

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF SCIENCE AND ENGINEERING
DEPARTMENT OF DISASTER RISK REDUCTION



Assessing Stakeholder Perceptions and Mitigation Strategies to reduce Livelihoods and Property Loss from Fire Hazards in Informal Marketplaces: A Case Study of Mbare Musika.

By

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B213143B

2025

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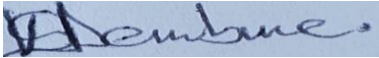
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**DISSERTATION SUBMITTED TO BINDURA UNIVERSITY IN PARTIAL
FULFILMENT OF THE REQUIREMENTS OF THE BACHELOR OF SCIENCE
HONOURS DEGREE IN DISASTER MANAGEMENT STUDIES**

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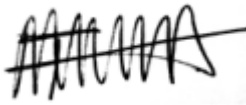
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DEDICATION

First and foremost, I dedicate this dissertation to my Lord God, The creator of heavens and earth, whose wisdom, grace and strength have carried me through this journey. I also sincerely dedicate this work to my beloved parents Mr and Mrs Dembure and to my uncles and their families. Your enduring love, sacrifices, support and encouragement have been the pillar of my academic journey. Thank you for believing in me especially during the most challenging times. This accomplishment is not mine alone but it also belongs to you all.

ACKNOWLEDGEMENTS

Above all, I want to genuinely express my gratitude to the Almighty God for giving me the courage, discernment and tenacity required to start and finish this research. None of this would have been possible without His direction.

I want to express my gratitude to my parents, uncles, and aunts for their constant love and support throughout my time as a student at Bindura University of Science and Education. Their support and encouragement inspired me to keep going and given me the bravery to get through every obstacle I faced while doing this research.

I'm profoundly grateful to my supervisor, Dr.T. Mayangadze, whose consistent support, expert advice and dedication significantly aided to the successful completion of this study.

I'm also deeply grateful to my friend Lubelihle Dube for her constant encouragement and support, as well as to my Best Group discussion friends for their invaluable motivation throughout this research journey.

I would like to sincerely thank the Mbare Musika community and the Harare City Council officials for their significant assistance and collaboration during this project. The Ward 4 vendors, residents and community leaders in Mbare Musika deserve special recognition for their participation and insightful contributions, which substantially enhanced the study.

ABSTRACT

Fire hazards remain a persistent threat in informal marketplaces due to poor fire safety knowledge, inadequate infrastructure, and weak stakeholder coordination. In Zimbabwe, Mbare Musika has been prone to recurrent fire outbreaks, significantly impacting livelihoods and resulting in property loss. Despite efforts to address fire risks through various interventions, challenges remain in promoting effective mitigation strategies. This study was carried out to assess stakeholder perceptions and mitigation strategies in Mbare Musika informal market. A cross-sectional research design adopted using both quantitative and qualitative approaches. Data collection tools included structured questionnaires and key informants' interviews. The study targeted a sample 100 market vendors and 5 key informants. The data was analyzed using Microsoft excel for descriptive statistics and thematic analysis for qualitative data. The findings revealed that 94% of vendors had experienced fire outbreaks, 44% indicating frequent occurrences. The most common causes from the survey results indicated open flames (41%), and electrical faults (31%) as the most frequently cited hazard. Despite only 45% of the respondents indicating awareness of fire safety practices and 40% expressing confidence in their ability to respond effectively to fire outbreaks, the findings point to low levels of preparedness among the majority of traders in Mbare Musika, with only 19% having access to functional fire extinguishers. The study revealed critical challenges in fire response including the absence of routine fire drills and weak coordination among stakeholders. These factors contribute to fragmented and largely reactive efforts, undermining the overall effectiveness of fire risk mitigation strategies and emergency response in the marketplace. The findings underscore the need for strengthening fire safety awareness, enhancing stakeholder collaboration and upgrading firefighting infrastructure .Promoting proactive fire risk reduction strategies such as regular fire safety training and awareness campaign ,community based education ,tailored infrastructure improvements can reduce vulnerability in informal market places .therefore ,understanding stakeholder perceptions and existing gaps is key to improving disaster preparedness and building resilience against fire hazards in high risk environments like Mbare Musika.

ACRONYMS

CBDRR- COMMUNITY- BASED DISASTER RISK REDUCTION

EMA - ENVIRONMENTAL MANAGEMENT AGENCY

DRR - DISASTER RISK REDUCTION

HSE - HEALTHY AND SAFETY EXECUTIVE

FAO - FOOD AGRICULTURAL ORGANISATION

SDGs - SUSTAINABLE DEVELOPMENT GOALS

PAR MODEL- PRESSURE AND RELEASE MODEL

IKS - INDIGENOUS KNOWLEDGE SYSTEMS

CBOs - COMMUNITY BASED ORGANISATIONS

IRB - INSTITUTIONAL REVIEW BOARD

NGOs - NON-GOVERNMENTAL ORGANISATIONS

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CHAPTER 1

1.1 Introduction

The chapter outlines the background to the study, presents the research problem, states the research objectives and research questions, the justification for conducting the study and highlights the scope of the research.

1.2 Background of the study

Informal marketplaces play a crucial role in urban economies worldwide especially in developing countries where they provide employment opportunities and affordable goods. Yet these, markets are often vulnerable to disasters, particularly fire outbreaks due to factors such as poor infrastructure, overcrowding, poor waste management and lack of enforcement of safety regulations. Globally, fire incidents in informal markets have caused severe economic and social disruptions. For example, the 2015 fire at Jakarta's Tanah Abang Market in Indonesia destroyed over 500 stalls, leaving many traders without a source of income as stated by (Halim, (2020). Similarly, major market fires in Latin America and Asia have highlighted the devastating impacts of inadequate fire safety measures in informal trading spaces (Abunyewah et al., 2021).

In Africa, informal trade is a major economic sector, with markets serving as key commercial centers in many cities. However, these markets frequently suffer from fire outbreaks, often caused by electrical faults, open flames, illegal structures and highly flammable materials. One of the worst cases was the 2019 fire at Kejetia Market in Ghana which destroyed over 200 stalls and affected thousands of traders according to (Asante, 2020). Likewise, Nigeria's Bologun Market in Lagos has experienced multiple fires often due to electrical faults and the highly congested nature of the trading space according to (Abubaker et al., 2023). Many African cities lack well-equipped fire brigades and emergency responses are frequently delayed due to inadequate infrastructure. As a result, fire incidents in informal markets continue to cause significant economic losses and hardships for traders thereby increasing livelihoods and properties vulnerabilities.

Zimbabwe has not been spared from the increasing trend of fire outbreaks in informal market places. In Harare, several markets have been affected by devastating fires leading to loss of livelihoods, properties and goods for traders. A major fire incident occurred at Glenview Home Industry Complex in 2020, where an electrical fault reportedly caused a fire that destroyed numerous stalls and goods worth thousands of dollars as noted by (The Herald, 2024). Similar fire

incidents have been recorded in other markets across the nation, reflecting the urgent need for improved fire prevention strategies as stated by (Partheepan, 2023).

Mbare Musika, the largest hub of informal commerce and activity in the country has been particularly vulnerable to fire outbreaks. The market serves as a key trading hub for agricultural produce and various goods, attracting thousands of traders and customers daily. However, its poor infrastructure, illegal electrical connections, makeshift stalls and improper waste disposal practices have made it highly susceptible to fire disasters. Over the years, several fire incidents have destroyed large sections of the market with major outbreaks recorded in 2017, 2020 and 2023. These fires have resulted in massive economic losses for traders and vendors, many of whom operate without insurance or financial security as noted by (Kodur et al., 2020). The lack of an effective fire prevention and response system further exacerbates the problem leaving traders and authorities struggling to cope with the aftermath of each fire incident according to (Sitompul, 2021).

The persistent fire outbreaks in Mbare Musika highlight broader challenges faced by informal marketplaces in Zimbabwe and across Africa. Addressing these risks demand for a comprehensive approach that includes advanced market infrastructure, strict enforcement of fire safety regulations, better waste management practices and increased trader awareness on fire prevention as noted by (ODAUD, 2021). Without urgent interventions the continued loss of livelihoods and property due to fires will remain a major threat to traders and the broader urban economy.

1.3 Problem Statement

Informal marketplaces such as Mbare Musika in Harare are vital for sustaining livelihoods and supporting the local economy. Yet they are increasingly exposed to fire hazards. The high frequency of fire outbreaks in this market has led to severe destruction of property, goods and income sources, exacerbating the socio-economic vulnerability of informal traders. These traders commonly operate in overcrowded and poorly regulated spaces with limited capacity to respond to emergencies due to inadequate fire safety infrastructure, illegal electrical connections and ineffective waste management. The lack of preparedness and absence of early warning systems further compound the risk while delayed emergency response and weak enforcement of safety regulations hinder timely recovery. As a result, fire hazards continue to deteriorate community resilience and threaten sustainable development goals. This study aims to assess stakeholder perceptions and the effectiveness of existing disaster risk reduction and mitigation strategies with

the goal of informing market appropriate, inclusive and sustainable interventions to reduce livelihoods and properties loss in Mbare Musika.

1.4 Objectives

1.4.1 Main Objective

To assess stakeholder perceptions and identify potential mitigation strategies for reducing fire hazards, protecting livelihoods and properties on Mbare Musika.

1.4.2 Specific Objectives

- To assess the perceptions of informal traders and stakeholders on fire hazards risks in Mbare Musika.
- To assess the existing fire safety infrastructure and its adequacy in mitigating fire related hazards and enhancing preparedness for fire related disasters in the market.
- To implement targeted mitigation strategies for improving fire safety, reducing fire hazard risks and protecting vendors' livelihoods and properties in Mbare Musika

1.5 Main Research Question

What are the stakeholder perceptions on fire hazards in Mbare Musika and what mitigation strategies can be proposed to reduce these risks and safeguard livelihoods and properties?

1.5.1 Specific Research Questions

1. What are the perceptions of informal traders and stakeholders regarding fire hazards in the informal marketplaces of Mbare Musika?
2. To what extent is the existing fire safety infrastructure and emergency response system at Mbare Musika effective in preventing and responding to fire related disasters?
3. What mitigation strategies can be implemented to improve fire safety, reduce fire hazard risks, and protect vendors' livelihoods and properties in Mbare Musika?

1.6 Justification

Mbare Musika informal marketplaces are essential economic hubs, providing affordable goods and providing employment opportunities to thousands of people. However recurrent fire hazards outbreaks in these markets have resulted in extensive financial losses and devastation of livelihoods. The informal nature of these markets commonly means that safety regulations lack

effective implementation and vendors and traders lack the knowledge to protect themselves and their businesses. Through understanding the causes of these fires and gaps in current fire safety measures, this research will help to identify solutions tailored to the unique challenges of informal marketplaces. The findings will contribute to improved fire safety infrastructure, raising awareness and enhancing preparedness among vendors and traders which will significantly contribute to safeguarding their businesses and the broader economy.

1.7 Assumptions

Fire outbreaks in Mbare Musika are recurring issue that significantly impact vendor's livelihoods and properties.

Existing fire safety measures and infrastructure in Mbare Musika market place are insufficient for reducing risk or responding effectively to fire incidents.

Sustainable, community-based interventions and stakeholder collaboration can play a crucial role in reducing fire hazard risks in Mbare Musika's informal market place.

1.8 Delimitations

The study is confined to Mbare Musika, an informal marketplace in Harare and does not include other informal markets in Zimbabwe. It specifically examines fire hazard risks and their effects on livelihoods and property excluding other hazards such as floods, crime and health risks. Data is gathered only from vendors, local authorities and relevant stakeholders directly involved with Mbare Musika excluding broader public perspectives. The focus is on preventative and mitigation measure rather than post disaster recovery or long-term rehabilitation.

1.9 Limitations of the study

Data collection and stakeholder participation were impacted by a number of practical and contextual issues in this study. Congestion, spatial planning challenges and restricted access to certain high-risk areas of Mbare Musika created challenges in accessing respondents and constrained effective interaction during the data collection process. Many vendors were initially hesitant to participate because of their demanding routines and concerns about customer loss during critical livelihood recovery periods. To overcome these surveys and interviews were strategically conducted during off-peak hours such as lunch breaks with support from nearby vendors who temporarily helped oversee participant's stalls thereby minimizing interruption to

their daily economic activities. Reluctance to respond from some local authorities and key stakeholders resulted in partial gaps in institutional perspectives. In addition, recent fire incidents and ongoing redevelopment activities in the area may have influenced the participant's response, potentially affecting the objectivity of some views related to risk perception and preparedness. Despite these limitations, strategies such as building rapport with vendors engaging informal gatekeepers and triangulating data sources were employed to enhance the credibility and trustworthiness of the findings.

1.10 Definition of Terms

Risk Perceptions - It is the subjective assessment and interpretation of the likelihood and severity of hazards by stakeholders, influencing their preparedness and responses. (Kinatader et.al 2014).

Mitigation Strategies - refers to the actions taken to reduce the severity or impact of fire hazards including safety training, improved infrastructure and community awareness programs. (Kodur and Nasar, 2021).

Stakeholders - Individuals or groups with an interest on a particular issue which includes vendors, local residents, non-governmental organizations and government authorities involved in market operations and safety. (Zikargae et.al, 2022)

Informal marketplaces - Markets operating outside formal regulations often lacking official licensing where vendors sell goods and services. (Davies et.al 2022).

Fire Hazards - Conditions that increase the likelihood of fire occurrence such as the presence of flammable materials, inadequate safety measures and environmental factors. (Khan et.al 2022).

Livelihoods - refers to the means and activities through which people secure the necessities of life such as food, water, shelter and income. (FAO, 2013).

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews existing literature on fire hazards in informal marketplaces focusing on Mbare Musika in Harare, Zimbabwe. The review is in line with the study's objectives, examining the underlying causes of fire risks, their impact on livelihoods and properties, stakeholder's perceptions and mitigation strategies. The discussion is also guided by a conceptual framework that connects these issues to broader structural and socio economic factors. by analyzing past studies in depth, this chapter brings to light knowledge gapes and practices, particularly within the Zimbabwean context and provides a foundation for addressing fire hazards more effectively in informal trading environments.

2.2 Conceptual Framework

At its core, a conceptual framework is defined as a structured, systematic representation of ideas and their interrelationships, serving as a navigational tool that guides the researcher from hypothesis to conclusion (Pleasant, 2024). In this research, the framework helps unravel the complex factors contributing to fire risks in informal markets specifically Mbare Musika in Harare, Zimbabwe. These risk factors include poor infrastructure, unsafe vendor practices, inadequate enforcement of safety regulations, and broader socio-economic challenges. Understanding how these elements interact is crucial to developing effective strategies to reduce fire incidents and protect livelihoods.

This study is grounded in the Pressure and Release (PAR) Model developed by Blaikie et al. (1994), which offers a powerful lens for analyzing how disasters result from the intersection of hazards and vulnerabilities. In informal marketplaces like Mbare Musika, the PAR model helps unpack how structural inequalities and systemic neglect amplify the likelihood and impact of fire hazards. The PAR model conceptualizes disaster risk as a progression of vulnerability beginning with root causes that is deep seated factors such as poverty, marginalization, and weak governance systems. In the case of Mbare Musika, many traders operate within an unregulated informal economy, lacking access to proper infrastructure or legal protection. These foundational issues diminish the capacity to demand or implement meaningful fire safety measures.

Moving closer to the hazard, dynamic pressures refer to the mechanisms through which root causes manifest as increased vulnerability. These include a lack of urban planning, limited fire safety

education, congested spaces and unregulated electricity connections. According to Ndabezitha et al. (2024), institutional inertia and fragmented disaster preparedness strategies result from failure to engage communities in risk reduction programs which significantly increase susceptibility to fire hazards among informal traders.

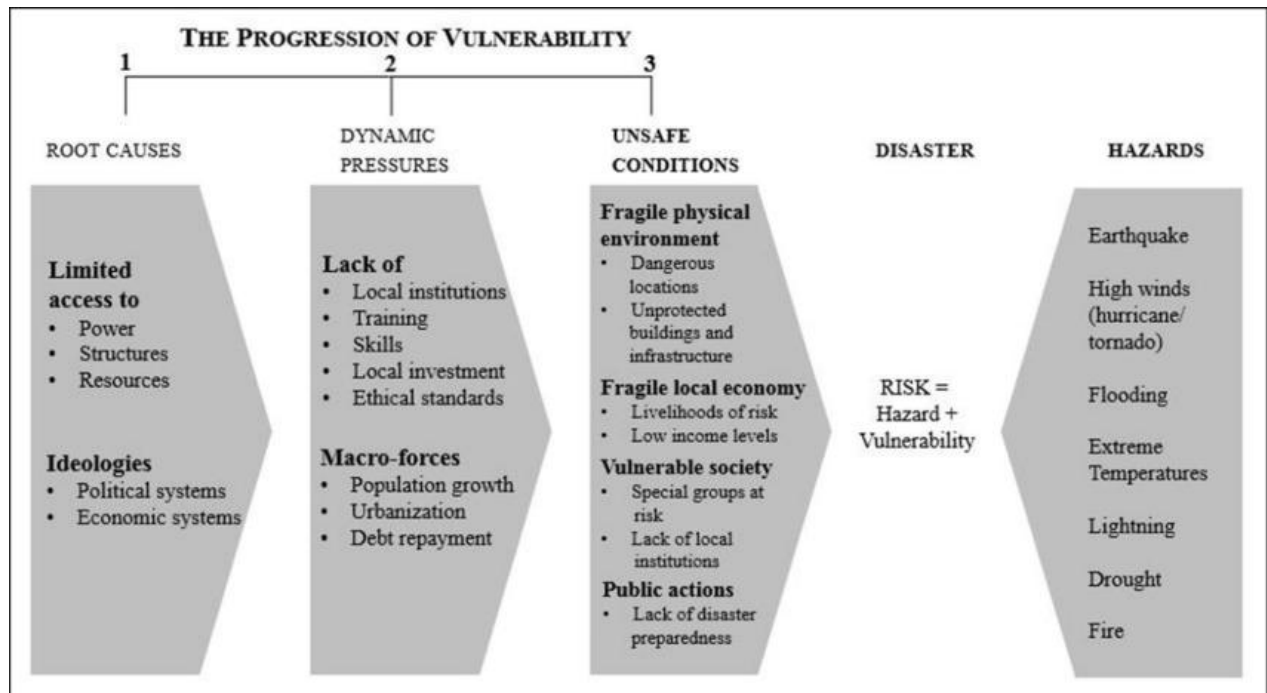
At the final stage, unsafe conditions represent the immediate physical and environmental circumstances that heighten risk. In Mbare Musika, this includes overcrowded stalls, flammable waste accumulation, blocked exit routes, and minimal fire safety infrastructure. These factors make it likely that even a minor ignition can trigger a large-scale disaster. Johnson et al. (2022) notes, that community perceptions and behaviors in response to these conditions are also vital to understanding disaster vulnerability and crafting localized solutions.

By applying the PAR model, this study goes beyond treating fire outbreaks as isolated events. Instead, it highlights the build-up of underlying pressures and environmental neglect that turn fire hazards into real threats. This conceptual framework aligns with Martin and Tarrant (2022), who advocate for inclusive, context-specific disaster risk reduction strategies rooted in local realities.

Guided by this framework, the study seeks to evaluate stakeholder perceptions of fire risks and the current fire safety infrastructure in Mbare Musika. It also aims to identify the main infrastructural and behavioral factors that contribute to fire hazards. Furthermore, the research will examine institutional and policy gaps in disaster preparedness and fire management to support the development of effective mitigation measures suited to the specific context of this informal market.

The conceptual framework thus provides the foundation for analyzing the interlinked causes of fire risks in Mbare Musika and helps structure the development of sustainable mitigation strategies. The accompanying diagram below illustrates how these factors interact according to the PAR model in the context of this study.

Pressure and release model



Source: (Wisner et al. 2004)

Figure 2.1 Pressure and Release and model

2.2.1 Infrastructural Vulnerabilities and Fire Risks

Infrastructural vulnerability and fire hazard risk in informal markets like Mbare Musika are prevalent. The lack of adequate infrastructure, including fire safety systems and accessible emergency routes, plays a significant role in the frequent occurrence of high fire risks in these markets (Ngau & Boit, 2020). These markets are characterized by high population density, with a number of stalls and buildings that do not meet basic safety standards. For instance, makeshift, outdated electrical systems and illegal connections are frequent in these markets, which can lead to an increase in fire hazards risks as noted by (Abubakar et al., 2023). Poor management of waste disposal and a lack of fire prevention resources significantly exacerbate fire hazard risks in informal markets. These conditions increase the vulnerability of market environments, especially where open burning of waste is common and fire safety infrastructure is lacking. Such practices not only degrade the environment but also heighten the exposure of vendors and their goods to potential fire outbreaks (Daffi, Chaimang, & Alfa, 2020). Similarly, inadequate waste management by street vendors contributes to unsafe and congested market conditions, further elevating the risk of fire incidents (Ezeudu, Maphanga, & Madonsela, 2024). These conditions underscore the critical need to enhance market infrastructure, conduct regular inspections of electrical systems,

and implement comprehensive fire safety strategies. Such proactive measures are essential to reduce the risk of fire hazards and safeguard the livelihoods and properties of market traders (Kodur, Kumar, & Rafi, 2020).

2.2.2 Human Factors and Behavior Patterns

Human factors refer to environmental, organizational, and job-related elements, as well as individual characteristics, that influence human behavior and can significantly affect health and safety outcomes. Behavior patterns involve the consistent ways individuals act or respond in different situations, often shaped by both internal and external influences (Health and Safety Executive, 2021).

The behavior of market vendors also plays a big part in fire hazard risks. In Mbare these habits often driven by the need to survive in an informal setting, can lead directly to fire outbreaks (Nyame-Asiamah, 2023). The lack of fire safety knowledge among market vendors significantly contributes to fire hazards in informal markets such as Mbare Musika. Many vendors, driven by the necessity to sustain their livelihoods, resort to using open flames for cooking or lighting and often engage in unsafe electrical practices due to limited resources and awareness. These behaviors, coupled with inadequate fire safety training and emergency preparedness, heighten the risk of fire outbreaks in these densely populated market areas (Mubita et al., 2020). This gap in fire safety education and training makes vendors more vulnerable to fires, leaving them unprepared and at higher risk of losing their goods, properties and livelihoods.

2.2.3 Institutional and Policy Frameworks

Government institutions and local authorities are of significance in the management of fire hazard risks, but unfortunately, many policies tend to be reactive rather than being proactive as it is of importance in Disaster Risk Reduction (DRR), that is authorities focus on reacting to fires after they happen rather than preventing them in the first place as noted by (Mavhura, 2021). In Mbare Musika, local authorities mostly prioritize firefighting and damage control instead of addressing the root causes of fires. Policies are fragmented and there is poor coordination between city authorities, the fire department, and market managers as stated by (Masimba & Walnycki, 2024).

To minimize fire risks in informal markets such as Mbare Musika, it is essential to adopt proactive approaches that integrate fire safety into urban planning. This includes ensuring that informal markets adhere to fire safety standards and conducting regular safety inspections. Implementing a

combination of interventions such as active protection systems which consists of fire suppression measures passive protection methods like noncombustible walls, and fire prevention strategies also like safe electrification can significantly reduce the incidence and impact of fires in informal settlements (Walls et al., 2020). Thus a coordinated effort that can be taken into consideration as far as fire hazards risks and institutional and policy frameworks are taken into account includes the active participation of vendors, local authorities, and fire services can be of help in trying to come up with a safer environment with protected livelihoods and properties .

2.2.4 Socio-Economic Impacts and Livelihoods

The socio-economic conditions of vendors in informal markets are strongly linked to fire risks .In Mbare Musika, a number of vendors do not have formal contracts or insurance, leaving them exposed to significant financial losses in the event of a fire disaster .Vendors in Mbare Musika mostly rely on their stalls as their primary source of income and losing their goods in a fire can signify losing their livelihood and valuable properties according to (Karombo, 2024).Due to the lack of financial resources to invest in fire safety measures or to rebuild after a disaster, many vendors continue working in unsafe conditions. This can lead to a creation of a cycle of vulnerability. In order to build resilience amongst these vendors. Socio-economic support programs that provide financial assistance can be executed, insurance options awareness can be done and emergency relief can allow vendors to recover more quickly and reduce their exposure to fire risks.

2.3 Comprehensive Fire Risk Mitigation Strategies

Comprehensive fire risk mitigation strategies are systematic approaches that involve the identification, prevention and control of fire hazards through coordinated structural, educational, and policy measures aimed at minimizing fire occurrence and impact as stated by (Ageboba et al., 2024).To effectively minimize fire hazard risks in Mbare Musika it requires an interconnected plan that looks beyond basic infrastructure rehabilitation. Comprehensive fire hazard risk mitigation strategies should also address human behaviors, policies, and socio-economic factors. For example, improving infrastructure such as installing fire resistant materials, updating electrical wiring, and ensuring clear evacuation routes can make a huge difference in preventing fires according to (Rush et al., 2020). This needs to be integrated with fire safety education for vendors, teaching them how to prevent fires, respond during an emergency and evacuate safely. Policy changes are also vital in ensuring that fire safety regulations are integrated into market management and consistently

enforced. Raphela and Ndaba (2024) emphasize the importance of regular fire drills, safety workshops for vendors and other markets stakeholders and community-based risk management systems in improving preparedness and response in vulnerable settings like marketplaces.

2.4 Long-Term Sustainability and Systemic Change

Systemic change means making big, deep changes to how society works like laws, institutions, and habits so that we can fix the root causes of problems. Long-term sustainability means making sure we meet our needs today without harming the ability of future generations to meet theirs as noted by (Moallemi et al., 2020). To effectively address fire hazard risk problems in informal marketplaces like Mbare Musika, long-term, systemic changes are needed as noted by (Rush et al., 2020). Policies put forward addressing the challenges caused by fires hazards should mainly focus on both immediate fire risk reduction, building back better and building long-term resilience. This means that continuous monitoring of fire safety measures, upgrading infrastructure, and implementing community-driven risk management systems is essential as far as long-term sustainability and systemic change is taken into account for fire hazard risk reduction. Fire safety should be part of broader urban planning and development efforts. Creating a sustainable solution requires collaboration from all stakeholders which comprise vendors, local authorities, the fire brigade, and community organizations to create a resilient system for managing fire hazard risks. Okyere et al. (2023), explained that policymakers must recognize that reducing fire risks in informal markets is an ongoing effort that requires reliable funding, attention and cooperation in order to avert the adverse impacts of fire hazard risks in Mbare Musika thereby enhancing livelihoods and properties of all active stakeholders who rely on the market for their day to day lives.

2.5 Assess perceptions of fire hazards and identify specific risks in informal marketplaces. Fire outbreaks in informal marketplaces present a significant global concern especially in developing urban centers. These fires are often linked to poor infrastructure, overcrowding, and weak enforcement of fire safety regulations. According to Kachenje et al. (2010), illegal electricity connections, open flames, illegal structures, poor waste management and the accumulation of flammable materials within crowded trading areas are major contributors to these disaster. In cities like Accra, New Delhi, and Manila, unregulated vending leads to unsafe cooking practices, improper waste disposal, and the use of temporary stalls made from non-fire-resistant materials.

There is a significant risk of fire due to these dangerous circumstances, which include unapproved electrical wiring, improvised stalls made of combustible materials like plastic and wood, and the frequent use of open flames for heating and cooking. Many ignition sites are created by faulty wiring, overloaded circuits, and the usage of gas canisters or charcoal stoves in crowded stalls. Markets and livelihoods are at danger due to these vulnerabilities, which are exacerbated by inadequate vendor training and a lack of basic fire safety infrastructure. Even little electrical problems or unintentional sparks can easily turn into destructive fires that damage merchandise, stalls and vital revenue streams, frequently causing families that depend on daily trading to go bankrupt as noted by Ofori Abrokwa et al. (2025).

Across sub-Saharan Africa, informal marketplaces have comparable difficulties on a regional scale. Kerosene stoves, improper trash management, and unlicensed electrical wiring are the main causes of frequent and destructive market fires in places like Kampala, Dar es Salaam, and Lagos (Mwandayi & Mangiza, 2022). A prime example of the effects of such vulnerabilities is the Kariakoo Market fire in Tanzania, which destroyed hundreds of vendors' livelihoods, properties and major portions of the market. Zoning, escape routes, and fire extinguishers are frequently absent from market layouts, and the use of flammable materials like wood and plastic for stalls increases the risk and extent of damage during fire breakouts as pointed out by (Mugambi, 2017).

Within Zimbabwe, informal markets have become sites of chronic fire disasters, especially in densely populated urban areas where infrastructure maintenance is poor.

The 2019 Glen View Area 8 Home Industries Complex fire in Harare, Zimbabwe, serves as a clear example of the devastating economic impacts of fire hazards in informal marketplaces. The blaze destroyed valuable machinery, including woodwork equipment, compressors, and generators, along with finished products prepared by local artisans. This incident not only disrupted livelihoods but also highlighted the systemic vulnerabilities faced by informal traders operating without adequate fire safety infrastructure or emergency preparedness measures. Such recurring disasters reveal institutional gaps in urban risk governance and disaster risk reduction in Zimbabwe's informal sector (Zimbabwe Situation, 2019). Mbare's Siyaso Industrial Market has also suffered multiple fires caused by faulty wiring, congested stall arrangements, and absence of fire safety equipment (Herald, 2021). Similarly, the 2022 fire at Mutize Flea Market in Bulawayo was linked to power surges and unattended cooking stoves, leaving hundreds of vendors jobless

overnight (Chronicle, 2022). Fires at Sakubva Market in Mutare have been repeatedly traced to improper waste disposal, unsafe cooking, and the use of substandard building materials (Manica Post, 2020). These recurring incidents cripple local economies and force vendors who often operate without insurance or formal protections into cycles of debt and poverty.

Mbare Musika, the biggest and busiest informal market in Zimbabwe, perfectly captures these ongoing fire hazards. Makeshift stalls made of combustible materials like cardboard, wood, and plastics, illegal electrical connections that regularly result in malfunctions and power surges, and the widespread use of gas canisters and charcoal burners in congested trading areas are the main risks. Due to these risky actions, which are primarily motivated by financial necessity and a lack of safer substitutes, traders are constantly at risk of fire. According to the Environmental Management Agency (EMA, n.d.), inadequate solid waste management is another contributing factor, as dry-season buildups of combustible trash serve as ready fuel for unintentional fires started by electrical malfunctions or cigarettes. The lack of fire prevention and response equipment, such as extinguishers, emergency signage, clear escape routes, and fire safety training for vendors, leaves Mbare Musika extremely vulnerable despite the frequent and destructive nature of these fires.

Fire outbreaks at Mbare Musika have become not only frequent but economically devastating. According to Makamanzi (2025), arson has sometimes been suspected as a cause, potentially linked to business sabotage, political manipulation, or unresolved conflicts. Regardless of the causes, these fires consistently destroy property, disrupt livelihoods, and increase vulnerability among informal traders who are already marginalized within the formal economy (Pikovskaia, 2022).

2.6 Existing fire safety infrastructure and its adequacy in preventing fire related disasters in the market.

Fire safety infrastructure plays a critical role in disaster prevention and response, especially in high-risk environments such as informal marketplaces as stated by (Cicione, Wade, & Spearpoint, 2021). Studies across developing regions reveal that most informal markets lack essential fire safety components, including fire extinguishers, hydrants, emergency exits, and reliable electrical systems. For instance, in Kenya's Gikomba Market, research by (Wanga, 2021) found that the absence of basic firefighting equipment and poorly maintained electrical installations significantly

contributed to recurring fire outbreaks. Similar findings were noted in Uganda's Owino Market, where ineffective municipal oversight and outdated infrastructure left traders exposed to frequent fire-related losses (Mushabe, 2023).

Globally, cities have struggled to retrofit existing informal markets with adequate fire protection systems due to limited space, poor urban planning, and high levels of informality. According to (Gupta, 2024), densely populated markets in India often lack access routes for fire trucks and suffer from water shortages, rendering emergency response difficult. Furthermore, many of these markets operate outside formal regulatory frameworks, making fire safety inspections rare or superficial.

In the Southern African region, fire safety infrastructure in informal markets remains grossly inadequate. (Dube, 2023) reports that in Bulawayo, Zimbabwe, many markets operate with faulty electrical wiring and no designated fire exits. Municipal fire services are often under-resourced, and fire drills or safety training for traders are almost non-existent. In Malawi, (Nyasa Times, 2024) found that traders lacked awareness of fire response procedures, and many markets did not meet the minimum fire safety standards prescribed by local authorities.

Specifically in Harare, the situation reflects similar deficiencies. Studies show that informal markets such as Mbare Musika are characterized by illegal electrical connections, congested trading spaces, flammable building materials, and a near-total absence of fire extinguishers or hydrants (Mandeverere & Jerie, 2020). According to H-Metro (2024), the Harare Fire Brigade often struggles to access fire scenes due to blocked roads and crowds, which delay firefighting efforts and worsen losses. Freddy (2024) further highlights that the city operates with only six functional fire engines, significantly below the recommended 25, further hindering emergency response capabilities. Additionally, regular inspections are rare, and traders often report a lack of consultation or involvement in fire risk mitigation planning.

Despite recent government efforts to reconstruct and modernize sections of Mbare Musika following the devastating October 2024 fire, questions remain regarding the adequacy of these improvements. The government has initiated plans for a redesigned three-storey market facility expected to accommodate at least 10,000 traders, with construction projected to be completed within seven months. However, concerns persist about whether these measures sufficiently address the underlying fire hazards and safety challenges that contributed to the previous disaster (The

Herald, 2024). While structural upgrades have been made, including wider passages and improved stalls, there is little evidence of systematic integration of fire safety mechanisms such as alarm systems, hydrants, or mandatory fire drills. As All Africa (2025) notes, without complementary measures such as training, equipment, and regulation enforcement, infrastructure alone may not be sufficient to prevent future fire disasters.

Therefore, assessing the current fire safety infrastructure in Mbare Musika is essential to understanding its capability to reduce fire risk and protect both traders and public assets. This analysis can inform targeted interventions and guide policymakers in enhancing urban disaster preparedness in Zimbabwe's informal economy.

2.7 Targeted mitigation strategies for improving fire safety, reducing fire hazard risks and protect vendors' livelihoods and properties

Globally, research on fire risk management in informal marketplaces emphasizes the need for localized strategies that blend infrastructure improvements, community education and strong stakeholder participation. In Bangladesh, vendor-led safety committees, routine fire drills and low-cost fire extinguisher distribution significantly enhanced preparedness and reduced fire damage according to (Rahman et al., 2025). These interventions demonstrate the effectiveness of empowering market vendors as frontline responders through training, risk mapping, and emergency coordination. Similar models could be adapted to Mbare Musika by establishing vendor-based fire committees and conducting regular safety drills.

At regional level, African markets face common challenges such as congestion, poor electrical wiring, and limited fire infrastructure. In Nigeria, such risks were addressed through enforced stall spacing, safer wiring practices, and vendor-government collaboration stated by (Aderonmu et al., 2023). Kenya's Gikomba Market introduced community-driven fire response teams and awareness campaigns, enabling vendors to take proactive roles in identifying hazards and reducing risks according to (Ongoro & Muiya, 2023). In Lusaka, Zambia, the introduction of fire alarms, emergency exits, hydrants, and structured training helped mitigate fire-related losses in informal market areas as noted by (Mubita et al., 2023). These regional case studies highlight the importance of integrating fire safety infrastructure with participatory planning and vendor engagement.

Focusing on Zimbabwe, informal markets like Mbare Musika remain vulnerable due to outdated infrastructure, limited fire awareness, and poor coordination among stakeholders according to (Zuze, 2024) (Mavhura, 2019), offers relevant insights through his advocacy for Community-Based Disaster Risk Reduction (CBDRR), which promotes active community participation in disaster preparedness. His approach involves participatory risk mapping, the formation of vendor-led fire response teams trained in basic firefighting, and the use of Indigenous Knowledge Systems (IKS) to complement modern prevention strategies. These grassroots methods not only foster a sense of ownership but also ensure strategies used are context-specific and culturally grounded. Strengthening coordination between vendors, city authorities, and emergency services guided by Mavhura's CBDRR model can lead to more inclusive and sustainable fire safety solutions.

Moreover, enhancing resilience in Mbare Musika should include recovery mechanisms. Providing access to micro-insurance, emergency relief funds, and business continuity training enables traders to recover more quickly after fire incidents as suggested by (Manika, 2024). Coupling these social protection measures with investment in fire-resistant infrastructure and improved drainage systems will reduce both fire risks and related vulnerabilities, supporting a safer and more sustainable market environment. (Zuze, 2024)

2.8 Gaps in the Literature

Despite extensive studies on fire hazards risks in informal marketplaces, several critical gaps remain, particularly in addressing the recurring loss of livelihoods and properties, the lack of Zimbabwe specific models and the limited integration of community-based resilience strategies. While many studies document the physical causes and immediate impacts of fire outbreaks, they often fail to assess how repeated fire incidents shape long-term livelihood and properties recovery and coping mechanisms among vendors. Without such long-term perspectives, fire hazards risks reduction efforts remain reactive, failing to prevent the recurrence of vulnerability and economic instability.

Furthermore, although international literature offers a range of fire safety frameworks, there is a notable absence of localized studies that reflect the unique conditions of Zimbabwe's informal markets such as Mbare Musika. These markets face distinct infrastructural, economic, and policy challenges that global models do not adequately address. As a result, interventions often lack contextual relevance and fail to disrupt the cycle of fire-induced livelihood loss.

More so, existing research tends to prioritize technical solutions, overlooking the socio-economic and psychological consequences of repeated fire disasters. The trauma of losing property, income and security repeatedly is seldom explored, despite its influence on vendor behavior, preparedness, and risk perception. This psychological dimension is crucial to understanding why certain preventative measures are adopted or ignored.

Lastly, literature rarely incorporates community-driven or indigenous approaches to fire risk management, which could provide sustainable and culturally relevant solutions. Addressing these gaps through longitudinal, context-specific and multi-sectorial research is essential for developing fire risk reduction strategies that not only prevent property loss but also safeguard livelihoods in Zimbabwe's informal economic sectors.

2.9 Summary

This chapter explored how stakeholders perceive fire risks and mitigation efforts in Mbare Musika, framed by the Pressure and Release (PAR) Model. It highlighted key factors such as infrastructure, behavior, institutions, and socio-economic challenges that contribute to fire hazards. Reviewing literature from global to local contexts uncovered a lack of tailored fire risk reduction strategies for Zimbabwe's informal marketplaces.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

Chapter 3 presented methodologies used to collect data for the study. It presented the study area, research design, targeted population, sample size, sampling procedure and data collection methods. Data analysis, presentation and lastly ethical considerations were discussed.

3.2 Study Area

Mbare Musika is one of Zimbabwe's largest and busiest informal marketplaces, serving as a key hub for traders, vendors, and transport operators. Despite its economic significance, the market faces recurrent fire outbreaks due to a combination of factors such as poor infrastructure, lack of fire safety awareness, overcrowding, poor waste management and inadequate fire prevention mechanisms. Many vendors operate in makeshift stalls made of flammable materials, and limited access to firefighting resources exacerbating the risk according to (Pienaar, 2021). Fire incidents in Mbare Musika often result in substantial loss of livelihoods and property, pushing affected traders into economic hardships (Nyama & Walnycki, 2024). Understanding the perceptions of

traders and stakeholders regarding fire risks and safety measures is crucial for identifying barriers to effective fire risk management as noted by (Adei et Al.,2021). By exploring knowledge, attitudes, and practices related to fire prevention, this study aims to inform targeted interventions that enhance resilience, improve fire safety infrastructure, and protect livelihoods and properties in informal marketplaces.

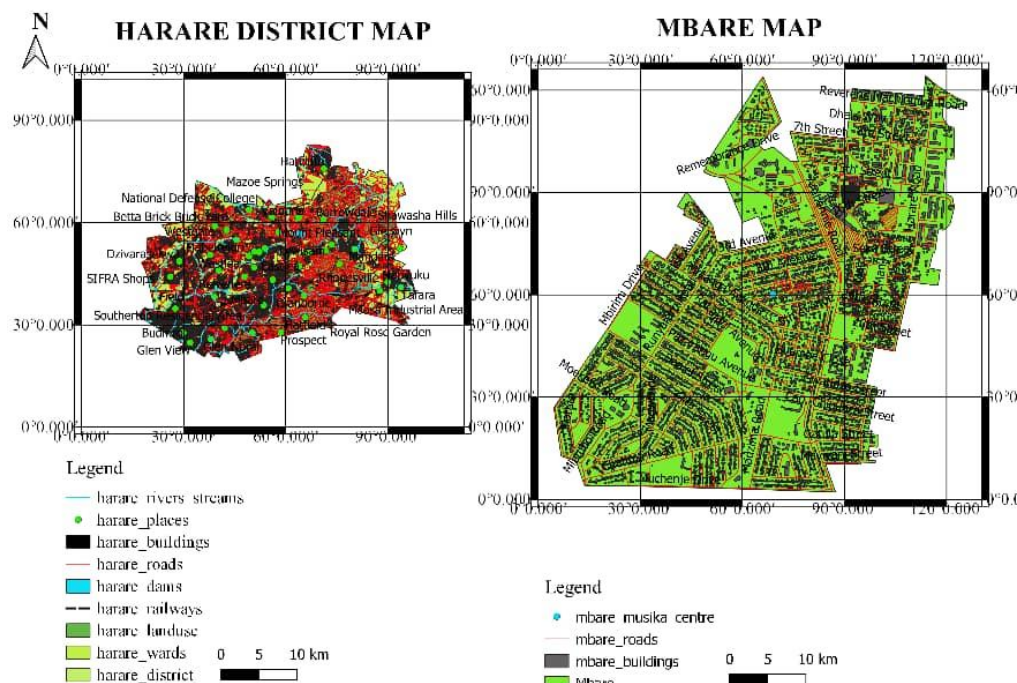


Fig 3.2: Mbare Musika area

3.3Study Design

This study will adopt a mixed-methods approach to assess the perceptions of informal traders and stakeholders on fire risk management at Mbare Musika. The study will combine quantitative surveys and qualitative interviews to gain a comprehensive understanding of the challenges and solutions related to fire prevention as noted by Adom et al., (2025). The quantitative component will involve structured questionnaires distributed to a representative sample of traders and business operators, focusing on demographic data, their perceptions, awareness of fire safety measures, existing fire response strategies and experiences with past fire incidents. This will allow for statistical analysis of traders' fire preparedness and awareness levels, serving as a baseline for assessing the effectiveness of existing fire safety measures as referenced by (Lule et al., 2020). The qualitative component will include in-depth interviews and with key stakeholders such as

market officials, local authorities, vendors' associations, emergency service providers and none governmental organizations (NGOs) that deals with vendors welfare. This will provide insight into institutional challenges, risk perceptions and community-driven strategies for fire prevention as stated by (Bongiwe & Mpuzu, 2023). Qualitative research is vital in uncovering the social, economic and policy-related factors influencing fire safety at Mbare Musika as stated by (Nawaz et al., 2020), by integrating both quantitative and qualitative data, the study will provide a well-rounded analysis of fire risk management in informal marketplaces and recommend practical solutions for reducing the loss of livelihoods and property.

3.4 Population

The study targeted informal traders and key stakeholders operating in Mbare Musika, including market vendors and stall operators across different sectors such as fresh produce, clothing household goods to mention a few and other various areas of trade within Mbare Musika. Business owners who have experienced fire outbreaks in the past were also included, along with local authorities responsible for market management and fire safety enforcement. Additionally, fire brigade officials and emergency response teams, as well as leaders of informal trader associations and community representatives, were engaged. By involving a diverse group of participants, the study captures different perspectives on fire risks, mitigation strategies and the effectiveness of current fire safety interventions.

3.5 Sample Size

The study targeted a sample size of 105 participants, consisting of 100 survey respondents and 5 interview participants, determined using the Rule of Thumb to ensure methodological rigor and representativeness. Since the exact population size of vendors in Mbare Musika was unavailable, a pragmatic approach was adopted to establish a statistically sufficient sample for both quantitative surveys and qualitative interviews. Using the Rule of Thumb, which is commonly applied in studies where population figures are uncertain, a sample size of 100 for the survey was considered appropriate for drawing meaningful statistical inferences while ensuring coverage of different vendor categories, including fresh produce, clothing, household goods and electronics. This provided a broad basis for analyzing fire safety awareness, risk perception and preparedness levels among traders. For the qualitative component, 5 key informants were initially selected to gain depth in insights, ensuring that diverse perspectives from market leaders, local authorities, fire

response teams, and vendors were captured. The 5 interviews were structured to account for variability in experiences, allowing comprehensive discussions on fire outbreak causes, fire safety infrastructure, and prevention strategies.

3.6 Sampling Procedure

The study utilized multi-stage sampling technique, it was used to ensure a diverse and representative selection of participants. First, the market was divided into different sections based on trade type, such as food vendors, hardware traders and textile sellers, through a cluster sampling approach as stated by (Mumtaz et al., 2023). Then, a systematic random sampling method will be used to select traders within these clusters, ensuring that all groups have an equal chance of inclusion. For qualitative interviews, key informants such as market committee representative, members of vendors association, representative from Zimbabwe Chamber of Informal Economy Association (ZCIEA), Harare Fire Brigade officer and municipal market officials from the Harare City Council were selected who included municipal safety officer and planner, through purposive sampling based on their expertise and experience with fire safety issues as referenced by (Mabula & Wema, 2024). This approach ensures that the study captures both general trader perspectives and expert opinions on fire risk management.

3.7 Data Collection Methods

The study employed two primary data collection instruments namely structured questionnaires for quantitative analysis and semi-structured interview guides for qualitative insights. These tools facilitated a comprehensive understanding of fire hazards, safety infrastructure and prevention strategies within Mbare Musika. Structured questionnaires were used to capture quantitative data on traders' fire safety awareness, past fire experiences, access to prevention resources, and attitudes towards risk mitigation. Similar approaches have been noted in studies by Lambon et al. (2023), which emphasize the effectiveness of structured surveys in assessing safety knowledge. The questionnaire included closed-ended questions to ensure consistency and comparability across responses. A total of 100 questionnaires were distributed to vendors operating in fresh produce, clothing, household goods, and electronics, ensuring sectorial representation.

The responses provided statistical insights into fire hazard risks and preparedness levels among traders. For qualitative data collection, semi-structured interview guides were utilized to engage key informants which were five in total. Interviews incorporated open-ended questions, allowing

deeper exploration of institutional challenges, market regulations, fire response effectiveness, and community-led safety initiatives. This method aligns with findings according to Cantelmi et al. (2021), who highlight the value of semi-structured interviews in identifying regulatory weaknesses and emergency preparedness gaps. Key informant interviews were successfully conducted with five individuals in total. These interviews provided in-depth and broad perspectives on fire hazards, as well as the existing prevention and mitigation strategies within the study area. The perspectives gathered from these key stakeholders contributed significantly to understanding the challenges and opportunities for improving fire safety and risk reduction in informal marketplaces of Mbare Musika.

3.8 Data Collection Tools

The study employed data collection tools like structured questionnaires and semi-structured interview guides. By combining validated survey instruments and open-ended qualitative tools, the study generated reliable and comprehensive data on fire risk management in informal marketplaces.

3.8.1 Key informants

Semi-structured interview guides were developed for key informant interviews, incorporating open-ended questions to explore a range of critical issues related to fire hazards in informal market places. The questions were informed by the need to gain deeper insights into institutional challenges, market regulations as well as emergency response effectiveness as stated by (Cantelmi et al., 2021). The key informants consisted of individuals with expert knowledge in areas such as urban planning, fire and emergency services, market administration, local government and disaster risk management. Their perceptions were viewed as vital in understanding both the structural and operational aspects influencing fire hazard risk management at Mbare Musika. The interview's semi structured format gave participants the opportunity to share their expediences in details and offer insightful views on the benefits and challenges for enhancing fire safety in informal trading environments.

3.8.2 Questionnaires

In this study, standardized questionnaires were given to traders in order to successfully gather quantitative data. These questionnaires included closed - ended, open –ended and scaled questions designed to assess critical factors such as fire safety knowledge, previous experience with fire

incidents, accessibility to fire prevention resources and attitudes toward fire risk mitigation strategies. Participants' knowledge of emergency protocols and opinions regarding the efficacy of Mbare Musika current fire safety measures were also investigated in the survey. The degree of preparedness among vendors was revealed by asking them questions like if they had fire extinguishers, and fire safety training or had previously dealt with fire outbreaks. The surveys were given in person to guarantee clarity and improve response accuracy. This helped build rapport and increased the validity and reliability of the data collected as noted by (Chishumbe and Aigbavboa, 2024).

3.9 Ethical Considerations

This study followed ethical guidelines by obtaining informed consent from participants, ensuring they were fully informed about the study's purpose, risks, and their right to withdraw at any time as referenced by (Pietilä et al., 2020). Confidentiality was maintained, with personal data kept anonymous to protect traders and stakeholders from potential repercussions as noted by (Pina et al., 2024). Cultural sensitivity was also prioritized, with the research team having received training on engaging with informal traders and market leaders respectfully according to (Bandauko & Arku, 2023). To minimize risks, the study assessed any potential psychological or social harm associated with discussing past fire incidents and provided support resources if needed as noted by (Gregg et al., 2022). Additionally, the study sought ethical approval from a recognized Institutional Review Board (IRB) to ensure compliance with ethical research standards as stated by (Islam & Abusaleh, 2025).

3.10 Data Analysis

A mixed-methods data analysis approach was used to interpret the findings. Descriptive statistics was used to analyze quantitative data, including percentages and means, to summarize fire safety knowledge, preparedness levels, and access to prevention resources as reported by (Thomas, 2022). For qualitative data, thematic analysis was employed to identify patterns in interviews, with coding used to reveal common themes related to fire risk management challenges and proposed solutions as noted by (Wulandari et al., 2023).

3.11 Chapter Summary

The research design, research tools, and data collection methods, including sampling, were covered in this chapter. The study adopts a design that accommodates both qualitative and

quantitative methodologies. Questionnaires and interviews are among the research tools that were addressed. Because the instruments used in data collecting complement one another, their utilization ensures the validity and reliability of the data acquired.

CHAPTER 4: DATA PRESENTATION, INTERPRETATION AND DISCUSSION

4. Introduction

This chapter presents, interprets and discusses the findings of the research on fire hazard risks in Mbare Musika, focusing on stakeholder perceptions and mitigation strategies to reduce the loss of livelihoods and property due to recurring fire hazards. Data was collected through a mixed-methods approach using questionnaires and in-depth interviews, enabling both statistical analysis and qualitative insights into fire risk perceptions, safety infrastructure and prevention strategies. The results of the study were presented following the objectives and methods of the study in the form of tables and pie charts and.

4.1 Demographic Characteristics

This section presents the demographic characteristics of the research participants basing on the 100 questionnaires which were distributed.

Table 4.1 Respondents Demographic Characteristics

Demographic variable	Category	Frequency n (%)
Age	18-24 years	20 (20%)
	25-34 years	25(25%)
	35-44 years	41(41%)
	45-55 years	14(14%)
Gender	Male	50(100%)

	Female	50(100%)
Educational level	No formal education	15(15%)
	Primary	20(20%)
	Secondary	41(41%)
	Tertiary	24(24%)
Years of experience as vendor	1-5 years	26(26%)
	6-10 years	31(31%)
	Less than 1 year	14(14%)
	More than 10 years	29(29%)

A total number of 5 key informants were also interviewed to obtain qualitative data.

4.2 Perceptions of informal traders and stakeholders on fire hazards risks in Mbare Musika.

Through a mixed-method approach, this section presents statistical survey findings alongside qualitative insights, highlighting traders' experiences, awareness levels, and perceived causes of fire outbreaks.

4.2.1 Frequency and Occurrence of Fire Outbreaks

Table 4.2 summarizes traders' experiences with fire outbreaks, offering insights into their awareness of fire hazards based on direct encounters.

Table 4.2: Exposure to Fire Outbreaks and Perceived Ability to Respond Effectively

Question	Yes
Have you ever witnessed a fire outbreak in Mbare Musika?	94%
Are you confident enough in your ability to effectively respond during a fire outbreak?	40%
Are you aware of fire safety practices in the market?	45%

The results on table 4.2 show that 94% of traders have witnessed a fire outbreak at Mbare Musika. This indicates a high level of exposure to fire hazards among the trading community, underscoring the need for improved fire prevention and emergency response systems in the market area. According to Table 4.2, on the confidence level of the traders to respond fire outbreaks only 40% of the respondents felt confident to respond to a fire emergency, while the majority 60% reported

lack of confidence which suggests for a significant gap in preparedness and highlights the need fire safety training and awareness programs for informal traders.

Furthermore, as a result from Table 4.2, the majority of 55% were not aware, indicating a gap in fire safety awareness that needs urgent attention through education and training

Fig4.3. fire outbreak occurrence

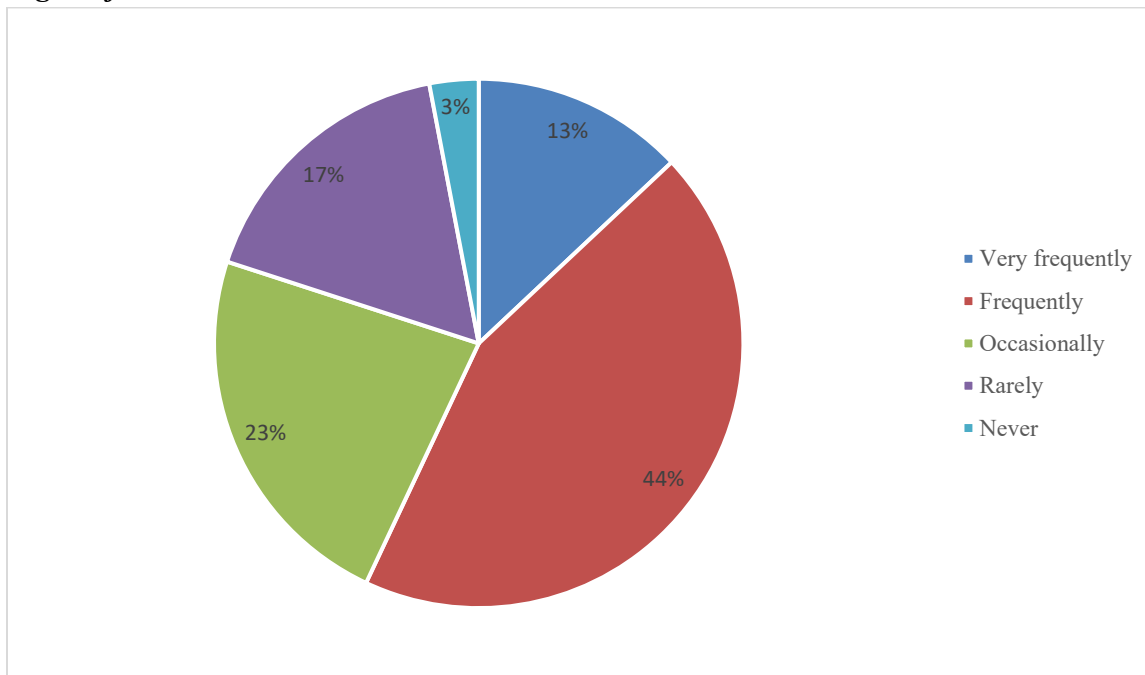


Fig4.3. fire outbreak occurrence

The data reveals that a significant proportion of traders are regularly affected by fire incidents. Specifically, 44% of respondents indicated that they experience fire outbreaks frequently, while an additional 13% reported witnessing them very frequently. This means that over half of the traders 57% in total are exposed to fire hazards on a regular basis. Such statistics clearly highlight that fire outbreaks are not isolated or rare occurrences in this market but are instead a recurring and serious threat to livelihoods and safety.

Furthermore, 23% of respondents stated that they experience fire outbreaks occasionally. While this is less frequent, it still points to an environment where fire is a constant concern. Only 17% of the traders said they rarely experience such incidents, and a mere 3% reported that they have never encountered a fire outbreak at the market. This suggests that virtually all traders in Mbare Musika are at some level of risk, with only a very small fraction being unaffected.

The frequent occurrence of fire outbreaks in Mbare Musika can be attributed to several structural and operational challenges. The market is known for its congestion, informal stall setups, and inadequate infrastructure. Many traders use substandard electrical wiring for lighting and cooking, increasing the risk of electrical fires. Additionally, the absence of proper fire prevention and control mechanisms such as fire extinguishers, hydrants, and trained personnel worsens the situation. Overcrowding also plays a significant role in accelerating the spread of fire when outbreaks occur.

“...we experience fires almost every year in Mbare Musika. Sometimes it starts as a small fire, but vendors panic, and it spreads fast.” (Municipal Safety Officer)

However, one member of the vendors association argued that:

“...the problem is, when a fire starts, there is no effective response system in place. Traders try to put it out, but they do not have proper tools.” (Member of Vendors Association)

4.2.2 Perceived Causes of Fire Outbreaks

Traders and stakeholders attribute fire outbreaks to multiple causes, ranging from electrical faults and open flames to illegal market structures and poor waste management. Survey results highlight open flames (41%) and electrical faults (31%) as the most frequently cited fire hazards, followed by illegal structures and other contributing factors. Table 4.3 presents statistical data on traders' perceptions of the primary causes of fire outbreaks.

Table 4.3 Traders' Perceptions of Fire Outbreaks Causes

Causes of fire outbreaks	Frequency n (%)
Electrical faults	31 (31%)
Open flames	41 (41%)
Illegal structures	12 (12%)
Poor waste management	6 (6%)
Highly flammable materials	10 (10%)

Qualitative interviews supported these findings, with vendors frequently attributing fires to unsafe practices and weak enforcement of market regulations. One of the Fire fighters said that:

“...illegal electrical connections are common because they need power to operate, but the wiring is unsafe, and sometimes stalls catch fire. The issue of street children also contribute to fires as they leave them after they use it for warm and some of fore cases are linked with theft.” (Fire Fighter)

Municipal Official argued that:

“...vendors are used to cook inside stalls which is very risky, but they do this because there are limited dedicated places. Flames rise, and if there is a flammable material nearby, fires spread quickly.” (Municipal Official)

4.2.3 Existing Fire Safety Infrastructure and its Adequacy in Mitigating Fire Hazards in Mbare Musika

This section presents findings that evaluated the current fire safety infrastructure in Mbare Musika using quantitative survey findings and qualitative insights from stakeholder interviews.

4.2.3 Availability and Accessibility of Fire Safety Infrastructure

Figure 4.1 shows that fire safety infrastructure in Mbare Musika is widely perceived as inadequate, with many traders reporting the absence of important firefighting equipment. The availability of fire extinguishers remains limited, as reflected in survey responses where 81% of traders stated fire extinguishers are not readily available

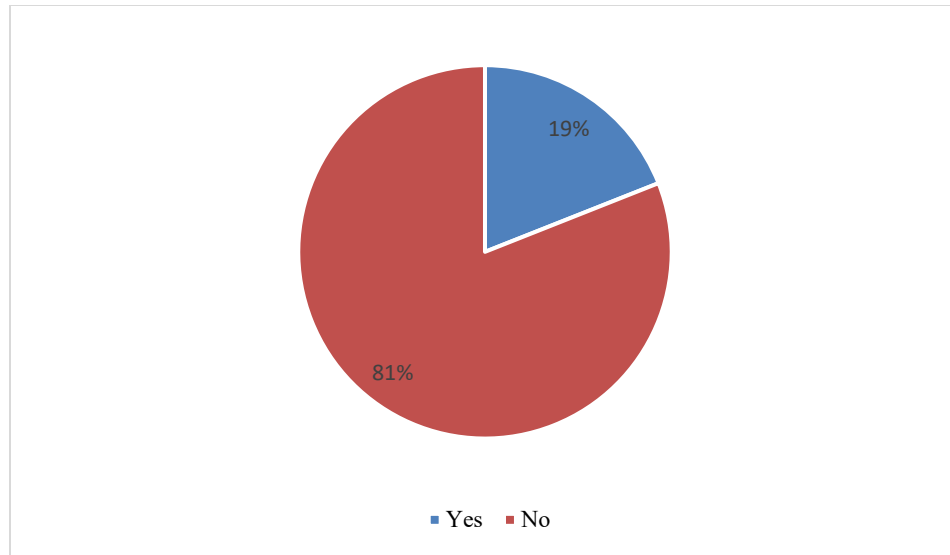


Figure 4.4 Availability of Fire Extinguisher in Mbare Musika

Additionally, Table 4.4 shows that, when asked to rate the overall fire safety infrastructure, traders expressed dissatisfaction. 40% rated it as very poor, 28% as poor, and only 7% described it as good.

Infrastructure Rating	Frequency n (%)
Very poor	40 (40%)
Poor	28 (28%)
Average	24 (24%)
Good	7 (7%)
Very Good	1 (1%)

Stakeholders reinforce these findings, stating that fire protection measures in the marketplace remain underdeveloped due to lack of investment, maintenance issues, and overcrowding. One of the Municipal Safety Officer had to say:

“...there are barely any fire extinguishers, and the hydrants in some areas do not function well. When a fire starts, vendors have nothing to fight it with except buckets of water.” (Municipal Safety Officer)

When asked about the availability of fire extinguishers, one trader remarked,

“To be honest, I’ve never seen a single fire extinguisher in this area. If a fire starts, we’re on our own no equipment, no help.”

This sentiment was commonly expressed, highlighting that essential fire prevention tools are not readily accessible or visible within the market space. Another trader added,

“Even if there are extinguishers somewhere, we don’t know where they are, and we haven’t been trained to use them. That alone is very risky.”

This lack of equipment is further reinforced by the findings which reflects the A significant 40% of the traders rated it as *very poor*, while 28% described it as *poor*. Only 24% viewed it as *average*, with a mere 7% rating it as *good*, and just 1% as *very good*. This overwhelming dissatisfaction is consistent with the interview responses gathered.

One elderly vendor stated,

“I’ve been selling here for over fifteen years. Fires have happened, and we’ve lost everything because there’s no proper system to control them. The council only shows up after the damage is done.”

Another echoed the same frustration, saying, *“We pay our fees, but the stalls are not built to standard, and there’s no water nearby to put out a fire. It’s dangerous.”*

These voices illustrate a general feeling of abandonment among the traders, many of whom rely solely on improvised methods such as using buckets of water or sand during fire emergencies. The data and interviews together paint a bleak picture of the fire safety situation in Mbare Musika. The infrastructure is either non-existent or severely inadequate, and traders have neither the tools nor the training to manage fire outbreaks effectively. It is clear from their responses that

the current fire prevention measures are not only insufficient but also endanger lives and livelihoods on a daily basis.

4.2.5 Adequacy of Fire Safety Training, Preparedness and Post – Fire Rehabilitation

Figure 4.2 shows findings that indicated that most traders lack formal training, with 75% stating they do not know how to use fire extinguishing tools.

Table 4.5 shows market authorities' role

Question	Yes
Do you know how to use a fire extinguisher?	25%
Do market authorities conduct fire drills or provide fire protective guidance?	34%
Have you ever received financial support after a fire incident?	9%

Table 4.5 shows market authorities' role in fire drills and safety guidance. Fire safety training and preparedness are critical components of disaster risk reduction in high-risk environments such as informal markets.

Staggering 75% of respondents admitted that they do not know how to use fire extinguishers. Only 25% reported any level of familiarity with operating these essential fire control tools. This data alone reveals the urgent need for training initiatives, especially considering the high frequency of fire outbreaks in the market. Without basic fire safety knowledge, traders are rendered helpless in emergency situations. Additionally, the same figure highlights that only 34% of traders are aware of any fire drills or fire safety guidance provided by market authorities. This finding is supported by Table 4.5, which shows that 66% of traders confirmed that no fire drills or structured safety guidance are provided. This lack of proactive safety engagement by market authorities indicates a systemic failure to equip traders with essential survival skills.

Furthermore, only 9% of traders reported receiving any financial support after a fire incident, according to Table 4.5. This means that 91% of the traders have never received any form of

compensation or financial support after fire incidents. This absence of post disaster recovery support highlights both a failure in enforcing social protection gaps in fire prevention and response systems. As a result traders are left to shoulder the full burden of loss which not only exacerbates their vulnerability but also discourages active participation in fire safety efforts and cooperation with authorities.

Interview responses reinforced this sentiment. A Market Committee Representative candidly explained:

“...the authorities only react when there is a fire. Prevention is never taken seriously, and there is no fixed compensation policy for traders who lose their stock to fires.”

This quote highlights two key failures: the absence of preventive action and the lack of a clear compensation framework. Both are indicative of weak governance and poorly enforced fire safety regulations.

The inadequacy of training was echoed in interviews conducted with both traders and officials. A senior Municipal Fire Officer stated:

“...vendors do not receive direct training, they just hear announcements about fire prevention but have no hands-on practice.”

This testimony affirms the notion that fire safety efforts are more theoretical than practical. Traders receive minimal or no structured training, and announcements or public address systems are used in place of hands-on demonstrations. In such an environment, fire safety becomes theoretical and ineffective when real emergencies arise.

A fruit vendor interviewed near the vegetable section remarked:

“We hear about fire drills, but we’ve never seen any in action. No one has ever come to teach us how to use fire extinguishers or what to do when a fire breaks out.”

Such statements reflect widespread neglect in engaging with the actual needs of traders. Many continue to rely on trial and error, intuition, or prayer during emergencies due to the lack of formal preparedness strategies.

Table 4.6 show traders view on the effectiveness of local authorities' responsiveness during fire incidents.

	Very effective(5)	Effective (4)	Somewhat effective (3)	Rarely effective (2)	Not effective (1)	Mean weight
How do you perceive the responsiveness of local authorities during fire incidents?	1	4	22	24	49	1,84
How would you rate the current fire infrastructure	1	7	24	28	40	2,01

Table 4.6, when traders were asked to evaluate how responsive local authorities were during fire incidents, a significant 49% described them as not effective, while another 24% said they were rarely effective. Only 4 traders (4%) rated the responsiveness as effective, and a mere 1 trader (1%) considered the response to be very effective. The mean score of 1.84 further indicates widespread dissatisfaction with the authorities' performance in managing fire emergencies.

One vendor operating in the clothing section of the market commented:

“By the time the fire truck arrives, everything is already burnt down. They take too long, and sometimes they even come without water.”

This comment underscores a systemic problem an unreliable and under-resourced emergency response that fails to meet the needs of traders during critical moments.

Further evidence of institutional ineffectiveness is found in traders' assessment of the overall fire infrastructure, which received a similarly low rating. Only 1 respondent deemed it very effective, and 7 said it was effective, while 40 rated it very poor. The mean weight of 2.01 in this case further confirms that existing fire infrastructure is far from meeting acceptable standards.

Interview responses reinforced this sentiment. A Market Committee Representative candidly explained:

“...the authorities only react when there is a fire. Prevention is never taken seriously, and there is no fixed compensation policy for traders who lose their stock to fires.”

This quote highlights two key failures: the absence of preventive action and the lack of a clear compensation framework. Both are indicative of weak governance and poorly enforced fire safety regulations.

Another trader emphasized:

“We see inspectors only after something goes wrong. They don’t follow up on safety standards or train us. There is no accountability.”

Such views reflect widespread frustration and a breakdown in the relationship between the informal sector and municipal governance structures. From a broader perspective, the findings suggest that fire safety in Mbare Musika is reactive rather than proactive. Enforcement of existing safety regulations appears to be minimal or inconsistent. Policies may exist on paper, but their practical implementation is hindered by lack of resources, coordination, and political will.

4.2.6 Mitigation Strategies for Improving Fire Safety, Reducing Fire Hazard Risks, and Protecting Vendors’ Livelihoods and Properties in Mbare Musika

This section presents findings on targeted fire mitigation strategies designed to enhance market safety, minimize fire hazards, and protect vendor livelihoods. These strategies focus on strengthening fire safety infrastructure, improving vendor preparedness, and enforcing policies that address market fire risks effectively.

4.2.7 Strengthening Fire Safety Infrastructure and Market Preparedness

This section presents findings on the availability and adequacy of firefighting infrastructure in Mbare Musika, with vendor preparedness levels for fire emergencies.

Table 4.7 presents traders’ perspectives on necessary fire safety infrastructure improvements, highlighting areas that require urgent intervention.

Survey Question	Response Options	Frequency n (%)
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What do you think needs to be improved in terms of fire safety infrastructure and market preparedness?	Increased availability of fire extinguishers and installation of fire hydrants	34 (34%)
	Outlawing open flames within market zones	13 (13%)
	Proper regulation of kitchens and canteens	7(7%)
	Upgrading market infrastructure to incorporate modern firefighting systems	20 (20%)
	Continuous fire safety training for market traders	26% (26%)

Traders at Mbare Musika expressed clear and urgent views regarding the deficiencies in fire safety infrastructure and what needs to be done to enhance market preparedness. When asked what should be improved, the most common suggestion, supported by 34% of respondents, was to increase the availability of fire extinguishers and install fire hydrants across the market. As one vendor dealing in electronics stated:

“We don’t have fire extinguishers near us. If a fire starts, we will just watch everything burn. There should be hydrants and extinguishers every few meters.”

This comment reflects a widespread sense of vulnerability and a desire for accessible emergency equipment.

Another significant portion of respondents, 26%, emphasized the need for continuous fire safety training for market traders. A vegetable trader explained:

“We don’t know how to use the equipment even if it’s there. They should teach us what to do when fire breaks out, step by step.”

This sentiment suggests that knowledge gaps are as dangerous as equipment shortages, and there is a genuine demand for regular, hands-on training sessions.

Furthermore, 20% of traders suggested that market infrastructure should be upgraded to include modern firefighting systems, such as alarms and sprinkler systems. One long-time clothing vendor remarked:

“This market was built a long time ago. There are no fire exits, no alarms. If fire starts at one end, people on the other side don’t even know until it’s too late.”

This underscores the need for structural upgrades that meet minimum fire safety codes.

Another 13% of traders stressed the importance of regulating kitchens and canteens. A food seller said:

“There are too many people cooking with gas in unsafe spaces. The council should make sure kitchens are inspected regularly.”

This shows an awareness among traders that unregulated cooking areas are a major risk factor.

Finally, 7% advocated for outlawing open flames in market zones, particularly outside designated areas. A young fruit vendor explained:

“People light up fires anywhere, even near plastic goods. That’s dangerous. It must be banned completely.”

Insights from interviews, following the 2024 fire disaster, stakeholders acknowledged the ongoing efforts to improve market infrastructure, especially eliminating flammable materials in market constructions. Municipal Market Planner said:

“...there is the need to install fire extinguishers and hydrants in Mbare Musika and construction of nonflammable stalls, for example, after the 2024 fire outbreak, authorities started constructing stalls that are durable and without flammable roofing materials to reduce risks.” (Municipal Market Planner)

These concerns highlight the need for clear fire-use policies and strict enforcement. Collectively, the voices of traders paint a vivid picture of a market that is highly exposed to fire risk, but also rich in practical knowledge about how that risk can be reduced. Their input points to the need for a multifaceted fire safety strategy one that includes improved infrastructure, stricter regulations, fire education, and genuine engagement between authorities and traders.

4.2.8 Policy and Governance Measures for Fire Risk Reduction

This section presents findings on market policies and governance strategies that contribute to fire risk reduction and improved vendor protection. The effectiveness of fire safety enforcement and post-disaster support mechanisms remains a critical concern in Mbare Musika.

Table 4.8 highlights traders' perspectives on necessary fire safety policy improvements, outlining priority areas that require stronger enforcement.

Survey Question	Response Options	Frequency n (%)
How do you think fire safety policies should be strengthened in Mbare Musika?	Stricter enforcement of safe electrical installations	42 (42%)
	Regulation of cooking zones to prevent open flames near flammable materials	34 (34%)
	Financial compensation programs for traders affected by fire disasters	24 (24%)

The majority of traders at Mbare Musika articulated a strong desire for more robust fire safety policies, especially in light of recurring fire incidents that have destroyed property and livelihoods. According to survey findings, the most frequently suggested policy reform identified by 42% of respondents was the stricter enforcement of safe electrical installations. Traders expressed frustration over the widespread use of illegal or poorly maintained wiring, which they see as a major contributor to fire outbreaks.

A trader in the hardware section remarked:

“The wires are hanging everywhere some of them are open or overloaded. Council officials must inspect stalls and cut off power if it’s not properly installed. We’re tired of losing stock because someone didn’t wire their stall properly.”

This comment captures the widespread belief that electrical hazards are being ignored and that tougher enforcement could significantly reduce fire risks.

The second most cited recommendation, supported by 34% of traders, was the regulation of cooking zones to prevent open flames near flammable materials. Food vendors and general traders alike expressed concern about open flames being used in unsafe conditions. One food stall operator shared:

“People cook next to boxes, plastic, and fuel. The council should create proper cooking zones with fireproof walls and no clutter around. Right now, anyone just sets up anywhere.”

This view highlights the urgent need to organize cooking areas in a way that minimizes fire hazards while still accommodating the needs of vendors who rely on food sales for income.

Meanwhile, 24% of respondents called for the introduction of financial compensation programs for traders affected by fire disasters. While not directly related to fire prevention, this suggestion speaks to the long-term consequences of fire and the lack of safety nets for informal traders. One clothing vendor whose stall had been destroyed in a previous fire lamented:

“We lose everything and have to start from zero. There’s no help from the council or government. If we had support after a fire, people wouldn’t be afraid to speak up about risks.”

Insights from interviews, stakeholders highlight enforcement gaps in monitoring fire risks, particularly in regulating electrical setups and market congestion. City Fire Department Official mentioned that:

“...illegal electrical connections keep causing fires, but enforcement is weak, there is the need to install proper electricity.” (City Fire Department Official)

Furthermore, Market Committee Representative mentioned that:

“...cooking near stock increases fire risks, but vendors do it because they lack separate cooking spaces.” (Market Committee Representative)

THE Zimbabwe Chamber of Informal Economy Associations (ZCIEA) representative emphasized that “...there are no clear policies supporting informal vendors after fire. Promises are often made

but rarely fulfilled. However, our members are increasingly calling for proper frameworks to be put in place.”

Additionally, vendors express frustration over the lack of financial recovery programs. Municipal Official stated that:

“...most traders lose everything when fires happen, yet there are no compensation or relief system in place.”

This perspective reveals that traders often feel abandoned after a disaster, and that the absence of compensation discourages proactive risk reporting. Overall, the findings reveal that traders are not only aware of the risks but also have practical, targeted ideas on how fire safety policies can be strengthened. From electrical compliance and safe cooking zones to post-disaster financial support, traders are calling for a more structured, responsive, and preventive approach to fire management at Mbare Musika.

4.3 Discussion of Findings

Following the data presentation and analysis in the previous section, this discussion evaluates findings in relation to existing literature, systematically identifying areas of alignment, divergence, and unique contributions. The discussion follows the research objectives, ensuring findings are thoroughly compared with relevant studies while presenting new insights specific to Mbare Musika.

4.3.1 The Perceptions of Informal Traders and Stakeholders on Fire Hazard Risks in Mbare Musika

Findings from Objective 1, which examined traders’ perceptions of fire hazard risks, strongly align with previous research identifying electrical faults, open flames, congested market layouts, and highly flammable materials as the primary contributors to market fires. Studies by Kachenje et al. (2020) and Mwandayi and Madzinga (2022) confirm similar patterns, reinforcing that poor infrastructure and unregulated activities significantly increase fire hazards in informal markets.

This study found that electrical faults and open flames were the most cited causes of fire outbreaks by vendors, aligning with prior research by Gupta (2024), who noted similar hazards in congested informal trading spaces. Moreover, vendors in Mbare Musika overwhelmingly recognized the role

of poor market planning and unregulated electrical installations in contributing to fires, which is consistent with studies on informal market fire risks in Uganda (Mushabe, 2023) and Kenya (Wanga, 2021).

However, findings diverged from previous studies in several areas. While prior research primarily attributes fires to structural deficiencies and accidental ignition sources, this study highlights limited fire safety awareness among traders as an overlooked contributor to market fires. Many vendors in Mbare Musika lack formal training on fire hazard identification and extinguisher use, reinforcing the knowledge gap in fire preparedness, which has not been widely discussed in previous studies. Unlike Gupta (2024), who focused on government-driven fire safety measures, this study found that vendors themselves recognize the urgency of market-wide fire safety improvements, marking a shift toward bottom-up fire risk reduction strategies.

Additionally, an important variation in findings is the impact of market reconstruction efforts post-2024 fire. This study observes ongoing efforts to eliminate plastic roofing and flammable materials in new market structures, a development not widely covered in fire safety literature. While Mubita et al. (2023) emphasize retrofitting market structures to improve fire resistance, this study found that Mbare Musika vendors actively push for safer building materials in market expansion projects, reinforcing the role of vendor-driven infrastructure improvements in fire safety.

These findings emphasize the necessity of integrated fire prevention strategies, including vendor-targeted fire training programs, stronger market policies regulating electrical setups, and continued infrastructure improvements focused on fire-resistant market designs.

4.3.2 Existing Fire Safety Infrastructure and Its Adequacy in Mitigating Fire Hazards in Mbare Musika

The assessment of fire safety infrastructure in Mbare Musika reveals significant deficiencies, reinforcing findings from Kenya (Wanga, 2021), Uganda (Mushabe, 2023), and Zimbabwe (Dude, 2023), where markets suffer from limited availability of hydrants and fire extinguishers, weak enforcement of fire hazard regulations, and poor municipal firefighting capacity. Additionally, this study's findings align with Freddy (2024), who noted that Harare operates below the recommended number of fire engines, making response times slow and ineffective.

This study found that fire hydrants and extinguishers are largely absent or inaccessible to vendors, reinforcing the findings of Mwandayi and Madzinga (2022), which highlight similar infrastructure

gaps across informal marketplaces in developing cities. Traders in Mbare Musika overwhelmingly rated municipal fire safety efforts as poor or very poor, mirroring findings in India (Gupta, 2024), which attribute slow fire response times to overcrowding and blocked access routes.

A notable divergence, however, lies in the gap between government-led market expansions and practical fire safety improvements. While studies such as Herald (2024) emphasize government investments in market upgrades, this study found that vendors remain skeptical about whether these expansions improve fire prevention. Unlike Freddy (2024), which discusses broader urban fire response efforts, this research highlights ground-level vendor frustrations regarding the absence of hydrants, alarms, and fire drills in new market facilities.

Furthermore, while previous studies largely examine fire safety policy failures, this study uncovers the practical challenges traders face due to inconsistent fire preparedness measures, such as reliance on water buckets instead of proper firefighting tools. The persistence of blocked emergency routes despite market expansions suggests that infrastructure investments are not translating into tangible fire risk reductions, reinforcing the need for implementation-focused fire hazard mitigation strategies rather than merely structural upgrades.

Stakeholders must ensure that market upgrades result in practical fire safety improvements, such as mandatory hydrant installations in newly constructed stalls, enforcement of clear fire escape routes, and market-wide fire drills to improve vendor response readiness. Without these interventions, fire risk reduction efforts will remain ineffective.

4.3.3 Mitigation Strategies for Fire Safety, Risk Reduction, and Vendor Protection in Mbare Musika

The identification of fire mitigation strategies aligns with previous studies advocating for community-driven fire safety programs, market infrastructure improvements, and stronger policy enforcement. Research from Bangladesh (Rahman et al., 2025) supports vendor-led fire committees and safety drills, strategies that this study finds strongly endorsed by traders in Mbare Musika. Similarly, findings align with studies from Nigeria (Aderonmu et al., 2023) and Kenya (Ongoro and Muiya, 2023), which emphasize stakeholder collaboration as critical for market fire resilience.

This study found that vendors overwhelmingly support direct participation in fire safety policy development, confirming global trends in community-led disaster risk reduction. Moreover, this

study strongly supports Mavhura's (2019) Community-Based Disaster Risk Reduction (CBDRR) model, which highlights local participation in fire prevention planning and grassroots risk reduction initiatives.

While previous studies primarily focus on formalized fire safety regulations, this study diverges by identifying vendor-driven resilience methods as a critical fire prevention tool. Unlike Mubita et al. (2023), which focuses on government-led market improvements, this study found that market vendors themselves are pushing for structural upgrades that prioritize fire-resistant materials, emergency exits, and better training sessions. The market's response to the 2024 fire disaster where plastic-based structures were eliminated represents a proactive architectural shift absent in broader literature.

Additionally, this study highlights challenges in policy enforcement, reinforcing vendor frustrations regarding weak regulation of electrical setups and cooking zones. Unlike Gupta (2024), which discusses market fire hazards at a macro level, this study finds that informal vendor-led fire response committees are emerging as practical alternatives to policy-driven risk reduction strategies.

To sustain fire prevention efforts, government and market stakeholders must focus on integrating structured fire training sessions, conducting regular inspections of cooking zones and electrical setups, and ensuring accessibility to fire exits, extinguishers, and hydrants. These efforts are essential in safeguarding the livelihoods and properties of vendors'. Through vendor-led safety interventions, Mbare Musika can transition into a safer trading environment, effectively reducing fire vulnerability through trader-driven solutions.

4.4 Chapter Summary

Chapter 4 has presented, interpreted, and discussed the results gathered. The discussion of findings reveals key insights regarding fire risks and mitigation strategies in Mbare Musika. Objective 1 aligns with previous studies on market fire hazards but expands on gaps in trader preparedness and vendor-driven safety improvements. Objective 2 confirms global trends regarding weak fire safety infrastructure while highlighting disconnect between market upgrades and practical fire hazard mitigation. Objective 3 supports community-driven fire safety models while emphasizing the emerging role of vendor-led fire response initiatives. These findings reinforce the urgent need for integrated fire risk management, requiring stronger enforcement of market-wide fire prevention

policies, improved firefighting infrastructure, and community-driven fire preparedness and mitigation strategies. Without these interventions, fire outbreaks will remain a persistent risk, threatening the livelihoods and properties of vendors and necessitating collaborative action between vendors and market authorities. This laid a foundation for chapter 5 to summarize, conclude, and come up with the recommendations aimed at creating a safer trading environment.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a comprehensive synthesis of the research findings by summarizing the study, providing detailed conclusions for each objective, and outlining strategic recommendations for enhancing fire safety in Mbare Musika. The chapter critically reflects on the perceptions of informal traders and stakeholders regarding fire hazard risks, evaluates the adequacy of existing fire safety infrastructure, and proposes practical mitigation strategies that can be implemented to safeguard lives, livelihoods and properties in one of Zimbabwe's busiest informal markets. The study sought to respond to three key objectives which are to assess the perceptions of informal traders and stakeholders on fire hazards in Mbare Musika, evaluate the sufficiency of existing fire safety infrastructure and disaster preparedness, and implement targeted strategies for improving fire safety and resilience.

5.1 Summary of findings

5.1.1 The perceptions of informal traders and stakeholders on fire hazard risks in Mbare Musika

Informal traders and stakeholders hold strong perceptions that fire hazards in Mbare Musika are widespread, increasing, and poorly managed. The majority of respondents identified fire outbreaks as a recurring and largely preventable problem. Causes highlighted include illegal and overloaded electrical connections, close proximity of flammable goods, blocked emergency exits, and cooking activities conducted within stalls. The perception is further shaped by experiences of past fire disasters, including the 2024 fire, which caused substantial loss of goods and left many traders without any form of compensation or support. Both traders and officials described market fires as traumatic and economically devastating, particularly due to the destruction of livelihoods and properties. There was widespread agreement that local authorities only react when fires occur rather than actively working to prevent them. Notably, perceptions were influenced by visible structural conditions and prior experiences of neglect. Many respondents noted a growing sense of helplessness and frustration as fire disasters continue to occur without adequate preventative action.

5.1.2 The existing fire safety infrastructure and its adequacy in mitigating fire-related hazards and enhancing preparedness in Mbare Musika

The study found that Mbare Musika lacks basic fire safety infrastructure required for disaster risk reduction. Only a few stalls have fire extinguishers, and these are often outdated or inoperable. Fire hydrants are scarce and poorly maintained, and market layouts obstruct access by emergency vehicles during fire emergencies. Vendors reported that emergency exits are either blocked or non-existent, and very few have received any form of training or orientation on what to do during a fire incident. The study also found that enforcement of fire safety regulations is weak and reactive. Data showed that 73% of vendors rate the effectiveness of regulations and enforcement as poor or very poor. Moreover, 91% of respondents indicated they had never received any financial support or insurance following fire incidents. This lack of preparedness and support continues to expose traders to repeated losses, severely impacting their livelihoods and properties. This paints a bleak picture of the adequacy of current infrastructure and institutional preparedness.

5.1.3 Strategies for improving fire safety, reducing fire hazard risks, and protecting vendors' livelihoods and properties in Mbare Musika

The third objective aimed to formulate practical strategies to improve fire safety and protect livelihoods. Based on responses from both traders and stakeholders, the study identified several

priority areas. These included: stricter enforcement of electrical standards, designated cooking zones, government-backed financial compensation schemes, and infrastructure investment in non-flammable building materials. Traders emphasized the importance of participatory strategies where they are empowered to take part in managing fire risks. Interviewees also highlighted the lack of collaboration between the city fire department, planners, and informal traders, calling for a more integrated and inclusive governance model. Stakeholders also noted that informal markets like Mbare Musika must be mainstreamed into broader urban disaster risk reduction policies. In its current form, fire safety planning often excludes the informal economy, leaving traders outside the social protection net. As such, any strategy designed must not only address risk reduction but ensure the protection of vendor's livelihoods and properties. The study stressed that targeted strategies must combine infrastructure with governance reforms, inclusive planning, financial tools, and capacity-building interventions.

5.2 Conclusions

5.2.1 The perceptions of informal traders and stakeholders on fire hazard risks in Mbare Musika

The study concludes that informal traders and stakeholders perceive fire risks in Mbare Musika as both severe and poorly addressed. These perceptions are shaped by a lived reality of structural vulnerabilities, weak governance and ineffective enforcement. The widespread fear of fire outbreaks is compounded by a lack of communication, planning and institutional preparedness. These perceptions reflect not only individual experiences but also a broader failure of urban risk governance, where informal market spaces fall through the cracks of city planning and disaster preparedness frameworks, resulting in frequent threats to vendor's livelihoods and properties.

5.2.2 The existing fire safety infrastructure and its adequacy in mitigating fire-related hazards and enhancing preparedness in Mbare Musika

Based on the evidence, it is concluded that fire safety infrastructure in Mbare Musika is wholly inadequate to prevent or respond to fire-related disasters. The market's physical layout, poor access roads, lack of firefighting equipment, and absence of evacuation plans all combine to render vendors highly vulnerable. Municipal fire services are ill-equipped and under-resourced, and current urban planning models have failed to incorporate informal markets into risk mitigation frameworks. Without significant improvements in infrastructure and governance, fire risks will continue to threaten livelihoods and properties of market vendors

5.2.3 Strategies for improving fire safety, reducing fire hazard risks, and protecting vendors' livelihoods and properties in Mbare Musika

It is concluded that meaningful fire hazard mitigation in Mbare Musika will require a multi-pronged approach that addresses the root causes of vulnerability. Structural interventions, such as the installation of hydrants and extinguishers, must be combined with community-based governance models, better policy enforcement, and financial safety nets. Simply responding to fire incidents is insufficient; proactive, inclusive, and systemic strategies must be adopted to build market resilience and ensure the dignity and protection of informal trader's livelihoods and properties.

5.3 Recommendations

- ❖ A comprehensive and participatory fire safety management strategy should be implemented at Mbare Musika, incorporating regular stakeholder engagement forums, inclusive decision-making, targeted awareness campaigns, and the formation of trader-led fire safety committees to enhance risk reduction, compliance, and community resilience, ultimately protecting vendor's livelihoods and properties.
- ❖ To enhance fire safety infrastructure in Mbare Musika, it is recommended to strategically install functioning fire hydrants and alarms, construct clearly marked and unobstructed emergency exits and escape routes, equip all market sections with fire extinguishers alongside regular vendor training and drills, develop a comprehensive fire safety master plan covering preparedness and risk reduction, and establish a dedicated city council unit to monitor and enforce compliance with safety standards, especially regarding electrical wiring and cooking practices. These interventions will safeguard not only lives but also the livelihoods and properties that sustain informal traders.
- ❖ Recommended mitigation strategies include creating safe cooking areas, conducting regular electrical inspections, upgrading stalls with fire-resistant materials, introducing micro-insurance and disaster relief funds, training traders and safety wardens, forming a Fire Risk Task Force, and integrating fire safety into urban policies to specifically reduce the risk of loss of livelihoods and properties.

5.3 Chapter summary

This chapter presents a detailed reflection on the study, focusing on summarizing the key findings, drawing informed conclusions, and recommending practical actions that address the challenges of

fire hazards in Mbare Musika. The chapter is structured around the study's three main objectives, each of which is thoroughly analyzed using data gathered from informal traders, stakeholders, and local authorities. The chapter begins by summarizing the major findings, which reveal that the perception of fire risks among traders and stakeholders is overwhelmingly negative. Most respondents believe that fire outbreaks are frequent, highly destructive, and largely preventable. These perceptions are shaped by experiences of past fire incidents, unsafe infrastructure, and a general lack of institutional support. Traders expressed frustration over inadequate enforcement of safety standards, lack of compensation, and poor communication from authorities. The chapter notes that these perceptions are not based on fear alone but are grounded in tangible structural weaknesses and repeated fire disasters that have gone unaddressed resulting to significant losses to livelihoods and properties. Secondly, the chapter assesses the current fire safety infrastructure in Mbare Musika, concluding that it is critically inadequate. Fire extinguishers are rare and often non-functional, there are no fire alarms or early warning systems, and access roads are poorly designed for emergency response. Emergency exits are either blocked or non-existent, and the market's layout contributes to the spread of fires. Most vendors are not trained in fire safety, and regular fire drills are absent. The study finds that municipal authorities have not prioritized the market in their urban risk management strategies, leaving thousands of informal traders exposed to disaster without institutional protection with livelihoods and properties constantly at risk. The chapter then presents targeted mitigation strategies aimed at reducing fire risks and protecting vendor livelihoods. These strategies include installing fire hydrants, improving stall construction with fire-retardant materials, designating cooking zones, conducting regular electricity inspections, and integrating informal traders into fire safety planning. The study emphasizes the need for inclusive governance, where traders participate actively in developing and monitoring fire safety policies. It also proposes the creation of fire safety committees, introduction of micro-insurance products, and stronger enforcement of safety regulations by local authorities to effectively protect the livelihoods and properties of traders.

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DATA COLLECTION TOOL

APPENDIX 1: INTERVIEW GUIDE FOR KEY INFORMANTS

I am Winnie S Dembure, a student at Bindura University studying disaster management. Currently, I am conducting a research on stakeholder perception and mitigation strategies to reduce livelihoods and property loss from fire hazards in informal market places. I am appealing for your assistance, contribution and relevant information regarding to the research. The information gathered in this research will be solely used for academic purposes.

Are you willing to participate in this study? Yes ☐ No ☐

Questionnaire ID: ☐

Section A: Demographic Information

Age: ☐

Gender: Female: ☐

Male: ☐

Section B: Perceptions of informal traders and stakeholders on fire hazards risks in Mbare Musika.

1. In your opinion, what are the primary causes of fire outbreaks in Mbare Musika?
2. How would you describe the level of fire risk in the market?

Section C: 4.5 Existing Fire Safety Infrastructure and its Adequacy in Mitigating Fire Hazards in Mbare Musika

3. What fire prevention infrastructure is currently in place?
4. How adequate is the market's fire response system?
5. How do vendors and traders currently handle fire emergencies?

Section D: Mitigation Strategies for Improving Fire Safety, Reducing Fire Hazard Risks, and Protecting Vendors' Livelihoods and Properties in Mbare Musika

a) Institutional & Policy Challenges

6. What challenges do authorities face in enforcing fire safety regulations?
7. Are there policies in place to support vendors affected by fire outbreaks?
8. How effective are current firefighting services in responding to market fires?

b) Community-Based Fire Prevention Strategies

9. Have there been any community-driven initiatives to improve fire safety?
10. What role do vendors play in preventing fire risks?
11. What recommendations would you propose to enhance fire safety and protect livelihoods?

DATA COLLECTION TOOL

APPENDIX 2: QUESTIONNAIRE FOR TRADERS AND VENDORS OF MBARE MUSIKA

I am Winnie S Dembure, a student at Bindura University studying disaster management. Currently, I am conducting a research on stakeholder perception and mitigation strategies to reduce livelihoods and property loss from fire hazards in informal market places. I am appealing for your assistance, contribution and relevant information regarding to the research. The information gathered in this research will be solely used for academic purposes.

Are you willing to participate in this study? Yes ☐ No ☐

Questionnaire ID: ☐

Section A: Demographic Information

Age: ☐

Gender: Female: ☐

Male: ☐

Other: ☐

- Years of experience as a vendor: ☐ Less than 1 year ☐ 1-5 years ☐ 6-10 years ☐ More than 10 years
- Educational level : ☐ No formal education ☐ Primary education ☐ Secondary education :
☐ Tertiary education

Section B: 4.3 Perceptions of informal traders and stakeholders on fire hazards risks in Mbare Musika.

1. Have you ever witnessed a fire outbreak in Mbare Musika? ☐ Yes ☐ No
2. Are you confident enough in your ability to effectively respond during a fire outbreak? ☐ Yes ☐ No
3. Are you aware of fire safety practices in the market? ☐ Yes ☐ No
4. How often do fire outbreaks occur in the market? ☐ Frequently ☐ Occasionally ☐ Rarely ☐ Never
5. What are the primary causes of fire outbreaks in the market? (Select all that apply)
 - ☐ Electrical faults
 - ☐ Open flames
 - ☐ Illegal structures
 - ☐ Poor waste management
 - ☐ Highly flammable materials

Section C: 4.5 Existing Fire Safety Infrastructure and its Adequacy in Mitigating Fire Hazards in Mbare Musika

6. Do you have any fire safety training? ☐ Yes ☐ No
7. Are fire extinguishers readily available in the market? ☐ Yes ☐ No
8. Do you know how to use fire extinguishing equipment? ☐ Yes ☐ No
9. Have you ever lost property due to a fire outbreak? ☐ Yes ☐ No
10. Have you ever received any financial support after a fire incident? ☐ Yes ☐ No
11. How would you rate the current fire safety infrastructure? ☐ Very effective ☐ effective ☐ Somewhat effective ☐ Rarely effective ☐ Not effective
12. How do you perceive the responsiveness of local authorities during fire incidents? ☐ Very effective ☐ effective ☐ Somewhat effective ☐ Rarely effective ☐ Not effective

Section D: Mitigation Strategies for Improving Fire Safety, Reducing Fire Hazard Risks, and Protecting Vendors' Livelihoods and Properties in Mbare Musika

Survey Question	Response Options
13. How do you think fire safety policies should be strengthened in Mbare Musika? <i>(Tick all that apply)</i>	☐ Stricter enforcement of safe electrical installations
	☐ Regulation of cooking zones to prevent open flames near flammable materials
	☐ Financial compensation programs for traders affected by fire disasters

Survey question	Response option
14. What do you think needs to be improved in terms of fire safety infrastructure and market preparedness?? <i>(Tick all that apply)</i>	☐ Increased availability of fire extinguishers and installation of fire hydrants
	☐ outlawing open flames within market zones ☐ Proper regulation kitchens and canteens
	☐ Upgrading market infrastructure to incorporate modern firefighting systems
	☐ Continuous fire safety training and awareness for market traders

Any other comments -----

Appendix 3: Research letter

DISASTER RISK REDUCTION DEPARTMENT



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BINDURA UNIVERSITY OF SCIENCE EDUCATION

CHAIRPERSON'S OFFICE

To Whom It May Concern

Dear Sir/ Madam,

REF: SPECIAL REQUEST FOR WINNIE SHARON DEMBURE (B213143B) TO BE GRANTED SPECIAL PERMISSION TO ACCESS YOUR INSTITUTION'S DATA FOR EDUCATIONAL PURPOSES

This is to confirm that WINNIE SHARON DEMBURE, Registration Number B213143B, is a student pursuing a Bachelor of Science Honours Degree in Disaster Management Sciences (HBSc.DMSc) in the Disaster Risk Reduction Department at Bindura University of Science Education. As part of her degree program, she is required to complete a research project, for which she will gather data from various sources, including your institution.

We kindly request your assistance in providing any information she may need from your organization.

For any further information or clarification, please feel free to contact the undersigned.

Yours faithfully



H. Musarandega (Dr.)
Acting Chairperson, Disaster Risk Reduction Department

CHAIRMAN
DISASTER RISK REDUCTION DEPARTMENT
FACULTY OF SCIENCE