



BINDURA UNIVERSITY OF SCIENCE EDUCATION



DEPARTMENT OF ENVIRONMENTAL SCIENCE

***An Assessment on the Impact of Behaviour-Based Safety Interventions
on OHS Improvement in a Rapidly Expanding Company. A Case Study
of Mega Market.***

By

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**Research Project submitted in partial fulfilment of the requirements of the
Bachelor of Science Honours degree in Safety, Health and Environmental
Management.**

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Dedication

I dedicate this dissertation to my lovely Mom, brother Shingirirai, and sister Rumbidzai Mandongwe, who have helped me throughout this journey. I sincerely appreciate your love, patience, and constant encouragement. We are all in ownership of this accomplishment. Thank you for always being there for me.

Declaration

To be compiled by the student

Registration number B212536B

I, Panashe Sithole, declare that this research project is my original work and has not been submitted before. All information derived from other sources is indicated in the project.

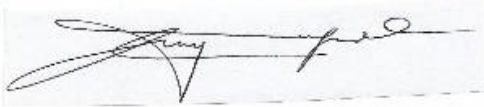
Signature of the student..........Date..........

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This dissertation is suitable for submission to the faculty and has been checked for conformity with the faculty guidelines.

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This research would not have been possible without each of you. Thank you all!

Abstract

This research project examined the impacts of BBS interventions in improving workplace safety in a rapidly growing company. As organizations expand, ensuring the strength of a safety culture is critical to reduce the risks associated with growing workforces and more complex operations. The study used a hybrid design, integrating quantitative data from safety performance indicators like incident rates and near-miss reports with qualitative insights gathered from employee surveys and interviews. It explored the effects of BBS on employee safety awareness, behavioural changes, and overall safety outcomes. Key findings indicate significant gaps in employee awareness, with 16% unaware of safety procedures and 41.3% citing lack of awareness as a barrier to participation. Furthermore, only 30.7% rated leadership responses as prompt and effective. Preliminary results suggest that targeted BBS interventions notably reduce unsafe behaviours and promote a proactive safety culture, despite challenges like employee resistance and resource allocation. Regression analysis revealed a weak predictive power of leadership and training on engagement ($R^2 = .079$), indicating the potential impact of unmeasured cultural factors. Recommendations include customized training, increased leadership accountability, anonymous feedback systems, and cultural audits. These findings offered valuable insights for fast-growing companies aiming to implement scalable safety interventions and contribute to the broader conversation on sustainable workplace safety practices.

List of Abbreviations and Acronyms.

BBS	: Behaviour-Based Safety
BIM	: Building Information Modelling.
FMCG	: Fast-Moving Consumer Goods.
KAB	: Knowledge, Attitude, and Behaviour.
LTI	: Lost Time Injury.
OHS	: Occupational Health and Safety.
MDGs	: Millennium Development Goals.
NDS1	: National Development Strategy 1
NGO	: Non-Governmental Organization.
PPE	: Personal Protective Equipment.
P2P	: Peer-to-Peer.
SMEs	: Small and Medium-sized Enterprises.
SPSS	: Statistical Package for Social Sciences
TBP	: Theory-Based Planning

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CHAPTER 1

1.1 Introduction

Behaviour-Based Safety (BBS) programs are widely adopted in fast-growing organizations to mitigate workplace risks through peer-led behavioural observations. By encouraging employees to identify and correct unsafe actions, BBS fosters a proactive safety culture. Empirical studies, such as those in the manufacturing sector, report accident reductions of 40–75% post-implementation (Kumar & Patel, 2022).

This study intended to examine the impact of BBS in a rapidly growing company. It will focus on its effectiveness in changing employee behaviours and improving compliance with safety standards, using insights from recent studies to evaluate its transformative potential.

1.2 Background of the Study

Heinrich's seminal accident causation theory (1931) posits that human actions, such as procedural oversights or inadequate training, account for the majority (88%) of workplace incidents, whereas equipment failures contribute to only 10% (Geller, 2021). This underscores the centrality of behavioural interventions in safety management.

Behaviour-based and Safety interventions have recently gained popularity as proactive measures to improve occupational health and safety outcomes. Every year, non-fatal accidents and injuries cause a large loss of productivity and work time, according to the International Labor Organization, which also claimed that there are over 2.3 million occupational-related deaths globally (Debelu, 2025). A scientific research organisation in the Netherlands, South America, conducted an intervention study on behaviour-based safety to lower occupational injuries. Bowdler (2023) studied the effectiveness of behavioural interventions on safety performance concerning reduction rates for occupational accidents, which were systematically reviewed by recent research.

This is of particular interest, given that research in high-risk environments, such as the Netherlands or similar settings, has shown that organizations can successfully implement behavior-based safety interventions (Chionis, 2022). The review showed that BBS interventions can lessen deadly and

non-deadly injuries in high-hazard work settings. These results (e.g., incident rates, frequency data, and safety performance in high-risk settings) generally show positive signs of BBS, but more research is needed.

Gonzales Pejerrey et al. (2023) aimed to frame an effective safety management model that minimizes accidents in SMEs engaged in construction within a behaviour-based safety framework and lean construction paradigms. The research, which was conducted in Peru (South America), highlighted the necessity for improving safety practices with the development of a safety culture at the employee level and optimization of processes, which is known as safety productivity. The approach sought to mitigate the incidence of accidents in the construction sector.

Yang, Kim, and Rodgers (2024) evaluated the impact of a BBS observation program in the construction industry, collaborating with Tuskegee University and the Georgia Institute of Technology. They researched an electrical company that adopted the BBS initiative in January 2019. Respondents noted an improved safety climate, which enhanced the overall safety culture. Following the program's implementation, the company introduced various initiatives to bolster safety protocols. The majority of reported at-risk behaviour was "line of fire," involving tasks like running wires, installing devices, and setting up lights.

Zhang, Qu, and Chen's (2022) investigated individual behaviour in the Chinese petrochemical industry concerning sustainable safety regulations. The study's goal was to evaluate how human behaviour impacts the effectiveness and application of safety procedures in the petrochemical industry, which is notorious for having a high-risk work environment. Employee attitudes, safety culture, and adherence to safety regulations are just a few of the important behavioural factors that the authors discussed as having an impact on safety outcomes.

Recommendations for organizations, especially in high-risk industries like petrochemicals and construction, focused on customized training programs that improve workers' behaviours and attitudes toward safety (Hafeez et al., 2021). A scientific approach that utilized surveys and data analysis has demonstrated a strong correlation between effective safety procedures and positive human behaviours, highlighting the importance of developing a robust safety environment to ensure adherence to safety protocols (Fauzi, 2023).

Meem, Hossain, and Akter (2022) investigated how construction safety tracking in Bangladesh's construction industry can be improved by combining behaviour-based safety (BBS) and building information modelling (BIM). To enhance safety tracking, the study looked at how behaviour-based safety concepts could be applied to building projects that use BIM. To keep an eye on safe practices on construction sites, the authors employed a BIM framework. Data on worker behaviour and safety compliance must be gathered and analysed to use the BIM platform.

According to the Meem, Hossain, and Akter (2022) study, employing BIM for safety tracking enhances the identification of dangerous behaviours and circumstances, leading to improved safety management practices. The connection facilitates real-time monitoring and risk assessment. The study emphasized BIM's potential as a powerful tool for improving safety practices and culture in the construction industry, as well as its use in design and construction management.

The use of behaviour-based safety (BBS) to improve safety culture in Indian organizations was investigated by Kumar and Prakash (2020). They contended that BBS focuses on identifying and changing risky behaviours rather than just addressing equipment and conditions, and their findings showed that BBS can significantly increase employee engagement and awareness of safety practices. The study emphasized the value of feedback, communication, and training in creating a proactive safety culture, which ultimately aims to reduce accident rates and improve overall safety performance in the workplace.

Yadav et al. (2022) reviewed the implementation of a Behaviour-Based Safety (BBS) strategy to improve worker performance in the Indian construction industry. They looked at various BBS tactics and procedures, stressing the value of staff participation, education, and observation in establishing a culture that prioritizes safety. The analysis concluded that integrating BBS into construction processes led to notable improvements in overall worker performance and safety standards, highlighting the positive effects of BBS on reducing incidents, fostering a proactive safety environment, and lowering accident rates.

In a study using partial least squares structural path modelling, Abella et al. (2023) investigated how employees in coal-fired power plants in the Philippines participate in safety procedures and are influenced by positive reinforcement in behaviour-based safety. The study found that using positive reinforcement tactics can enhance safety procedures and encourage employees to

participate in safety campaigns, ultimately resulting in a safer work environment for everyone involved.

The safety knowledge, attitude, and performance of Malaysian industrial workers in Southeast Asia were investigated in the article by Zulkify et al. (2021). The writers stressed the value of workplace safety and the connections between behaviour, attitude, and knowledge in establishing a safe working environment. The authors emphasized the importance of workplace wellbeing and the links between knowledge, behaviour, and attitude in establishing a safe working environment. They underscored the need for effective safety protocols in the manufacturing sector, given the substantial risks involved.

The KAB framework developed by the authors linked attitudes toward safety, safety knowledge, and real-world safety behaviours. They proposed that improving one area could improve others. The study recommended developing and improving an intervention module to raise KAB among staff members. The proposed study aimed to assess current practices, identify safety-related knowledge and attitude gaps, and implement measures to improve workplace safety culture.

The study by Amirah et al. (2024) investigated how fostering behaviour-based safety can help the manufacturing sector in Malaysia develop a safety culture. The authors examined several factors that affect safety culture and behaviour in manufacturing settings using a structural equation modelling approach. The researchers emphasised how crucial leadership, employee involvement, and training are to improving safety protocols. The results ultimately demonstrated that a strong safety culture is critical in lowering workplace accidents and advancing sustainability in the industrial sector.

Edem and Akinsola (2022) used behavioural observation-based indicators to assess how human factors affected occupational safety at a Nigerian construction site. The writers emphasized how crucial it is to comprehend how employee actions affect safety results. They suggested a methodical assessment procedure for these measures to pinpoint areas where safety procedures require enhancement. The results show that some actions based on observed behaviours can improve safety protocols and, as a result, lower the likelihood of mishaps on construction sites.

Fugar, Adinyira, and Adade-Boateng (2021) provided a framework with the specific intention of improving Ghanaian construction workers' opinions about the significance of wearing helmets.

The significance of behaviour-based safety (BBS) tactics in fostering safety-related attitudes was highlighted in the study. By implementing strategies like awareness campaigns, training, and peer reinforcement into practice, the framework sought to increase helmet usage compliance. This reduced the possibility of head injuries and made the construction industry a safer place to work.

Nunu (2021) Conducted a study on the impacts of a peer-to-peer approach to reduce accidents at a specific Zimbabwe platinum mine, investigating the impact of the P2P BBS technique in a mining environment. The study's goal was to evaluate how a P2P safety approach might affect mine worker injuries and accidents. The study assessed safety procedures both before and after the P2P strategy was implemented using surveys and observational techniques. Safe behaviours that are influenced by peer relationships and accountability.

The BBS method encouraged a safety culture and gave employees the confidence to talk about and support safety practices among coworkers. The strategy enhanced communication and teamwork, fostering a more proactive safety environment. The results of the study showed that P2P BBS methods can promote safer work practices and lower the number of incidents of workplace accidents in the mining sector.

The study focused on how behaviour-based safety tactics, particularly those that involve peer interactions, can effectively lower risks and promote a safer workplace in the mining industry. The adoption of the P2P strategy led to a notable improvement in the safety practices of employees. The accident rate at the mine dramatically dropped after the technique was put into place.

Shabani, Jerie, and Shabani (2023) examined how behaviour-based procedures can improve worker safety in Zimbabwe's healthcare industry. They examined several programs designed to enhance safety outcomes by focusing on employee behaviour, emphasizing the importance of monitoring safe practices, providing training, and offering reinforcement. According to the review, behaviour-based interventions can lower incidents, foster a safety culture, and improve overall workplace reliability. Based on case studies and previous research, the authors contended that incorporating behaviour-based approaches into safety protocols is essential for reducing risks and enhancing patient outcomes in the medical field.

1.3 Problem Statement

This study assesses how BBS interventions improve Occupational Health and Safety (OHS) at Mega Market, a rapidly expanding retail company in Mutare. Despite BBS's growing adoption, its specific impact on OHS metrics such as incident rates and employee engagement remains underexplored in hyper-growth contexts. The study attempts to bridge a gap by determining the impact of BBS interventions in decreasing workplace accidents, injuries, and illnesses at Mega Market. Additionally, the study will investigate the connection between BBS interventions and OHS performance, highlighting best practices and potential areas for improvement.

Mega Market Safety Information

Source: Company Report, 2024.

Table 1.1 Mega Market Safety Information.

 Month: October Year: 2024			
	For the Week	Month to Date	Year to Date
At Risk Behaviour	3	5	15
Unsafe Conditions	1	3	9
Near miss	2	4	20
First Aid Case	1	3	10
Non-lost Time	1	5	25
Lost Time Injury	0	2	10
Road Traffic Accident	2	2	14
Fatality	0	0	0
Environmental Incidents	0	0	1
Number of days worked since last LTI.	42	42	42
Number of days worked since the last fatality.	304	304	304

1.4 General Objective

To examine the impact of BBS interventions in improving OHS performance in a fast-growing company, a case study of Mega Market Mutare. Areas for further improvement will be identified to maintain a safe workplace.

1.41 Specific Objectives

- Examine the organization's current safety procedures and guidelines to find any gaps or potential areas for developing worker safety behaviour.
- Investigate the current level of employee involvement in safety initiatives and identify methods of enhancing participation and ownership of safety practices.
- Examine the role of leadership in championing BBS initiatives, assessing how leadership behaviours influence employee commitment to safety.
- Establish a system for collecting ongoing employee feedback regarding BBS interventions, allowing continuous improvement and adaptation to changing conditions.

1.5 Hypothesis

H0: The implementation of the BBS intervention will not cause a noticeable decrease in workplace accidents or injuries.

H1: The implementation of a BBS intervention will significantly lower workplace accidents or injuries through the improvement of the employees' safety behaviours and attitudes.

1.6 Justification of the study

Mega Market Mutare is rapidly expanding, increasing the risk of workplace accidents if safety measures are not prioritized. Behaviour-based safety (BBS) interventions focus on identifying and changing unsafe behaviours, which are major contributors to workplace incidents. Implementing BBS at Mega Market can significantly reduce accidents, improve employee attitudes toward safety, and foster a safer work environment.

As the company grows, managing a larger workforce and complex operations introduces new hazards that previous safety measures may not address. BBS interventions are crucial for continuously monitoring these risks and ensuring safety. A strong safety culture is essential for

minimizing workplace accidents, with BBS seeks to improve safe behaviours and enhance organizational safety culture. This study provides a framework for shared responsibility in safety, enabling informed decision-making based on empirical data about safety behaviours.

Additionally, as companies expand, compliance with stricter safety regulations becomes necessary. BBS interventions can help mitigate litigation risks and associated costs while ensuring regulatory compliance. Integrating BBS strategies has implications beyond workplace safety, positively impacting the broader Mutare community by fostering accountability around safety.

Reducing workplace accidents through BBS initiatives not only benefits employees but also enhances community well-being. A safer workplace leads to a healthier workforce, which can improve the overall quality of life in Mutare. Moreover, safer environments attract talent and investment, supporting economic stability. Fewer accidents can lower medical expenses and legal fees, boost company profitability, and create job security for residents. Responsible business expansion allows for reinvestment in the community, promoting growth and opportunities for local vendors.

BBS initiatives also provide community benefits. By sharing findings and best practices, the organization can raise safety awareness across various sectors. Outreach programs can educate local businesses on safe procedures, fostering a culture of safety that enhances community quality of life.

On a global scale, implementing BBS interventions can influence occupational safety practices. By developing effective strategies and sharing outcomes, the organization can contribute valuable insights applicable to various industries, potentially shaping international safety regulations and improving working conditions.

Focusing on behaviour-based safety promotes a sustainable culture within the organization and the community. BBS programs encourage a prevention-oriented mindset, protecting workers and fostering a responsible attitude toward health and safety that extends beyond the workplace. This shared understanding can cultivate a culture of accountability and care throughout Mutare.

In addition to improving corporate safety performance, this research supports key frameworks such as Education 5.0, Vision 2030, National Development Strategy 1 (NDS1), and the Millennium Development Goals (MDGs). By combining instruction, research, and community involvement, Education 5.0 enhances safety training initiatives and encourages hands-on learning. This makes the connection between scholarly research and practical applications in the industry stronger.

Additionally, by boosting workplace productivity and drawing in investment while guaranteeing adherence to labour laws, the study advances Zimbabwe's Vision 2030. Zimbabwe's commitment to international development standards is further evidenced by its role in the shift from the MDGs to the Sustainable Development Goals (SDGs), specifically SDG 3 (good health), SDG 8 (decent work), and SDG 9 (industry innovation).

Furthermore, the NDS1 focuses on economic recovery and improved quality of life, promoting a skilled workforce and economic resilience through reduced accidents. Companies prioritizing safety become more competitive and contribute to economic diversification.

Engagement with the BBS interventions study provides valuable insights for managers, employees, and safety professionals, offering evidence-based solutions for improving safety procedures. By learning from BBS experiences, individuals can apply tailored strategies to promote safety in their workplaces.

The report emphasizes individual accountability in maintaining safety. By adopting behaviour-based approaches, individuals are empowered to take responsibility for their actions, fostering a culture of accountability that influences behaviour both in and out of the workplace.

1.7 Study Area Description

Mega Market is a fast-growing retail company located in Mutare, the fourth largest city in Zimbabwe. It is a Fast-Moving Consumer Goods (FMCG) company that is structured with different departments to enable the business flow. The various departments operate interdependently with each other, including Purchasing and Supply Management, Procurement, Production, Vehicle Workshop, Warehousing, Logistics, Accounting, Human Resources, and SHEQ make up the team. These departments encompass a wide range of job tasks, work processes,

and potential hazards, making them an ideal setting for evaluating how BBS interventions affect OHS.

1.71 Mega Market's Organogram

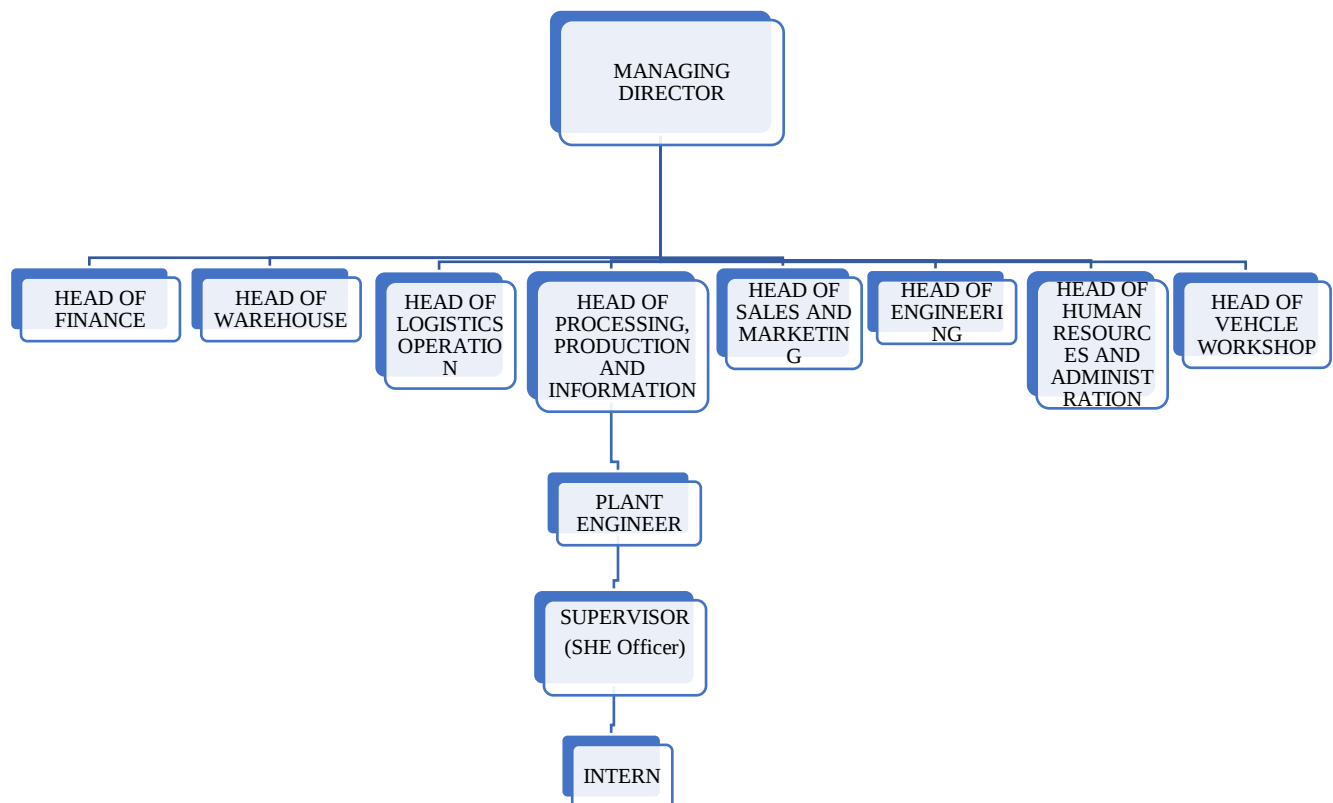


Figure 1.1: Mega Market's Organogram.

Mega Market has struggled to consistently maintain high occupational health and safety (OHS) standards amid its rapid expansion. The previous OHS program primarily relied on traditional compliance-driven methods, such as employee training and safety inspections. Despite these efforts, workplace accidents and lost-time injuries continued to occur, leading management to seek more proactive and behaviour-focused safety measures. Recently, Mega Market implemented a comprehensive Behaviour-Based Safety (BBS) program at its headquarters in Mutare. The BBS initiative includes the following key components:

- Implementation of CCTVs.
- Implementing the violation ticket book.
- Make use of Key Performance Indicators.

- Vehicle tracking system.
- Safety walk-throughs.
- Training of supervisors and managers as safety observers to conduct regular behaviour-based observations.
- Deployment of a near-miss reporting system to identify and address potential hazards.

1.72 The Physical Characteristics of Mutare

Mega Market, the study site, is situated in Mutare, near the Eastern Highlands, at an altitude of 1,500 metres, which is higher than the sea level. Regional topography is, to a larger extent, determinative of the regional climate dynamics and variability (Munyai, 2021), and the Mutare river and its tributaries are important components of the environment, with the hills and the valleys of the area forming a variety of microhabitats that influence mosquito larvae and species diversity (Makuwaza et al., 2021).

The climate of Mutare is a subtropical highland, with mild temperatures and distinct wet and dry seasons. The average annual temperature is around 18 degrees Celsius, with particularly cold winter nights (Zengeni, 2022). The rainy season, which runs from November to March, contributes significantly to the region's water resources, and this seasonal change is advantageous for agriculture and the surrounding ecosystem because it prolongs the growing season. Chikozho (2020) talked about how changing rainfall patterns affect plants, water, and animals, emphasizing the significance of these changes.

Mutare's plentiful water supply is provided by rivers and seasonal ponds, which are crucial for both agricultural and residential purposes. Makuwaza et al. (2021) highlighted the significance of these environments for the development of *Anopheles* mosquito larvae, noting that factors such as plant cover and water levels greatly influence larvae dispersal. Additionally, urban development has altered water flow and quality, impacting the natural habitats of aquatic animals (Ndlovu, 2020).

The soils in Mutare and its surroundings are generally fertile, supporting a variety of agricultural activities. Research by Nyoni (2021) showed that volcanic soil in certain areas enhances agricultural productivity, making these regions essential for food production. The types of crops that can be cultivated depend largely on physical characteristics such as texture and nutrient

content. Furthermore, effective soil management practices are necessary, especially in steeply sloped areas, to maintain soil fertility and prevent erosion from runoff.

The physical characteristics of Mutare are significantly impacted by urbanization. Land use changes and environmental degradation result from the destruction or alteration of natural habitats brought about by the city's growth. In addition to decreasing the general quality of current habitats, urban growth can produce new mosquito breeding grounds (Munyai, 2021). According to Ndlovu (2020), this change in the landscape impacts public health, especially regarding vector-borne illnesses. An understanding of these effects is crucial for the region's environmental conservation and urban planning initiatives.

1.73 The Socio-economic activities in Mutare

Situated in the eastern part of Zimbabwe, Mutare has been undergoing socio-economic changes since 2020, such as opportunities and challenges that have influenced ways of life at a local economic level within the community. These are realized through the analysis of key sectors, including agriculture, trade, and informal markets, amidst socio-political influential forces. Most of the people in Mutare engage in farming, which is considered the foundation of the city's economy.

The area has been facing several challenges since 2020 relating to limited availability of resources, economic instability, and climatic changes. Farmers in the surrounding areas embrace the concept of sustainability amidst the challenges facing agriculture. A common approach adopted to mitigate the challenges of unpredictable weather is by adopting drought-resistant crops (Mushore et al., 2021). This will also ensure that this government engagement through training programs and subsidies can help these small-scale farmers increase their contribution to regional productivity and food security.

The trading landscape in Mutare has evolved significantly following the COVID-19 pandemic. Initially, restrictions and lockdowns disrupted operations, leading to declines in formal and informal trade. However, as regulations eased, there was a notable shift toward e-commerce and other digital transaction methods. Local businesses began utilizing social media to connect with customers as part of Zimbabwe's broader digital transformation (Fortune, 2020).

A significant portion of Mutare's population relies on the informal sector, which has become increasingly important. The number of informal traders has increased since 2020 as a result of economic downturn, especially in marketplaces and street vending (Price, 2020). These traders have demonstrated resilience by adapting their strategies to meet the needs of their customers during challenging times. However, informal trade faces challenges such as competition, market access, and regulatory issues that can hinder growth. Despite these obstacles, the informal sector remains a crucial buffer against unemployment and poverty in the region.

The mining activities around Penhalonga, near Mutare, have significantly influenced the local economy, creating both opportunities and challenges. The area's rich gold reserves have attracted a mix of legal and illegal mining operations, leading to a complex interplay of social issues and economic benefits. While mining has generated numerous job opportunities and increased incomes for many residents, it has also resulted in informal employment that lacks benefits, contributing to economic instability. As miners and their families spend on local goods and services, businesses in retail, transportation, and hospitality have thrived, benefiting from the rising spending power of the local population (Langton, 2024).

Moreover, the growth of the mining sector has attracted various stakeholders, including local entrepreneurs eager to meet the increased demand for goods and services. This has spurred the creation of new businesses, especially in food supply, accommodation, and transportation. The rise in business activity reflects the economic opportunities created by mining, resulting in a more dynamic local economy (Langton, 2024). However, reliance on mining as a primary economic driver carries risks, particularly if market fluctuations or regulatory changes affect mining operations.

Conversely, the rapid expansion of mining activities has also led to significant social issues. The influx of workers and their families has strained local infrastructure and services, causing overcrowding, increased housing demand, and pressure on medical facilities. Environmental degradation related to mining, such as deforestation and water pollution, has further impacted the quality of life for residents in Mutare and Penhalonga (Makuwaza et al., 2021). Local communities are concerned about the health implications of mining, especially regarding water quality and the transmission of malaria, particularly with regard to improved environmental management and public health initiatives (Makuwaza et al., 2021).

Additionally, Mutare's socio-economic activities have been affected by the socio-political landscape. National political unrest and poor economic management have impacted local communities, leading to a greater reliance on community-based initiatives and non-governmental organizations (NGOs) to address social and economic needs, as public trust in government institutions has declined (Chivasa, 2022). NGOs have played a vital role in assisting, from food support to skill development, which has been essential for building community resilience.

1.74 Mega Market Location

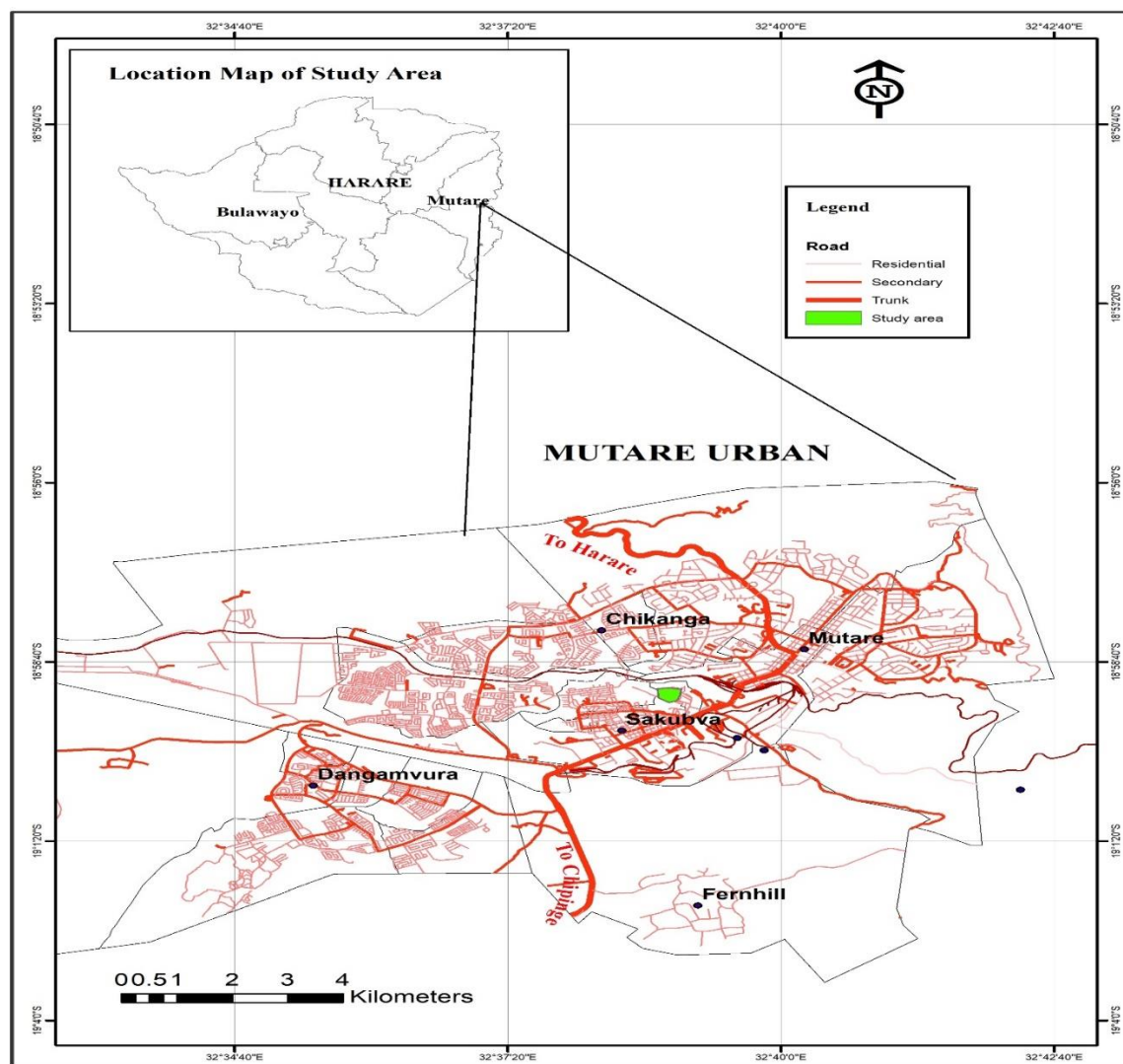


Figure 1. 2. Mega Market Location

1.8 Limitations of the study

Too short timelines may limit the amount of data that can be collected and produce inconclusive findings or fail to identify significant behaviour changes. On the other side of this stage, BBS interventions will perhaps be rolled out too early. Compromising the quality with which the intervention was conducted and measured will make the process hardly credible. For the assessment of long-term behaviour changes, high-value BBS studies often need to sample longitudinally. Time pressures may inhibit follow-up assessments; therefore, reducing insights about the sustainability of the interventions.

Moreover, limited funding may constrain the study's scope, affecting the number of participants, the length of the intervention, and the quality of the training. For some companies, the cost of implementing management and staff training programs exceeds their budget, despite these being essential components of BBS projects. Sufficient financial resources are necessary for both the tools and the expertise required for data analysis. As a result, a survey might resort to basic analytical methods due to funding constraints, potentially hindering its ability to uncover significant findings.

The absence of any baseline information about present safety practices or environmental conditions may limit the ability to accurately evaluate the impact of BBS interventions. Without a clear understanding of which exact behaviours need to be changed, it has been difficult to develop effective treatments. A failure to access relevant research might result in the adoption of unsuccessful tactics since the study cannot take advantage of the best practices or lessons learned from earlier interventions.

Assessment of behaviour in BBS studies often relies on observational approaches and, thus, might be susceptible to a certain level of bias due to the potential for variations in observers' perceptions of safe versus unsafe acts. An issue of quantification of behaviours involves the fact that behavioural changes might be hard to measure, and too few measurement tools may not capture the improvements in safety measures.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

BBS interventions become fundamental to managing occupational safety, especially in high-risk industries experiencing rapid growth (Zhang et al., 2022). BBS aims to observe and change employee behaviours to decrease workplace accidents, utilizing concepts from behavioural psychology to promote a proactive safety culture. In fast-growing companies, where the pace of operational expansion often surpasses safety infrastructure, BBS provides a systematic method for risk mitigation. This literature review assesses the impacts of BBS interventions by examining their theoretical basis, practical applications, and effectiveness within dynamic organizational settings.

BBS operates on the premise that human behaviour, rather than environmental factors, drives the majority of workplace accidents. The approach systematizes behavioural change through structured observation, feedback, and reinforcement (Geller, 2021). The change in “at-risk” behaviour to safe conduct is the goal of the BBS program, which is one of the strategies for lowering workplace accidents. The objective of behaviour-based approaches to occupational safety is to clearly define target behaviours in a manner that is both observable and measurable, enabling a systematic evaluation of different interventions.

Following this, the behaviours are monitored and documented in their expected settings. The goal of the intervention is to promote positive behavioural change, typically by modifying the significance of the causes and consequences associated with the specific behaviours. To assess the usefulness of the intervention, the frequency, period, or intensity of behaviours being targeted are measured during and subsequent to the intervention and subsequently compared to the initial behavioural procedures (Toma et al., 2024). This review synthesizes key concepts, theories, and empirical studies related to BBS, providing an overview of the current knowledge, ongoing debates, and existing gaps.

2.2 Traditional safety approaches

Traditional safety methods primarily rely on hazard mitigation tiers to prevent workplace injuries. These strategies aim to eliminate hazards through physical safeguards or adherence to regulatory standards. Conventional safety practices prioritize hazard elimination via engineering controls (e.g., machine guards) and regulatory compliance, often overlooking behavioural factors (Schwatka et al., 2020). For example, engineering controls like machine guards help reduce hazard exposure but do not tackle unsafe behaviours, such as ignoring safety protocols.

Likewise, administrative controls, including mandatory safety training, often assume that knowledge leads to compliance, which is not always true (Hussain et al., 2020). In rapidly growing companies, traditional approaches struggle to adapt to swift workforce expansion and changing operational requirements, resulting in safety performance gaps. Additionally, the emphasis on top-down, command-and-control strategies often neglects employee engagement, diminishing their effectiveness in dynamic settings (Niciejewska & Kiriliuk, 2021).

2.3 Nature of accidents.

Workplace accidents are complex and often arise from a mix of environmental, organizational, and behavioural factors. Niciejewska and Kiriliuk (2021) pointed out that unsafe behaviours, such as mishandling equipment or not following protocols, contribute significantly to incidents, particularly in high-risk sectors like construction and manufacturing. Zhang et al. (2020) noted that in rapidly growing companies, accidents can be worsened by swift scaling, which may lead to insufficient training, poor communication, and inconsistent safety practices.

The "Hawthorne effect," where employees change their behaviour temporarily when observed, complicates the analysis of accidents, potentially obscuring underlying issues during BBS interventions (Li et al., 2020). Psychosocial risk factors such as stress and fatigue influence accidents, particularly in organizations experiencing high workload pressures (Naji et al., 2022). The intricate nature of accident causation emphasizes the need for additional research to grasp long-term trends in fast-growing companies.

2.4 The Key Concepts, Theories, and Studies

Several core principles reinforce the BBS framework, with behaviour change being a key element in reducing workplace injuries. BBS focuses on identifying and reinforcing positive behaviours to

enhance the socio-behavioural factors essential for safety (Krause, 2020). There is also growing recognition of safety culture as a living entity within organizations, necessitating a supportive environment for BBS programs to thrive. Organizational safety culture is characterized by a climate that influences employee behaviour. A positive safety culture encourages safe practices and active participation in safety initiatives (Abeje, 2023).

Multiple hypotheses support the principles of BBS. The roots of Behaviour-Based Safety can be traced back to the classic Domino Theory (Heinrich, 1931), which posits that unsafe behaviours and conditions are the primary causes of injuries. Heinrich (1931) indicated that 88% of injuries stem from unsafe behaviours, 10% from unsafe conditions, and 2% from unpreventable factors. Social Learning Theory suggests that people pick up habits by watching others, implying that peer pressure encourages the promotion of safe behaviours (Geller, 2021).

TPB, which is central to BBS, asserts that individual behaviour is shaped by attitudes, social norms, and perceived control, all of which affect behaviour (Gh et al., 2021). Recent studies have employed TPB to develop effective BBS interventions, demonstrating that shifting attitudes toward safety can enhance safety practices across various work environments (Gh et al., 2021). Additionally, personality traits such as carefulness and friendliness have been shown to influence safety behaviours, highlighting the significance of personality differences in the success of BBS programs (Li et al., 2022).

Another vital aspect of BBS is the safety climate, which reflects how employees perceive and communicate about safety rules, procedures, and practices. Ansori et al (2021) found that a positive safety climate correlates with higher compliance rates. The combination of a safety climate with BBS policies represents a more comprehensive approach to lowering workplace accidents.

A meta-analysis by Zhang (2020) indicated that while BBS programs generally lead to improved safety outcomes, the results are highly dependent on industry context and program fidelity. Furthermore, Nguyen et al. (2023) explored technology use in BBS, emphasizing the effectiveness of mobile applications for real-time data collection and immediate feedback to employees.

2.5 Current Status of Knowledge

BBS programs successfully reduce risky behaviours across various industries, like manufacturing and construction (Zakaria, 2023). For instance, a study in the chemical manufacturing sector demonstrated that behaviour-based safety observation programs significantly decreased incident rates (Zakaria, 2023). Empirical evidence also suggests that enhancing workers' motivation and safety awareness is vital for promoting compliance and involvement in safety initiatives.

(Wang, 2022) has established that both strict and transformational leadership skills influence employee safety behaviours. Specifically, transformational leadership is associated with increased safety compliance and engagement, highlighting the significance of management in cultivating a safety environment.

BBS interventions yield positive results in both workplace measures and the cultivation of a safety culture. Recent technological advancements, which support traditional BBS methods, have transformed these approaches, enhancing their effectiveness and reach (Kumar & Patel, 2022). Additionally, psychological factors such as peer pressure and motivation are crucial for the success of BBS programs (Adams et al., 2021). However, further exploration of the nuances in BBS effectiveness is needed, as different companies implement varied strategies that lead to diverse outcomes.

BBS is supported as a viable strategy for reducing workplace injuries, especially when combined with safety culture initiatives. For example, Schwatka et al. (2020) found that BBS interventions in small metal industries improved six out of eight safety perception factors, indicating greater employee engagement. Niciejewska and Kiriliuk (2021) reported that BBS programs in manufacturing resulted in 40–75% reductions in accident rates within a year, largely due to consistent behavioural observations and feedback.

However, the effectiveness of BBS can vary based on organizational context. Fast-growing companies, for instance, encounter challenges like high employee turnover and inconsistent safety training, which can hinder BBS outcomes (Zhang et al., 2020). Recent innovations, such as mobile applications for real-time safety monitoring, have improved the scalability of BBS (Uddin et al., 2020). These conclusions are supported by robust methodologies, including randomized controlled

trials and meta-analyses, yet much of the research focuses on construction and manufacturing, with limited exploration of service-oriented or tech-driven fast-growing firms.

2.6 Key Debates or Controversies

BBS has made significant progress, but it is crucial to point out that various aspects of the literature remain controversial. A major point of debate is that BBS prioritizes compliance over genuine behavioural change. Critics argue that focusing on compliance may lead to superficial adherence to safety protocols, failing to address the root causes of risk-taking behaviours (Fletcher & McCaughey, 2022). Additionally, the increasing reliance on technology for BBS raises concerns regarding data privacy, employee surveillance, and the possible replacement of human judgment in safety processes (Heath & Lemaire, 2023).

Despite progress in BBS research, arguments persist regarding the most effective methods for implementing BBS programs. The balance between structural changes and behavioural interventions in safety management systems is a significant area of contention. According to Zakaria (2023), some researchers argue that focusing solely on individual behaviours may overlook systemic issues that contribute to hazardous conditions. Furthermore, the impact of BBS in high-risk industries remains disputed; some studies suggest that behaviour-based approaches may not always outperform traditional safety measures (Harijadi, 2024).

The soundness of current assessment tools and the evaluation of safety behaviours are also subjects of debate. While several frameworks have been proposed to analyse safety behaviours, there is disagreement about the best metrics to gauge the effectiveness of BBS interventions (Wang & Yu, 2021). This highlights the need for further research to develop reliable assessment methods that accurately capture the complexities of safety behaviour in various work environments.

Another important consideration is the cultural context in which BBS is implemented. An organization's culture can impact BBS interventions, raising questions about the general applicability of BBS models across different work environments. Basiru (2023) suggests that for BBS interventions to be most effective, they should be custom-made to the specific contexts of organizations.

2.7 Critical Successes Resulting from the Achievements of the Behaviour-Based Safety Approach

A key achievement of BBS is its effectiveness in lowering workplace injuries. Geller et al. (2020) found that organizations that adopted BBS programs experienced a 30–50% reduction in incident rates within the first year, thanks to focused interventions targeting high-risk behaviours. Likewise, Lingard (2021) described a long-term study in the construction sector, which showed that BBS led to a 42% decrease in near-miss incidents over two years, demonstrating its long-term effectiveness. These results highlight BBS's ability to proactively identify and address behavioural risks.

Behaviour-Based Safety (BBS) has greatly enhanced safety cultures within organizations by promoting collective responsibility. Krause (2020) observed that companies implementing BBS reported improved safety climates, with employees being 25% more likely to intervene in unsafe situations. Kumar (2020) highlighted that BBS transforms safety from merely a compliance requirement into a shared value, with both managers and workers working together to establish safety goals. This cultural transformation has been particularly important in sectors like manufacturing, where heightened safety engagement is linked to increased productivity (Krause, 2020).

The integration of Behaviour-Based Safety (BBS) with digital tools has enhanced its effectiveness since 2020. Lingard et al. (2021) reported that the mining industry used wearable sensors and mobile apps to monitor unsafe behaviours in real time, leading to a 20% quicker resolution of hazards. Additionally, AI-driven analytics have facilitated predictive risk modelling, enabling proactive interventions (Lingard et al., 2021). These advancements illustrate how technology improves the scalability and accuracy of BBS.

2.8 Gaps in existing Knowledge

Despite advances in our understanding of BBS, many questions remain unanswered. One notable gap is the limited exploration of psychosocial factors such as stress and resilience that affect safety behaviour (Lu, 2023). Although some researchers have commenced to examine the function of psychological safety in encouraging safe behaviours, a more comprehensive study is required to appreciate how these factors relate to traditional BBS methods (Lu, 2023).

While the ability to implement BBS interventions has improved significantly, numerous knowledge gaps persist. There are very few longitudinal studies assessing the long-term sustainability of behaviour changes resulting from BBS programs. Additionally, more research is required to investigate the specific challenges and successes of BBS in high-hazard sectors, such as construction and healthcare, where safety is a critical concern (Lee et al., 2022). Lastly, there is a need for comprehensive frameworks that include the sociocultural, sociotechnical, and design elements influencing the effectiveness of BBS.

CHAPTER 3

Research Methodology

3.1 Introduction

Behaviour-based safety involves a systematic approach to analysing the impact of various occupational safety interventions by initially classifying the aim conduct in a directly observed and recorded way. (Adrian Toma, 2024). BBS interventions have emerged as a prevalent strategy to enhance workplace safety and diminish injuries and accidents (Zakaria, 2023). These interventions have become a popular strategy for improving workplace safety and reducing injuries and accidents (Zakaria, 2023).

This chapter's research technique offered a thorough strategy for achieving the investigation's goals. These goals included assessing the effectiveness of the current safety protocols, investigating how employees participate in safety programs, analysing the leadership's involvement in encouraging safety practices, and setting up a continuous feedback mechanism for development.

3.2 The Research Design

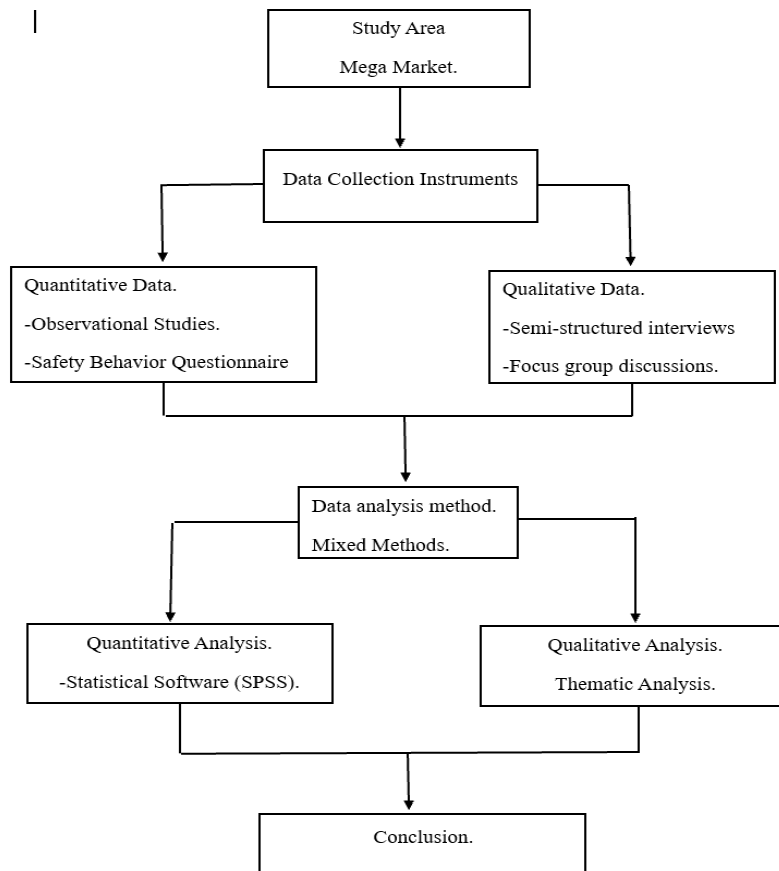


Figure 3.1 Research Methodology Illustration

A mixed-methods design was used to:

1. To quantify the engagement gaps (75 employees, stratified by department), and
2. Explain the root causes.

3.3 Sampling

The sampling concentrated on leaders and workers at all levels of the FMCG company. To ensure representation from a range of Mega Market departments, the sampling process used a stratified random sample technique (Andi et al., 2022). The workforce was divided by departments, job duties, and work location to ensure a representative sample. A sample size calculation was made

to regulate the number of participants needed to ensure statistically significant results, taking into account the predicted effect size, desired power, and significance level (Zulkify, 2023).

3.31 Sample Size

To guarantee the accuracy of statistical outcomes, Cochran's formula was applied to find the sample size. The study included a sample of 75 employees, accounting for approximately 10% of the total workforce of 750, which was deemed adequate for drawing reliable conclusions about the effectiveness of BBS interventions. (Udokporo, 2020).

3.32 Sampling Procedure

The sampling procedure applied a segmented random sampling procedure, ensuring representation in various departments within Mega Market. The sampling procedure involved the following steps:

1. Obtained an exhaustive list of every Mega Market employee.
2. Stratified the workforce based on job roles, departments, and work locations.
3. Used a random number generator to choose participants at random from each stratum.
4. Invited the selected participants to take part in the study.
5. Information gathering.
6. Data recording.

3.40 Data Collection Instruments

Data was gathered using quantitative and qualitative approaches. The following instruments were employed to gather quantitative data:

3.41 Safety Behaviour Questionnaire and Observational Study

Analysing adherence to established safety procedures (measuring self-reported behaviours) and identifying possible areas for improvement was accomplished through a combination of a safety behaviour questionnaire and a direct observation study of safety procedures in action (Abatan et al., 2024). Additionally, part of the document analysis included reviewing the company's safety policies, training materials, and incident reports. As previous studies demonstrated that a thorough

evaluation of safety protocols was required to determine their effectiveness, this process was crucial (Abeje & Luo, 2023). Considering the known link between workplace health and safety and employee involvement, a survey also assessed how workers viewed safety procedures (Narciso & Narciso, 2022).

Qualitative Data Instruments

3.43 Semi-structured interviews

This component involved semi-structured interviews with organization executives to explore how leadership practices influence employee commitment to safety. Prior studies had shown that incorporating leadership significantly improved employee psychological safety, which in turn had a significant effect on employees' commitment to safety protocols and workplace engagement (Abeje & Luo, 2023).

3.44 Focus Group Discussions

FGDs were used to implement an ongoing feedback mechanism and provide qualitative information about the reasons why employees did or did not participate in safety initiatives (Qasim et al., 2022). Focus group talks were essential to the effective deployment of a continuous feedback system in businesses. Employee issues were addressed, requirements were identified, and a variety of viewpoints were gathered in an organized yet adaptable setting through these talks.

Employee ownership and participation in safety initiatives were significantly increased by providing a forum for them to express their opinions (Juba, 2024). The feedback mechanism enabled real-time modifications to BBS activities to maintain the programs' relevance and efficacy in promoting a safe workplace (Chen et al., 2021).

3.5 Data analysis

3.51 Quantitative analysis of data

SPSS, a statistical software, was used to analyse survey data. The dependent variable (an increase in employee engagement in safety practices) and the independent variables (adequacy of safety

procedures, leadership participation in safety initiatives, presence of a safety system at work, and attendance at safety-related training sessions) were analysed using regression analysis (Huang et al., 2024). The results were presented using charts and graphs to illustrate trends and significant findings, aiding in the interpretation and discussion of data.

3.6 Qualitative Data Analysis

The interviews underwent a thematic evaluation to identify recurrent themes and provide insights into how successfully leaders could foster a culture that prioritised safety. The thematic analysis was applied to code the qualitative information gathered through the interviews to point out developing themes and patterns (Liu, 2023; Zhou et al., 2022; Wang & Yu, 2021). The following steps were followed:

1. Transcription of interview recordings
2. Familiarization with the data through repeated reading
3. Generating initial codes
4. Searching for and identifying themes
5. Examining and refining the themes
6. Identifying and characterising the themes
7. Compiling the final report

3.7 Ethical Issues

High ethical standards were maintained throughout the study, which aimed to enhance workplace safety through behaviour-based safety (BBS) interventions. Clear communication, respect for employee privacy, and valuing feedback were essential for achieving research goals and fostering a safety-oriented culture. Trust between the company and employees was vital for improving safety outcomes.

The research faced ethical challenges, particularly in balancing safety practices with employee privacy, as data collection could be seen as infringing personal privacy and eroding trust (Teebken

& Heß, 2021). To protect participants, the study ensured data integrity and maintained objectivity, focusing on participants' autonomy and dignity. Respondents were informed that the study aimed to support the need for a BBS program at Mega Market, with their responses kept confidential.

3.8 Conclusion

This chapter on research methodology presents a robust plan to investigate the impact of BBS interventions that were put into place within the FMCG sector. By integrating qualitative and quantitative methods, the study aimed to derive nuanced insights into safety procedures and employee engagement in safety practices while also highlighting the significant part played by leadership in shaping a safety culture. Stratified random sampling, mixed-methods data collection, and analysis offered a strong framework to assess the efficacy of the BBS interventions and produced insightful information for the company.

CHAPTER 4

Presentation of results

4.1 Introduction

In the context of rapid organizational growth, it is essential to uphold and enhance a safe environment. The impacts of BBS programs in a fast-growing company, emphasizing employee perceptions, leadership engagement, and barriers to participation. Data was gathered from 75 respondents representing various roles and age groups, offering perceptions into the effectiveness and challenges of BBS enactment. The analysis demonstrates that the targeted sample size of 75 responders was met.

4.2 Demographic Overview

Table 4. 1 Role in organization.

		Count	%	Valid %	Cumulative Percent
	Top Management	9	12.0	12.0	12.0
	Supervisor	9	12.0	12.0	24.0
	Safety Officer	2	2.7	2.7	26.7
	Processing and Production staff	55	73.3	73.3	100.0
	Total	75	100.0	100.0	

The data indicates that processing and production staff comprised the majority of respondents (73.3%), supervisors and top management represented 12%, and safety officers accounted for only 2.7%. The operational focus of BBS programs, usually target frontline workers who face the highest safety risks, is in line with this distribution (Kaila, 2023).

However, the low number of safety officers is significant. Conversely, Zhang and Fang (2021) demonstrated the crucial role of safety professionals in organizing and supervising safety initiatives, suggesting that their limited presence in this study might reflect a disconnect between

those who design safety policies and those who implement them. Furthermore, Zhao (2022) noted that programs are more successful and sustainable when leadership and safety professionals are actively involved in BBS rollouts. This finding highlights the need to reassess the structure and engagement of safety roles within BBS frameworks.

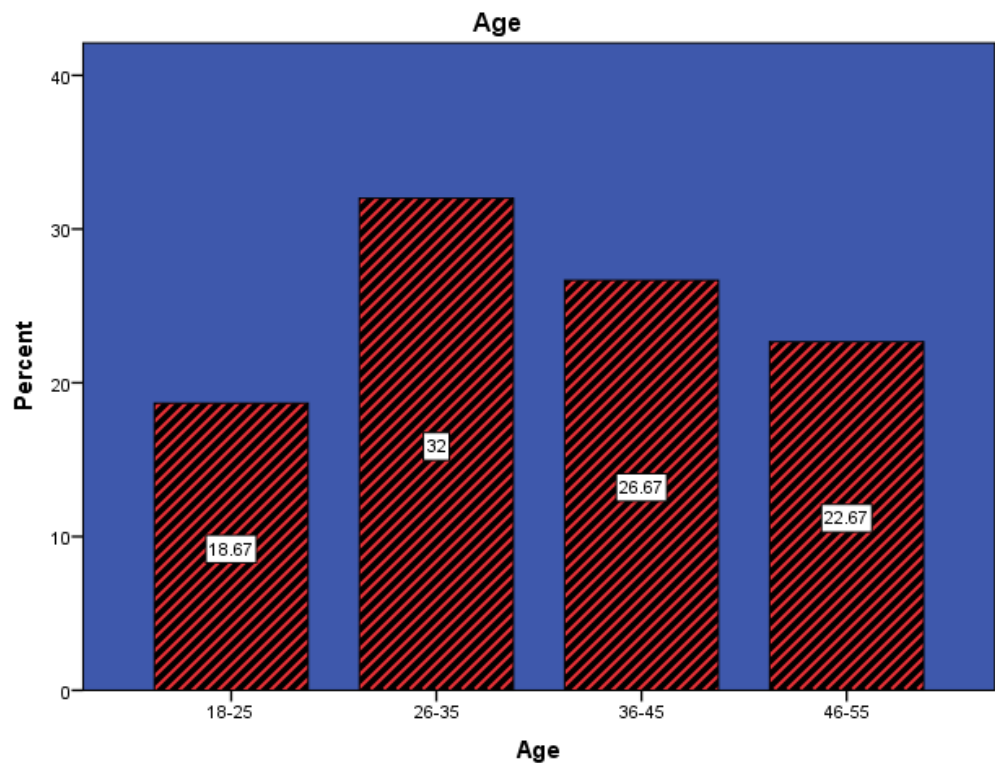


Figure 4. 1 Age Distribution.

The workforce’s age distribution shows that 58.7% of employees fall within the 26-45 age range, indicating a mature group that values structured programs but may be resistant to change unless clear benefits are evident. The presence of employees who are younger (18–25) and older (46–55) highlights the importance of inclusive communication strategies. Experienced employees are more inclined to engage in safety programs if they see tangible benefits, like reduced injury risks or improved working conditions, according to a study by McInnis (2023).

Younger employees, especially those between 18 and 25, tend to be more receptive to behavioural changes but often lack the experience to identify subtle risks or foresee outcomes (Fasbender,

2022). Conversely, older workers may have established work habits, both positive and negative, but also contribute important institutional knowledge and awareness of risks. Therefore, an effective behaviour-based safety (BBS) intervention should be flexible to accommodate generational differences. For instance, peer mentoring programs can facilitate learning by pairing seasoned employees with younger, less experienced team members.

However, generational differences can complicate BBS implementation, as younger employees prefer digital communication, while older workers lean towards traditional methods. To navigate these dynamics, the company should create age-inclusive BBS training that integrates digital tools with in-person sessions to ensure accessibility and engagement for all age groups (McInnis, 2023).

4.3 Familiarity with safety procedures

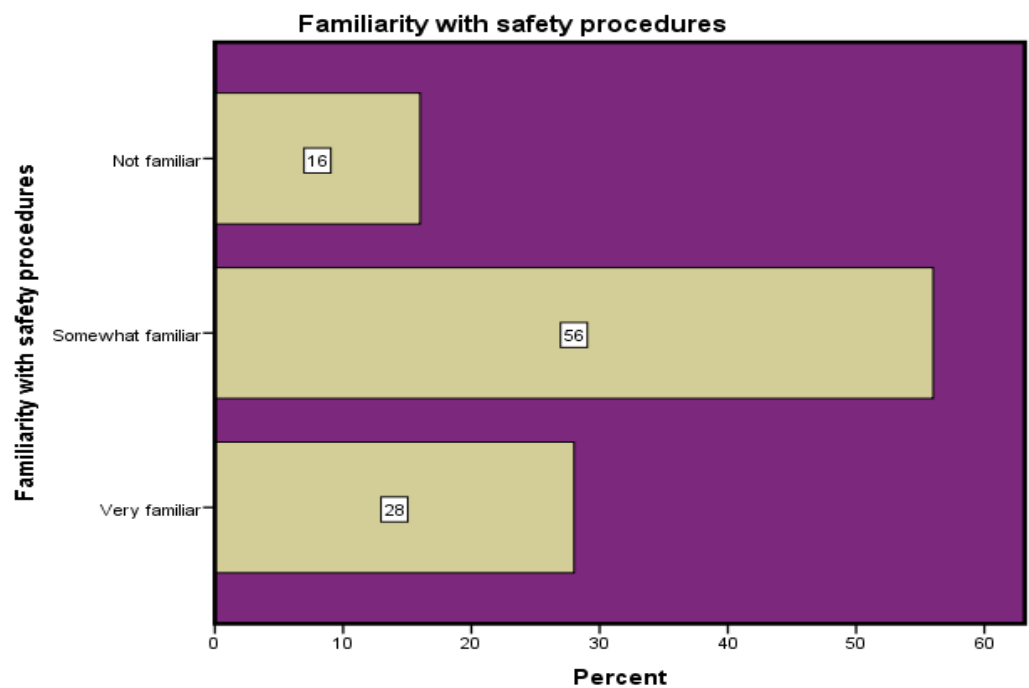


Figure 4. 2 Familiarity with safety procedures.

A concerning 16% of respondents reported being unfamiliar with safety procedures, while 56% stated they were somewhat familiar, and 28% claimed to be very familiar. This lack of familiarity among 16% of employees poses significant risks to workplace safety, increasing the likelihood of accidents. The 56% who are only somewhat familiar might not have the confidence or depth of knowledge necessary for consistent compliance, which could undermine the safety culture. Conversely, the 28% who are very familiar are in a strong position to advocate for safety practices.

Evaluating the organization's safety procedures revealed significant gaps and areas that needed improvement. The analysis revealed compliance issues, with 16% of employees unaware of the existing procedures. This finding reinforces the research of Dyreborg et al., which highlighted the need for ongoing monitoring and strong leadership to ensure compliance with safety regulations (Dyreborg et al., 2022). The findings suggested that structured training programs are essential for improving employee awareness of safety protocols, as studies have shown that educational interventions can greatly enhance safety knowledge and behaviour (Zakaria et al., 2023).

4.4 Barriers to participation in safety initiatives

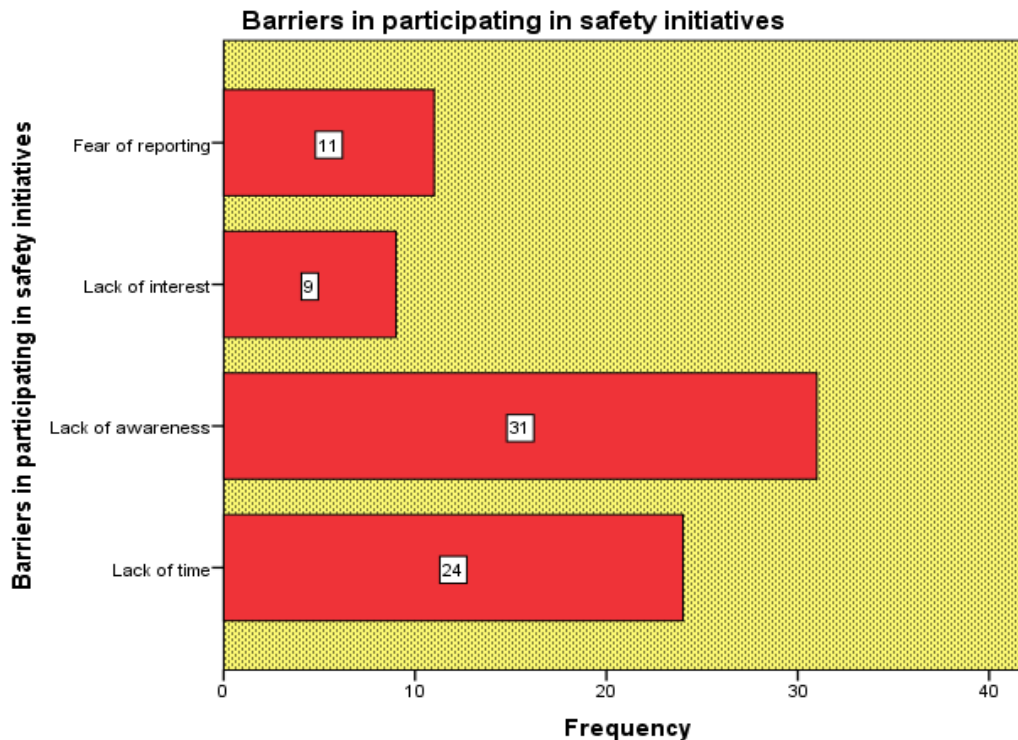


Figure 4. 3 Barriers to practices in safety initiatives.

The most reported barrier was lack of awareness (41.3%), followed by lack of time (32%), fear of reporting (14.7%), and lack of interest (12%). This finding is notable as it contrasts with studies like Goh et al. (2020), which identified time constraints and production pressures as the main obstacles. The high percentage of “lack of awareness” in the results indicates a potential gap in

communication or training, possibly due to ineffective sharing of safety protocols or inadequate onboarding practices.

The problem of time constraints (32%) highlights a typical conflict in industrial environments, where the drive to achieve production targets often competes with safety priorities. This aligns with a study by Basiru (2023), which highlighted that pressure can result in reduced adherence to safety protocols and lower participation in safety initiatives. Therefore, organizations need to create working conditions that allow sufficient time for safety without compromising productivity.

Additionally, the issue of “fear of reporting” (14.7%) aligns with Alruqi and Hallowell’s (2020) research, which emphasized psychological safety as a crucial element for the success of behaviour-based safety (BBS) initiatives. When employees fear retaliation or a lack of action, they are less likely to participate in safety programs or report unsafe situations. This highlights the need to foster a just culture that encourages and protects feedback and reporting in the organisation.

4.5 Leadership in championing behaviour-based safety initiatives

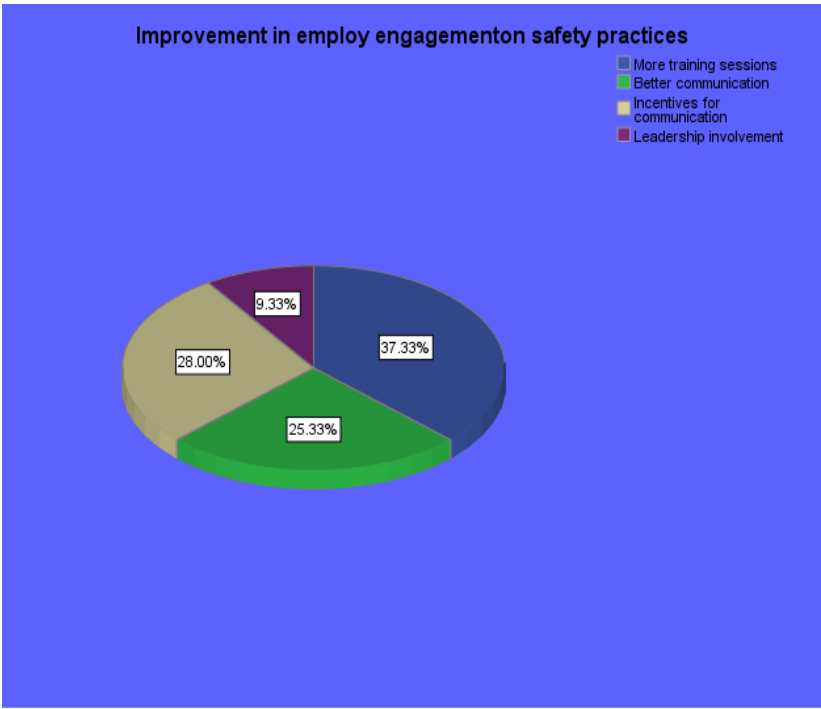


Figure 4. 4 Improvement in employee engagement and safety practices.

When employees were asked how to enhance engagement, they ranked more training sessions (37.3%) as the top way to increase engagement, followed by incentives for communication (28%), improved communication (25.3%), and leadership involvement (9.3%). The emphasis on training highlights the general belief that knowledge and awareness are essential for driving behavioural change (McDaniel, 2020).

Notably, leadership involvement received the lowest ranking, which contrasts with findings from studies like Kaila (2023), emphasizing that visible leadership engagement is crucial for effective behaviour-based safety (BBS) initiatives. This difference may stem from a lack of visible leadership in the organization, causing employees to undervalue its potential impact. Alternatively, it could indicate a broader mistrust or disconnect between leadership and staff, a trend often seen in safety-sensitive industries with hierarchical structures (Heaslet, 2021).

4.51 Leadership Involvement in Safety Initiatives



Figure 4. 5 Leadership involvement in safety initiatives.

Leadership involvement is perceived differently by employees: 61.3% view leaders as "somewhat involved," 26.7% as "very involved," and 12.0% as "not involved." This aligns with existing literature, which emphasized that effective safety leadership significantly influences the safety

climate within organizations (Zhao, 2022). Kaila (2023) observed that leaders visibly championing BBS cultivate higher employee buy-in, transforming safety from a compliance mandate to a collective value. At Mega Market, however, only 26.7% of employees perceived leadership as 'very involved' (Figure 4.5), suggesting a gap between theory and practice.

4.52 Responsiveness of Leadership to Safety Concerns

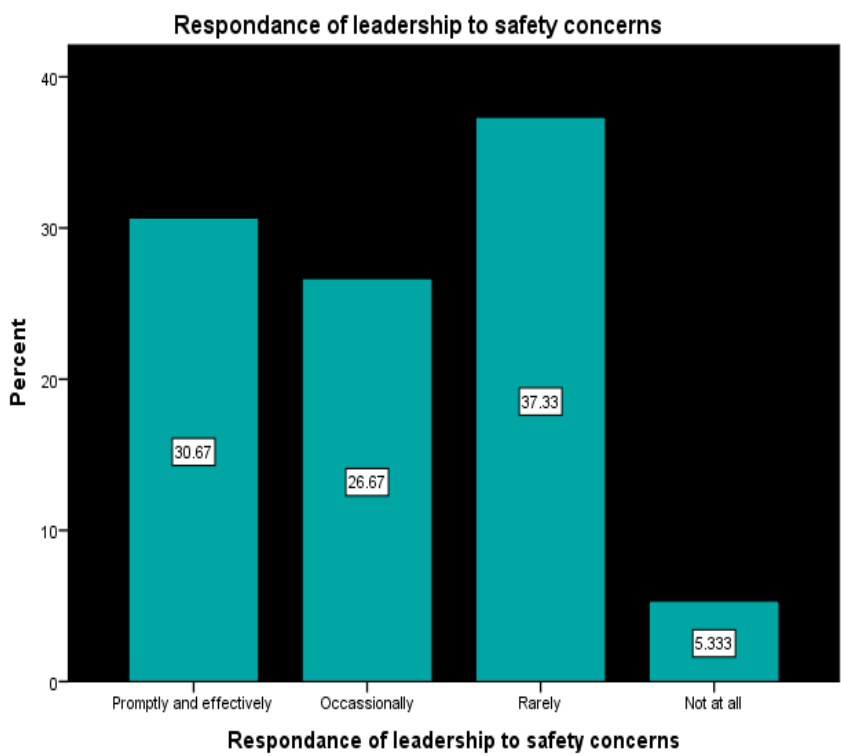


Figure 4. 6 Response of leadership to safety concerns.

Just 30.7% of respondents thought that leadership addressed safety concerns “promptly and effectively”, compared to 37.3% who said that responses were “rarely” effective, and 26.7% reported “occasionally” effective responses. These results contrast with those of Kaila (2023), who pointed out that timely responses to safety issues foster greater employee trust and participation in programs. The differences in the research findings suggest operational delays, insufficient follow-through, or ineffective communication strategies that hinder the resolution of reported issues. These inconsistencies could also explain the fear of reporting and the lack of awareness, resulting in a feedback void where safety concerns go unrecognized and unaddressed.

4.6 The role leadership should play in improving safety

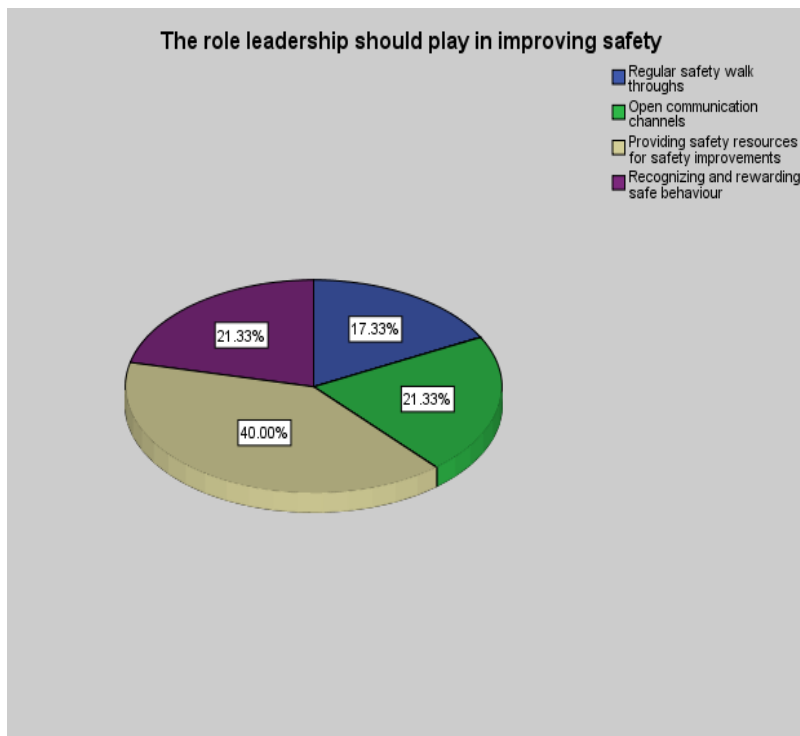


Figure 4. 7 *The role leadership should play in improving safety.*

The most important leadership role, according to respondents, is “providing safety resources” (40%), followed by “open communication channels” and “recognizing safe behaviour” (both at 21.3%), with “regular safety walkthroughs” at 17.3%. This ranking shows that tangible assistance is preferred over symbolic actions. (Basiru, 2023) emphasized that leadership should proactively allocate resources, show accountability, and acknowledge employee contributions to safety. This study supports this idea by indicating that walkthroughs and other symbolic leadership actions have less impact unless paired with genuine support.

4.61 Employee Feedback regarding BBS interventions

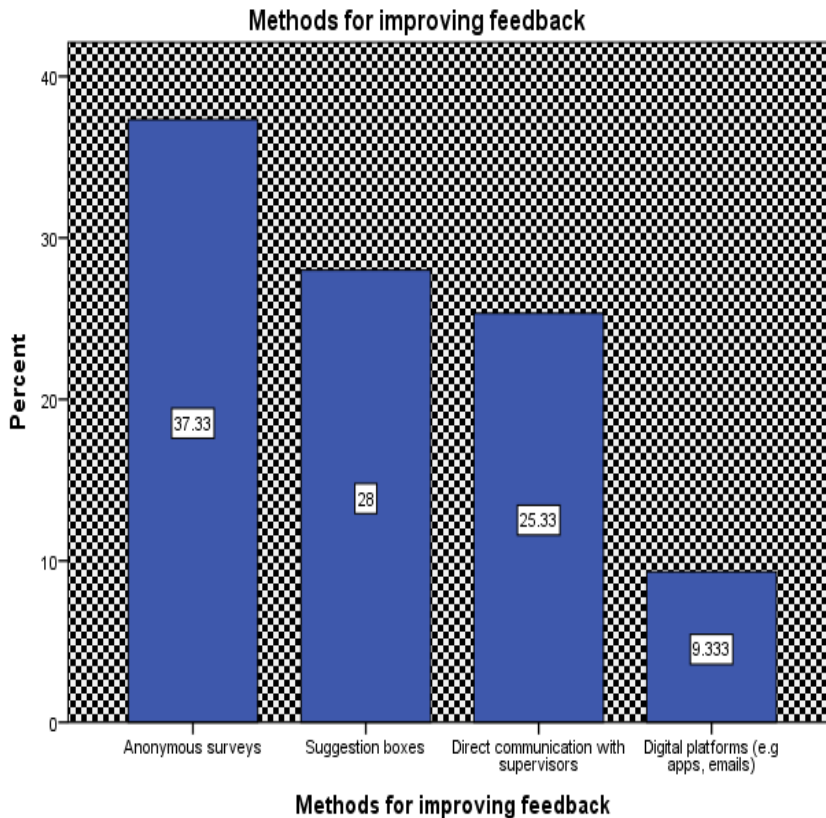


Figure 4. 8 Methods for improving feedback

The majority of respondents preferred anonymous surveys (37.3%) and suggestion boxes (28%), showing less interest in direct communication (25.3%) and digital platforms (9.3%). This preference for anonymity indicates concerns about retaliation or mistrust in direct reporting. (Liu, 2020) highlighted that anonymous reporting systems promote honest feedback by alleviating fears of consequences. To build trust, the company should improve confidential reporting options and ensure that feedback is addressed, in line with Lal's (2023) recommendations for promoting open safety communication.

In contrast, Zhang (2021) discovered that high-trust environments tended to rely more on digital platforms and discussions with supervisors. The research findings' preference for anonymity suggests organizational mistrust or past encounters with unanswered feedback, highlighting the need for a cultural change towards transparency and trust.

4.62 The use of employee feedback

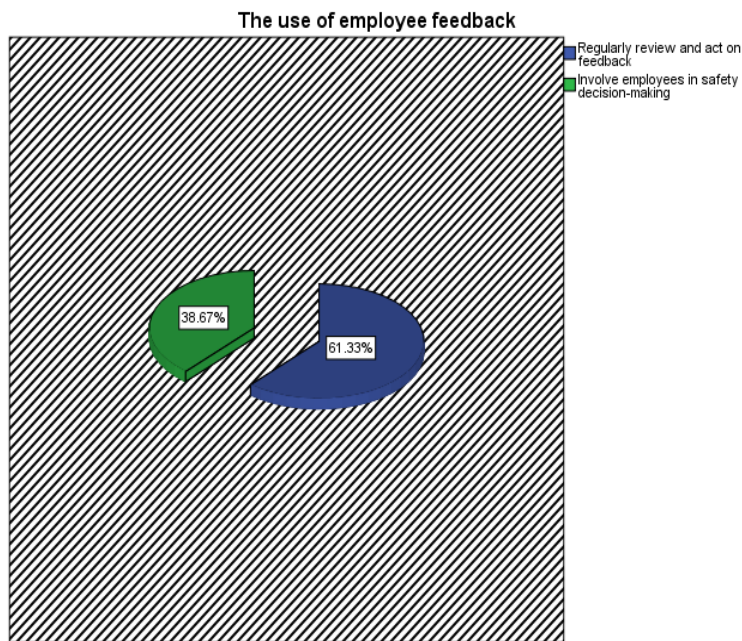


Figure 4. 9 The use of employee feedback

The fact that 38.7% of workers reported feeling excluded from safety decision-making and 61.3% of workers feel their feedback must be routinely reviewed and addressed is a comparatively positive outcome. These results align with best practices outlined by Kumar (2020), who argued that involving employees in decision-making promotes a sense of ownership over safety outcomes. However, nearly 40% of the employees still feel excluded, indicating that feedback mechanisms may exist, but they are not fully incorporated into strategic planning or operational decisions.

4.7 Regression test

Table 4. 2: Descriptive Statistics

	Mean	Std. Deviation	N
Improvement in employee engagement in safety practices.	2.09	1.016	75
Sufficiency of safety procedures.	1.61	.715	75
Leadership involvement in safety initiatives.	1.85	.608	75
Safety system presence at the workplace.	1.57	.756	75
Safety-related training sessions attendance.	2.11	.831	75

The descriptive statistics outline the characteristics of the studied variables (N = 75). A moderate degree of perceived improvement among employees was indicated by the dependent variable, improvement in employee engagement with safety practices, which had a mean of 2.09 (SD = 1.016). Safety training attendance had the highest mean (M = 2.11), suggesting that it happens frequently. In contrast, the presence of safety systems had the lowest mean (M = 1.57), followed closely by the adequacy of safety procedures (M = 1.61), suggesting that the structural aspects of safety practices may be insufficient or underdeveloped.

These results suggest that although there are training programs available, establishing safety systems and formal procedures might not be strong. This supports the findings of Casey (2021), who pointed out that training is useless in the absence of a strong safety infrastructure and active leadership support. Furthermore, the low standard deviations for each variable (0.608 to 1.016) imply little variation in the responses, which may indicate a common perception of safety conditions within the organization.

4.8 Correlation analysis

Table 4. 3: Correlations

		Improvement in employee engagement in safety practices	Sufficiency of safety procedures	Leadership involvement in safety initiatives	Safety system presence at the workplace	Attendance at safety- related training sessions
Pearson Correlation	Improvement in employee engagement in safety practices	1.000	.199	.197	.105	.180
	Sufficiency of safety procedures	.199	1.000	.210	.141	.230
	Leadership involvement in safety initiatives	.197	.210	1.000	.273	.272
	Safety system presence at the workplace	.105	.141	.273	1.000	-.034
	Attendance at safety-related training sessions	.180	.230	.272	-.034	1.000
Sig. (1- tailed)	Improvement in employee engagement in safety practices		.043	.045	.184	.061
	Sufficiency of safety procedures	.043		.035	.114	.024

N	Leadership involvement in safety initiatives	.045	.035		.009	.009
	Safety system presence at the workplace	.184	.114	.009		.386
	Attendance at safety-related training sessions	.061	.024	.009	.386	
	Improvement in employee engagement in safety practices	75	75	75	75	75
	Sufficiency of safety procedures	75	75	75	75	75
	Leadership involvement in safety initiatives	75	75	75	75	75
	Safety system presence at the workplace	75	75	75	75	75
	Attendance at safety-related training sessions	75	75	75	75	75

The Pearson correlation analysis revealed weak but positive associations among the dependent variable and three important independent variables:

- Sufficiency of safety procedures ($r = .199$, $p = .043$)
- Leadership involvement ($r = .197$, $p = .045$)
- Training attendance ($r = .180$, $p = .061$)

Although these correlations are statistically significant or close to significance, their weak strength ($r < .3$) implies that these factors have limited direct effects on engagement in safety practices.

Remarkably, there was a weak and statistically insignificant correlation with engagement ($r = .105$, $p = .184$). In contrast, Felter (2021) discovered that formal systems like hazard identification tools and reporting mechanisms strongly predict safety engagement. The difference is due to contextual factors, perhaps the organization has informal or inconsistently implemented systems, which could undermine employee trust in their effectiveness.

Moreover, correlations between variables, such as leadership involvement and safety system presence ($r = .273$, $p = .009$), suggest a potential indirect relationship: leaders who are actively engaged in safety initiatives may positively affect the development or perception of safety systems. According to the theory of transformational safety leadership, which suggests that visible and engaged leaders promote the institutionalization of safety (Kaila, 2023).

4.81 Regression analysis

Table 4. 4 Regression Analysis.

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	.280 ^a	.079	.026	1.002
a. Predictors: (Constant), Attendance of safety-related training sessions, Safety system presence at the workplace, Sufficiency of safety procedures, Leadership involvement in safety initiatives				
b. Dependent Variable: Improvement in employee engagement on safety practices.				

The regression analysis yielded a weak model fit ($R^2 = .079$), explaining just 7.9% of the variance in safety engagement. This aligns with qualitative feedback suggesting unmeasured cultural factors (e.g., trust in leadership) may dominate BBS effectiveness at Mega Market.

- **Adjusted $R^2 = .026$** (after considering sample size and predictors)
- **Standard Error = 1.002**, which is nearly equal to the standard deviation of the dependent variable

These results strongly suggest that the model has low predictive accuracy, and the independent variables are not effective predictors of improved employee engagement.

None of the predictors was statistically significant:

- Sufficiency of procedures ($p = .251$)
- Leadership involvement ($p = .339$)
- Safety system presence ($p = .641$)
- Training attendance ($p = .342$)

Among these, sufficiency of procedures had the highest standardized coefficient ($\beta = .139$), indicating a slightly stronger, yet still non-significant, impact.

These findings contrast with existing literature, where leadership and training are consistently shown to predict employee engagement and safety behaviour (Decuypere, 2020). The discrepancy may be attributed to contextual differences; in this case, the organization has approached training and leadership involvement in an artificial, compliance-focused manner rather than a deep, values-driven one. As noted by Alruqi and Hallowell (2020), the quality and consistency of safety interventions are more crucial than their simple existence.

Table 4. 5 Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.979	.482		2.030	.046
	Sufficiency of safety procedures	.198	.171	.139	1.158	.251
	Leadership involvement in safety initiatives	.202	.210	.121	.962	.339
	Safety system presence at the workplace	.076	.162	.057	.469	.641
	Attendance at safety-related training sessions	.143	.150	.117	.958	.342

a. Dependent Variable: Improvement in employee engagement on safety practices

The coefficients table outlines the contributions of each predictor. The constant term is significant ($B = .979$, $p = .046$), representing a baseline level of engagement when all predictors are at zero. However, none of the independent variables are statistically significant at the .05 level:

- Sufficiency of safety procedures ($B = .198$, $\beta = .139$, $p = .251$)
- Leadership involvement in safety initiatives ($B = .202$, $\beta = .121$, $p = .339$)
- Safety system presence at the workplace ($B = .076$, $\beta = .057$, $p = .641$)
- Attendance at safety-related training sessions ($B = .143$, $\beta = .117$, $p = .342$)

The standardized coefficients (β) indicate that sufficiency of safety procedures has the greatest relative impact ($\beta = .139$), followed by leadership involvement ($\beta = .121$) and attendance at training sessions ($\beta = .117$), while safety system presence has the least effect ($\beta = .057$). The absence of statistical significance implies that these variables, whether individually or together, do not effectively predict improvements in employee engagement in safety practices within this sample.

4.82 Residual Analysis

Table 4. 6 Residual Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.60	2.64	2.09	.285	75

Residual	-1.638	2.402	.000	.975	75
Std. Predicted Value	-1.740	1.911	.000	1.000	75
Std. Residual	-1.634	2.396	.000	.973	75

a. Dependent Variable: Improvement in employee engagement on safety practices

The residual statistics indicate that although the model's predictions are centred around the mean (mean residual = 0), there is a wide range of residuals (-1.638 to 2.402). This suggests that while the model is unbiased overall, the individual prediction errors are significant, reinforcing its low predictive power.

This could be attributed to unmeasured confounding variables such as organizational culture, job satisfaction, or psychological safety. Kavalela (2024) highlighted the important mediating role of organizational culture in behaviour-based safety outcomes, yet it was not included in this model. The variation in residuals also underscores the need for a more comprehensive framework that includes both behavioural and psychosocial factors.

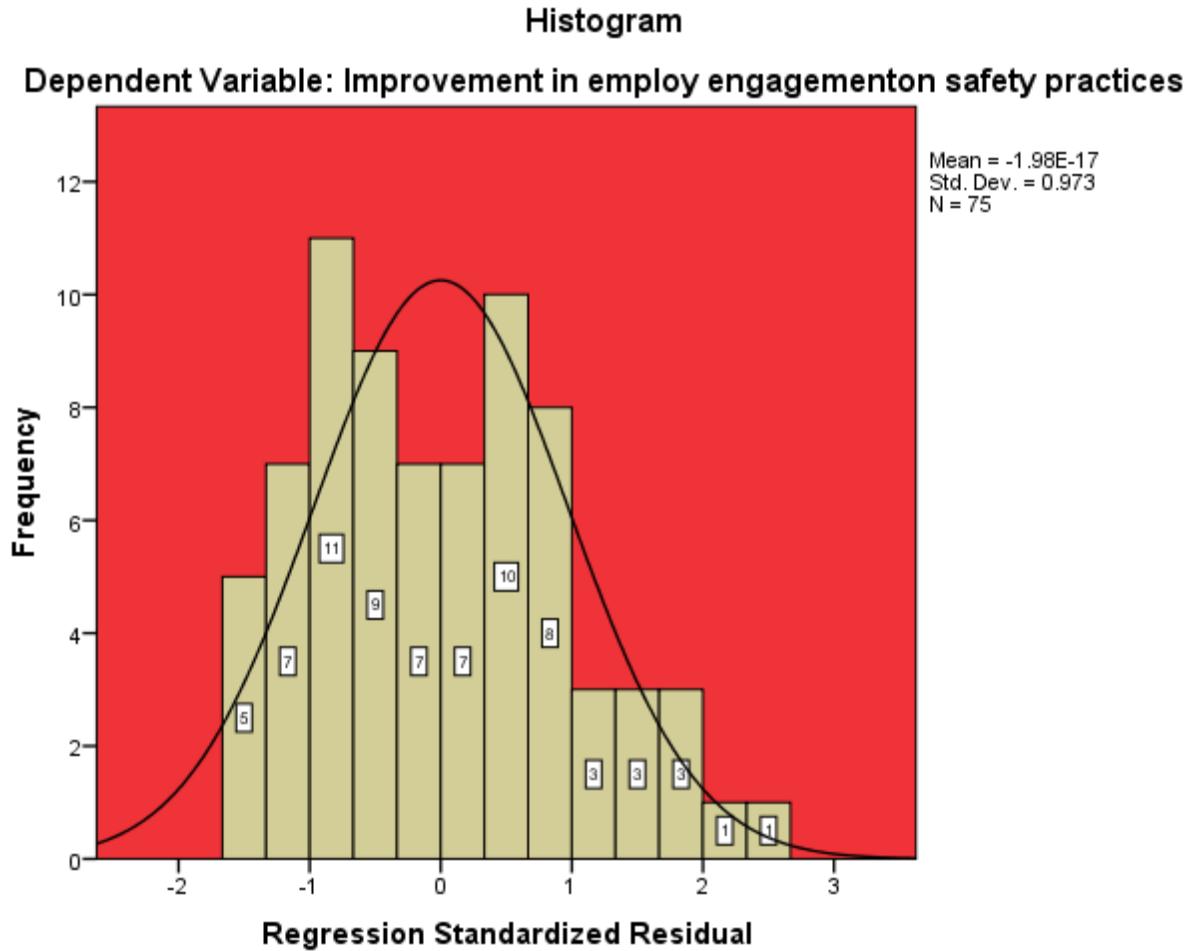


Figure 4. 10 Regression Standardized Residual.

The histogram of standardized residuals from a regression analysis of 75 cases shows the distribution of differences between observed and predicted values related to employee engagement and safety practices. It resembles a normal curve with a slight right skew, indicating some asymmetry. A mean near zero suggests no systemic bias, and a standard deviation of 0.973 confirms proper scaling. The analysis is robust enough to yield reliable conclusions, as indicated by the normal curve overlay, which suggests that deviations from predicted values are largely random (Huang, 2024).

The histogram supports the model's suitability for examining the relationship between behaviour-based safety interventions and employee engagement. While some outliers exist, they reflect

variability in effectiveness rather than undermining the model, possibly due to factors such as management commitment and perceptions of safety climate (Sankar, 2023).

Recent research contextualizes these findings. Abeje (2023) revealed a strong relationship between management involvement and worker participation in safety programs, showing a tighter residual distribution. Yang et al. (2024) noted that cultural and organizational differences can increase variance, aligning with the broader spread in this analysis. A higher standard deviation and rightward skew suggest the model may have under-predicted improvements for some individuals due to unconsidered factors like motivation or ongoing projects.

Discrepancies with existing literature may also result from sample characteristics, including demographics and industry. For example, the construction industry often shows greater variability in safety engagement due to a transient workforce (Zhang, Q. L., 2025). Additionally, the design of behaviour-based safety programs can significantly affect outcomes, particularly if they focus on individual behaviour without sufficient organizational support (Ewert B, 2020).

4.9 Qualitative Data Analysis

Three primary themes emerged from qualitative analysis: inconsistent safety protocol enforcement, limited accessibility to training, and perceived complexity of procedures. Participant 5 pointed out, “Safety checklists are available, but some supervisors disregard them when we're under pressure.” Interviewee 15 commented, “The rules seem to vary depending on who's observing, making them hard to take seriously.” These findings imply that safety procedures are weakened by uneven enforcement. Concerns about training accessibility were raised, with participant 6 noting, “New employees receive a brief introduction, but there's no follow-up support.” Additionally, participant 4 pointed out, “The safety manual is too complicated for everyday reference.”

According to quantitative data, 16% of respondents were unaware of safety procedures, 56% were somewhat familiar, and 28% were very familiar. This knowledge gap is especially pronounced among the 73.3% of respondents in high-risk processing and production roles (see Table 4.1), which increases the risk of accidents. According to Antony (2020), inadequate training contributes to these knowledge gaps, while Lal (2023) stressed the importance of comprehensive compliance training. Both qualitative and quantitative findings underscore the necessity for standardized

enforcement, accessible training, and simplified procedures, aligning with the views of Asivandzadeh et al. (2020) on the connection between organizational factors and risk perception.

Qualitative themes showed a lack of participation in safety programs and a desire for a more collaborative safety culture. Participant 24 remarked, “The safety committee seems geared toward managers; I’m unsure how to get involved.” Interviewee 9 said, “Reporting near-misses feels pointless, there’s no follow-up.” Employees expressed a need for inclusivity, with participant 41 suggesting, “Team groups would make me feel more engaged.”

Lack of awareness (41.3%), insufficient time (32.0%), fear of reporting (14.7%), and lack of interest (12.0%) were among the obstacles to participation that were found in the survey data (Figure 4.3). Figure 4.4 designates that workers preferred more training (37.3%), incentives (28.0%), and better communication (25.3%) to enhance engagement. Adade-Boateng (2021) advocated for training and incentives to reinforce safety behaviours. According to Abduraimi (2023), the regression analysis's low R^2 (.079) in Table 4.4 raises the possibility that organizational culture and other variables could have an impact on engagement. These results demonstrate the need for participatory mechanisms and clear communication to foster ownership, in line with the insights of Roller and Research Design Review (2021).

Qualitative themes included visible leadership commitment and inconsistent modelling by leaders. Participant 61 said, “When managers participate in safety walkthroughs, it demonstrates that behaviour-based safety (BBS) is important.” However, Participant 19 observed, “Some supervisors emphasize safety, while others focus on meeting the target over following rules.” Interviewee 38 said, “tinopacker rice mushonga wefumigation usati waexpire.”

The final objective was to establish a feedback system for ongoing improvement in behaviour-based safety (BBS). Qualitative themes highlighted existing barriers to feedback and a preference for accessible feedback channels. Participant 3 remarked, “The suggestion box goes unnoticed; it feels like shouting into a void.” Interviewee 11 mentioned, “I’m reluctant to speak up to avoid appearing like a complainer.” Employees favoured anonymous options, with participant 55 suggesting, “An app or survey would allow us to share ideas safely.”

According to survey data (Figure 4.8), there was a preference for anonymous surveys (37.3%) and suggestion boxes (28.0%). Figure 4.9 revealed that 38.7% wanted more involvement in safety decisions, even though 61.3% reported that feedback was reviewed. Liu (2020) supported anonymous systems to mitigate fears of retaliation, while Donaghy (2024) recommended safety committees to enhance empowerment. The correlation analysis (Table 4.3) showed weak relationships between feedback-related variables and engagement ($r = .105-.199$), suggesting that other factors might influence the effectiveness of feedback.

CHAPTER 5

Discussion of Results and Recommendations.

5.1 Introduction

The study examined the impacts of introducing BBS programs in a fast-growing company and provides important insights into employee perceptions, leadership involvement, and obstacles to participation. The findings provide a foundation for useful suggestions to enhance the safety culture by highlighting both the significant advantages and disadvantages of the current safety framework. This essay reviews the study's findings, integrates quantitative and qualitative data, and offers evidence-based suggestions to address the issues raised.

5.2 Discussion

According to the demographic data (Table 4.1), the processing and production staff, who are exposed to the greatest safety hazards, made up 73.3% of the respondents. This aligns with the emphasis of BBS programs on frontline workers (Kaila, 2023). However, the minimal representation of safety officers (2.7%) indicates a possible disconnect between policy development and implementation, as OHS experts play an important part in managing BBS initiatives (Zhang & Fang, 2021).

The age distribution shows that 58.7% of respondents are aged 26–45, suggesting a mature workforce that appreciates structured programs but may resist changes unless clear benefits are demonstrated (McInnis, 2023). Additionally, younger (18–25) and older (46–55) employees require tailored communication strategies to accommodate their varying preferences for digital versus traditional methods (Fasbender, 2022).

A major concern is the lack of familiarity with safety procedures, with 16% of respondents unaware and 56% only somewhat familiar (Figure 4.2). This knowledge gap, especially among high-risk production staff, increases accident risks and undermines compliance (Dyreborg et al., 2022). Qualitative data supports this, with employees citing inconsistent enforcement and complicated procedures as obstacles (e.g., Participant 5: “Safety checklists are available, but some supervisors ignore them”). These findings align with those of Antony (2020), who associated

inadequate training with knowledge gaps, and Lal (2023), who emphasised the importance of comprehensive compliance training.

Barriers to participation (Figure 4.3) include lack of awareness (41.3%), time constraints (32%), fear of reporting (14.7%), and lack of interest (12%). The significant role of awareness as a barrier contrasts with Goh et al. (2020), who found that the biggest obstacle was time constraints, suggesting that there may be problems with onboarding or communication in this company. Time constraints highlight a common conflict between production and safety priorities (Basiru, 2023), while fear of reporting points to insufficient psychological safety, which is essential for the success of BBS (Alruqi & Hallowell, 2020). Qualitative feedback, such as “Reporting near-misses feels pointless” (Interviewee 9), emphasizes the need for a supportive culture that encourages feedback.

Leadership involvement is seen as "somewhat involved" by 61.3% of respondents (Figure 4.5), which is important but not fully utilized, as only 30.7% rated leadership responses as “prompt and effective” (Figure 4.6). This contrasts with Kaila (2023), who found that timely leadership responses build trust and increase participation. Employees favoured tangible leadership actions like providing resources (40%) over symbolic gestures like walkthroughs (17.3%) (Figure 4.7), supporting Basiru's (2023) call for resource allocation and accountability. The low rating of leadership involvement (9.3%) in boosting engagement (Figure 4.4) suggests a disconnect, potentially due to hierarchical structures or a lack of trust (Heaslet, 2021).

Feedback mechanisms need enhancement, as 37.3% of respondents prefer anonymous surveys and 28% prefer suggestion boxes (Figure 4.8), which reflects concerns about retaliation (Liu, 2020). While 61.3% believe that feedback is reviewed, 38.7% feel left out of safety decisions (Figure 4.9), showing that feedback is not fully integrated into strategic planning (Kumar, 2020). Qualitative comments, such as “The suggestion box goes unnoticed” (Participant 3), highlight barriers to efficient feedback systems.

The regression analysis (Table 4.4) shows a weak model ($R^2 = .079$), with none of the predictors' adequacy of procedures, leadership involvement, safety system presence, or training attendance being statistically significant. This contrasts with existing literature that highlights leadership and training as strong predictors of safety engagement (Decuyper, 2020). The weak correlations ($r =$

.105–.199) and high residual variability (Table 4.6) suggest that unmeasured factors, such as organizational culture or psychological safety, may influence the outcomes (Kavalela, 2024). Although the normal distribution of residuals (Figure 4.91) validates the model statistically, the slight right skew indicates some under-prediction for certain respondents, potentially due to contextual factors like a transient workforce (Zhang, 2025).

5.3 Recommendations

The study's results informed these suggestions to improve the BBS program:

5.31 Improve Training Accessibility and Standardization

Action: Establish a thorough, continuous training program that accommodates the preferences of different generations, incorporating in-person sessions for senior staff members and digital modules for younger staff members (McInnis, 2023). Include regular follow-up meetings to address the 16% unfamiliarity and 56% partial familiarity with safety procedures.

Justification: According to Zakaria et al. (2023), structured training enhances safety knowledge and compliance. Peer mentoring can leverage institutional knowledge and boost engagement by matching seasoned employees with less experienced ones (Fasbender, 2022).

Implementation: Create digital platforms with interactive safety modules and set aside funds for monthly training sessions. Simplify safety manuals to improve accessibility, while taking into account Participant 4's qualitative comments about their complexity.

5.32 Enhance Leadership Engagement and Responsiveness

Action: Train leaders to consistently model safety behaviours, perform regular safety walkthroughs, and respond quickly to concerns, addressing the 37.3% "rarely effective" response rate (Figure 4.6). Introduce accountability metrics for leaders, such as tracking response times to safety reports.

Justification: Visible leadership fosters a positive safety climate and builds trust (Zhao, 2022; Kaila, 2023). Inconsistent leadership modelling, as mentioned by Participant 19, can reduce the effectiveness of BBS.

Implementation: To address leadership gaps, Mega Market should adopt Kaila's (2023) transformational safety training framework, coupled with targeted resource allocation as a priority for 40% of employees (Figure 4.7). Pilot testing this approach in high-risk departments (e.g., Production) could validate its efficacy.

5.33 Foster Psychological Safety and Feedback Systems

Action: Set up anonymous feedback channels, such as a mobile app or online surveys, to meet the 37.3% preference for anonymity (Figure 4.8). Form safety committees with employee representation to enhance involvement in decision-making, addressing the 38.7% desire for participation (Figure 4.9).

Justification: Anonymous systems help alleviate the fear of reporting (Liu, 2020), while participatory mechanisms promote ownership (Kumar, 2020). Qualitative feedback indicates a lack of trust in current systems (Participant 3).

Implementation: Launch a digital feedback platform with regular updates on actions taken to ensure transparency (Lal, 2023). Safety committees should meet biweekly and include production staff to address concerns about exclusivity (Participant 24).

5.34 Address Time Constraints and Awareness Gaps

Action: Integrate safety tasks into daily workflows to minimize time conflicts (32% barrier, Figure 4.3). Initiate awareness campaigns using posters, videos, and team briefings to combat the 41.3% lack of awareness.

Justification: Balancing production and safety priorities is essential in industrial settings (Basiru, 2023). Awareness campaigns can help bridge communication gaps (Goh et al., 2020).

Implementation: Schedule safety tasks during low-production periods and utilize concise, visual communication tools to reinforce protocols, ensuring accessibility for all roles.

5.35 Incorporate Organizational Culture in BBS Design

Action: To address latent cultural barriers, Mega Market should conduct an organizational audit evaluating psychosocial factors (e.g., trust in leadership, perceived accountability). Findings can tailor BBS interventions to local workforce dynamics.

Justification: The low R^2 (.079) indicates that unmeasured cultural factors may influence outcomes (Kavalela, 2024). Tailored interventions that address contextual barriers can improve effectiveness (Ewert, 2020).

Implementation: Hire a consultant to evaluate organizational culture and integrate the findings into the BBS redesign, focusing on building trust and promoting inclusivity.

5.34 Conclusion

This chapter examines the roll out of Behaviour-Based Safety (BBS) initiatives within a fast-growing company, highlighting employee perceptions, leadership roles, and barriers to participation. Most respondents are high-risk processing and production staff, while safety officers are underrepresented, indicating a disconnect in policy execution. Many employees are unfamiliar with safety procedures, contributing to increased risks, and barriers include a lack of awareness, time constraints, and fear of reporting. Leadership involvement is deemed insufficient, necessitating improved feedback mechanisms. Recommendations emphasize enhancing training accessibility, leadership engagement, psychological safety, and integrating organizational culture into BBS design to strengthen safety culture and increase compliance.

CHAPTER 6

Conclusion

6.1 Conclusion

The study highlights significant gaps in the BBS program, including limited awareness, inconsistent leadership, and obstacles to feedback, which collectively impede safety engagement. Although training occurs frequently, its effectiveness is diminished without strong safety systems and leadership support. The weak predictive power of the regression model highlights the importance of adopting an all-inclusive approach, including cultural and psychosocial factors. By implementing customized training, enhancing leadership accountability, fostering psychological safety, addressing time constraints, and incorporating cultural considerations, the organization can improve its safety culture. These recommendations offer a pathway for sustainable improvements in BBS, reducing risks and enhancing employee engagement.

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Appendix 1

BEHAVIOUR-BASED SAFETY (BBS) QUESTIONNAIRE

Research Participation Invitation

Researcher: Panashe Sithole

University: Bindura University of Science Education

Registration No: B212536B

Degree Program: BSc (Hons) in Safety, Health and Environmental Management (SHEM)

Research Title: An Assessment of the Impacts of Behaviour-Based Safety Interventions at a Fast-Growing Company.

Purpose of the Study: This research aims to evaluate how Behaviour-Based Safety (BBS) interventions influence Occupational Health and Safety (OHS) performance in rapidly growing companies. Your insights will help us understand the perception and implementation of these principles in the workplace.

Voluntary Participation: Participation is completely optional.

Confidentiality: Your data will be kept private and anonymous. No individuals or companies will be identifiable in the results.

Ethical Guidelines: This study adheres to ethical research practices to ensure your privacy is protected.

Instructions for Completion: Please answer all questions honestly and based on your experiences and understanding. Tick in the box.

Your contribution is invaluable, and I appreciate your interest in participating!

Section 1: Demographic Information

1. What is your role in the organization?

☐ Top Management

☐ Supervisor

☐ Safety Officer

☐ Frontline Worker

2. Gender

☐ Male

☐ Female

3. Age

☐ 18-25

☐ 26-35

☐ 36-45

☐ 45-55

4. Job Tenure

☐ <1

☐ 1-3 years

☐ 4-6 years

☐ >6 years.

5. Which department do you work in?

☐ Production

☐ Logistics

☐ Maintenance

☐ Administration

Section 2: Current Safety Procedures and Guidelines

6. How well do you know the organization's existing safety protocols and policies?

☐ Very familiar

☐ Somewhat familiar

☐ Not familiar

7. Do you feel the current safety procedures are sufficient to ensure worker safety?

☐ Yes

☐ No

☐ Not familiar

8. Are there any gaps in the current safety procedures that you have observed?

☐ Yes

☐ No

☐ Not sure

9. What areas of worker safety behaviour do you think need improvement? (Select all that apply.)

☐ Use of Personal Protective Equipment (PPE)

☐ Adherence to safety protocols

☐ Reporting of near-misses and incidents

☐ Emergency response preparedness

Section 3: Employee Engagement in Safety Initiatives

10. How often do you participate in Safety-related training or meetings?

☐ Regularly

☐ Occasionally

☐ Rarely

☐ Never

11. Do you feel encouraged to report safety concerns or near-misses?

☐ Yes

☐ No

☐ Sometimes

12. What motivates you to follow safety practices? (Select all that apply.)

☐ Personal Safety

☐ Team Safety

☐ Organizational policies

☐ Leadership encouragement

13. What barriers do you face in participating in safety initiatives?

☐ Lack of time

☐ Lack of awareness

☐ lack of interest

☐ Fear of reporting

14. How can the organization improve employee engagement in safety practices?

- ☐ More training sessions
- ☐ Better communication
- ☐ Incentives for participation
- ☐ Leadership involvement

Section 4: Leadership and Safety Culture

15. How would you rate the involvement of leadership in promoting safety initiatives?

- ☐ Very involved
- ☐ Somewhat involved
- ☐ Not involved

16. Do you feel that leadership sets a good example for safety practices?

- ☐ Yes
- ☐ No
- ☐ Sometimes

17. How does leadership respond to safety concerns raised by employees?

- ☐ Promptly and effectively
- ☐ Occasionally
- ☐ Rarely
- ☐ Not at all

18. What role do you think leadership should play in improving safety behaviour? (Select all that apply.)

- ☐ Regular safety walkthroughs

- ☐ Open communication channels
- ☐ Providing resources for safety improvements
- ☐ Recognizing and rewarding safe behaviour

Section 5: Feedback and Continuous Improvement.

19. Does the organization currently have a system for collecting employee feedback on safety practices?

- ☐ Yes
- ☐ No
- ☐ Not sure

20. What methods would you prefer for improving feedback on safety practices?

- ☐ Anonymous surveys
- ☐ Suggestion boxes
- ☐ Direct communication with supervisors
- ☐ Digital platforms (e.g., apps, emails)

21. How can the organization use employee feedback to improve safety practices?

- ☐ Regularly review and act on feedback.
- ☐ Involve employees in safety decision-making.

Appendix 2

OBSERVATION CHECKLIST FOR BEHAVIOUR-BASED SAFETY RESEARCH PROJECT

Objective 1: Examine Current Safety Procedures and Guidelines

- **Are safety procedures documented and accessible?**
 - Yes
 - No
 - Comments: _____
- **Are employees trained on existing safety procedures?**
 - Yes
 - No
 - Comments: _____
- **Is there evidence of regular reviews and updates to safety guidelines?**
 - Yes
 - No
 - Comments: _____
- **Are there identified gaps in safety protocols?**
 - Yes
 - No
 - Comments: _____

Objective 2: Investigate Employee Engagement in Safety Initiatives

- **Are employees actively participating in safety meetings?**

- Yes
 - No
 - Comments: _____
- **Is there a formal system for employee suggestions related to safety?**
 - Yes
 - No
 - Comments: _____
- **Do employees demonstrate ownership of safety practices (e.g., reporting hazards)?**
 - Yes
 - No
 - Comments: _____
- **Are there incentives for participation in safety initiatives?**
 - Yes
 - No
 - Comments: _____

Objective 3: Examine Leadership's Role in Safety Initiatives

- **Do leaders visibly promote safety practices?**
 - Yes
 - No
 - Comments: _____
- **Is the leadership approachable regarding safety concerns?**
 - Yes
 - No

- Comments: _____
- **Do leaders provide regular feedback and recognition for safe behaviours?**
 - Yes
 - No
 - Comments: _____
- **Are safety performance metrics communicated to the team by leadership?**
 - Yes
 - No
 - Comments: _____

Objective 4: Establish an Ongoing Feedback System

- **Is there a system in place for collecting employee feedback on safety initiatives?**
 - Yes
 - No
 - Comments: _____
- **Are feedback mechanisms easy to use and accessible to all employees?**
 - Yes
 - No
 - Comments: _____
- **Is feedback regularly reviewed and acted upon?**
 - Yes
 - No
 - Comments: _____
- **Is there evidence of continuous improvement based on employee feedback?**

- Yes
- No
- Comments: _____

Appendix 3

STATISTICAL TABLES

A. Regression Test

	Mean	Std. Deviation	N
Improvement in employee engagement in safety practices.	2.09	1.016	75
Sufficiency of safety procedures.	1.61	.715	75
Leadership involvement in safety initiatives.	1.85	.608	75
Safety system presence at the workplace.	1.57	.756	75
Safety-related training sessions attendance.	2.11	.831	75

B. Correlation Analysis

	Improvement in employee engagement in safety practices	Sufficiency of safety procedures	Leadership involvement in safety initiatives	Safety system presence at the workplace	Attendance at safety-related training sessions
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Pearson	Improvement in	1.000	.199	.197	.105	.180
Correlation	employee					
	engagement in					
	safety practices					
	Sufficiency of	.199	1.000	.210	.141	.230
	safety procedures					
	Leadership	.197	.210	1.000	.273	.272
	involvement in					
	safety initiatives					
	Safety system	.105	.141	.273	1.000	-.034
	presence at the					
	workplace					
	Attendance at	.180	.230	.272	-.034	1.000
	safety-related					
	training sessions					
Sig. (1-	Improvement in		.043	.045	.184	.061
tailed)	employee					
	engagement in					
	safety practices					
	Sufficiency of	.043		.035	.114	.024
	safety procedures					
	Leadership	.045	.035		.009	.009
	involvement in					
	safety initiatives					
	Safety system	.184	.114	.009		.386
	presence at the					
	workplace					
	Attendance at	.061	.024	.009	.386	
	safety-related					
	training sessions					

N	Improvement in employee engagement in safety practices	75	75	75	75	75
	Sufficiency of safety procedures	75	75	75	75	75
	Leadership involvement in safety initiatives	75	75	75	75	75
	Safety system presence at the workplace	75	75	75	75	75
	Attendance at safety-related training sessions	75	75	75	75	75

C. Regression Analysis

Model Summary^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.280 ^a	.079	.026	1.002
a. Predictors: (Constant), Attendance of safety-related training sessions, Safety system presence at the workplace, Sufficiency of safety procedures, Leadership involvement in safety initiatives				
b. Dependent Variable: Improvement in employee engagement on safety practices.				

D. Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.979	.482		2.030	.046
	Sufficiency of safety procedures	.198	.171	.139	1.158	.251
	Leadership involvement in safety initiatives	.202	.210	.121	.962	.339
	Safety system presence at the workplace	.076	.162	.057	.469	.641
	Attendance at safety-related training sessions	.143	.150	.117	.958	.342

a. Dependent Variable: Improvement in employee engagement on safety practices

D. Residual Analysis

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.60	2.64	2.09	.285	75
Residual	-1.638	2.402	.000	.975	75
Std. Predicted Value	-1.740	1.911	.000	1.000	75
Std. Residual	-1.634	2.396	.000	.973	75

a. Dependent Variable: Improvement in employee engagement on safety practices

Appendix 4

Turnitin Report



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