zimbabwe OSH Bill of 2025 are constant standards against which the BCC's OSH compliance is evaluated (ILO, 2023) . The Zimbabwean OSH Bill of 2025 is also set in line with keeping with these international standards.

2.2.7 OSH Relationship Proposition with the Conceptual Framework

The conceptual framework proposes these relationships between the variables. Systemic, Resource-Based and Human Factors collectively determine the effectiveness of the OSH-MS cycle. A deficiency in any of the 3 determinant categories will negatively impact the OSH-MS cycle, leading to a lower level of OSH compliance. These factors are interrelated. For example, a systemic failure in planning (e.g., no training policy) leads to a human factor problem (untrained workers), which is compounded by a resource-based constraint (no budget for training). This cyclical relationship explains the persistent nature of OSH non compliance

Understanding the specific nature and interaction of these determinants within the BCC will lead to a targeted, evidence-based intervention strategies, ultimately improving outcomes in employee wellbeing, operational efficiency and injury reduction. These are the factors (Section 2.2) investigated as the root cause of OSH compliance levels

2.3 Relevance of the Theoretical Framework to the Study

The Systems Theory and the ILO OSH-MS framework provided a lens for analyzing OSH compliance at the BCC. The conceptual framework for this study was developed by operationalizing these theories into specific, measurable variables. The Systems Theory justified the examination of how systemic, resource-based and human factors interact to produce the overall compliance. The ILO OSH-MS framework, with its PDCS cycle provided a diagnostic tool for identifying where the BCC's OSH system was failing. This was diagnosis was whether in policy formulation (Plan), resource allocation and implementation (Do), monitoring and auditing (Check), or corrective action and learning (Act). By grounding the study in these established theories, the research was able to move beyond superficial description on the level of compliance to deeper understanding of the systemic root causes.

2.4 Synthesis of Empirical Evidence

2.4.1 The State of OSH Compliance in Local Authorities in Africa

Public sector institutions, particularly local government, are critical yet challenging environments for OSH implementation. These institutions tend to typically be large employers engaged in a wide array of high-risk services such as waste management, water

and sanitation, road construction and public health (Marumahoko, 2020). The nature of this work exposes employees to a complex mix of physical, chemical, biological and ergonomic hazards.

Despite this, the public sector and local government municipalities in many low-to-middle income countries (LMIC's) lag behind the private sector in OSH performance. This has been attributed to several factors that include bureaucratic inertia in which complex procurement and Human Capital processes can delay the timely acquisition of safety equipment or hiring of OSH staff. Political interference and funding instability can shift budgets and priorities during political changes, making long term investment in OSH systems difficult (Moyo et al., 2015). Unlike private companies where poor safety can directly impact profits and shareholder value, the consequences for public entities can be less immediate or direct, reducing the incentive for proactive investment and accountability (Sorensen et al., 2017).

Research in the Southern Africa Development Community (SADC) region municipalities' has documented high injury rates among waste collectors and water services technicians, linked to a combination of inadequate PPE, poor vehicle safety and lack of training, exampled in Tanzania (Mrema et al., 2018) and South Africa (Moyo et al., 2015). Similarly , a study on municipal workers in India highlighted the high prevalence of musculoskeletal disorders and infections among sanitation workers, driven by systemic neglect and deeply entrenched social inequalities (Prüss-Üstün et al, 2016).These findings from municipalities in other LMICs provide a strong comparative basis for understanding the potential challenges at BCC

2.4.2 Factors that Facilitate or Hinder OSH Compliance in Africa

Existing literature identifies 3 categories of factors that influence OSH compliance which are systemic, resource-based and human factors (see Section 2.2.1-3). Systemic factors refer to the formal structures and processes of the OSH management system , including the existence and quality of the OSH policies, the effectiveness of the management commitment and leadership (ILO, 2020), robust hazard identification, incident investigation processes and the efficiency of safety and auditing reporting mechanisms. Resource-based factors encompass the tangible and intangible assets allocated to implement the OSH-MS including the adequacy of financial allocation to OSH, the availability and condition of personal protective equipment (PPE), safe machinery ad sufficiency of dedicated and competent OSH personnel(Marumahoko, 2020). Human factors involve the behavioral, cultural and perceptual elements of the workforce.

In the SADC region, studies have shown that these factors are often interlinked, with resource constraints undermining both systemic processes and human capacity (Moyo et ..al., 2015). Factors that hinder (barriers) to OSH compliance include inadequate resources and finance. Lack of capital for implementing and sustaining OSH-MS is a major impediment especially in small to medium-sized enterprises(Mandowa et al., 2025). A production-oriented culture that presents with employers often prioritizing production targets and profitability over safety is a barrier to OSH compliance as OSH is viewed as a cost rather than an investment (Mixafenti et al., 2025). In South African local municipalities, a study showed that weak regulatory enforcement through inadequate

monitoring, lack of labor inspectors and inadequate legislative frameworks hinders OSH compliance as routine inspections are insufficient (Moji et al., 2022).

Workers and managers who lack education on OSH hazards and regulations contribute to poor compliance. (Mandowa et al., 2025). This can be due to lack of training and knowledge. A majority of the African workforce operates in the informal sector, where there is little to no coverage by formal OSH services or accident compensation (Moyo et al., 2015) (Ncube & Kanda, 2018). These informal economy dynamics contribute to OSH barriers leading to OSH non-compliance. Another barrier is shortage of skilled OSH practitioners. There is a significant shortage of qualifies safety and health practitioners across various sectors in Africa (Mandowa et al., 2025). Ineffective us of PPE exampled by inconsistent use of PPE, particularly among informal sector workers due to unavailability or discomfort contributes to OSH non-compliance in South African (Mashimbyi et al., 2025) and Nigerian welders (Obarhoro et al., 2020)

Factors that facilitate or enhance OSH include senior management commitment with strong commitment and proactive involvement from top management (Mandowa et al., 2025) (Ssemuddu et al., 2025), active participation from employees in safety decisions and regular, targeted training to raise awareness and improving safety culture (Lu et al., 2025), effective risk control strategies by establishing a pro-active hazard identification, risk assessment and communication systems (GAN, 2019), regular OSH inspections and Audits through consistent internal and external inspections ensuring that OSH standards are upheld (Le & Nguyen, 2025) and a proactive safety culture that moves beyond mere ‘paper compliance’ to a safety culture that promotes a preventive approach (ILO, 2019).

2.4.3 Employees' Perceptions of OSH Practices, Risks and Safety Climate in Africa

Employees' subjective assessment of risk, or risk perception is a critical determinant of safety behavior. If a worker perceives that a risk is low or that management does not take safety seriously, they are less likely to comply with safety rules, even if PPE and procedures are available (Kumar & Bhattacharjee, 2023). The concept of safety climate, which referred to employees' shared perceptions of the importance of safety in their organization has been identified as a strong predictor of safety outcomes (Kalteh et al., 2021).

Research in African public sector contexts has indicated that safety climate is often shaped by factors such as the visibility of management commitment, the effectiveness of communication about safety issues and the fairness of reporting hazards (Moyo et al., 2015). Furthermore, worker consultation and participation have been shown to play a crucial role in shaping positive safety perceptions as they empower employees and demonstrate that their safety concerns are valued (ILO, 2020).

2.4.4 The Zimbabwean OSH Context

In Zimbabwe, OSH has been governed historically by a patchwork of outdated statutes. The recent Occupational Safety and Health Bill of 2025 (GOZ, 2025) represents a significant step forward, aiming to establish a modern , comprehensive legal framework. The Bill aligns with the ILO Conventions C155 and C187 by creating a robust national OSH system, establishing a dedicated Department of Occupational Safety and Health within the National Social Security Authority (NSSA), and clarifying the roles of

employers, workers, and the state in fostering a ‘national preventative safety and health culture’.

However, the passage of the law is the first step. The history of OSH in Zimbabwe, particularly in the public sector, points to significant implementation gap. Local government sectors have historically demonstrated challenges in adhering to OSH regulations (Chazingwa, 2024) (Mupanedemo, 2024) (Zhakata, 2025). The tragic deaths of council workers in sewer systems in Gweru, Harare and Kadoma are stark, real-world indicators of systemic failure. These incidents suggest potential breakdowns in multiple areas which include lack of confined space entry procedures (systemic), non-availability of gas detectors and breathing apparatus (resource-based) and possibly a culture that does not prioritize preventative measures (human factors).

Empirical research in OSH in Zimbabwe is growing but remains limited, especially within municipal authorities. Studies have focused on the manufacturing sector (Mandowa et al., 2025), mining and agriculture. The specific confluence of systemic, resource-based and human factors driving the level of compliance at the BCC remain poorly understood and documented and hence this study aims to fill this critical gap.

2.4.5 Research Gap

The reviewed literature established a clear global consensus on the importance of OSH and provided robust theoretical frameworks (Systems Theory and OSH-MS) for its analysis. Empirical studies from both high-income countries and LMICs consistently point to the triad of systemic, resource-based, and human factors as the primary determinants of OSH compliance and performance.

In high-income countries, the challenge is often refining already established OSH-MS, integrating technological solutions and managing psychosocial risks (Lucchini&Landrigan, 2015). The focus for these countries is continuous improvement and culture maturation. However, in LMICs, the challenges are more fundamental. They include establishing basic OSH systems, securing minimal resource allocation, overcoming deep-seated cultural and behavioral barriers and strengthening weak enforcement regimes.

Within the LMIC context, the public sector, specifically the local government, emerged as a particularly vulnerable and under-researched area. While studies from South Africa, Ghana, Tanzania and India provide valuable insights, the applicability of their findings to unique socio-economic, political and legal context of Zimbabwe's municipal system cannot be assumed.

Therefore, a significant research gap exists. There was a pressing need for a comprehensive, empirical study that contextualizes the problem by systemically evaluating OSH compliance within a major Zimbabwean municipality, the BCC, against the new national benchmark (OSH Bill 2025)(GOZ, 2025) and international standards. Such a study was needed to move beyond documenting injuries to quantitatively and qualitatively diagnosing the specific human, systemic and resource-based factors driving compliance, ultimately generating evidence-based strategies tailored to the specific realities at the BCC. This research was designed to fill this gap

2.5 Summary

This chapter reviewed the literature relevant to evaluating OSH compliance in a public sector context. The theoretical framework, grounded in the Systems Theory and the ILO OSH-MS framework, was presented and its relevance to the study established. The literature review was organized around the research questions, exploring the state of OSH compliance in local authorities, the factors that influence it and employee perception of safety. This chapter concluded by identifying the research gap that this study aimed to address which was the lack of empirical evidence on the specific interplay is systemic, resource-based and human factors influencing OSH compliance in a major Zimbabwean municipality.

CHAPTER 3 METHODOLOGY

3.1 Introduction

This chapter outlines the detailed methodological plan that was followed in conducting the research. it specifies the research design, study setting, population, sampling techniques and strategies, data collection and management procedures and ethical considerations. A rigorous and transparent methodology was essential for generating credible evidence that could inform strategic decision-making at the BCC (Creswell & Creswell, 2018) and contribute to the broader field of OSH in the public sector.

3.2 The Research Design

This study employed a convergent parallel mixed-methods design. This approach involved the simultaneous collection and separate analysis of both quantitative and qualitative data, with the results integrated during the interpretation stage to provide a comprehensive understanding of the research problem (Creswell & Creswell, 2018). The rationale for a mixed-methods approach was the complexity of OSH systems as outlined in the contextual framework, necessitated an approach that can both measure generalizable patterns and explore underlying meanings and contexts.

The quantitative component consisted of a cross-sectional survey that was used to quantify the perceptions of employees regarding OSH compliance and the systemic factors, resource-based factors and human factors. This allowed for a statistical generalization of findings across different high-risk departments at the BCC. The qualitative component explored complex systemic processes, management perspectives and nuanced aspects of

safety culture that a survey alone could not fully capture. The convergence of these 2 data strands provided a robust, multi-faceted evaluation of OSH compliance at the BCC, aligning with the Systems Theory perspective that OSH outcomes emerge from a complex interplay of factors.

3.3 Study Setting, Population and Sampling

3.3.1 Study Setting

The study was conducted within the Bulawayo City Council in Bulawayo (see Figure 3 below), the second largest metropolitan local authority in Zimbabwe (GOZ, 2022). This research focused on high-risk operational departments and sections, including Water and Sanitation, Works Department (Roads and Construction), Health Services (Clinical and Environmental Health), Ambulances and Fire Sections, Housing and Community Services and Security/Loss Control. These departments and sections were selected because their employees are routinely exposed to physical, biological, ergonomic and workplace hazards making them critical units for assessing OSH compliance (Marumahoko, 2020).

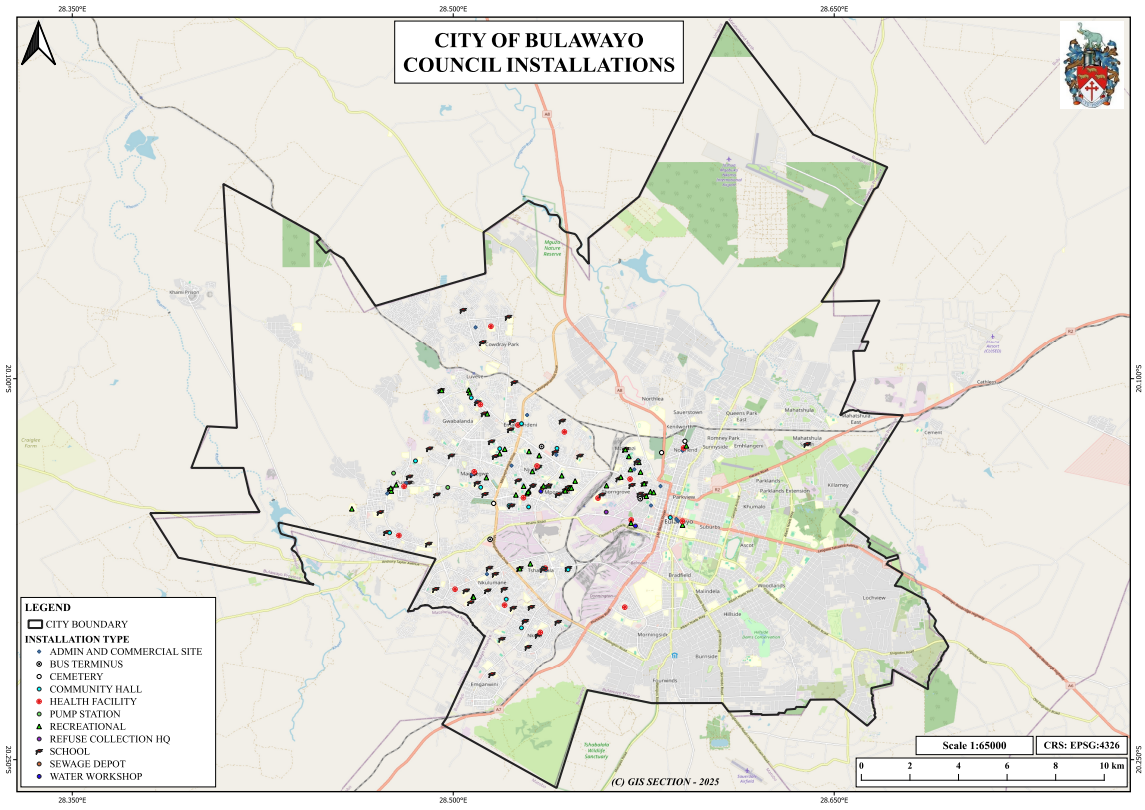

Figure 3. Bulawayo City Council Installations (adapted from the Geographic Information System Unit of The City of Bulawayo 2025(City Of Bulawayo, 2025))

3.3.2 Study Population

The target population comprised all employees of the BCC who worked in high-risk operational departments or sections. According to the BCC Staff Establishment Report of October 2025, the total number of permanent and contract across all departments was 3,885 employees (City Of Bulawayo, 2025). For this study, the focus was on high-risk departments, which collectively accounted for a significant portion of the workforce. Based on the BCC Staff Establishment report of 2025, the high-risk departments identified for this study had the following actual staffing numbers inclusive of both contract and

permanent employees: Water and Sanitation (576), Works Department (362), Health Services (980), Housing and Community (622), Loss Control & Fire Department (999) (City Of Bulawayo, 2025). Therefore, the total study population from these high-risk departments is estimated at approximately 3,539 employees.

3.3.3 Sample Size

For the quantitative component, the sample size was calculated using the Dobson formula for cross-sectional studies: $n = [Z^2 \times p(1-p)] / d^2$ where,

- Z = Z score for 95% confidence level (1.96)
- p = estimated proportion of non-compliance on OSH. A conservative estimate of 50% (0.5) will be used due to lack of prior specific data
- d = margin of error (5.3% or 0.053)

a margin of error of 5.3% (0.053) was used, which according to methodological guidance allows the researcher to adjust precision slightly to achieve feasible sample sizes without compromising validity (Beard, 2024)This yielded a minimum sample of 341. Accounting for a potential of 10% non-response, the target sample size was approximately 378 for non-managerial employees. A stratified random sampling was used to ensure representation from all selected high-risk departments. The total target sample was proportionally allocated to each department based on the number of employees. Within each stratus (department), simple random sampling was used to select individual participants from staff registers.

For the qualitative component, purposive sampling was employed to select 14 key informants, including safety officers, union representatives and managers from high-risk departments as data saturation was reached. The final sample achieved 362 respondents for the quantitative survey and 14 key informants for the in-depth interviews.

Table 1. Sample Distribution

Department	Total Employees	Proportion (%)	Sample Allocation
Water & Sanitation	576	16.28	62
Works Department	362	10.23	39
Health Services	980	27.69	104
Housing & Community	622	17.58	66
Loss Control & Fire Department	999	28.23	107
Total	3539	100	378

3.3.4 Inclusion and Exclusion Criteria

The inclusion criteria encompassed permanent and contract workers who worked in the selected high-risk departments for at least 6 months and provided informed consent. The exclusion criteria were administrative staff with minimal exposure to operational hazards, employees with less than 6 months in service and any individual who after being fully informed declined to participate

3.4 Data Collection Instruments

3.4.1 Quantitative Instrument

The primary instrument for the quantitative component was a close-ended, self-administered structured questionnaire. Questionnaires are frequently used instrumentally as a standardized and a standardizing tool to ask a set of questions to participants(Ranganathan & Caduff, 2023). The questionnaire used a 5-point Likert scale(Joshi et al., 2015) form and multiple-choice questions.

3.4.2 Qualitative Instruments

Qualitative data were collected through in-depth interviews using a semi-structured interview guide. The guide probed the 3 factor domains (systemic, resource-based and human) as well as challenges and recommendations. A document analysis was also used to systemically review key BCC OSH documents, including OSH policy manuals, records of workplace incidents and injuries (anonymized), internal audits and inspection reports, training records and procurement records of safety equipment

3.4.3 OSH Compliance and Governance Checklist

The OSH Compliance and Governance Checklist was developed as a structured diagnostic tool derived explicitly from the Zimbabwe Occupational Safety and Health Bill of 2025. This instrument was designed to systematically evaluate the BCC's alignment with the national legal requirements across 26 items covering administrative, operational and strategic areas. The Checklist served as a critical third data collection instrument,

providing an objective benchmark to complement the subjective perceptions gathered from quantitative surveys and qualitative interviews.

3.5 Pilot Study

A pilot study was conducted with a small group of 12 employees at the Bulawayo Provincial Medical Directorate, which had a similar OSH setting to the BCC and was not participating in the main study. The pilot tested the clarity, validity and reliability of the questionnaire and the interview guide. The feedback from the pilot was used to refine the instruments, adjust question phrasing, develop clear instructions for participants and estimate the time required for completion. Cronbach's Alpha(Taber, 2018) was calculated for the Likert-scale sections of the questionnaire to ensure internal consistency and reliability (target alpha more than 0.7).

3.6 Data Collection Procedure

Prior to data collection, formal institutional permission was obtained from the BCC Human Capital Director. Ethical approval was obtained from the Africa University Research Ethic Committee (AUREC) before any data collection. For the quantitative survey, a sampling frame was developed for each high-risk department using the BCC Staff Establishment Report of 2025 (City Of Bulawayo, 2025). Participants were selected using random sampling and were approached in person by the researcher. The informed consent process was conducted individually and questionnaires were administered during educated sessions arranged by immediate supervisors.

The researcher was present to explain the purpose of the study and address any questions. Completed questionnaires were assigned unique identification numbers and stored securely. For the qualitative interviews, key informants were identified through purposive sampling and approached individually. Interview appointments were scheduled at times and locations convenient for the participants. Informed consent was obtained prior to each interview, which were audio-recorded with the participants permission and later transcribed verbatim

3.7 Analysis and Organization of Data

3.7.1 Quantitative Data Analysis

Survey data was coded, cleaned and entered into Epi Info (CDC, 2022). Analysis included descriptive statistics with frequencies, percentages, means, medians, standard deviations and inter-quartile range (IQR) to summarize the data. Inferential statistics with bivariate analysis (Chi-square tests for categorical variables) was used to test associations between independent variables and OSH compliance.

Multivariate backward logistic regression was employed to identify independent systemic, resource based and human factors that were significantly associated with the level of OSH compliance, thereby testing the study's hypothesis. A p-value less than 0.05 was considered statistically significant. For dependent variable compliance rating, very poor, poor, and neutral responses were recorded as No. Good and very good were recorded as Yes, all to make the variables binary. The same was done for independent variables where strongly disagree, disagree and neutral responses were recorded as No and the agree and

strongly agree were recorded as Yes to make the new binary variables. These new recoded variables were used to calculate odds ratios and logistic regression.

3.7.2 Qualitative Component Data Analysis

Audio recordings were transcribed verbatim. Thematic analysis using Braun and Clarke's thematic analysis framework (Sirwan et.al, 2025) was used. This process involved familiarizing oneself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the final report. Qualitative data analysis software NVivo 15 (Lumivero, 2025) was used to manage and code data systemically.

3.7.3 Data Integration

During the interpretation phase, the quantitative and qualitative findings were merged. The quantitative results identified the factors significantly associated with OSH compliance, while the qualitative data explain how and why these factors operate within the context of the BCC. This integration provided a nuanced and evidence-based answer to the research questions.

3.8 Ethical considerations

The researcher strictly adhered to the following ethical principles, in line with the Africa University Research Ethics Committee (AUREC) guidelines and international standards for research involving human subjects**.**

3.8.1 Ethical Approval

Ethical approval was formally sought and obtained from the AUREC before any data collection commences**. Institutional Permission** was sought from the BCC Director of Human Capital. A written **Informed Consent** form available in both English and Ndebele (Appendix 1&2) was provided to all participants. It clearly stated the purpose of the research, procedures, potential risks and benefits, confidentiality assurances and the voluntary nature of the participation. All participants were required to sign this form before enrolling in the study**.**

The researcher ensured that participants were informed that participation was voluntary, they could withdraw at any time, choose not to answer certain questions and that withdrawal bore no consequences. An informed consent was signed by all participants.

3.8.2 Confidentiality and Anonymity

All data was treated with strict confidentiality. Participant names and identifying information did not appear on any research instruments as unique identification codes will be used. (see section 3.6) All digital data was stored on a password-protected server and physical documents kept in a locked cabinet. Data was accessible only to the researcher and their supervisors. All information gathered was used for academic purposes only and names of the respondents will not be used to protect their privacy.

3.8.3 Risk Minimization and Avoidance of Harm

The study involved minimal risk. However, to mitigate any potential discomfort from discussing workplace safety failures, the researcher ensured the environment was private

and supportive. Participants were reminded that they could skip any question or withdraw from the study at any time without penalty**.** The research study must never be more important than the well-being of the participant, and therefore researchers must continuously weigh up the cost and risk against the benefits (Mondragón Barrios et al., 2022)

In this particular research study, physical harm could not occur but emotional harm could not be ignored as the nature of the research questions might elicit past experiences. In the case where emotional harm could occur, the concerned research participants where be referred to counselling services and the research participants informed that they can withdraw at any time during the research study.

3.8.4 Plagiarism

To prevent taking someone's work as the researcher copying words and ideas without acknowledging, the researcher gave credit whenever they used someone's work. The use of sources in a responsible and creative manner prevents plagiarism. The researcher used other scholars' publications in a responsible manner. Due to the fact that plagiarism is defined as intellectual theft that can take various forms that include direct, accidental, paraphrasing, copy-and-paste, the best approach was to always cite when in doubt. (Lalwani, 2025).

3.8.5 Beneficence

The study aims to benefit the BCC and its employees by providing insights that can lead to safer work environment. A summary of the findings and a copy of the findings was shared with the BCC management upon study competition.

3.9 Summary

This chapter detailed a robust mixed-methods methodology designed comprehensively to evaluate OSH compliance at the BCC. The integration of quantitative surveys with qualitative interviews and document analysis allowed the study to generate valid and reliable evidence on the systemic, resource-based and human factors influencing OSH outcomes. Clear definitions of the study population, sample size, and key informants supported by official BCC staffing data ensured that the study was transparent, replicable and ethically sound. The rigorous approach to sampling, data collection and analysis, underpinned by a strong ethical framework, ensured that the study yielded actionable insights for improving OSH practices and protecting employee well-being at BCC.

CHAPTER 4 DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

4.1 Introduction

This chapter presents, analyzes and interprets the data collected to evaluate Occupational Safety and Health (OSH) compliance and practices at the Bulawayo City Council (BCC). This study employed a convergent parallel mixed-methods design, integrating quantitative survey data from 362 employees with qualitative data from key informant interviews and a structured document analysis using the OSH Compliance and Governance Checklist. The findings are structured to address the 4 research objectives established in Chapter 1 which are to assess the current state of OSH compliance within key operational departments at the BCC, to identify and assess the factors influencing the level of OSH compliance at the BCC, to examine the perceptions of non-managerial employees in high-risk departments regarding OSH practices, risks and safety climate and to propose a framework of strategic, evidence-based recommendations to improve OSH compliance and outcomes at the BCC. The analysis was framed by the Systems Theory and the ILO OSH-MS framework which posits that safety outcomes emerge from the dynamic interplay of systemic, resource-based and human factors.

4.2 Data Presentation and Analysis

4.2.1 Objective 1: To Assess the Current State of OSH Compliance at BCC

This section addresses the first research objective by presenting the quantitative survey findings and the results of the OSH Compliance and Governance Checklist to describe the state of Compliance

4.2.1.1 Demographics and Occupational Profile of Respondents

The demographic analysis revealed a median age in years of the respondents was 40 years and with an interquartile range 31- 48 years. Regarding gender, the proportion of males was 210(58%) which is markedly higher when compared to the proportion of females 152(42%) (Figure 4). Most of the respondents were employed as permanent 264(72.9%) with 98(27.1%) employed on contract. On length of service, 133 (36.7%) had more than 10 years working experience, 123 (34%) had 1-5 years, 52 (14.4%) had 6-10 years, and 54 (14.9%) had less than a year. The demographic characteristics are presented in Table 2. This demographic context is crucial , as factors like age, gender and contract status can influence risk perception and safety behaviour.

Table 2. Demographic Characteristics

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	Median	40 (31–48)	–
Sex	Male	210	58.0
	Female	152	42.0
Employment Type	Permanent	264	72.9
	Contract	98	27.1
Length of Service	Less than 1 year	54	14.9
	1–5 years	123	34.0
	6–10 years	52	14.4
	More than 10 years	133	36.7
Department/Section	Security	63	17.4
	Fire	41	11.3
	Ambulances	25	6.9
	Water & Sanitation	53	14.6
	Clinical Health	49	13.5
	Housing Community	60	16.6
	Works	52	14.4
	Environmental Health	19	5.3

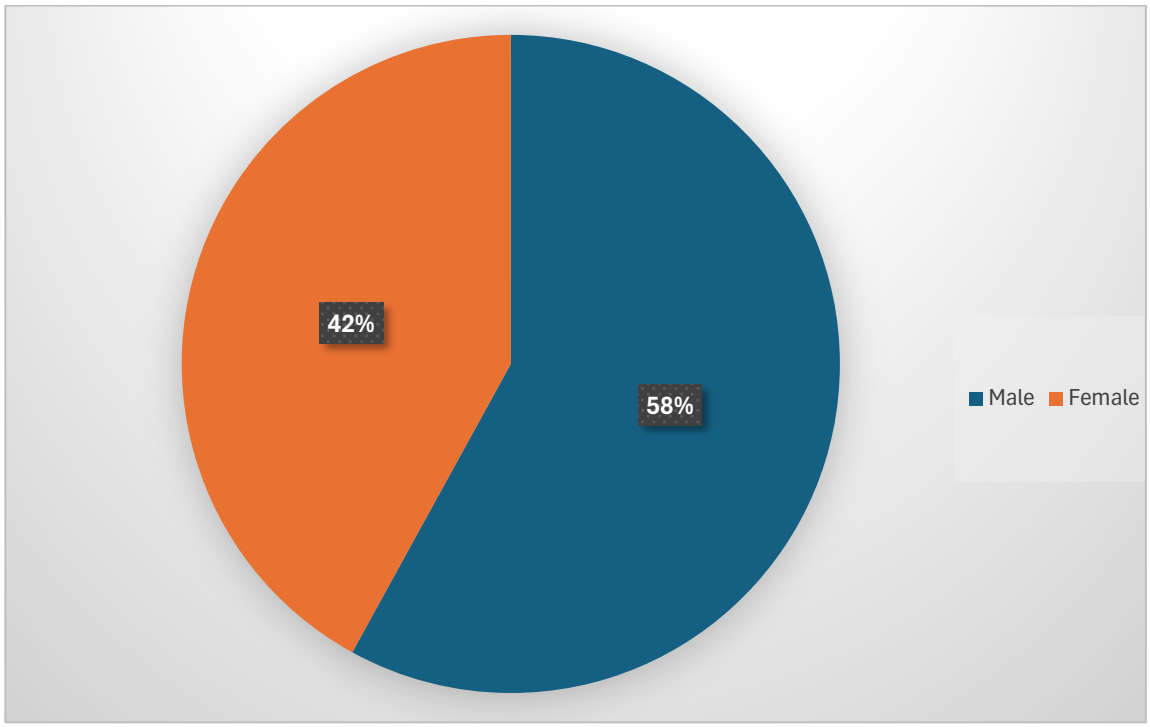

Figure 4. Gender Distribution

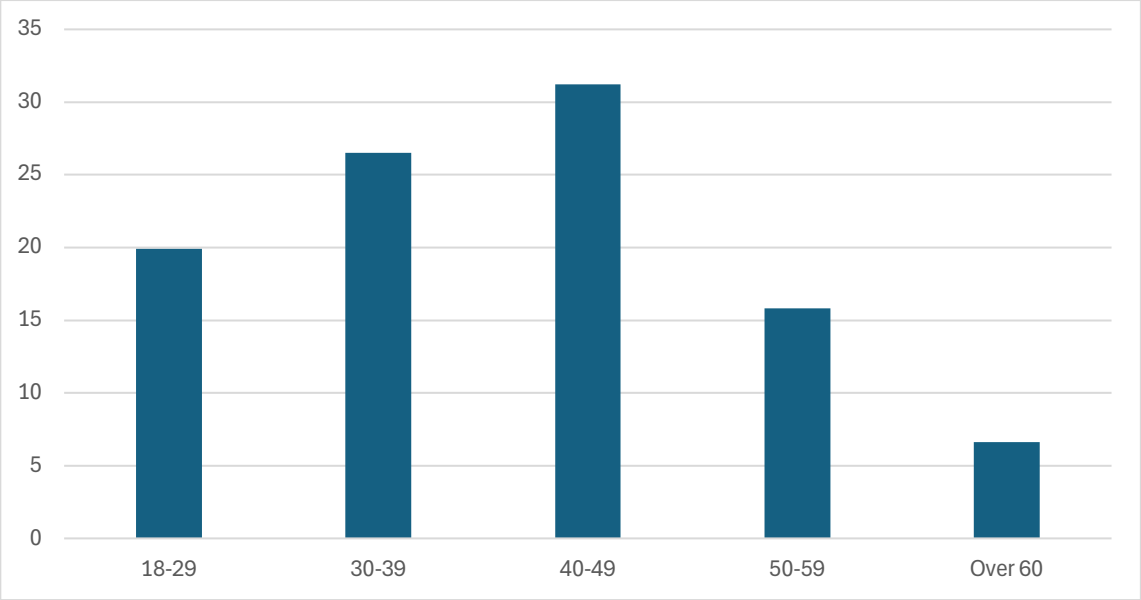

Figure 5. Age Categories

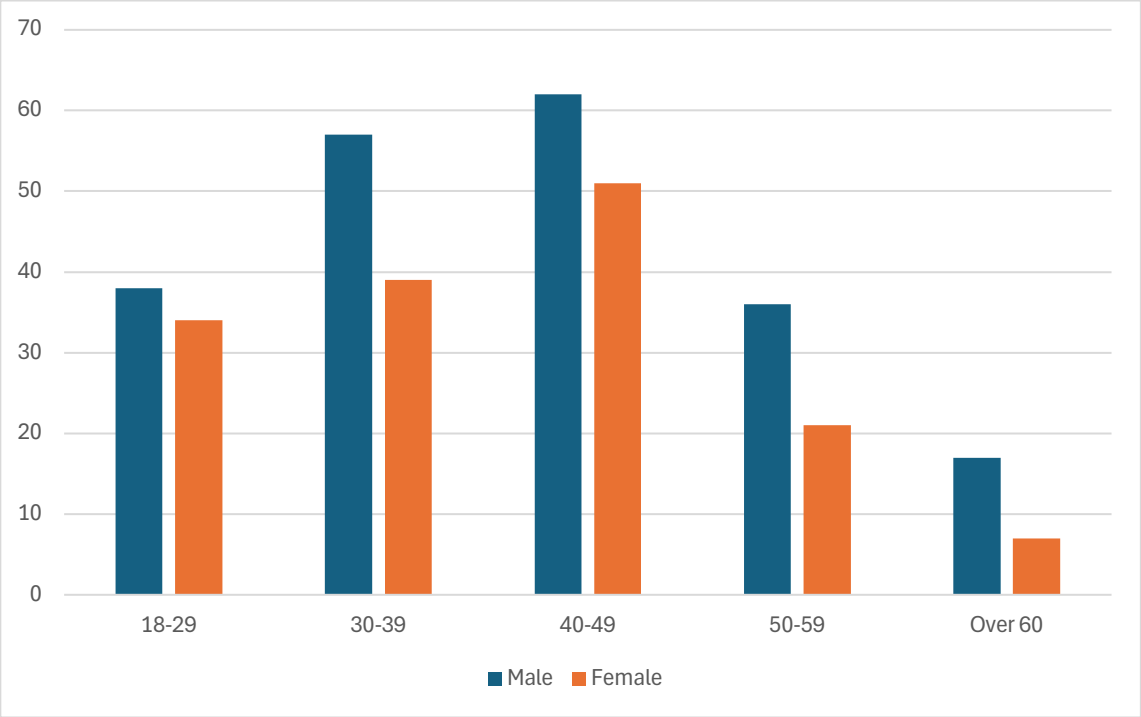

Figure 6. Age Categories disaggregated by gender

4.2.1.2 Self-Reported OSH Outcomes

The quantitative survey provided a baseline for assessing the state of OSH compliance through reported outcomes. In terms of workplace incidents 12.71% of the respondents reported having experienced a workplace a workplace injury in the past 12 months whereas 87.29% indicated that they had not. The workplace injury responses are presented in Figure 7. Over 52% of respondents indicated that they never had a workplace near miss incidents, 22.16% had a near miss incident once, 18.84% had a near miss incidents between one to five times and 6.09% had near misses greater than five. This significant total of 47.2% had experienced at least one near miss (Figure 8). This high prevalence of near-misses is a critical indicator of latent systemic failures that have not yet resulted in injury. Self-related compliance showed moderate picture with 62.4% rating their own compliance as good or excellent. However, this self-perception must be considered against the backdrop of other findings. The most commonly cited barriers to compliance were a lack of necessary equipment (38.95%) and pressure to work quickly (24.31%), which suggest that employees may want to be compliant but structurally and culturally constrained.

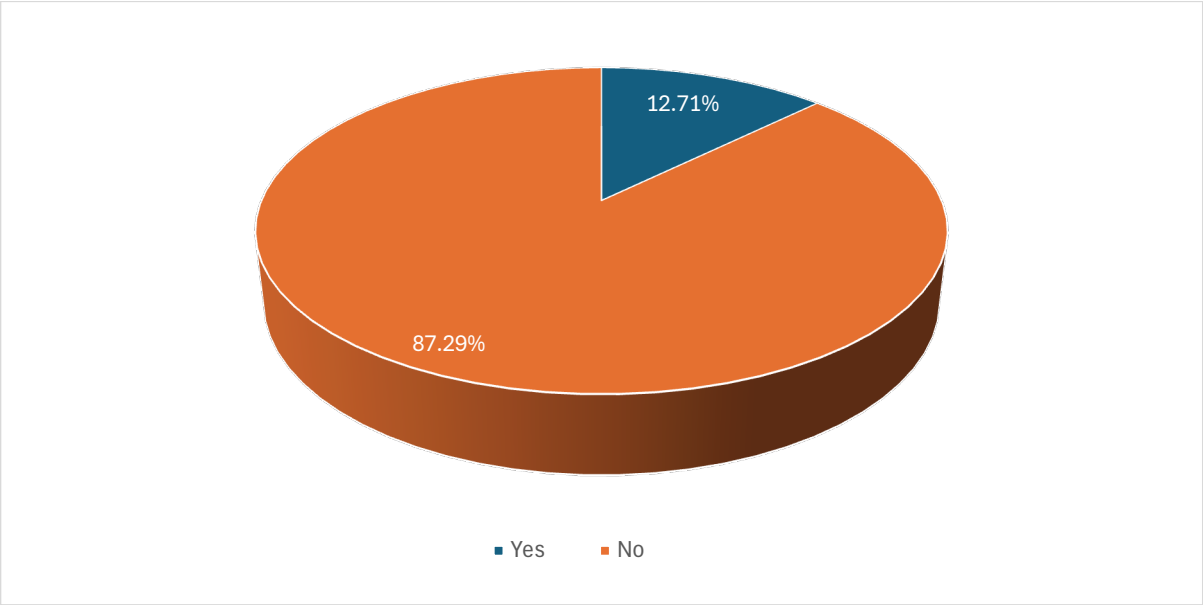

Figure 7. Workplace Injury

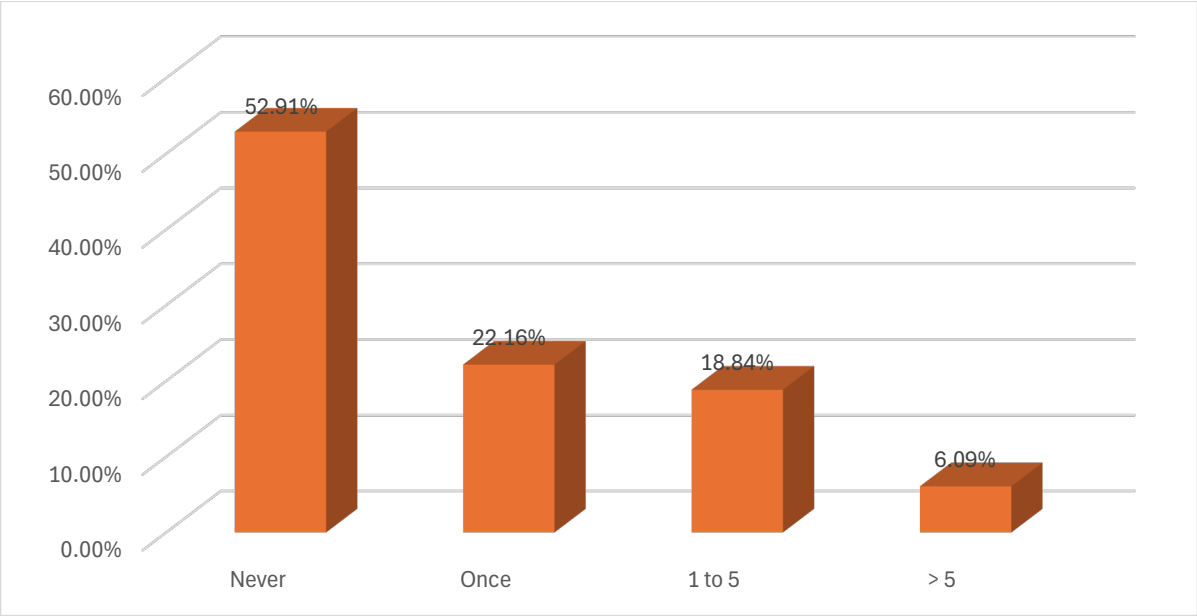

Figure 8. Workplace Near Miss

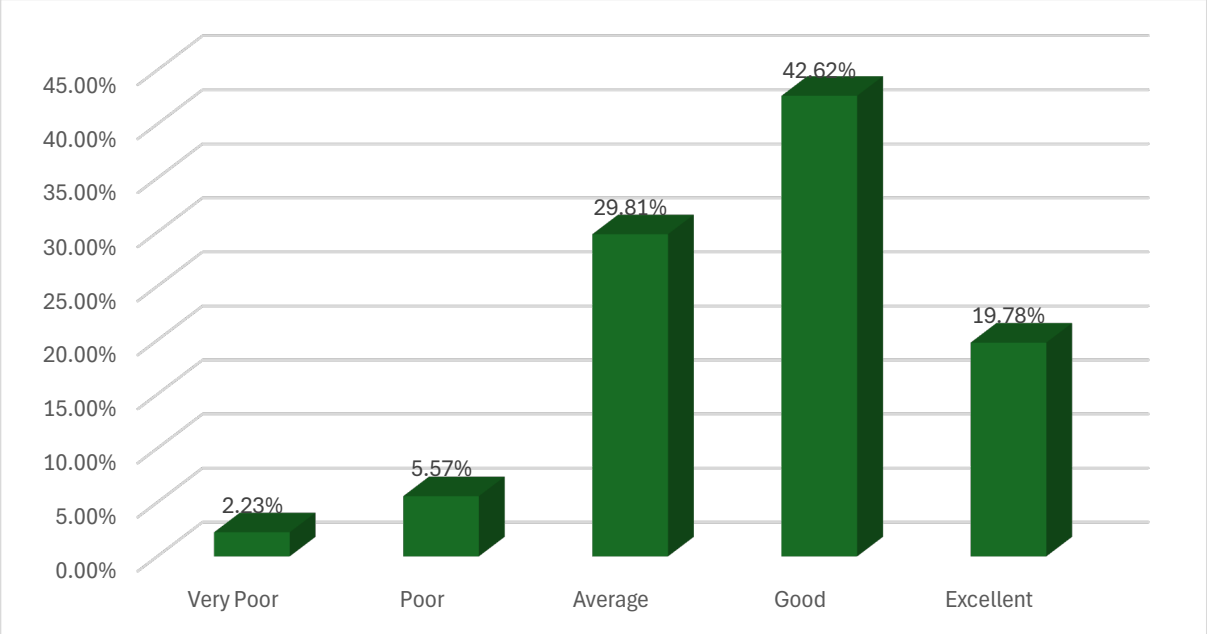

Figure 9. Self-Occupational Safety and Health Compliance Rating

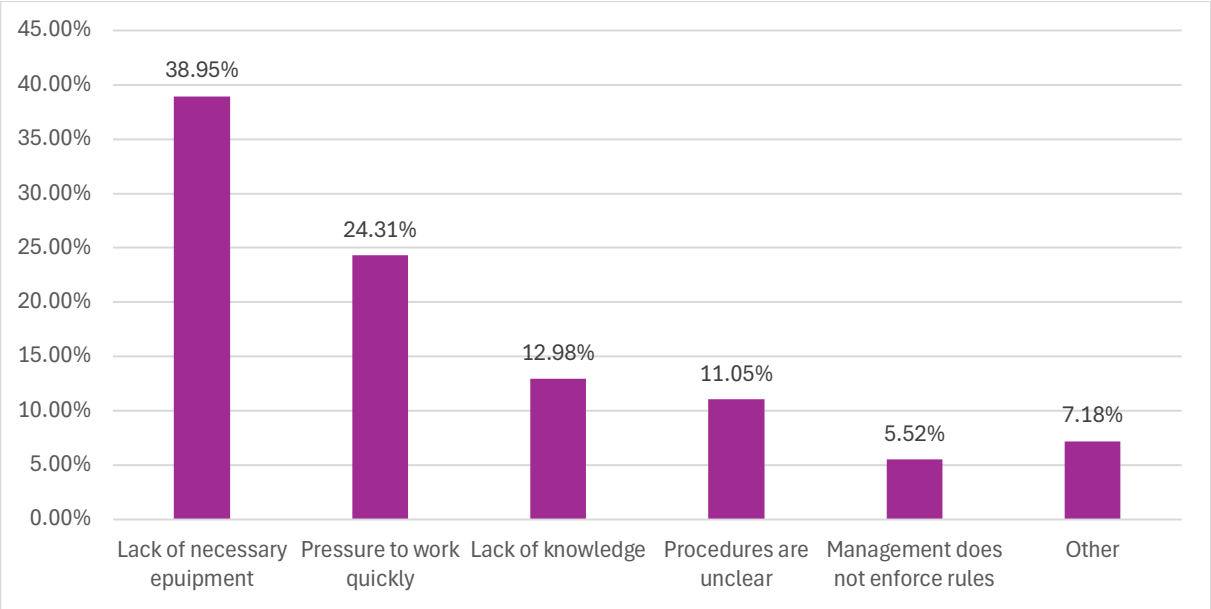

Figure 10: Barriers to Occupational Safety and Health

4.2.1.3 OSH Compliance and Governance Checklist for BCC: A Structured Assessment

To provide a structured assessment of the Bulawayo City Council's (BCC) alignment with the national legal framework, the study developed and employed a compliance and governance checklist derived from the Zimbabwe Occupational Safety and Health Bill of 2025. This checklist (Table 3) served as a diagnostic tool, evaluating the BCC's performance across key administrative, operational and strategic areas as mandated by the new legislation. These findings, summarized in Table 3, indicate a compliance score of 84.6%, with the BCC found to be compliant in 22 of the 26 assessed items, partially compliant in 4 and non-compliant in none. However, this high-level score belies critical

nuances in implementation and effectiveness that are essential for a comprehensive understanding of the BCC's OSH system.

A significant portion of the compliant items pertains to the existence of foundational and strategic structures. The BCC has established the necessary formal frameworks, such as a documented OSH policy statement, top-level OSH management committee, a designated senior manager for OSH liaison and contracts with accredited occupational practitioners. This aligns with the quantitative finding that 44.5% of employees are aware of the official OSH policy and clear hazard reporting procedures are in place. The presence of these structures indicates that the BCC has successfully laid the groundwork for a formal OSH management system, meeting the legislative requirements for institutional design. This foundational compliance reflects the 'Plan" phase of the ILO OSH-MS framework, where policies and procedures are formally established.

Despite this strong foundational compliance, the items flagged as 'Partially Compliant' (P) reveal the critical implementation gaps that the qualitative data so vividly illustrated. The checklist identified partial compliance in the areas of data management systems, the formal accreditation of OSH management system and the deployment of full-time dedicated OSH officers. The qualitative narratives provide the context for these partial ratings. For an instance, while a system for health surveillance exists, participants noted its reliability is compromised by 'electrical outages and server instability'. This transforms a policy-compliant item into practical failure, as unreliable data systems impede effective monitoring and decision-making.

Similarly, the issue of OSH officer deployment is a stark example. While the BCC is compliant in appointing officers, the checklist correctly flags as "partial' the fact that none of these officers are full-time and dedicated to OSH responsibilities. This perfectly aligns with qualitative findings where participants stated, "Committee members have other jobs. A person cannot have 2 jobs." (#P13) and "There are no departmental specific dedicated OSH officers… It's not adequate." (#P4). This structural weakness, where OSH functions are secondary to operational roles, is a fundamental barrier to effective implementation and it prevents the consistent application of the "Do', 'Check' and 'Act' phases of the OSSH-MS cycle.

The fact that the BCC was found to be compliant in areas such as asset management, incident registration and established procurement protocols further highlights the central paradox of the study which is the existence of a robust policy framework not translating to effective practice. While the BCC has a register of prescribed machinery and mandatory accident registers, the qualitative findings revealed that the procurement of PPE which is a core element of asset management is plagued by chronic delays and cumbersome processes. This divergence between policy compliance and operational reality underscores a key conclusion that is the BCC OSH system is characterized by paper compliance. Formal structures are in place to satisfy legislative checklists but the underlying processes are too weak to deliver the intended safety outcomes.

Table 3. Occupational Safety and Health Compliance and Governance Checklist for Local Municipalities, derived from The Zimbabwe Occupational Safety and Health Bill H.B. 6, 2025

#	Clause Reference	Business Administration Focus Area	Compliance Item	Status (C/P/N/NA)	Notes / Evidence
PART 1 - FOUNDATIONAL & STRATEGIC OVERSIGHT					
	2, 3	**Scope & Strategic Intent**	Has the municipality identified and documented ALL its workplaces?	**C**	City facilities/ installations register
	3,13	**Strategic Planning & Leadership**	Does the CEO / Town Clerk have a documented OSH policy statement?	**C**	City Policies register reflects current policy
	3,40	**Governance & Stakeholder Dialogue**	Has the municipality established a formal, top-level OSH management committee?	**C**	Committee exists with structured meeting schedule
PART 2 - ADMINISTRATION & INSTITUTIONAL FRAMEWORK					
	4	**Organizational Structure**	Is there a designated senior manager e.g., Human Capital Director as the primary liaison with the NSSA Department of OSH?	**C**	Yes, the Principal Gender Safety and Health Officer
	5, 6, 7, 8, 9	**Specialist Support & Medical Governance**	Does the municipality have a contract or arrangement with accredited occupational medical practitioner to manage medical surveillance?	**C**	Yes, Health Services Department and NSSA approved practitioners
	43	**Supply Chain & Procurement**	Are all external OSH service providers e.g., trainers, consultants, medical practitioners	**C**	Procurement Plan includes

#	Clause Reference	Business Administration Focus Area	Compliance Item	Status (C/P/N/NA)	Notes / Evidence
			verified to be accredited by the Authority before procurement?		verification requirements
PART 3 & 4 - OPERATIONAL SAFETY & HEALTH SERVICES					
	10(2), 13	**Hazard Identification**	Has the municipality conducted comprehensive hazard identification and risk assessment (HIRA)?	**C**	City Council Full Minutes document HIRA conduct
	10 (4), 10 (5)	**Information Management & data Privacy**	Does the municipality have a secure & confidential system for collecting, storing and using workers' health surveillance data?	**P**	System exists but reliability compromised by electrical outages and server instability outages
	13 (1), 13 (2)	**Management System & Compliance**	Has the municipality established, implemented and maintained an OSH management system e.g., aligned with the ISO 45001?	**P**	Not yet accredited, but in the process of accreditation
	14(2), 14 (3), 14(4)	**Human Resources & Consultation**	Is there a documented process to ensure that workers and their representatives are consulted on OSH matters during paid hours, and that they receive adequate OSH training?	**C**	OSH policy SOPs document consultation processes
	14(9), 14 (10)	**Employee Accountability & Culture**	Are safety, rules, procedures and codes of practice clearly communicated & is there a disciplinary process for workers who willfully or negligently misuse safety equipment or fail to report hazards?	**C**	Disciplinary processes documented and communicated

#	Clause Reference	Business Administration Focus Area	Compliance Item	Status (C/P/N/NA)	Notes / Evidence
	12(2), 12(3)	**Worker Representation & Committees**	Have OSH officers been appointed in each department?	**P**	Officers are appointed but none are full-time dedicated to OSH responsibilities
	11	**Personnel Deployment**	Does the municipality have a process to ensure workers are only employed in specified working environments e.g., confined spaces or hazardous waste areas after verifying that all prescribed safety requirements are me??	**P**	Processes exists but incomplete implementation evidenced by documented workplace injuries in high-risk areas
PART 5 – FACILITIES, ASSETS & REGISTRATION					
	17, 18, 19	**Asset Management & Compliance**	Are ALL municipal workplace premises registered with the Authority?	**C**	City registers are maintained and current
	20	**Capital Projects & Change Management**	Are there any new municipal buildings or structural alterations to existing workplaces submitted to the Authory for approval?	**C**	Approval processes documented and followed
	21	**Plant & Equipment Management**	Is there a register for all prescribed machinery?	**C**	Yes, its protocol
PART 6 – ENFORCEMENT & LIABILITY					
	22	**Incident & Data Management**	Does the municipality maintain a mandatory accident register?	**C**	Yes
	24, 25, 26	**Operational Readiness**	Are there procedures in place to provide unrestricted access and necessary facilities to	**C**	Yes

#	Clause Reference	Business Administration Focus Area	Compliance Item	Status (C/P/N/NA)	Notes / Evidence
			OSH Inspectors/ NSSA inspectors?		
	28, 29, 33	**Corrective Action & Risk Control**	Is there a formal process for managing improvement and prohibition notices including root cause analysis, allocation of resources and tracking remedial actions to ensure timely closure?	**C**	Yes,
	15, 33, 35, 36	**Procurement & Public Safety**	Does the municipal ensure that all purchased machinery and equipment are accompanied by safety information and instructions?	**C**	Yes,
PART 7 & 8 – FINANCE & ADVISORY	37, 38, 39	**Financial Management & Budgeting**	Does the municipality's annual budget explicitly allocate funds for OSH activities?	**C**	Allocations are department specific with broader budgets
	40	**Strategic Advisory & Governance**	Does the municipality have a formal link or representation to the tripartite Zimbabwe Occupational Safety and Health Advisory Council to stay informed of national policy?	**C**	Yes
PART 9 – GENERAL & RECORDS MANAGEMENT					
	22, 24, 27	**Documents & Records Control**	Is there a policy for retention of key records, such as an accident that happened 50 years ago (accident registers)?	**C**	Yes, the city accident register
	44	**Continuous Improvement**	Does the municipality utilize approved codes of practice as guidance for developing its own	**C**	Yes

#	Clause Reference	Business Administration Focus Area	Compliance Item	Status (C/P/N/NA)	Notes / Evidence
			internal operational procedures and standards?		
	45, 46, 47	**Regulatory & Legal Awareness**	Is there a system to monitor ministerial directives and regulations issued under the Act and incorporate them into municipal operations and by-laws?	**C**	Yes,
	42	**Risk Transfer & Insurance**	Has the municipality reviewed its insurance policies (including those from NSSA's Accident Prevention and Worker's Compensation Fund) to ensure adequate coverage?	**C**	Yes

Key: **Compliant (C), Partially Compliant (P), Non-Compliant (N), Not Applicable (NA)**

4.2.2 Objective 2: To Identify and Assess Factors Influencing OSH Compliance at the BCC

This section addresses the second objective by presenting the quantitative analysis of factors associated with OSH compliance, organized according to the 3 determinant categories from the conceptual framework which are human factors, systemic factors and resource-based factors

4.2.2.1 Human Factors and OSH Compliance

Table 4 below presents results of the seven dimensions of human factors. On received adequate training on OSH, 128 (35.4%) remained neutral, 120(33.2%) agreed to have

received adequate training on OSH and 78 (21.6%) disagreed, with only 10 (2.8%) strongly agreeing. On whether workers were regularly consulted on OSH safety matters 118 (32.6%), 103 (28.5%), and 102 (28.2%) agreed, were neutral, and disagreed, respectively. Self-reflection on adherence to OSH procedures even under time and pressure was more concrete with 177 (48.9%) agreeing and 37 (10.2%) strongly agreeing whilst 14 (3.9%), 40 (11.1%) and 94 (26.0%) strongly disagreed, disagreed and were neutral to following OSD procedures.

On being comfortable to rejection of unsafe tasks 117(32.3%) respondents were neutral, 100 (27.6%) agreed, and 43 (11.9%) strongly agreed. In the case where management cared more about productivity than safety (reverse-coded), 111 (30.7%) were neutral, 109 (30.1%) agreed, and 45 (12.4%) strongly agreed. The description of human factors is presented in Table 3.

Table 4. Human Factors and Occupational Safety and Health Compliance

Factor	Strongly Disagree n,%	Disagree n,%	Neutral n,%	Agree n,%	Strongly Agree n,%	Total N
Adequate OSH Training	26 (7.2)	78 (21.6)	128 (35.4)	120 (33.2)	10 (2.8)	362
Workers Consulted	30 (8.3)	102 (28.2)	118 (32.6)	103 (28.5)	9 (2.5)	362
Follow OSH Procedures	14 (3.9)	40 (11.1)	94 (26.0)	177 (48.9)	37 (10.2)	362
Can Refuse Unsafe Tasks	31 (8.6)	71 (19.6)	117 (32.3)	100 (27.6)	43 (11.9%)	362
Management Prioritises Productivity*	31 (8.6%)	66 (18.2)	111 (30.7)	109 (30.1)	45 (12.4)	362
Believe Workplace is Safe	16 (4.4)	73 (20.2)	122 (33.7)	139 (38.4)	12 (3.3)	362

OSH Risks Awareness	9 (2.5%)	28 (7.7)	76 (21.0)	203 (56.1)	46 (12.7)	362

*Negative item (reverse-coded).

Based on human factors mean scores table, the highest mean score was OSH risk awareness (M = 3.69, SD = 0.88) with 68.8 percent of the respondents agreeing or strongly agreeing. The adherence to OSH procedures also received a relatively high score (M = 3.51, SD = 0.95) and 59.1% of the respondents agreed. By contrast, the mean (M = 2.89, SD = 0.99) of workers consulted was lower, and only 30.9% agreed. Moderate (M = 3.03, SD = 0.97) and 36% agreement occurred regarding adequate OSH training. The reversed coded item management emphasises productivity rather than safety had a mean of 2.80 (SD = 1.14) with 42.5% agreement. The mean scores on human factors are presented in Table 4.

Table 5. Mean Scores for Human Factors and Occupational Safety and Health Compliance

Factor	Mean	SD	Agree + Strongly Agree (n)	Percentage (%)
Adequate OSH Training	3.03	0.97	130	36.0
Workers Consulted	2.89	0.99	112	30.9
Follow OSH Procedures	3.51	0.95	214	59.1
Can Refuse Unsafe Tasks	3.15	1.13	143	39.5
Management Prioritizes Productivity*	2.80	1.14	154	42.5
Believe Workplace is Safe	3.16	0.93	151	41.7
OSH Risks Awareness	3.69	0.88	249	68.8

*Reverse-coded item.

The findings presented indicate varying levels of awareness and adherence to occupational safety and health (OSH) practices among respondents. OSH Risk Awareness has the highest mean score of 3.69 suggesting that a significant portion of respondents (68.8%) are aware of OSH risks. This strong awareness is positive, as it can lead to better safety

practices and a culture of safety within the workplace. Adherence to OSH Procedures with a mean score of 3.51, adherence to OSH procedures is also relatively high, as evidenced by the 59.1% agreement from respondents. This reflects a positive trend in employees following safety protocols, although there is still room for improvement. Consultation with Workers has the lower mean score of 2.89, coupled with only 30.9% agreement regarding workers being consulted, suggesting that communication and involvement in safety discussions are lacking. This could be a significant area for improvement, as involving workers in OSH matters is crucial for effective implementation and acceptance of safety measures.

Further, Adequate OSH Training with a moderate mean score of 3.03 and 36% agreement regarding the adequacy of OSH training, there appears to be some uncertainty or dissatisfaction with the training provided. This indicates a potential gap that could affect employees' ability to comply with safety procedures effectively. Management's Focus on Productivity vs. Safety has the reversed coded item showing a mean score of 2.80 indicating that a notable portion of respondents (42.5%) feels that management prioritizes productivity over safety. This perception can undermine safety culture, suggesting that management should reinforce the importance of safety alongside productivity goals. Overall, while awareness and adherence to OSH procedures appear to be relatively strong, there are significant concerns regarding worker consultation, training adequacy, and management's priorities. Addressing these issues could enhance safety outcomes and employee engagement in OSH practices.

4.2.2.2 Systemic Factors and OSH Compliance

In the systemic factors description Table 6,142 (39.2%) agreed there were clear and easy to follow procedure for reporting hazards, near misses or accidents , 22 (6.1%) strongly agreed and 110 (30.4%) were neutral. Among the respondents 137 (37.9%) agreed and 29(8.0%) strongly agreed that incident investigations were being conducted with corrective measures taken whereas 113 (31.2%) were neutral. Clear communication on OSH by management was high, with a 162 (44.8%) agreeing and 25 (6.9%) agreeing strongly whereas 95(26.2%) were neutral. On the official BCC OSH policy awareness 139(38.4%) respondents agreed whereas 129 (35.6%) were neutral.

Weaknesses were seen on the conduction of safety audits where 131 (36.2%) were neutral and 27.4% disagreed that safety audits were being done. Supervisor encouraging OSH and safe working environments had the greatest strength with 187 (51.7%) agreeing and 54 (14.9%) strongly agreeing. The description of the systemic factors is presented in Table 6.

Table 6. Systemic Factors and Occupational Safety and Health Compliance

Factor	Strongly Disagree n,%	Disagree n,%	Neutral n,%	Agree n,%	Strongly Agree n,%	Total N
Clear Hazards Reporting Procedure	27 (7.5)	61 (16.9)	110 (30.4)	142 (39.2)	22 (6.1)	362
Incidents Investigated	24 (6.6)	59 (16.3)	113 (31.2)	137 (37.9)	29 (8.0)	362
Management Communicates Clearly on OSH	16 (4.4%)	64 (17.7)	95 (26.2)	162 (44.8)	25 (6.9)	362
Aware of BCC OSH Policy	26 (7.2)	46 (12.7	129 (35.6)	139 (38.4)	22 (6.1)	362

Risk Assessments Conducted	30 (8.3)	78 (21.6)	123 (34.0)	118 (32.6)	13 (3.6)	362
Safety Audits Done	45 (12.4)	99 (27.4)	131 (36.2)	75 (20.7)	12 (3.3)	362
Supervisor Encourages OSH	16 (4.4)	20 (5.5)	85 (23.5)	187 (51.7)	54 (14.9)	362

The systemic factors demonstrate that supervisor encouragement had the greatest mean (M = 3.67, SD = 0.95) and 66.6% agreement. There is a clear communication of management on worker safety followed (M = 3.32, SD = 0.99) and 51.7% agreement. The lowest mean (M = 2.75, SD = 1.03) and the lowest agreement (24 percent) were observed with the conduction of safety audits done. The results of risk assessment were moderate (M = 3.02, SD = 1.01), with a rate of agreement of 36.2 percent. There was a fairly high awareness of BCC OSH policy (M = 3.23, SD = 0.99), and 44.5% agreed. The mean scores on systemic factors are present in Table 7.

Table 7. Mean Scores on Systemic Factors and Occupational Safety and Health Compliance

Factor	**Mean**	**SD**	**Agree + Strongly Agree (n)**	**Percentage %**
Clear Reporting Hazards Procedure	3.20	1.03	164	45.3
Incidents Investigated	3.24	1.03	166	45.9
Management Communicates Clearly on OSH	3.32	0.99	187	51.7
Aware of BCC OSH Policy	3.23	0.99	161	44.5
Risk Assessments Conducted	3.02	1.01	131	36.2
Safety Audits Done	2.75	1.03	87	24.0
Supervisor Encourages OSH	3.67	0.95	241	66.6

4.2.2.3 Resource-Based Factors and OSH Compliance

There are five dimensions shown in the resource-based factors table. The BCC OSH budget adequacy was poor, with 143 (39.5%) respondents being neutral, 94 (26.0%) disagreeing, and 61 (16.9%) strongly disagree. On the availability of OSH officers to support departments, 141 (39.0%) respondents were neutral, 103 (28.5%) disagreed, and 78(21.6%) agreed. On whether PPE was in good condition 108 (28.7%) respondents disagreed, 96 (26.5%) were neutral, and 85 (23.5%) agreed.

With regards to personal protective equipment (PPE) provision 100(27.6%) respondents disagreed, 92(25.4%) were neutral, and 90(24.9%) agreed. The respondents were neutral 111 (30.7%), disagreed 99 (27.4%), and agreed 90 (24.9%) on whether tools and machinery were maintained. The resource-based factors description is presented in Table 8.

Table 8. Resource-Based Factors and Occupational Safety and Health Compliance

Factor	Strongly Disagree n,%	Disagree n,%	Neutral n,%	Agree n,%	Strongly Agree n,%	Total N
OSH Budget Sufficient	61 (16.9)	94 (26.0)	143 (39.5)	61 (16.9)	3 (0.8)	362
OSH Officers Available	34 (9.4)	103 (28.5)	141 (39.0)	78 (21.6	6 (1.7)	362
PPE in Good Condition	60 (16.6)	104 (28.7)	96 (26.5)	85 (23.5)	17 (4.7)	362
PPE is Provided	56 (15.5	100 (27.6)	92 (25.4)	90 (24.9)	24 (6.6)	362
Tools are Maintained	44 (12.2)	99 (27.4)	111 (30.7)	90 (24.9)	18 (5.0)	362

Weakest factors are resource-based. The lowest mean was observed in OSH budget sufficiency (M = 2.59, SD = 0.98), and the agreement was 17.7%. Availability of OSH officers scored M = 2.78 (SD = 0.95) and agreement of 23.2%. The factor that PPEs in good state had (M = 2.71, SD = 1.14) and a 28.2% agreement. The factor PPE provision was somewhat greater (M = 2.80, SD = 1.17) with 31.5% agreement level whereas tools are maintained had M = 2.83 (SD = 1.09) and 29.9% agreement. The mean scores for the resource-based factors are presented in Table 9.

Table 9. Mean Scores for Resource Based Factors and Occupational Safety and Health Compliance

Factor	Mean	SD	Agree + Strongly Agree (n)	Percentage
OSH Budget Sufficient	2.59	0.98	64	17.7
OSH Officers Available	2.78	0.95	84	23.2
PPE in Good Condition	2.71	1.14	102	28.2
PPE is Provided	2.80	1.17	114	31.5
Tools are Maintained	2.83	1.09	108	29.9

4.2.2.4 Bi-variate Analysis: Factors Association with OSH Compliance

On human factors, there was an odds ratio of 1.56 on sufficient OSH training (CI: 0.99-2.46, p=0.054). Adherence to OSH procedures presented an odds ratio of 1.83 (95% CI: 1.19- 2.83, p=0.006). The odds ratio of being able to reject performing a task that the respondents felt was unsafe was 1.61 (95% CI: 1.03-2.50, p=0.035). Perception that the

work place is safe had an odds ratio of 2.16 (95% CI: 1.39-3.39, p<0.001). A focus on productivity by the management over a focus on safety resulted in odds ratio of 1.53 (95% CI= 0.94-2.52, p=0.088). The odds ratio of OSH risk awareness was 2.35 (95% CI: 1.49-3.71, p<0.001). An odds ratio of 1.30 (95% CI 0.81-2.07, p=0.272) was observed when the workers were consulted.

Under systemic factors, policy awareness had odds ratio of 1.23 (95% CI: 0.80-1.89, p=0.341). Clear reporting hazard procedure had an odds ratio of 1.91 (95% CI: 1.24-2.96, p=0.003). Investigated incidences produced an odds ratio of 1.35 (95% CI: 0.88-2.07, p=0.172). Odds ratio of management reporting well on OSH was 1.87 (95% CI: 1.22-2.88, p=0.004) whereas odds ratio results of risk assessments performed were 1.22 (95% CI: 0.78-1.91, p=0.375). The odds ratio of safety audits done was 1.61 (95% CI: 0.96-2.71, p=0.070) and odds ratio of supervisor encouragement of OSH was 1.22 (95% CI: 0.78-1.91, p=0.374).

The availability of OSH officers on resource factors had odds ratio of 1.87 (95% CI: 1.10-3.20, p=0.021). The odds ratio of the OSH budget sufficiency was 2.08 (95% CI: 1.13-3.83, p=0.017). The good condition of PPE exhibited an odds ratio of 1.70 (CI 95: 1.04-2.79, p=0.033). An odds ratio of 1.91 (95% CI: 1.18-3.09, p=0.008) with regards to provision of PPE was observed. Maintaining tools gave a odds ratio of 1.70 (95% CI: 1.05-2.76, p = 0.030). The odds ratios of the factors associated with OSH compliance are presented in Table 10.

Table 10. Odds Ratio for Factors Associated with Occupational Safety and Health Compliance

Factor	Classification	Compliance Yes (n, %)	Compliance No (n, %)	Odds Ratio	95% Confidence Interval	p-value
Human Factors						
Adequate OSH Training	Yes	89 (68.5)	41 (31.5)	1.56	0.99 – 2.46	0.054
	No	135 (58.2)	97 (41.8)			
Follow OSH Procedures	Yes	145 (67.8)	69 (32.2)	1.83	1.19 – 2.83	0.006
	No	79 (53.4)	69 (46.6)			
Can Refuse Unsafe Tasks	Yes	98 (68.5)	45 (31.5)	1.61	1.03 – 2.50	0.035
	No	126 (57.5)	93 (42.5)			
Believe Workplace is Safe	Yes	109 (72.2)	42 (27.8)	2.16	1.39 – 3.39	<0.001
	No	115 (54.5%)	96 (45.5%)			
Management Prioritizes safety over productivity*	Yes	67 (69.1)	30 (30.9)	1.53	0.94 – 2.52	0.088
	No	157 (59.3)	108 (40.7)			
OSH Risks Awareness	Yes	170 (68.3)	79 (31.7)	2.35	1.49 – 3.71	<0.001
	No	54 (47.8)	59 (52.2)			
Workers are Consulted	Yes	74 (66.1)	38 (33.9)	1.30	0.81 – 2.07	0.272
	No	150 (60.0)	100 (40.0)			
Systemic Factors						
Aware of Policy	Yes	104 (64.6)	57 (35.4)	1.23	0.80 – 1.89	0.341
	No	120 (59.7)	81 (40.3)			
Clear Reporting Hazards Procedure	Yes	115 (70.1)	49 (29.9)	1.91	1.24 – 2.96	0.003
	No	109 (55.1)	89 (44.9)			
Incidents Investigated	Yes	109 (65.7)	57 (34.3)	1.35	0.88 – 2.07	0.172
	No	115 (58.7)	81 (41.3)			

Factor	Classification	Compliance Yes (n, %)	Compliance No (n, %)	Odds Ratio	95% Confidence Interval	p-value
Management Communicates Clearly	Yes	129 (69.0)	58 (31.0)	1.87	1.22 – 2.88	0.004
	No	95 (54.3)	80 (45.7)			
Risk Assessments Conducted	Yes	85 (64.9)	46 (35.1)	1.22	0.78 – 1.91	0.375
	No	139 (60.2)	92 (39.8)			
Safety Audits Done	Yes	61 (70.1)	26 (29.9)	1.61	0.96 – 2.71	0.070
	No	163 (59.3)	112 (40.7)			
Supervisor Encourages OSH	Yes	153 (63.5)	88 (36.5)	1.22	0.78 – 1.91	0.374
	No	71 (58.7)	50 (41.3)			
Resource Factors						
OSH Officers Available	Yes	61 (72.6)	23 (27.4)	1.87	1.10 – 3.20	0.021
	No	163 (58.6)	115 (41.4)			
OSH Budget Sufficient	Yes	48 (75.0)	16 (25.0)	2.08	1.13 – 3.83	0.017
	No	176 (59.1)	122 (40.9)			
PPE in Good Condition	Yes	72 (70.6)	30 (29.4)	1.70	1.04 – 2.79	0.033
	No	152 (58.5)	108 (41.5)			
PPE is Provided	Yes	82 (71.9)	32 (28.1)	1.91	1.18 – 3.09	0.008
	No	142 (57.3)	106 (42.7)			
Tools are Maintained	Yes	76 (70.4)	32 (29.6)	1.70	1.05 – 2.76	0.030
	No	148 (58.3)	106 (41.7)			

*Reverse-coded item

4.2.2.5 Logistic regression: Independent Factors Predictors of OSH Compliance

A backward logistic regression model was used to identify the strongest independent predictors of OSH compliance (Table 11). The predictors involved clear reporting hazards procedure, OSH budget adequacy, provision of PPE, investigated incidents, and OSH risk awareness. The model had a final convergence -2 Log Likelihood of 456.66, and the general model fit was statistically significant as the Score test statistic of 23.90 (df = 5, p = 0.0002) and the Likelihood Ratio test statistic of 24.55 (df = 5, p = 0.0002).

Clear reporting hazard procedure yielded an adjusted odds ratio of 1.58 falling within the 95% confidence interval of 0.98 to 2.56 (p = 0.062). Adjusted odds ratio of OSH budget sufficiency was 1.68 with confidence interval of 0.89-3.17 (p=0.110). The adjusted odds ratio was found to be 1.51 with a confidence interval of 0.91 to 2.51 (p = 0.109) for provision of PPE. The compliance was most closely related to OSH risk awareness with adjusted odds ratio of 2.04, adjust confidence interval of 1.24 to 3.35, and a p value of 0.005. The logistic regression results with adjusted odds ratios are presented in table 10.

The constant was negative (coefficient = -0.30, p = 0.148), indicating that the log odds of compliance when there were no predictors were negative. The general findings of the regression indicate that the awareness of OSH risks is significantly significant in predicting compliance among the covariates that were investigated, whereas the other variables have a positive but non-significant correlation.

In summary, employees who were aware of the specific risks of their jobs were 2.04 times more likely to be compliant to OSH compared to those who were not (AOR=2.04, 95%CI 1.24-3.35, p=0.005). other factors showed a positive but non-significant associations in

the final model, indicating that their effect may be mediated through risk awareness or variables.

Table 11. Logistic Regression for Independent Factors Associated with Occupational Safety and Health Compliance

Factor	Class	Compliance n,%		Odds Ratio	Adjusted Odds Ratio	95% Confidence Interval	p-value
		Yes	No				
Clear Reporting Hazards Procedure	Yes	115 (70.1)	49 (29.9)	1.91	1.58	0.98 – 2.56	0.062
	No	109 (55.1)	89 (44.9)				
OSH Budget Sufficient	Yes	48 (75.0)	16 (25.0)	2.08	1.68	0.89 – 3.17	0.110
	No	176 (59.1)	122 (40.9)				
PPE is Provided	Yes	82 (71.9)	32 (28.1)	1.91	1.51	0.91 – 2.51	0.109
	No	142 (57.3)	106 (42.7)				
OSH Risks Awareness	Yes	170 (68.3)	79 (31.7)	2.35	2.04	1.24 – 3.35	0.005
	No	54 (47.8)	59 (52.2)				

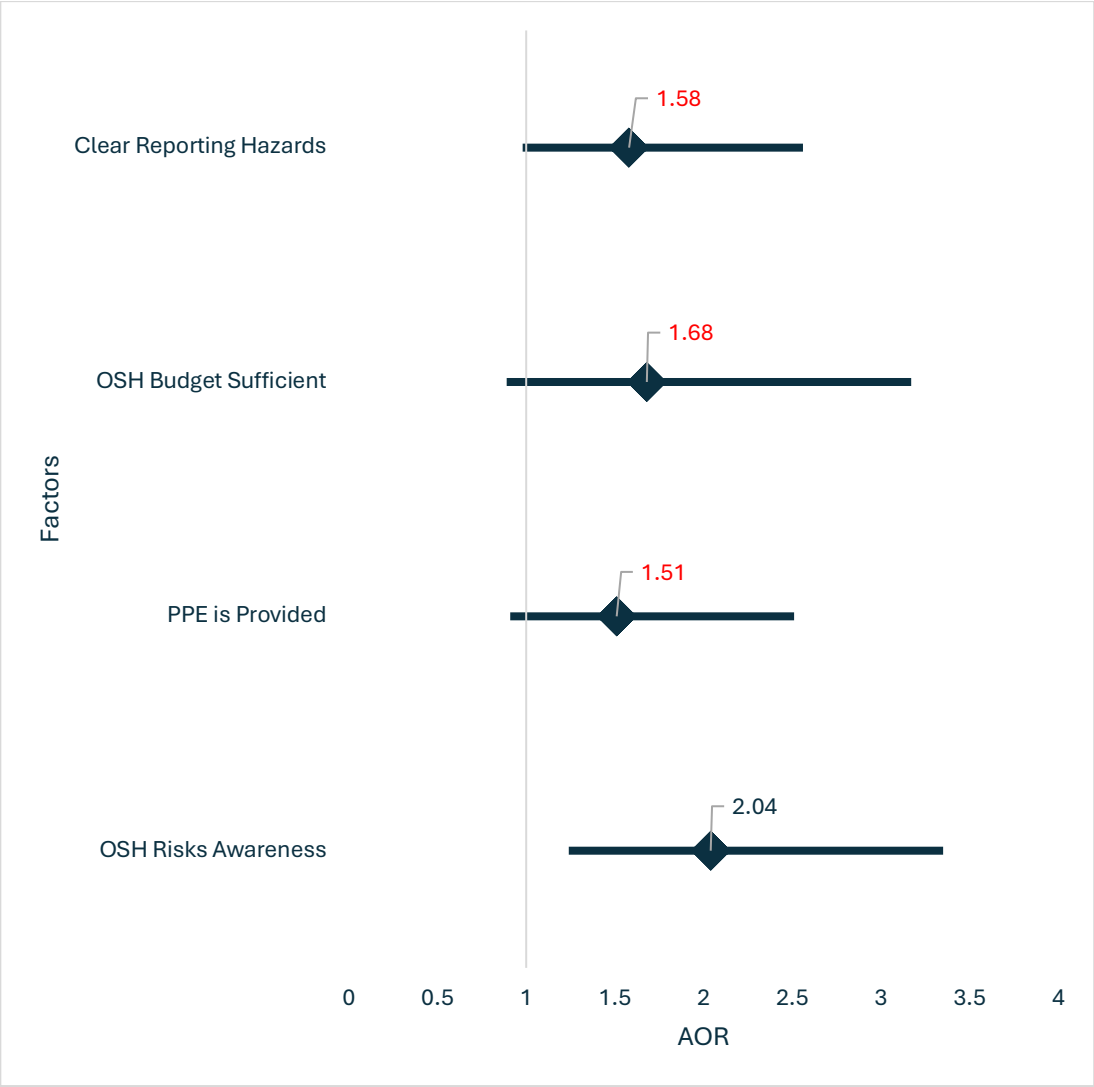

Figure 11. Forest Plot of the Independent Factors Associated with Occupational Safety and Health Compliance

4.2.3 Objective 3: To Examine Perceptions of OSH Practices, Risks and Safety Climate

This section addresses the third objective by presenting the qualitative findings derived from thematic analysis of 14 key informant interviews and the document analysis. The themes are presented as they emerged from the narratives.

4.2.3.1 Theme 1: Systemic Factors - Policies Existence vs Implementation Gaps

This theme explored the foundational systemic elements that shape OSH compliance, including the formal management system, leadership commitment, risk assessment processes, and the role of audits and reporting

4.2.3.1.1 Formal OSH Management System

Participants acknowledged the existence of the formal OSH structures; such has department appointed OSH officers and departmental committees, which aligned with the 'Compliant' findings of the OSH Checklist. This indicates that the BCC has established the necessary legislative framework, which aligns with the constitutional mandate for all levels of government to provide a safe working environment(GOZ, 2025).

However, participants expressed concern about the deterioration of these structures over time. One participant noted:

"Policies are there, but the committees are slowly dying off" (#P3)

Another participant corroborated this observation:

"Refresher training workshops have vanished" (#P1)

These narratives suggest that while formal structures exist, their operational effectiveness is compromised by lack of sustained institutional support. This aligns with Mandowa et.al 2025, who observed that in Zimbabwean manufacturing contexts, policy existence does not guarantee implementation without consistent institutional reinforcement. The ILO emphasizes that effective OSH management systems require continuous cycles of planning, doing, checking and acting (PDCA). This process appears to be weakened at the BCC

4.2.3.1.2 Management Commitment to OSH Compliance

Participants' perceptions of management commitment to OSH compliance revealed a nuanced picture. While some acknowledged top management stated commitment, implementation gaps were evident. One participant explained:

"Top management shows some commitment, but the supply of PPE is poor. They leave it to middle management" (#P5)

This disconnect between policy pronouncements and practical implementation is consistent with findings by (Sorensen et al., 2017),who noted that in low- and middle income countries, public sector organizations often struggle to translate policy commitments into tangible safety outcomes due to bureaucratic inertia and resource constraints.

4.2.3.1.3 Hazard Identification and Risk Assessment

Participants acknowledged that hazard identification and risk assessment processes exist, but identified significant weaknesses in follow through and implementation of the corrective points. One participant noted:

"We do the assessments but there is co consistency in following through" (#P1)

Another participant highlighted the lack of systematic evaluation after the recommendations are made:

"There is some room for improvement because after the recommendation there should be a further evaluation of whether the recommendations have been taken seriously" (#P12)

These findings indicate that while the BCC has established mechanisms for identifying hazards and assessing risks, the absence of the consistent follow-up and evaluation undermines the effectiveness of these processes. This represents a critical 'failure' of the 'Act" component of the PDCA cycle, where corrective actions are not systemically monitored for completion or effectiveness.

4.2.3.1.4 Audits and Reporting

The perception of safety audits and reporting mechanisms was overwhelmingly negative. Participants consistently reported that audit findings are not communicated effectively or used for continuous improvement. One participant stated:

"We have audits, but you never see the results. It feels like it's just paperwork" (#P7)

These findings suggest that audits are conducted for compliance purposes rather than as tools for organizational learning and safety improvement. The lack of visibility of audit results prevents employees from understanding safety performance and undermines trust in the OSH system. This aligns with the quantitative finding that 24% of employees agreed that safety audits are regularly conducted, indicating that even when audits occur, their outcomes are not effectively disseminated.

4.2.3.2 Theme 2: Resource-Based Factors (Financial and Physical Resources)

This theme examines the tangible resources essential for OSH implementation, including budget allocations, procurement processes and staffing levels

4.2.3.2.1 Adequacy of Budget

Participants expressed divergent views on budget adequacy, with some characterizing it as insufficient while others noted that the challenge lies with utilization rather than allocation. One participant stated:

"The OSH budget is insufficient. We often go without basic PPE or training because of procurement delays." (#P2)

However, a more nuanced perspective emerged from another participant who distinguished between budget allocation and effective utilization:

"Budget is always there and we can say its sufficient… but the allocation of funds is often hindered at the procurement stage and maybe you don't get a compliant supplier." (#P14)

This finding suggests that the fundamental problem may not be the quantum of resources allocated but rather systemic barriers in the procurement system that prevents budgeted funds from being translated into safety equipment and training. This interpretation is supported by the quantitative data that only 17.7% of employees agreed that the OSH budget was sufficient.

4.2.3.2.2 Personal Protective Equipment (PPE) Procurement

PPE procurement emerged as a. critical challenge characterize by chronic delays, quality issues and systemic inefficiencies. One participant described the severity of delays:

"It took nearly 2 years for our department to get PPE. The tender process is a nightmare." (#P8)

Beyond delays, participants identified quality and specification issues that further compromise safety:

"They ask for sizes from the workers and when they get them, they are not the correct sizes. Poor fitting PPE is a hazard itself." (#P8)

This finding highlights a critical paradox that is the procurement system intended to provide protection instead introduces additional hazards through ill-fitting equipment. The combination of delays and quality issues creates a situation where workers either work without protection or with equipment that may itself create safety risks.

4.2.3.2.3 Staffing Adequacy

The inadequacy of dedicated OSH personnel was a universal theme across the interviews. Participants consistently noted that the current model relies on committee members with other primary responsibilities. One participant observed:

"There are no departmental specific dedicated OSH officers, therefore we don't have enough OSH officers. It's not adequate." (#P4)

Another participant elaborated on the structural limitations of the committee-based approach:

"Committee members have other jobs. A person cannot have 2 jobs. There is need for one OSH officer dedicated to OSH only in every department." (#P13)

This finding underscores the fundamental structural limitation of the current OSH system. The expectation that employees can effectively manage responsibilities while fulfilling primary operational roles is unrealistic and contributes to the implementation gaps observed throughout the study.

4.2.3.3 Theme 3: Human Factors (Culture, Behavior, and Training)

This theme explores the human dimensions of OSH, including safety culture, training quality, employee participation and behavioral barriers.

4.2.3.3.1 Safety Culture

Participants described the prevailing safety culture as weak and driven by fear rather than genuine commitment to safety values. One participant articulated the primacy of production over safety:

"Employees feel that production comes before safety." (#P9)

Another participant provided insight into the motivations behind safety and compliance:

"People are safe because they are scared of management and job security, not because they believe in it." (#P6)

This finding indicates that safety behaviors are, motivated by fear of punishment rather than an intrinsic belief in safety values. This reactive climate is less sustainable and less effective than a proactive culture where employees internalize safety as a core value.

4.2.3.3.2 Quality of Training

Participants acknowledged the quality of OSH training while identifying significant gaps in frequency and reach. One participant noted:

"The training we get is the best, however the frequency of training is too low and the interval is too long." (#P10)

This finding highlights a critical gap between training quality and training accessibility. While the training content is valued, the limited frequency and long intervals between sessions mean that many employees, particularly new hires, may not receive adequate safety education.

4.2.3.3.3 Employee Consultation and Participation in OSH

Participants confirmed that non-managerial employees are involved in OSH through committee structures and their opinions are taken into consideration. One participant noted:

"Departments have OSH committees made up of employees and their opinions are taken into account." (#P12)

This was corroborated by another participant:

"Employee involvement is there. In the OSH committees, there are members who are not management." (#P8)

However, earlier findings about committee effectiveness suggest that while representation exists, the influence of employee representatives may be constrained by hierarchical dynamics and fear of victimization, as noted in section 4.3.1.1. the structural presence of employee representatives does not necessarily translate to meaningful influence over safety decisions

4.2.3.3.4 Behavioral and Cultural Obstacles

Participants identified several behavioral and cultural barriers that impede OSH compliance. A common theme was resistance to wearing PPE due to discomfort:

"Some workers refuse to wear PPE because its uncomfortable… when it's very hot, they say 'I can't put a mask'" (#P13)

This finding reflects a tension between immediate physical comfort and long-term safety protection. The behavioral pattern of prioritizing short-term comfort over safety protection represents a significant barrier that cannot be addressed through resource provision alone, but requires a cultural change and ongoing safety education

4.2.3.4 Identified Challenges

Participants consistently identified a combination of resource, process and training challenges as the primary barriers to OSH compliance. One participant summarized:

"The main problem is a lack of resources, training and cumbersome procurement process." (#P2)

This synthesis captures the interconnected nature of the challenges identified throughout the analysis. The procurement process emerges as a central constraint that prevents the translation of budget allocations into tangible safety resources. The training gap compounds these challenges by limiting employees' awareness and skills to work safely.

Table 12. Main themes and subthemes emerging from participant narratives

Main Theme	Subthemes	Illustrative key informant (KI)/Participant (P) narratives
Theme 1: Systemic Factors	Formal OSH Management System	"Policies are there, but the committees are slowly dying off" (#P3)
		"Refresher training workshops have vanished" (#P1)
	Management Commitment	"Top management shows some commitment, but the supply of PPE is poor. They leave it to middle management" (#P5)
		"The management is well committed… through the provision of PPE… but there is a challenge in the procurement of PPE. Some departments have been going for almost 2 years without PPE" (#P2)
		"I think management commitment is half-hearted because the enforcement is minimal" (#P12)
	Hazard identification and Risk Assessment	"We do the assessments but there is no consistency in following through" (#P1)

Main Theme	Subthemes	Illustrative key informant (KI)/Participant (P) narratives
		"There is some room for improvement because after the recommendation there should be a further evaluation of whether the recommendations have been taken seriously" (#P12)
	Audits and reporting	"We have audits, but you never see the results. It feels like it's just paperwork." (#P7)
Theme 2: Resource-based Factors	Adequacy of budget	"The OSH budget is insufficient. We often go without basic PPE or training because of procurement delays." (#P2)
		"Budget is always there and we can say its sufficient… but the allocation of funds is often hindered at the procurement stage and maybe you don't get a compliant supplier" (#P14)
	PPE procurement	"It took nearly 2 years for our department to get PPE. The tender process is a nightmare." (#P8)

Main Theme	Subthemes	Illustrative key informant (KI)/Participant (P) narratives
		(They ask for sizes from workers and when they get them, they are not the correct sizes. Poor fitting PPE is a hazard itself) (#P8)
	Staffing adequacy	"There are no departmental specific dedicated OSH officers, therefore we don't have enough OSH officers. It's not adequate." (#P4)
		"Committee members have other jobs. A person cannot have 2 jobs. There is need for one OSH officer dedicated to OSH only in every department" (#P13)
Theme 3: Human Factors	Safety culture	"Employees feel that production comes before safety." (#P9)
		"People are safe because they are scared of management and job security, not because they believe in it." (#P6)
	Quality of training	"The training we get is the best, however the frequency of training is too low and the interval is too long." (#P10)

Main Theme	Subthemes	Illustrative key informant (KI)/Participant (P) narratives
	Employee participation	"Departments have OSH committees made up of employees and opinions are taken into account." (#P12) "Employee involvement is there. In the OSH committees, there are members who are not management" (#P8)
	Behavioral/ cultural obstacles	"Some workers refuse to wear PPE because its uncomfortable… when it's very hot, they say 'I can't put a mask'" (#P3)
General Problems and recommendations	Identified challenges: lack of training, budget constraints, poor committee performance, procurement delays	"The main problem is a lack of resources, training and cumbersome procurement process." (#P2)
	Recommendations: Staff empowerment, resource optimization, empowered OSH officers, re-energized	"They need to give OSH officers real power like NSSA to enforce the rules." (#P13) "The OSH section needs to be empowered and given authority… to say

Main Theme	Subthemes	Illustrative key informant (KI)/Participant (P) narratives
	committees resolve the procurement crisis	'stop what you are doing until you comply with OSH'" (#P3) (OSH trainings should be held every year for all employees, not just supervisors." (#P6)

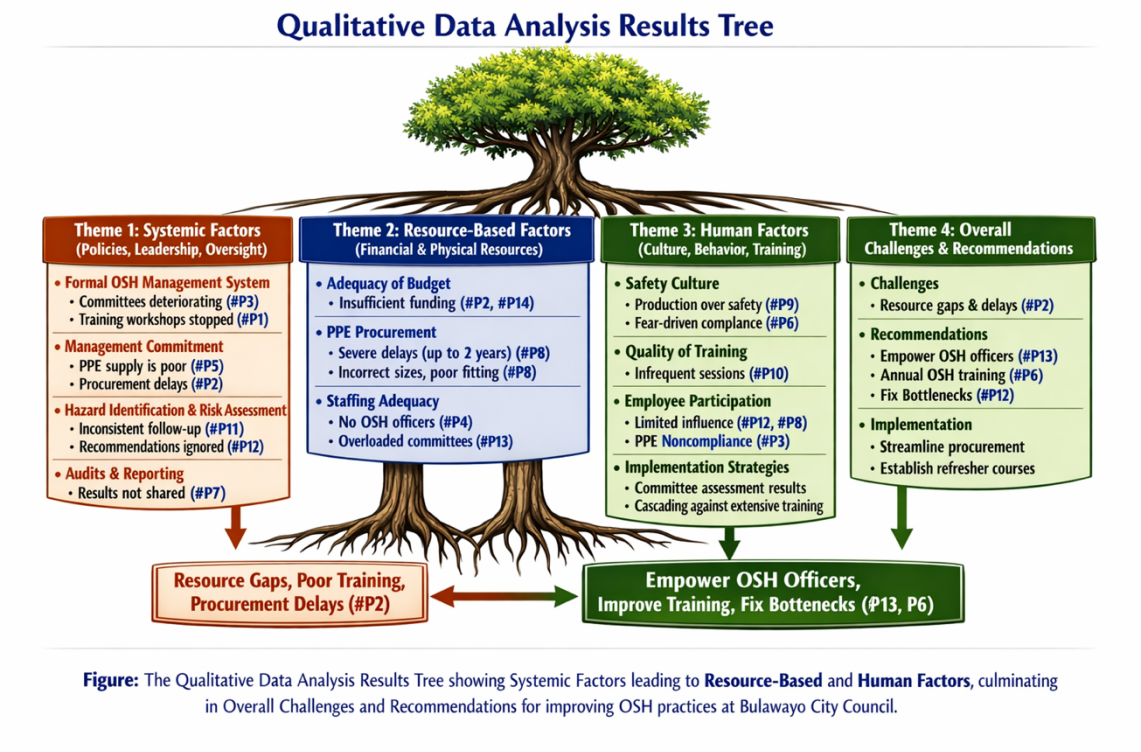

Figure: The Qualitative Data Analysis Results Tree showing Systemic Factors leading to **Resource-Based** and **Human Factors**, culminating in Overall Challenges and Recommendations for improving OSH practices at Bulawayo City Council.

Figure 12. Occupational Safety and Health Compliance Themes Analysis Results Tree

Figure 13. Word Cloud of Key Informant Interviews

4.3 Discussion and Interpretation

4.3.1 Demographic Profile and Workforce Characteristics

The demographic profile of the respondents provides essential context for understanding OSH compliance at the BCC. The median age of 40 years (IQR 31-48) indicates a workforce characterized by a balanced composition of experienced and relatively younger employees. This age structure has significant implications for OSH implementation, as mature workforces typically possess institutional memory(Burmeister & Deller, 2016), while younger employees may bring greater receptiveness to new training methodologies and technical innovations(Lucchini & Landrigan, 2015).

Research has demonstrated that age diversity within organizations can be leveraged to create mentoring relationships that reinforce safety culture and facilitate knowledge transfer between generations and facilitate knowledge transfer between generations (Kalteh et al., 2021). The presence of a mid-career focused workforce, with a substantial proportion of employees having over 10 years of service (36.7%) alongside a significant cohort of 1-5 years' experience (34.0%), creates conditions conducive to sustainable OSH improvement through a combination of experience-based wisdom and openness to innovation.

The gender distribution, with males comprising of 58.0 and females 42.0% of the respondents reflects broader occupational segregation patterns documented across Zimbabwe (Nyagadza et al., 2022) and Southern Africa (Moyo et al., 2015a). This distribution is consistent with the nature of work in municipal settings, where men are

disproportionately represented in physical demanding and outdoor roles such as security, fire services, water and sanitation while women predominate in clinical health, environmental health and community-based services

This gendered division of labor has important implications for OSH policy and practice, as different occupational groups face distinct hazard profile and may need different training needs, risk perceptions and barriers to compliance (Biswas et al., 2022) (Liu et al., 2021) (Özbakır, 2024). The findings underscore the necessity of gender sensitive OSH approaches that account for differential exposures, vulnerabilities, and participation patterns across occupational categories.

Employment type distribution reveals that 72.9% of the respondents are permanent employees while 27.1% are employed on contract basis. This pattern has important considerations for OSH management, ads contract workers may face greater precarity(Gunn et al., 2022), reduced access to training and protective equipment and have diminished participation in safety governance structures(Le & Nguyen, 2025) (Pilbeam, 2024). Research from LMICs has documented that contingent workers often experience higher injury rates due to inadequate training, limited safety equipment and pressure to prioritize productivity over safety (Le & Nguyen, 2025) (Mandowa et al., 2025) (Astutik et al., 2024).

The substantial proportion of contract workers at the BCC necessitates deliberate strategies to ensure equitable OSH coverage, including contract-specific training programs, provision of personal protective equipment (PPE) regardless of employment status and inclusion of contract worker representatives in OSH committees.

Length of service distribution, with 36.7% of employees having more than 10 years of service and 34.0% having 1-5 years, creates opportunities for structured mentorship and knowledge transfer that can strengthen OSH practices. Seasoned employees possess tacit knowledge about workplace hazards, informal safety practices and historical patterns of incidents that can inform prevention strategies and can mentor new employees(Yang et al., 2024). However, the presence of a substantial cohort of relatively new employees also highlights the importance of robust induction training and ongoing safety education to ensure that all workers, regardless of tenure, possess the knowledge and skills necessary to work safely

Departmental representation across the sample reflects the diverse operational landscape of a municipal service, with Security (17.4%), Housing and Community Services (16.6%), Water and Sanitation (14.6%), Works (14.4%) and Clinical Health (13.5%) constituting the largest categories. This distribution is appropriate given the high risk nature of these departments and the concentration of occupational hazards within them(Marumahoko, 2020).

The smaller representation of Fire (11.3%), Ambulances (6.9%) and Environmental Health (5.3%) reflects their smaller workforce sizes but does not diminish their importance in OSH analysis, as these departments face some of the most severe occupational hazards, including fire suppression risks(Cuenca-Lozano & Ramírez-García, 2023) , emergency response exposures and biological hazards. The heterogeneity of departmental risk environments underscores the need for differentiated OSH strategies that address the specific hazards, work processes and operational contexts of each

department rather than applying uniform approaches across all settings(Mandowa et al., 2025).

4.3.2 Human Factors and OSH Compliance

The human factors analysis reveals a workforce with substantial risk awareness but limited engagement in safety consultation and decision-making processes. The finding that 68.8% of respondents strongly agreed or agreed that they are aware of the specific OSH risks associated with their jobs indicates that BCC employees possess foundational knowledge about workplace hazards. This awareness is critical, as risk perception has consistently been identified as a primary determinant of safety behavior across occupational settings(Priolo et al., 2025).

However, the disparity between risk awareness and meaningful participation is striking. Only 30.9% of employees agreed that workers are consulted on safety matters and the consultation was not significantly associated with compliance in regression analysis (OR=1.30, p=0.272). this suggests that while employees understand the hazards they face, they lack meaningful opportunities to influence safety policies, procedures and resource allocation decisions. Worker consultation has a key role in instilling safety culture(ILO, 2019) and in the absence of a sincere consultation, employees can comply superficially but not own safety practices.

The finding that 59.1% of employees agreed or strongly agreed that they follow OSH procedures even under time and work pressure indicates a relatively high procedural compliance. However, the source of this compliance is important to consider. Qualitative interview narratives revealed that compliance may be driven more by fear of management

or job security than a genuine commitment to safety values. As one participant stated, “People are safe because they are scared of management and job security, not because they believe in it.” (#P6). This pattern is consistent with research demonstrating that compliance motivated by fear or external pressure is less sustainable and more likely to erode under operational pressure than behavior rooted in internalized safety values(Sorensen et al., 2017).

The ability to refuse unsafe tasks was significantly associated with compliance (OR =1.61, p=0.035), yet only 39.5% of employees agreed or strongly agrees that they feel comfortable doing so, with 32.3% remaining neutral. This ambivalence likely reflects the tension between safety and productivity that emerged as a dominant theme across both quantitative and qualitative data. The finding that 42.5% of employees perceived that management prioritizes productivity over safety provides empirical confirmation of this tension. This pattern mirrors findings from other LMIC public contexts (Mutegi et al., 2023), where economic pressures, resource constraints and competing organizational priorities often create conditions in which safety is subordinated to production demands (Sorensen et al., 2017).

The reverse coded factor/item regarding management prioritizing productivity over safety focus showed a positive but non-significant association (OR=1.53, p=0.088), suggesting that while this perception influences behavior, its effects may be moderated by other factors.

4.3.3 Strengths and Weaknesses of Systemic Factors

Systemic factors demonstrated a mixed pattern of strengths and weaknesses. The finding that 66.6% of employees agreed or strongly agrees that supervisors encourage OSH compliance indicates that frontline leadership is perceived as supportive of safety. This is significant strength, as one of the strongest predictors of safety behavior and injury prevention(Man et al., 2025). Effective management communication on OSH also showed relatively strong agreement (51.7%), suggesting that top-down messaging is present, if not uniform. These strengths were reflected in the bivariate analysis, where clear hazard reporting procedures (OR=1.91, p=0.003) and effective management communication on OSH (OR=1.87, p=0.004), were significantly associated with compliance.

However significant weaknesses emerged in the domain of audits and risk assessment. Only 24.0% of employees agreed that safety audits are regularly conducted and 36.2% agreed that OSH risk assessments are conducted. These findings indicate that formal oversight mechanisms are inconsistently applied, creating latent conditions for accidents. Reason's Swiss Cheese Model explains how such systemic weaknesses create pathways for error that may remain dormant until triggered by local circumstances(Wiegmann et al., 2022). The non-significant association of safety audits (OR=1.61, p=0.070) and conducting risk assessments (OR=1.22, p=0.375) with compliance in bivariate analysis, despite positive point estimates, reflects the inconsistent application of this mechanism. Qualitative narratives reinforced this interpretation, with one participant noting, "We have audits, but you never see the results. It feels like it's just paperwork." (#P7).

Awareness of the official BCC OSH policy was moderate with 44.5 % in agreement and 35.6% neutral. This suggests that while policies exist, they may not be effectively communicated. Policy awareness is emphasized to be a must so that the policies are translated into actions through clear procedures and consistent enforcement (ILO, 2020). The finding that incident investigation was not significantly associated with compliance (OR=1.35, p=0.172) and showed a negative adjusted association in regression analysis (AOR=0.81, p=0.399) is particularly concerning, as it suggests that investigation processes may be disconnected from preventive action. This pattern is consistent with organizational learning failures documented in safety science literature, where organizations investigate incidents without addressing the systemic conditions that enabled the, resulted in repeated failures(Reason, 2016)

4.3.4 Resource–Based Factors as Fundamental Constraints to OSH Compliance

Resource-based factors emerged as the weakest domain across all measures, with the lowest mean scores and highest levels of disagreement. Only 17.7% of employees agreed that OSH budgets are sufficient, while only 31.5% agreed with adequacy of PPE provision, PPE condition 28.2% and tool maintenance was similarly low at 29.9%. the availability of OSH officers received only 23.2%. this findings indicate chronic underfunding of OSH functions, a pattern documented across LMIC public sectors where competing priorities often marginalize safety investments (Grimani et al., 2018).

All five resource-based indicators mentioned in the paragraph preceding this one demonstrated significant associations with compliance in the bivariate analysis. OSH budget sufficiency (OR=2.08, p=0.017), PPE provision (OR=1.91, p=0.008), PPE

condition (OR=1.70, p=0.033), tool maintenance (OR=1.70, p=0.030) and OSH officer availability (OR=1.87, p=0.021). The strength and consistency of these association underscore the fundamental role of resource adequacy in enabling OSH compliance. In logistic regression, OSH budget sufficiency (AOR=1.68, p=0.110, and PPE provision (AOR=1.51, p=0.109) showed positive but non-significant association, likely reflecting mediation of resource effects through risk awareness and other factors.

Procurement delays emerged as a critical bottleneck in qualitative narratives, with participants reporting up to 2 years waits for PPE. “It took nearly 2 years for our department to get PPE. The tender process is a nightmare.” (#P8). Such delays reflect systemic inefficiencies that transform resource scarcity into implementation failure. Beyond delays, participants identified quality and specification issues that further compromise safety. “They ask for sizes of workers and when we get them, they are not the correct sizes. Poor fitting PPE is a hazard itself.” (#P8). This finding highlights a critical paradox where the procurement system intended to provide protection instead introduces additional hazards through ill-fitting equipment.

The inadequacy of dedicated OSH personnel was a universal theme across interviews. Participants consistently noted that the current model relies on committee members with other primary responsibilities. As one participant observed, “There are no departmental specific dedicated OSH officers, therefore we don’t have enough OSH officers. Its inadequate” (#P4). Another elaborated that, “Committee members have other jobs. A person cannot have 2 jobs. There is need for one OSH officer dedicated to OSH only in every department.” (#P13). This structural limitation fundamentally constrains OSH

implementation, as employees cannot effectively manage safety responsibilities while fulfilling primary operational roles.

4.3.5 Safety Culture and Organizational Climate and OSH Compliance

The findings reveal a safety culture that is reactive rather than proactive, compliance-driven rather than values-driven. The perception that productivity trumps safety (42.5%) indicates a cultural orientation that undermines OSH. Qualitative narratives reinforce this interpretation, with one participant stating, “Employees feel that productivity comes before safety.” (#P9). This tension is particularly problematic in high-risk operational contexts where time pressure and production demands can directly conflict safe work practices. Organizations are required to invest effort, time and resources to keep production and safety trade-offs in balance (Hashemian & Triantis, 2023).

The source of compliance is equally important to consider. “People are safe because they are scared of management and job security, not because they believe in it.” (#P6). This pattern suggests that safety behaviors are motivated by fear of punishment rather than intrinsic commitment to safety values. Such reactive climates are less sustainable and less effective than proactive cultures where employees internalize safety as a core value and take personal responsibility for their own safety and that of their colleagues (Kalteh et al., 2021).

The limited consultation and participation documented in this study further reinforces the reactive nature of the safety culture. When employees are not genuinely involved in safety decision-making, they are less likely to take ownership of safety outcomes and more likely to view safety as something imposed upon them rather than actively contribute to. Worker

representation is critical for developing robust safety cultures and without genuine consultation, compliance may remain superficial and safety ownership limited (Arbin et al., 2021).

4.3.6 Data Integration and Interpretation

Integration of quantitative and qualitative findings provides a comprehensive understanding of OSH compliance at BCC. The convergence of data sources strengthens the validity of findings and reveals the complex interplay of factors influencing compliance.

4.3.7 Human Factors as Central Determinants to OSH Compliance

Both the quantitative and qualitative data confirm that human factors, particularly risk awareness are central to OSH compliance. Quantitative analysis identified OSH risk awareness as the strongest independent predictor of compliance (AOR=2.04, p=0.005), while the qualitative narratives revealed that employees understand workplace risks but face constraints in acting on this awareness. This convergence supports (Priolo et al., 2025) assertion that risk perception directly influences safety behavior, while also highlighting the need for organizational support to translate awareness into action.

4.3.8 Systemic Strengths and Weaknesses

Quantitative data showed a clear hazard reporting procedures and management communication with staff were significantly associated with communication, while the qualitative narratives revealed that the mechanisms are consistently applied. This divergence suggests that while formal systems exist, their implementation is variable. This

weak association of safety audits with compliance, combined with qualitative accounts of audits being ‘paper work’, indicates monitoring mechanisms are not effectively linked to corrective action.

4.3.9 Resource Constraints as Fundamental Barriers

Resource-based factors demonstrated the most consistent significance in quantitative analysis, with all 5 indicators associated with compliance. Qualitative narratives reinforced this, with participants identifying budget inadequacy, PPE shortages, and staffing deficiencies as fundamental constraints.

4.3.10 Safety Culture and Participation

The tension between productivity and safety strongly emerged in both datasets. Quantitative analysis showed that 42.5% of employees perceived that management prioritizes productivity over safety, while the qualitative narrative described safety culture shaped by fear rather than genuine commitment. This suggests that BCC’s safety culture is reactive rather than proactive, consistent with findings from Sorenson at al. 2017 who noted that low to middle income countries often struggle to balance economic pressures with safety imperatives

4.4 Summary

This chapter has presented a comprehensive analysis of OSH compliance at the BCC, integrating quantitative survey data with qualitative interview narratives. The findings reveal that OSH compliance is influenced by a complex interplay of human, systemic and resource-based factors. Human factors, particularly risk awareness, emerged as the

strongest indicator of compliance. Systemic factors, including hazard reporting procedures and management communication, demonstrated significant associations but revealed implementation gaps. Resource-based factors consistently emerged as significant determinants, with budget adequacy, PPE provision and staffing identified as fundamental constraints.

The qualitative data enriched these findings by providing contextual explanations from quantitative patterns. Participants' narratives revealed that while formal OSH structures exist, their effectiveness is compromised by consistent implementation, resource constraints. These findings confirm the alternative hypothesis (H_1), that significant factors are associated with OSH compliance at the BCC, with risk awareness being the most influential determinant.

CHAPTER 5 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a comprehensive synthesis of the research findings on Occupational Safety and Health (OSH) compliance and practices at the Bulawayo City Council (BCC). The study, grounded in the Systems Theory and the International Labor Organization's (ILO) Occupational Safety and Health Management System (OSH-MS) framework, employed a convergent parallel mixed-methods design to evaluate OSH compliance against the benchmarks established by the ILO Conventions C155 and C187 and Zimbabwe's Occupational Safety and Health Bill of 2025.

The Chapter integrates quantitative survey data from 363 employees across high-risk departments with qualitative interview narratives from key informants, providing a holistic understanding of the factors that influence OSH outcomes. This discussion contextualizes findings within existing literature, drawing on empirical studies from low to middle income countries (LMICs) and international best practices.

The conclusions distill the key insights emerging from the research, while the implications section translates these findings into actionable guidance for policy and practice. The recommendations provide a structured set of evidence-based interventions designed to strengthen compliance, reduce workplace injuries, foster a preventative safety culture at the BCC and contribute novel literature to academia. Finally, the chapter identifies avenues for future research that can build on this study's contributions to the fields of

business administration and occupational safety and health in the public sector of Zimbabwe and comparable contexts

5.2 Discussion

The study's findings strongly support the Systems Theory perspective, demonstrating that OSH compliance at the BCC is not a product of isolated factors, but emerges from the dynamic interaction of systemic, resource-based and human elements. The primary driver of compliance was individual risk awareness, a human factor. However, this awareness was not enough to guarantee safety. Employees ability to act safely was fundamentally constrained by systemic weaknesses. These systemic weaknesses included inconsistent follow-through on hazard reporting and severe resource deficiencies of functional PPE due to procurement failures. This finding is consistent with research by (Priolo et al., 2025) on the link between risk perception and safety behavior, while highlighting the critical role of organizational support in translating awareness into action.

The systemic factors at the BCC presented a dual reality, vividly illustrated by the OSH Compliance and Governance Checklist. On one hand, there was a formal framework of policies and supervisor support, which aligns with the 'Plan' phase of the ILO OSH-MS cycle and the checklist's high compliance score. However, the qualitative data and the checklist's 'Partially Compliant' ratings revealed a fatal flaw that is the systems were not consistently implemented or linked to corrective action. The 'Check' and 'Act' phases were particularly weak, with audits described as paperwork and investigations failing to lead to systemic improvements, a pattern consistent with (Reason, 2016) model of organizational accidents.

The most pervasive and foundational barriers to OSH compliance were the resource-based factors. These findings on chronic underfunding , PPE shortages and inadequate staffing echo the challenges documented across public sector organizations in LMICs (Mandowa et al., 2025) (Sorensen et al., 2017). The study's critical contribution is in revealing the specific mechanism of this failure which is a dysfunctional procurement system. This system not only delays the delivery of essential safety equipment but also introduces new hazards such as ill-fitting PPE. This finding transforms the abstract concept of resource constraints into a concrete, addressable systemic problem and exposes the weaknesses of the checklist's "Compliant' rating on the procurement protocols.

The nature of BCC safety culture, which the study found as reactive rather than proactive was concerning. The tension between productivity and safety was a dominant theme, with employees reporting they comply not out of intrinsic belief but due to job security and fear of senior management. Such a reactive fear-based culture , documented both in the quantitative and qualitative data, is less sustainable and less effective than a proactive culture where safety is a shared value (Kalteh et al., 2021). The limited and tokenistic worker participation, reflected as compliant in the checklist but inadequately implemented worker consultation policy, further reinforces this, as employees ae not empowered to take ownership of safety.

5.3 Conclusions

This section presents conclusions drawn from the findings, structured according to the study's objectives

Objective 1: To Assess the Current State of OSH Compliance Within Key Operational Departments at the BCC

The study concludes that the current state of OSH compliance at the BCC is characterized by a significant implementation gap. The OSH compliance and Governance Checklist revealed a high level of foundational compliance (84.6%), indicating that the BCC has established formal structures required the Zimbabwe's OSH Bill of 2025. However, this paper-based compliance is not translating effectively into practice. This is evidenced by preventable injuries (12.71% reporting an injury), a pervasive perception that productivity trumps safety (42.5%) and systemic failure to provide basic resources like functional PPE. The compliance was largely reactive, driven by consequences rather than a genuine proactive safety culture. The partially compliant items on the checklist (data systems, OSH-MS accreditation, dedicated OSH officers) precisely identify the structural weaknesses causing this implementation failure.

Objective 2: To Identify and Assess the Factors Influencing the Level of OSH Compliance at the BCC

The study concludes that OSH compliance is influenced by a complex interplay of factors, with OSH risk awareness as the strongest independent predictor (AOR=2.04, p=0.005). however, this awareness is mediated by significant resource-based constraints (inadequate budgets, dysfunctional procurement, staffing shortages) and systemic weaknesses (ineffective audits, poor investigation follow-up, lack of enforcement authority for OSH officers). The study also concludes that the procurement system is a fundamental barrier, undermining all other OSH efforts by failing to translate budgeted funds into usable safety

equipment, a finding that exposes the inadequacy of simply having compliant procurement protocol

Objective 3: to examine the perceptions of non-managerial employees in high-risk departments regarding OSH practices, risks and the safety climate

The study concludes that employees in high-risk departments possess a high-level risk of awareness (68.8%) but perceive themselves as disempowered. They view the safety climate as reactive, where management commitment is inconsistent and production targets are prioritized over their well-being. Employee participation is perceived as tokenistic, confined to ineffective committees and OSH officers who are not empowered to make real changes. The prevailing perception is that safety is a rule to be followed, not a shared value and this explains why there is a strong association of risk awareness with compliance but does not translate into better outcomes

Objective 4: To Propose a Framework of Strategic, Evidence-Based Recommendations to Improve OSH Compliance and Outcomes at the BCC

Based on the evidence, the study concludes that a transformative approach is required as isolated interventions will not be sufficient. A strategic framework must address the root causes of non-compliance, specifically by empowering OSH personnel with enforcement authority to halt unsafe work, thereby transforming the advisory function into an operational mandate, reforming the procurement system to ensure timely availability of quality PPE, moving beyond paper-compliance to functional delivery and institutionalizing a comprehensive OSH training that fosters and encourages genuine safety values, accessible to all workers not just managers. These interventions must be

underpinned by strengthened worker participation and genuine commitment from top management to align resources and policies with the stated goal of a safe workplace (Table 13).

5.4 Implications

5.4.1 Implications for Policy

The findings of this study have significant implications for OSH policy at both organizational and national levels. At the organizational level, the results underscore the need for the BCC to develop and implement comprehensive OSH policies that address the interrelated human, systemic and resource-based factors identified in this research. policies should move beyond statements of commitment to specify clear procedures, accountability mechanisms and resource allocations. The finding that policy awareness is moderate (44.5% agreement) suggests that policy communication and internalization require strengthening. The procurement policy needs an urgent review to introduce streamlined processes for safety-critical equipment. The OSH Checklist provides a clear roadmap for policy reform in data management, system accreditation and staffing

At national level, the study provides evidence than can inform the implementation of the Occupational safety and Health Bill of 2025. The findings highlight the gap between legislative intent and organizational reality. This further suggests effective implementation requires not only legislative reform but also capacity building, resource allocation and enforcement mechanisms. The OSH Bill's provisions for NSSA oversight

and enforcement provide mechanisms for addressing the gaps identified at BCC, but oversight will require adequate staffing, resources and political support.

The study has also implications for policy coherence across different levels of government. As a local authority, BCC is subject to national legislation but operates within a broader framework of local government policies and procedures. The procurement delays documented in this research reflect systemic issues that may extend beyond BCC to the broader local government system. Addressing these issues may require policy reforms at national level regarding local government procurement, budgeting and human resource management

5.4.2 Implications for OSH Practice

The findings have direct implications for OSH management at the BCC. The primacy of risk awareness as a predictor of compliance suggests that OSH training and communication should prioritize building and reinforcing workers' understanding of job-specific hazards. Training should move beyond generic safety messages to address the specific hazards, work processes and operational contexts of different departments. The findings that 68.8% of employees are aware of OSH risks but only 30.9% are consulted on safety matters indicates a significant under-utilization of employee knowledge and experience in safety governance.

The finding that adequate OSH training showed a positive but non-significant association with compliance (OR=1.56, p=0.054) suggests that current training programs may be insufficient in frequency, content or reach. Implications for practice include expanding training coverage to all employees, including contract workers. Increasing the training

frequency to annual refresher courses and tailoring training content to the specific hazards of different departments and job roles.

The shortages of OSH dedicated officers documented in the qualitative narratives have implications for capacity building. The BCC should recruit additional OSH officers, especially at departmental level and provide specialized training in risk assessment, incident investigation and enforcement. OSH officers should be empowered with authority to stop unsafe work until compliance is achieved, transforming OSH from advisory function to operational policy.

The consistent significance or resource factors across both quantitative and qualitative analysis have clear implications for resource allocation. BCC should ring-fence OSH budgets that are protected from reallocation to other priorities. Procurement processes should be reviewed to identify and eliminate bottlenecks, with consideration of alternative sourcing mechanisms as framework contracts with re-qualified supplies for critical safety equipment.

The finding that PPE provision and condition are inadequate has implications for procurement and supply chain management. The BCC should prioritize PPE procurement, ensuring that appropriate types and sizes are available for all employees. Quality assurance mechanisms should be established to ensure that procured PPE meet relevant standards and is fit for purpose. Maintenance programs should be established for tools and machinery, with regular inspections and timely repairs.

The study findings have significant implications for organizational culture. The perception that productivity trumps safety (42.5 % agreement) indicates a cultural orientation that

undermines OSH. Shifting this orientation requires visible, consistent leadership commitment to safety, integration of safety metrics into performance management systems and accountability for safety outcomes at all levels of management. Leaders should demonstrate through their actions that safety is valued equally with productivity, not just in policy statement but in resource allocation decisions, performance evaluations and responses to safety concerns.

The finding that compliance may be driven by fear rather than genuine commitment suggests the need for cultural transformation from reactive to proactive safety. This transformation requires building trust, empowering workers and creating conditions where employees feel psychologically safe to raise safety concerns and participate in safety decision-making. Proactive safety cultures are characterized by shared safety values , open communication about hazards and incidents, continuous learning and collective responsibility for safety outcomes(Kalteh et al., 2021).

5.4.3 Implications for Research and Evaluation

The findings from this research have implications for OSH research and evaluation at the BCC. This study demonstrates the value of mixed-methods approaches for understanding complex OSH issues, combining quantitative measurement of compliance levels with qualitative exploration of underlying factors. This approach should be institutionalized as part of BCC's ongoing OSH monitoring and evaluation activities. Regular surveys could track trends over time and evaluate the impact of interventions, while qualitative interviews can provide contextual understanding of survey findings.

The conceptual framework developed in this study, integrating Systems Theory with the ILO OSH-MS framework and the 3 determinant categories of systemic, resource-based and human factors, provides a model for OSH evaluation that could be applied in other municipalities and public sector organizations. The framework's emphasis on the interdependence of factors and the PDCA cycle offers a diagnostic approach that moves beyond simple compliance checking systemic analysis.

5.5 Recommendations

Based on the study's conclusions and the integrated analysis of quantitative, qualitative and the checklist data, the following evidence-based recommendations are proposed. They are structured to address the specific factors identified as barriers to OSH compliance and are aimed at transforming the OSH system at the BCC from a reactive to proactive. The recommendations are designed to close the critical implementation gap identified by the OSH Compliance and Governance Checklist, particularly addressing the areas where the BCC was found to be partially compliant.

5.5.1 Institutionalize Comprehensive OSH Training and Risk Awareness Programs

The study identified OSH risk awareness as the strongest independent predictor to compliance. However, only 36% of employees felt they had received adequate training. To address this, the BCC must move beyond generic safety inductions. The Human Capital Director is tasked to develop and implement department-specific training modules to all workers not just supervisors. These modules must cover not only hazard

identification and safe work procedures but also include emergency response, proper PPE use and crucially workers' rights including the right to refuse unsafe work.

To ensure that knowledge is retained and reinforced, annual refresher training must be schedules for all existing employees across all departments. The effectiveness of this investment must be evaluated through pre- and post-0 training assessments and annual knowledge retention tests. These will be conducted by the Principal Gender Safety and Health Officer. This transforms training from a one-off event into a continuous process of learning and reinforcement addressing the 'Do' and 'Check' phases of the ILO OSH-MS cycle.

5.5.2 Strengthen Worker Participation and Consultation

The quantitative analysis revealed a significant gap in worker consultation, with only 30.9% of employees agreeing they are consulted on safety matters. The qualitative narratives described this participation as tokenism. To remedy this, the Principal Gender Safety and Health Officer must lead a comprehensive review of existing OSH committee structures and their Terms of reference.

The goal is to identify gaps and empower the genuine decision-making authority and clear mechanisms for escalating unresolved safety concerns. Furthermore, a mandatory feedback mechanism must be enforced to ensure that committee decisions, actions and audit findings are communicated transparently to all employees through notice boards, emails and regular meetings. This transforms worker participation from a passive formality into an active, accountable process and directly addressing the 'Act' phase of the OSH-MS cycle by ensuring that safety discussions lead to visible action

5.5.3 Implement Policies Protecting the Right to Refuse Unsafe Work

The study showed that only 39.5% of employees felt comfortable in refusing unsafe work whilst 32.3% remained neutral. This ambivalence reflects a culture of fear, where productivity is perceived to be prioritized over safety. To dismantle this barrier, the Human Capital Director must draft and implement a formal policy on right to refuse unsafe work. This policy must go beyond a simple statement of intent and include clear, step-by-step procedures for workers to follow, as well as explicit protections against any form of retaliation. Complementing this, a confidential reporting mechanism must be established, allowing workers to report unsafe conditions without fear of reprisal. This recommendation directly addresses the human factors driving non-compliance, shifting the balance of power and reinforcing that a worker's safety is paramount and legally protected

5.5.4 Strengthen Safety Audits and Risk Assessment Systems

The study found a critical systemic weakness in the 'Check' phase of the OSH-MS cycle. Only 245 on employees agreed that safety audits are regularly conducted and a mere 36.2% agreed that risk assessment is performed. The qualitative data revealed that audits are perceived as just paperwork with no actionable follow through. To address this, the Director of the Audit Department must conduct a baseline comprehensive safety audit across all high-risk departments. This audit should serve not as a punitive exercise but a diagnostic tool to establish a baseline for improvement. Crucially, the findings and the progress of the corrective actions must be communicated to all employees through

quarterly safety reports. This transparency builds trust, demonstrates management's commitment and ensures that the 'Act' phase of the cycle is operationalized.

5.5.5 Establish Dedicated OSH Budgets and Streamline Procurement Processes

Resource-based factors were the weakest domain in the study, with all 5 indicators significantly associated with compliance. The qualitative data pinpointed the procurement system as the fundamental mechanism of this failure with reports of prolonged waits for PPE and acquisition of ill-fitting inappropriate equipment. The OSH Compliance and Governance Checklist rated the BCC as compliant on having procurement protocols (Clause 15 of the Zimbabwe's OSH Bill of 2025). However, this highlights a critical paradox of the existence of a policy that does not ensure effective implementation.

To break this bottleneck, the Town Clerk must secure approval for dedicated OSH budget lines that are protected from reallocation. This must be based on a comprehensive OSH resource assessment conducted by the Osh department to ensure the budget is adequate and justified. Simultaneously, the Chief Procurement Officer must conduct an urgent review of the procurement procedures to identify bottlenecks, such as lengthy tender processes or over reliance of single suppliers and to streamline processes specifically for safety-critical equipment. These 2 actions together address the 'Do' phase of the OSH-MS cycle, ensuring that the financial and material resources intended for safety are actually available when and where they are needed

5.5.6 Increase OSH Staffing and Strengthen Enforcement Capacity

The inadequacy of dedicated OSH personnel was a universal theme, with the OSH Compliance and Governance Checklist flagging this as partially compliant (Clause 12(2), 12(3) of the Zimbabwe OSH Bill of 2025). The current model of using committee members with other primary jobs was described as ineffective. To rectify this structural flaw, the Human Capital Director must develop job descriptions and a recruitment plan for additional, full time OSH officers to be based at departmental level. However increasing numbers is not sufficient alone. The Town Clerk must formalize the authority of these officers, delegating to them power to stop any work deemed immediately unsafe until compliance is achieved. This official delegation transforms OSH from an advisory function into a core operational mandate, giving officers the teeth they need to enforce safety protocols and directly challenging the culture that prioritizes productivity over safety

5.5.7 Align Internal policies with Zimbabwe's Occupational Safety and Health Bill of 2025

The study revealed that while the BCC has foundational policies in place, their implementation is inconsistent. The new OSH Bill of 2025 provides legislative framework but its intent must be integrated into the daily operations of the BCC. The Human Capital Director is responsible for developing specific OSH performance indicators for individuals and departments. These indicators must be integrated into the performance appraisal templates for all managers and supervisors. This action is critical because it hold management accountable for safety outcomes, directly addressing the perception that

management prioritizes productivity over safety. It ensures that safety is not just a stated value but a measured and rewarded component of management performance

5.5.8 Implement a Formal OSH Management System Based on the ILO Framework

The OSH Compliance and Governance Checklist rated the BCC as partially compliant on having an accredited OSH management system (Clause 13(1), 13(2) of Zimbabwe's OSH Bill of 2025). To achieve full compliance, and more importantly to institutionalize a systematic approach to safety, the Principal Gender Safety and Health Officer must lead the implementation of a formal OSH-MS across all high-risk departments. This implementation should be conducted in phases, using the findings of this study as the starting point and diagnostic baseline. By adopting the ILO's PDCA cycle, the BCC can move beyond fragmented interventions to a holistic, continuously improving system. This formal system will provide the structure for all other recommendations, ensuring they are not implemented in isolation but as part of a coherent, integrated strategy for OSH management

Table 13. Recommendations

Recommendation	Action Point	Responsible Person	Timeline
Institutionalize Comprehensive OSH Training & Risk Awareness Programs	Develop department specific training modules for each high-risk department covering hazard identification, safe work procedures, emergency response, PPE use and worker's rights	Human Capital Director	End 2nd Quarter 2026
	Schedule and conduct annual refresher training on OSH for all existing employees across all departments	Human Capital Director	End of 2026
	Evaluate training effectiveness through pre- and post- training assessments and annual knowledge retention tests	Principal Gender Safety and Health Officer (OSH Manager)	End of 2nd Quarter 2026
Strengthen Worker Participation	Review existing OSH committee structures and terms of reference (TOR) to identify gaps and areas of improvement	Principal Gender Safety and Health Officer (OSH Manager)	End of 2nd Quarter 2026
	Enforce feedback mechanism to communicate committee decisions and actions to all employees, audit reports (notice boards, email, meetings)	Principal Gender Safety and Health Officer (OSH Manager)	End of 2nd Quarter 2026
Implement Policies Protecting the Right to Refuse Unsafe Work	Draft a formal policy on the right to refuse unsafe work, including clear procedures and protection against retaliation	Human Capital Director	End 2nd Quarter 2026
	Establish a confidential reporting mechanism for workers to report unsafe conditions without fear of reprisal	Human Capital Director	End of 2nd Quarter 2026
Strengthen Safety Audits and Risk Assessment Systems	Conduct baseline comprehensive safety audits across all high-risk departments	Director of the Audit Department	End 2026
	Communicate audit findings and all corrective action progress to	Principal Gender Safety and Health	End 2026

Recommendation	Action Point	Responsible Person	Timeline
	all employees through quarterly safety reports made available to all employees	Officer (OSH Manager)	
Establish dedicated OSH Budgets and Streamline Procurement Processes	Secure approval for dedicated OSH budget lines protected from reallocation (after conducting a comprehensive OSH resource assessment)	Town Clerk	End of 2026
	Review procurement procedures to identify bottlenecks and develop streamlined processes for safety equipment	Principal Procurement Officer	End 2nd Quarter 2026
Increase OSH Staffing and strengthen Enforcement Capacity	Develop job descriptions and recruitment plan for additional full-time OSH officers at departmental level	Human Capital Director	End 2026
	Formalize authority for OSH officers to stop unsafe work until compliance is achieved, through official delegation from the Town Clerk	Town Clerk	End 2026
Align Internal Policies with Zimbabwe's Occupational Safety and Health Bill of 2025	Develop OSH performance indicators for individuals and departments	Human Capital Director	End 2nd Quarter 2026
	Integrate OSH indicators into appraisal templates for all managers and supervisors		
Implement a Formal OSH-MS based on the ILO Framework and OSH Bill of 2025	Implement OSH-MS across all high-risk departments with a phased roll-out to address the partial compliant item on the system accreditation	Principal Gender Safety and Health Officer (OSH Manager)	End 2nd Quarter 2026
	(Use this study as a starting point)		

5.6 Suggestions for Further Research

5.6.1 Economic Evaluation of OSH Investments

Research examining the economic impact of OSH investments at the BCC, including cost-benefit analysis of PPE provision, training programs and systems strengthening would provide evidence to support business cases for increased OSH funding. Such studies could quantify returns in terms of reduced injury costs, decreased absenteeism, improved productivity and enhanced service delivery. Economic evaluations could also examine the costs of non-compliance including direct costs of workplace injuries and indirect costs such as reputational damage and regulatory penalties

5.6.2 Comparative Studies Across Zimbabwean Municipalities

Future research should compare OSH compliance across multiple Zimbabwean municipalities incorporating both urban and rural councils. This can be done to identify common challenges and context specific factors. Such comparative studies would illuminate whether the patterns observed at the BCC are unique or reflect systemic issues across local government, informing national-level policy harmonization and resource allocation strategies. Comparative research could also examine how variations in municipal size, resource base, political context and management practices influence OSH outcomes.

5.6.3 Longitudinal Studies of OSH Culture and Compliance

Longitudinal research tracking OSH compliance and safety culture over time, particularly following the implementation of the OSH Bill of 2025 and any interventions arising from

this study would provide evidence on the sustainability of changes and elicit time frames required for cultural transformation. Longitudinal studies could also examine the relationship between OSH Compliance and organizational outcomes such as employee retention, productivity, and service delivery quality

5.6.4 Sector-Specific Analyses in High-Risk Departments at BCC

In-depth studies focusing on specific high-risk departments such as Water and sanitation, Fire Services, Ambulances and Works would generate detailed understanding of the unique hazards, barriers and intervention opportunities in these critical areas. Such targeted research would inform targeted resource allocation and specialized training programs tailored to the distinct risk profiles or different occupational groups. Sector-specific studies could examine the effectiveness of different PPEs, work practices and engineering controls in reducing specific operational contexts.

5.6.5 Development and Validation of OSH Measurement Instruments

Future research should focus on refining the OSH and Governance Checklist instrument developed in this study and validate for appropriate LMIC public sector contexts. This includes survey instruments for assessing safety climate, risk perception and compliance. Observation protocols for measuring safety behavior and audit tool for assessing OSH management systems can be developed. Such validated instruments would facilitate comparative research and enable a rigorous evaluation of OSH intervention mentioned in 5.6.2

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APPENDICES

Appendix 1 Informed Consent in English

Informed consent: An Evaluation of Occupational Safety and Health Compliance and Practices at the Bulawayo City Council, 2025

My name is Mbusi Falayi, an Executive Master in Business Administration student at Africa University. I am conducting research on evaluating the Occupational Safety and Health (OSH) Compliance and Practices at the Bulawayo City Council (BCC). The purpose of the study is to assess the level of OSH compliance at the BCC. This will help in identifying key factors associated with the level of OSH compliance at the BCC thereby preventing workplace injuries before they occur. Should you decide to participate you will take about fifteen minutes to answer questions asked by the interviewer. The researcher will address the sensitive questions in a respectable manner. The participant is also free to divulge the information voluntarily. It is essential to note: that there are no material or financial benefits attached to the study, all the information obtained would be kept confidential, no names or any other forms of identification will appear on questionnaires, coding of questionnaires will be done using serial numbers to enhance privacy, privacy will be maintained and participation in this study is on voluntary basis

Should the participant feel unable to participate, the action will not affect their relationship with Bulawayo City Council or any authority. If you chose to participate, you are free to withdraw your consent at any time and discontinue participation without penalty. Please feel free to ask any questions pertaining to the study. You may take as much time as necessary to make a decision. If you have decided to participate in this study kindly sign the form in the spaces provided below as an indication that you have read the information and have agreed to participate.

If you have any queries, questions or concerns beyond those addressed by the researcher or anything to with the research, like your rights as a research participant and you feel you have been treated unfairly, and would like to talk to someone other than the researcher feels free to contact my supervisor Dr Tawanda Nyikadzino (0772308322) or the Africa University Research Ethics Committee on telephone. (020) 60075 or 60026 extension 1156 or email aurec@africa.edu.

Name of Research Participant ……

Signature of Research Participant ……

Date …….

Name of researcher: …Mbusi Falayi 0779559265…….……..……

Appendix 2 Informed Consent in Ndebele

Incwadi yokupha umfundi imvumo yokuxoxa lomphathisi (Ndebele Informed Consent)

Ibizo lami ngingu Mbusi Falayi, ngiyenza iExecutive Master in Business Administration e Africa University.Ngicubungula ukugcinwa lokulandelwa kwemithetho yokuphepha ezingozini zemsebenzini kanye lempilakahle ekhansilini yako Bulawayo.Injongo yalolu cubungulo yikuhlola ukugcinwa lokulandelwa kwemithetho yokunqanda ingozi emsebenzini ekhansilini yako Bulawayo. Lokhu kucubungula kujonge ukuzwisisa lapho okusilela khona ekulandelweni kwemithetho yokuvikela ingozi emsebenzini, okuzenza ukuthi ingozi emsebenzini zivimbeke zingakenzakali.Uma kwenzeka unquma ukubamba iqhaza uzothatha cishe imizuzu engamashumi amabili ukuphendula imibuzo ebuzwa ngumuntu obuza imibuzo. Umcwaningi uzophendula imibuzo ebucayi ngendlela ehloniphekile futhi agcine ulwazi olutholiwe luyimfihlo. Umhlanganyeli futhi ukhululekile ukudalula ulwazi ngokuzithandela. Kubalulekile ukuqaphela ukuthi azikho izinzuzo ezibonakalayo ezixhunywe ocwaningweni. Abahlanganyeli bazothola izinzuzo zezempilo kuphela. Lonke ulwazi olutholiwe luzogcinwa luyimfihlo, awekho amagama nanoma yimuphi omunye umazisi ozovela kuhlu lwemibuzo. Kodwa-ke ukufakwa kwamakhodi kuhlu lwemibuzo kuzokwenziwa kusetshenziswa izinombolo ze-serial. Ubumfihlo nabo buzogcinwa. Ukubamba iqhaza kulolu cwaningo kungokuzithandela. Uma ngabe umhlanganyeli ezizwa engakwazi ukubamba iqhaza, isenzo ngeke sithinte ubudlelwano bakhe nenhlangano ebambe iqhaza nanoma yisiphi isiphathimandla. Uma bekhethe ukubamba iqhaza bakhululekile ukuhoxisa imvume yabo futhi bayeke ukuhlanganyela ngaphandle kwesijeziso. Sicela uzizwe ukhululekile ukubuza noma yimiphi imibuzo ephathelene nocwaningo. Ungathatha isikhathi esiningi ngangokunokwenzeka ukuze wenze isinqumo. Uma unqume ukubamba iqhaza kulolu cwaningo ukurekhodwa kuzokwenziwa njengobufakazi bokuthi uyavuma ukubamba iqhaza kulolu cwaningo.

Igama Lombambiqhaza……

Ocwaningweni……

Usuku……

Igama-lomcwaningi……Mbusi Falayi (0779559265)……

Ummeleli ogunyazwe ngokomthetho

Uma unemibuzo, imibuzo noma okukukhathazayo ngale kwalokhu okukhulunywe ngumcwaningi noma okunye mayelana nocwaningo, njengamalungelo akho njengomhlanganyeli wocwaningo. Uma unomuzwa wokuthi awuphathwanga ngendlela efanele, futhi ungathanda ukukhuluma nomunye umuntu ngaphandle komcwaningi zizwe ukhululekile ukuthinta u Dr Tawanda Nyikadzino (0772308322), i-Africa University Research Ethics Committee ngocingo. (020) 60075 noma 60026 isandiso 1156 noma i-imeyili aurec@africa.edu.

Appendix 3 Interview Guide for Key Informant Interview

An Evaluation of Occupational Safety and Health Compliance and Practices at the Bulawayo City Council,2025

Theme 1: Systemic Factors (Policies, Leadership, and Oversight)

1.Can you describe the formal OSH management system at BCC? *(e.g., What policies exist? How is it structured?)*

2.How would you characterize the commitment of senior and middle management to occupational safety and health? (*Can you provide examples of how this commitment is demonstrated (or not) in practice?)*

3.From your perspective, how effective are the current processes for identifying hazards, assessing risks, and investigating incidents? *(What are the main strengths and weaknesses of these processes?)*

4.Tell me about the safety audit and reporting mechanisms. How are the findings from audits and incident reports typically used? *(Are they used for continuous improvement, or do they often end up as just paperwork?)*

Theme 2: Resource-Based Factors (Financial and Physical Resources)

5.In your opinion, is the budget allocated for OSH (for PPE, training, equipment maintenance, personnel) sufficient? Why or why not?

6.What is the process for procuring safety equipment like PPE? Are there any significant delays or challenges?

7.How adequate is the staffing of the OSH department? Do you feel there are enough competent OSH personnel to cover the needs of all high-risk departments?

Theme 3: Human Factors (Culture, Behavior, and Training)

8.How would you describe the overall 'safety culture' at BCC? *(Do employees feel responsible for their own safety and that of their colleagues? Is safety a shared value?)*

9.What is your view on the level and quality of OSH training provided to both new and existing employees?

10. How are non-managerial employees involved in OSH decision-making? (e.g., safety committees, consultations) *(Is their feedback genuinely sought and acted upon?)*

11. What, in your view, are the most significant behavioral or cultural barriers to achieving full OSH compliance among the workforce?

Theme 4: Overall Challenges and Recommendations

12.Reflecting on everything we've discussed, what do you see as the two or three most critical challenges to achieving excellent OSH compliance at BCC?

13.If you had the authority and resources to change three things about the OSH system at BCC to reduce workplace injuries, what would they be and why?

14.Is there anything else you think is important for me to understand about safety and health at BCC that we haven't covered?

THANK YOU FOR YOUR RESPONSES AND TIME

Appendix 4 Questionnaire in English

Employee Survey on Occupational Safety and Health (OSH) Compliance

Section A: Demographics

#	Question	Response
1	Age	……..
2	Sex	[ ] Male [ ] Female
3	Department	[ ] Chamber [ ] Security [ ] Fire. [ ] Ambulances [ ] Water & Sanitation [ ] Health [ ] Housing &Community [ ] Human Capital [ ] Town Planning [ ] Works [ ] Internal Audit
4	Length of service with BCC	[ ] less than 1 year [ ] 1-5 years [ ] 6-10 years [ ] over 10 years
5	Employment type	[ ] Permanent. [ ] Contract
6	Job title/Role	……

Section B: Factors

Please indicate your level of agreement with the following statements based on your experience at the BCC. ***Tick on the appropriate box***

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
SYSTEMIC FACTORS					
I am aware of BCC official OSH policy					

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Management clearly communicates its commitment to worker safety					
My supervisor actively encourages safe work practices					
Hazard identification and risk assessments are regularly conducted in my work area					
There is a clear and easy to follow procedure for reporting hazards, near misses or accidents					
When an incident is reported, it is properly investigated and corrective actions are taken					
Safety audits and inspections are carried out regularly in my department					
RESOURCE BASED FACTORS					
I have been provided with all the necessary personal protective equipment (PPE) for my job					
The PPE is in good condition and replaced when worn out					
The tools and machinery I use are well maintained and safe to operate					
There is a sufficient number of OSH personnel/Safety Officers available to support mt department					
I believe the BCC allocates enough money in its budget for safety training and equipment					
HUMAN FACTORS					
I have received adequate OSH training to perform my job					

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Workers are regularly consulted on safety matters that affect us					
My co-workers and I always follow safe work procedures, even under time and pressure					
I feel comfortable refusing to perform a task that I believe is unsafe					
Management prioritizes productivity over safety					
I believe that my workplace is generally safe					
I am aware of the specific health and safety risks associated with my job					

Section C: Outcomes (*Circle the response)*

C1- In the past 12 months, how often have you personally experienced a near-miss (an accident that could have resulted in an injury?

- Never
- Once
- 1-5times
- More than 5 times

C2 - In the past 12 months, have you sustained any work-related injury that required first aide?

- Yes
- No

C3 – If yes to C2, did you report through official channels?

- Yes
- No
- N/A

C4 – On a scale of 1 to 5, how would you rate your own compliance with safety procedures *(where 1 is very poor and 5 is excellent)*

- 1 Very poor
- 2 Poor
- 3 Average
- 4 Good
- 5 Excellent

What is the single biggest barrier to working in your role (please select one)

- Lack of necessary equipment / PPE
- Pressure to work quickly
- Lack of training or knowledge
- Procedures are unclear or practical
- Management does not enforce rules
- Other *(please specify)*
  ……
  ……
  ……
  ……

THANK YOU FOR YOUR TIME AND RESPONSES

Appendix 5 Questionnaire in English and Ndebele

Employee Survey on Occupational Safety and Health (OSH) Compliance

Ucubungulo lokugcinwa lokulandelwa kwemithetho ephephisa engozini kanye lempilakahle yizisebenzi emsebenzini

Section A: Demographics

#	Question *Umbuzo*	Response *Impendulo*
1	Age *Iminyaka*	……..
2	Sex	[ ] Male [ ] Female *Abesilisa* *Abesifazane*
3	Department *Umnyango/ugatsha*	[ ] Chamber [ ] Security *Onogada* [ ] Fire. *Abomlilo* [ ] Ambulances *Abamaambulensi* [ ] Water & Sanitation *Abamanzi* [ ] Health *Abempilakahle* [ ] Housing &Community *Abezindlu* [ ] Human Capital Abaqhatshi [ ] Town Planning *Abokuhlelwa kwamadolobho* [ ] Works *Abasebenza imisebenzi yezandla* [ ] Internal Audit *Abahloli baphakathi kwenhlanganiso*
4	Length of service with BCC *Ulesikhathi esinganani usebenza ekhansilini yakoBulawayo*	[ ] less than 1 year ngaphansi komnyaka [ ] 1-5 years phakathi komnyaka kusiya kuminyaka emihlanu [ ] 6-10 years kusukela kuminyaka emihlanu kusiya kwelitshumi [ ] over 10 years phezu kweminyaka elitshumi
5	Employment type *Ngumsebenzi bani*	[ ] Permanent. [ ] Contract *Owesikhathi eside* okwesivumelwano sesikhathi esifitshane

6	Job title/Role *Umsebenzi owenzayo*	……

Section B: Factors

Please indicate your level of agreement with the following statements based on your experience at the BCC. ***Tick on the appropriate box***

*Tshengisa ibanga lokuvumelana lokulotshiweyo usebenzisa ukusebenza kwakho ekhansilini yakoBulawayo.****Bhala maqondana lempendulo yakho***

Statement	**Strongly Disagree** ***Angivumelani lakho kakhulu***	**Disagree** ***Angivumelani lakho***	**Neutral** ***Angithathi cele***	**Agree** ***Ngivumelana lakho***	**Strongly** ***Agree*** ***Ngivumelana lakho kakhulu***
SYSTEMIC FACTORS ***IZIZATHO EZITHINTA UHLELO LONKE***					
I am aware of BCC official OSH policy *Ngiyayazi imithetho yokuvikela izingozi ezenzakala emsebenzini*					
Management clearly communicates its commitment to worker safety *Omphathi bakhuluma ngokucacileyo ukuzimisela kwabo ekuphepheni kwezisebenzi engozini*					
My supervisor actively encourages safe work practices *Umphathi wami ukhuthaza ukugcinwa kwemithetho yokuphepha ezingozini zemsebenzini*					
Hazard identification and risk assessments are regularly conducted in my work area					

Statement	**Strongly Disagree** *Angivumelani lakho kakhulu*	**Disagree** *Angivumelani lakho*	**Neutral** *Angithathi cele*	**Agree** *Ngivumelana lakho*	**Strongly** *Agree* *Ngivumelana lakho kakhulu*
Ukhomba ngozi lokuhlolwa kwezinto ezingabangela ingozi emsebenzini kwenziwa njalo njalo					
There is a clear and easy to follow procedure for reporting hazards, near misses or accidents *Kulendlela kumbe amanyathelo alula njalo asobala okulandela awokubika ingozi esezenzakeleyo kumbe eziphose zenzeka*					
When an incident is reported, it is properly investigated and corrective actions are taken *Nxa ingozi isenzakele yabikwa ,icubungulwa ngendlela ,njalo ixazulukwa ngendlela*					
Safety audits and inspections are carried out regularly in my department *Ukuhlolwa kwezinto ezinqaba ingozi kwenziwa njalo njalo kuhlangothi/gatsha engisebenza kilo*					
RESOURCE BASED FACTORS ***IZINTO EZIBONAKALAYO EZIYIZISETSHENZISWA***					
I have been provided with all the necessary personal protective equipment (PPE) for my job *Ngiyanikwa impahla zokusebenzisa ezokuzivikela ezingozini zemsebenzini*					

Statement	**Strongly Disagree** *Angivumelani lakho kakhulu*	**Disagree** *Angivumelani lakho*	**Neutral** *Angithathi cele*	**Agree** *Ngivumelana lakho*	**Strongly** *Agree* *Ngivumelana lakho kakhulu*
The PPE is in good condition and replaced when worn out *Impahla ezokuzivikela lezi zilohlonzi njalo zingadabuka kumbe ukuguga kuthengwa ezinye*					
The tools and machinery I use are well maintained and safe to operate *Imitshina engiyisebenzisayo igcinwa kuhle njalo iphehphile ukusebenzisa*					
There is a sufficient number of OSH personnel/Safety Officers available to support mt department *Kulabaphathi bezokuphepha engozini zomsebenzi abeneleyo abasixhasayo egatsheni lethu*					
I believe the BCC allocates enough money in its budget for safety training and equipment *Ikhansili yabela imali eyeneleyo yokufundisana ngokwenqabela ingozi emsebenzini kanje lemitshina*					
HUMAN FACTORS ***ABANTU***					
I have received adequate OSH training to perform my job *Ngafundiswa ngokwaneleyo ngokuvikela ingozi lempilakahle emsebenzini*					

Statement	**Strongly Disagree** ***Angivumelani lakho kakhulu***	**Disagree** ***Angivumelani lakho***	**Neutral** ***Angithathi cele***	**Agree** ***Ngivumelana lakho***	**Strongly** ***Agree*** ***Ngivumelana lakho kakhulu***
Workers are regularly consulted on safety matters that affect us *Izisebenzi zibonisana labaphathi njalo njalo ngendaba zokuphepha engozini ezibehlelayo*					
My co-workers and I always follow safe work procedures, even under time and pressure *Mina labanye engisebenza labo silandela imithetho yokuphepha engozini noma simatasatasa*					
I feel comfortable refusing to perform a task that I believe is unsafe *Ngikhululekile ukwala ukwenza umsebenzi engikholwa ukuthi awuphephile engozini*					
Management prioritizes productivity over safety *Abaphathi baqakathekisa isivuno phezu kokuphepha engozini*					
I believe that my workplace is generally safe *Ngikholwa ukuthi emsebenzini sisebenza siphephile engozini*					
I am aware of the specific health and safety risks associated with my job *Ngiyazazi ingozi zemsebenzini lezempilakahle ezihambisana lomsebenzi wami*					

Section C: Outcomes (*Circle the response)*

Impumela (gombolozela impendulo)

C1- In the past 12 months, how often have you personally experienced a near-miss (an accident that could have resulted in an injury?

Kunyanga ezilitshumi lambili ezidluleyo uphose wawelwa yingozi kangaki emsebenzini ebe zingabangela ukulimala kwakho

- Never *Angikaze*
- Once *kanye*
- 1-5times *kanje kufika kahlanu*
- More than 5 times *okudlula kahkanu*

C2 - In the past 12 months, have you sustained any work-related injury that required first aide?.

Kunyanga ezilitshumi lambili ezidluleyo uke walimalela emsebenzini yini okucine kudinga usizo lwabezempikakahle

- Yes *Yebo*
- No *Hatshi*

C3 – If yes to C2, did you report through official channels?

Nxa uphendule 'yebo' ku C2 wabika yini ngendlela esemthethweni?

- Yes *Yebo*
- No *Hatshi*
- N/A *Akubalulekanga*

C4 – On a scale of 1 to 5, how would you rate your own compliance with safety procedures *(where 1 is very poor and 5 is excellent)*

Kusilinganiso sokusuka kokunye sifika kokuhlanu ,ucabanga ukuthi ukusibanga siphi sokugcina imithetho yokuphepha engozini lempilakahle (okunye yikugcina kubi imithetho kakhulu ,okuhlanu yikugcina kuhle kakhulu)

- 1 Very poor *kubi kakhulu*
- 2 Poor *kubi*
- 3 Average *okulingeneyo*
- 4 Good *kuhle*
- 5 Excellent *kuhle kakhulu*

What is the single biggest barrier to working in your role (please select one)

Kuyini okukunqaba kakhulu ekusebenzeni kwakho(khetha okukodwa)

- Lack of necessary equipment / PPE *ukuswelakala kwempahla ezivikeka ezingozini*
- Pressure to work quickly *isiphithiphithi sokusebenza masinyane*
- Lack of training or knowledge *ukuswelakala kolwazi lemfundiso*
- Procedures are unclear or practical *izeluleko zokusebenza azicacanga njalo ezenzeki*
- Management does not enforce rules *Abaphathi abalandeleli abantu ukuthi babone ukuthi izisebenzi ziyalandela yini imithetho*
- Other *(please specify) okunye (chaza)*

  ……
  ……
  ……
  ……

THANK YOU FOR YOUR TIME AND RESPONSES

NGIYABONGA NGEMPENDULO YAKHO LANGESIKHATHI SAKHO

Appendix 6 AUREC Approval

"Investing in Africa's future"

AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE (AUREC)

P.O. Box 1320 Mutare, Zimbabwe, Off Nyanga Road, Old Mutare-Tel (+263-20) 60075/60026/61611 Fax: (+263 20) 61785 Website: www.africau.edu

Ref: AU4200/26

6 February, 2026

MBUSI FALAYI
C/O Africa University
Box 1320
MUTARE

RE: **AN EVALUATION OF OCCUPATIONAL SAFETY AND HEALTH COMPLIANCE AND PRACTICES AT THE BULAWAYO CITY COUNCIL,2025**

Thank you for submitting the above-titled proposal to the Africa University Research Ethics Committee for review. Please be advised that AUREC has reviewed and approved your application to conduct the above research.

The approval is based on the following.

a) Research proposal

- **APPROVAL NUMBER** AUREC 4200/26
  This number should be used on all correspondence, consent forms, and appropriate documents
- **AUREC MEETING DATE** NA
- **APPROVAL DATE** February 6, 2026
- **EXPIRATION DATE** February 6, 2027
- **TYPE OF MEETING**: Expedited
  After the expiration date, this research may only continue upon renewal. A progress report on a standard AUREC form should be submitted a month before the expiration date for renewal purposes.
- **SERIOUS ADVERSE EVENTS** All serious problems concerning subject safety must be reported to AUREC within 3 working days on the standard AUREC form.
- **MODIFICATIONS** Prior AUREC approval is required before implementing any changes in the proposal (including changes in the consent documents)
- **TERMINATION OF STUDY** Upon termination of the study a report has to be submitted to AUREC.

AFRICA UNIVERSITY
RESEARCH ETHICS COMMITTEE (AUREC)
APPROVED
P.O. BOX 1320, MUTARE, ZIMBABWE

Yours Faithfully

MARY CHINZOU
FOR CHAIRPERSON
AFRICA UNIVERSITY RESEARCH ETHICS COMMITTEE

Appendix 7 Institutional Approval to Carry Out Study

All Communications
To be addressed to the
Human Capital Director

Human Capital Department
Municipal Buildings
L. Takawira Ave/J. Tongogara
Street
P.O. Box 558
Bulawayo

Tel: (263-9) 75011
Fax: (263-9) 69701
Email: hcpdept@citybyo.co.zw
Website: www.citybyo.co.zw
Facebook: The City of Bulawayo
Twitter:@CityofBulawayo
Call Centre: 08084700 (Econet,)
08004700 (Telone) (09)71290

11 November2025

Our Reference: SAD/74-00-00
1 Khami Road
Kelvin North
+263 779 559 265

Dear Mr Mbusi Falayi

RE: REQUEST FOR PERMISSION TO CONDUCT AN OCCUPATIONAL SAFETY HEALTH PRACTICE STUDY AT CITY OF BULAWAYO:AN EVALUATION OF THE OCCUPATIONAL SAFETY AND HEALTH COMPLIANCE AND PRACTICES IN THE CITY OF BULAWAYO ,2025.

Your letter on the above matter refers

Please be informed that Council acceded to your request to undertake a strategic research study within Bulawayo City Council premises subject to the following conditions:

a) You should submit a copy of your research findings after completing the research exercise.

b) Council is to be indemnified against any accidents /mishaps, which may occur during the conduct of the research.

c) The information gathered during research should be used for academic purposes only.

Accordingly you may approach any of Council's Service Departments as appropriate for assistance.

Yours faithfully

HUMAN CAPITAL DIRECTOR

CITY OF BULAWAYO
HUMAN CAPITAL DEPT.
14 NOV 2025
TOWER BLOCK, L TAKAWIRA ST/
J. TONGOGARA ST.
P.O. BOX 558 OR 559, BULAWAYO