



Fire Safety Management Strategies in Selected Markets of Lusaka City

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ABSTRACT

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This study investigated the effectiveness of fire safety management strategies in selected markets of Lusaka city. The study employed a descriptive research design, which involved qualitative data collection and analysis. The study used purposive sampling to select markets and participants for the study. A total of 2 markets. From each market, 10 marketeers were sampled conveniently. 2 market managers were also sampled purposefully. The study collected data using two main methods: Focus Group Discussions (FGD) and in-depth interviews. The marketeers were interviewed individually and FGD guide was further administered to get more insights. This was meant to collect opinion and insights that could not be collected during interviews. The in-depth interviews were conducted with a subset of the participants to obtain more detailed and nuanced information. The data collected from the in-depth interviews and FGD were analyzed using thematic analysis to identify patterns and themes in the data. The findings of the study indicated that effective fire safety management in markets required a combination of proactive measures and emergency preparedness. Proactive measures included regular risk assessments, proper storage of flammable materials, regular maintenance of electrical systems, and the installation of fire safety equipment such as alarms and sprinklers. Emergency preparedness strategies included the creation of emergency evacuation plans, the establishment of communication protocols, and the training of market staff on fire safety procedures. The study also found that collaboration between market management, vendors, and local fire departments is crucial to effective fire safety management in markets.

The study highlights the need for ongoing education and training for vendors and market staff to maintain awareness of fire safety hazards and emergency response procedures. It also underscores the importance of regular reviews and updates of fire safety management plans to ensure they remain effective and relevant. Overall, the study provides valuable insights into effective fire safety management strategies in markets, and emphasizes the need for continued attention and investment in fire safety management to protect people, property, and businesses from the devastating effects of fires

Keywords:

market, safety, health, management, strategy

1. BACKGROUND

Among the world known disasters, incidents of fire in market places have been reported as one of the major drawbacks in most developing countries as economic resources are diverted to deal with the damages caused. Generally, a number of fires have been recorded in most parts of the globe including Mexico, Mozambique, Ghana as well as Zambian markets among others, (Disaster Management and Mitigation Unit, 2008).

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Moreover, the recorded incidents of fire have not only led to economic crisis, but they have as well led to the loss of property and lives, (Rubaratuka, 2013). South Africa has had a share of fire incidents too. Laura (2009) discussed that between January 2005 and March 2009 in the Joe Slovo informal settlement in Cape Town, fire destroyed over 3600 homes and made more than 13000 people homeless. With such statistics of the effects of fires on people as well as on property, the evidence of the cost of fire on the economy and property as well as human lives is clearly noticeable. According to Wahab (2015) fire starts in different ways and can serve as a potentially destructive force in people's lives, hence, this calls for serious mitigation measures that aim at preventing the lead or cause of market fires.

In Zambia, fire incidents have been reported and recorded, and they include the following: the earliest Chisokone market of 1998, Tambalala market of 2016, Lusaka's Kamwala and City market of 2017, Ndola's biggest market, Masala market of 2016 and Lusaka's Common Market for Eastern and Southern Africa (commonly known as COMESA) market of 2018 among others. However, it is realized that, there is little information known on how best these fires may be avoided as there is less emphasis on the prevention of such. This is seen in the latest Market fire incident in the selected markets where the study was conducted, where there has been no evidence until now as to how the fire started and no available evidence and data on who was responsible for the incident. Hence, there is no better term to give such an incident, be it, an arson or rather an accidental fire incident or even a natural fire. With this said, there is therefore, need to focus on this subject from a proactive approach so as to ensure that fire incidents are reduced and possibly avoided at all cost. Against this background, this study investigated the fire safety management strategies in selected markets of Lusaka city.

1.2 Problem Statement

According to Disaster Management and Mitigation Unit (2017), the frequency of fire gutting in Zambian markets has been on the increase and the ability to save property and lives in places where fire has occurred has been inadequate.

Consequently, market fires put the government in desperate position of finding solutions for the affected businesses in regards to property loss, injury and sometimes loss of lives of marketeers and other casualties. This is because funds intended for other needs may be diverted to attend to the urgent needs of the instigated problem. Besides that, the socio-economic status of the affected persons is disturbed too. Hence, the lives and wellbeing of marketeers will remain at risk as long as this problem is not dealt with or rather, preventive measures are well considered and implemented.

With reference to the foregoing, this study attempts to assess the strategies put in place to manage market fires in three selected markets of Lusaka District, and suggest possible mitigation measures to fire safety management in those Markets. If the strategies put in place are not practical, there might be reoccurrence of fires in the same circumstances in those markets.

1.3 Aim

To assess fire management strategies in selected Market places of Lusaka District and to propose sustainable mitigation measures to challenges of the fire safety in markets in Lusaka City.

1.4 Specific Objectives

This will be guided by the following research objectives:

- i. to investigate causes of fire accidents in selected market places of Lusaka City.
- ii. to identify the fire safety management strategies that the market fire authorities have put in place to prevent fire accidents in Lusaka City.

- iii. to propose sustainable mitigation measures to fire safety management in selected markets in Lusaka City.

1.5 Significance of the Study

The study on fire safety management strategies in selected market places of Lusaka district is significant for a number of reasons:

Ensuring public safety: The study could help identify the gaps in the current fire safety management strategies and recommend solutions to ensure the safety of the public. Market places are often crowded and busy, which can increase the risk of fire outbreaks, so it is crucial to have effective fire safety management strategies in place.

Protecting businesses and properties: Fire outbreaks can cause significant damage to businesses and properties, leading to financial losses. An effective fire safety management strategy can help prevent or minimize the damage caused by fire outbreaks.

Compliance with regulations: In many countries, including Zambia, fire safety regulations are in place to ensure the safety of the public. Conducting a study on fire safety management strategies in selected market places of Lusaka district can help identify if the market places are compliant with the regulations and recommend improvements where necessary.

Knowledge generation: The study can help generate knowledge on fire safety management strategies in market places, which can be used to inform policies and strategies for other similar settings.

Overall, the study can contribute to creating a safer and more secure environment for the public and businesses in Lusaka district.

2. LITERATURE REVIEW

2.1 Selected studies on fire safety in markets by different scholars

This paper looked at studies on fire safety in markets by different scholars as follows:

"Fire Safety in Shopping Centres" by Jose Luis Calvo-Rolle and Jose Ignacio Torero (2014): This study focuses on the design and construction of shopping centres with fire safety in mind. The authors suggest that a comprehensive fire safety management plan should be put in place, which includes fire safety education and training for staff, regular fire safety inspections, and the installation of fire suppression systems.

"Fire Risk Assessment for Open-Air Marketplaces" by David C. Jones (2007): This study examines the fire risk associated with open-air marketplaces and provides guidance on how to conduct a fire risk assessment. The author suggests that fire safety management strategies should be tailored to the specific needs of the marketplace and should include measures such as regular fire safety inspections, the provision of fire extinguishers and other fire suppression equipment, and the establishment of clear evacuation procedures.

'A Proposed Holistic Approach to Fire Safety Management in Zambian Markets' by Mubita Kaiko et al. (2020): This paper provides a comprehensive review of the literature related to fire safety in markets. The authors identify several key factors that contribute to fire risk in marketplaces, including the use of flammable materials, the presence of cooking facilities, and overcrowding. They suggest that effective fire safety management strategies should include fire safety education and training vendors and customers, the installation of fire suppression systems, market surveillance and security and regular fire safety inspections.

"Fire Safety in Markets: A Review" by Siddhartha Mandal and Gautam Saha (2017): This paper provides a comprehensive review of the literature related to fire safety in markets. The authors identify several key factors that contribute to fire risk in marketplaces, including the use of flammable materials, the presence of cooking facilities, and overcrowding. They suggest that effective fire safety management strategies should include fire safety education and training for vendors and customers, the installation of fire suppression systems, and regular fire safety inspections.

"Fire Safety Management in Retail Buildings" by Vincent Ho (2015): This study examines fire safety management strategies in retail buildings, including shopping centres and marketplaces. The author suggests that effective fire safety management requires a combination of active and passive fire protection measures, including the installation of fire suppression systems, the provision of fire extinguishers and other fire suppression equipment, and the establishment of clear evacuation procedures.

"Fire Safety and Security in Markets" by J. P. Sinha and A. K. Gupta (2012): This paper provides a comprehensive overview of fire safety and security issues in markets, including the importance of fire safety education and training, the need for regular fire safety inspections, and the installation of fire suppression systems. The authors suggest that effective fire safety management strategies should include fire safety education and training for vendors and customers, the installation of fire suppression systems, and the establishment of clear evacuation procedures.

Effective fire safety management strategies are essential for ensuring the safety of vendors and customers in marketplaces. This literature review has highlighted several key studies and research papers related to fire safety management strategies in marketplaces, including the need for regular fire safety inspections, the installation of fire suppression systems, and the importance of fire safety education and training for vendors and customers. By implementing these strategies, marketplaces can reduce the risk of fire and ensure the safety of everyone who enters their premises.

3. METHODOLOGY

This section outlines the research methodology used in the study on the safety of transportation modes used by pupils in selected schools.

Research Design: The study employed a descriptive research design, which involved qualitative data collection and analysis. This was meant to get opinion and perception of pupils on the fire safety management strategies in selected markets of Lusaka.

Sampling: The study used purposive sampling to select markets and participants for the study. A total of 2 markets. From each market, 10 marketeers were sampled conveniently. 2 market authorities were also sampled purposefully.

Data Collection: The study collected data using two main methods: Focus Group Discussions (FGD) and in-depth interviews. The marketeers were interviewed individually and FGD guide was further administered to get more insights. This was meant to collect opinion and insights that could not be collected during interviews. The in-depth interviews were conducted with a subset of the participants to obtain more detailed and nuanced information.

Data Analysis: The data collected from the in-depth interviews and FGD were analyzed using thematic analysis to identify patterns and themes in the data.

4. PRESENTATION OF RESULTS

4.1 Demographics of Participants

The participants were disaggregated by position, gender and experience. The total number of these participants were 22 which comprised of market authorities and marketeers. All the 22 participants were working from the 2 selected Markets at the time of the Market fire incidents and thus, had first-hand information. The participants were both male and female. The figure below shows the gender of participants in the study.

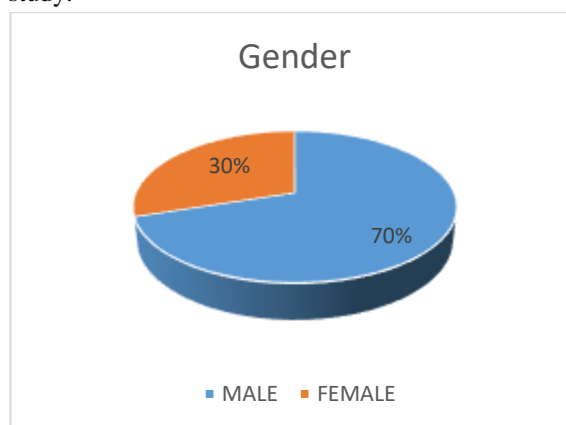


Figure 1. Gender of participants

Source: field data, (2020)

The reason for having more male respondents than the females is simply because most of the males ran to the scene at the time of the fires and had a lot more accurate information than the females who could not manage to rush to the scene.

Number of participants

Table 1: Number of participants of market managers and marketeers.

SN	Participants	Number Of Participants
1	Market Y Management Marketeers	1 10
2	Market Z Management Marketeers	1 10
3	Total	22

Source: Field Data (2020)

4.2 Identified causes of fire in markets

Fire has a variety of causes depending on the environment and situations of occurrence. This part therefore, highlights the anticipated causes of the market fires in the selected markets of Lusaka district in line with the responses given by the participants interviewed during this works’ data collection.

Question 1: What do you think were the causes of the fire accidents?

Participant one: *“according to the experience I have and the stories that are going around, people still speculate that the fire was caused by an electrical fault from one of the stationary shops while others believe that the fire came from the brazier which was left in a stand. Even I am not really sure of the actual cause of the fire because we had followed all the preventive measures such as switching off the main source of power as it has always been. Moreover, ZESCO also confirmed that there wasn’t any electrical fault on the day of the fire incident.”*

Participant two: *“chamene chinalengesa mulilo kuyaka muno mu market sitichiziba. Chifukwa chamene nikambila so nichakuti mulilo unayamba kuseni maningi chakuma 05:00 hours ndishi tili kunyumba, tinavela chabe ati markert yapya. ndiye pamene tinafika pano nakupeza kuti nizoona market yapya. Koma chazoona chinayambisa mulilo sichizibika mphaka lelo.”* (the causes of the fire here in this market is still not known to us the marketeers, as the fire started very early in the morning at around 05hours at the time when we were all at home. We just heard that there was a fire at our market that’s when we started off and truly, we found the market on fire. But the truth is that the cause of the fire is not known up to now).

Participant three: *He suspected that the fires could have been as a result of a foul-*

play by the former management because of the disagreements that had transpired between the current market management and the former one. “The fire started at the centre of the market” he said, “and it was so vicious and with enough burning fuel for it to have started on its own.”

4.3 Effects as a result of the market fires experienced

Market fires have devastating results on the economic and social wellbeing of people. The following questions were asked by interviewers and the responses from the interviewees were as follows:

Question 2: How has the fires experienced affected you?

This research study engaged participants of the two markets and inquired from them on how the market fires experienced at those markets affected their socio and economic status and also the flow of their businesses entirely. Not only had that but also sought to find out how the managerial procedure have been as a result of the fires. Responses from the participants were as follows:

Participant one: *“we have lost so much revenues from the marketeers and even now we are not able to collect revenue as it used to be before the fire incident occurred”. The fires have also affected us on our allowances which used to be covered by the collected revenues from the marketeers. The participant also complained that “we are unable to sustain ourselves as it was the case before and the levies, we are collecting now have been reduced due to the previous fire”.*

Participant two: *the fire incident really affected us in such a way that we lost a life. We were also emotionally affected as we sympathised with the loss of their goods as well as a life that was lost. Witnessing the weeping of tears in these marketeers brought about displeasure to us having understood that marketeers would die out of stress because of the loses. The condition was unbearable as we witnessed two tragedies in one event.*

Participant three: *“epo umulilo wachitikila utuntamba twesu uto twalebomfya ukushitishishamo twalipile nomulilo, elo ukufika na lelo tatwakulwa nakabili pamulandu wakutila ba kafulumende tabaposako amano mukulolekeshapo pabuyantanshi bwesu nama kwebo yesu. Lilo lilo talalokwa nokulokwa elo nakasuba kala tocha pantu tushitisha ukwabula imitenge. Elo nachimbi ichachitika muno chakuti, bambi balifwa kuchikonko chaku*

lufya amakwebo yabo, elo bambi balifilwa ukukonkanyapo na makwebo yabo ukufika na ilelo.” (Ever since the fire occurred, the stands that we were using that got burnt in the fires have not been rebuilt because the government has not shown care to rebuilt our stands or render help in boosting our business. We get soaked during the rainy season and also burnt by the sun in the sunny season because our stands are without roofing. Another thing is that, other marketeers have died due to depression as a result of losing their goods while others have failed to raise from the tragedy and return to their business stands).

In conclusion, implementing effective fire safety management strategies in markets is essential to prevent and mitigate fire incidents. Regular fire risk assessments, the installation of automatic fire detection and suppression systems, providing fire safety training, addressing fire hazards, conducting fire drills and emergency response training, and developing market-specific fire safety codes and regulations are some of the critical strategies that can be employed in markets.

4.4 Mitigation measures

Participants had their own mitigation strategies that they thought if they are correctly implemented, the fire market problem can be solved. The following questions were asked and their responses were recorded as follows:

Question: Has there been any mitigation measures before and after the fire incident?

Before the fire;

Participant one: *well, before the fire, there were little efforts regarding the fire safety measures, only that we had a fire hose-reel installed by the entrance of the market main gate although there was no specialist trained on how to use it. Besides that, we also had fire extinguishers installed in some parts of the market. Unfortunately, all this fire-fighting equipment could not help in the instance of the fire.*

Participant two: *in this market, the occurrence of another fire was not anticipated, hence, there were no mitigation measures put in place in order to prevent another fire, or respond to any market fire gutting.*

After the Fire Incident;

Participant three: *after the fire, we had to immediately set up a rule of commanding every marketer to stop the use of braziers in the market stands as well as completely removed the source of power supply out of the market so as to ensure there is no any*

more risk of another fire relating to either brazier fires or electrical fault. Unfortunately, this affected the business of most of the marketeers, however, we had no choice.

Participant four: *to quickly respond to the effects of the fire, as well as avoid any future fires, we gave a directive of removing all the steel made materials as well as any combustible materials used as trading stands whose heights are longer than before so as to avoid the spread of the fire. This was later replaced by stands made of non-combustible materials such as clay made bricks. Added to the list is the change in the distances between shops of about two meters apart, as this will easily allow the fire-fighting guards to smoothly carry out their job in case of a fire.*

Participant five: *in response to the fire, we plan on having most of our marketeers trained on how to use fire-fighting equipment so as to enable them have the ability to respond positively to any future fires. This will be done by involving the fire brigade fire marshals in the training process. We are also planning on encouraging our marketeers to have their businesses insured so as to avoid complete drawbacks in case of any property loss.*

5. DISCUSSION OF THE FINDINGS

5.1 Causes of fires in markets

There are various causes of fires in markets, including:

Electrical fault: Electrical faults such as short circuits, overloaded electrical sockets, and damaged electrical appliances can cause fires in markets. According to a study by Abdulkareem and Oladokun (2019), electrical faults were responsible for 30% of the market fires in Nigeria. Boateng (2013) also posited that improper electrical fittings, use of substandard electrical materials, defective generators, power fluctuations resulting from frequent power outages and illegal tapping from the national grid are some of the possible causes of fire outbreak. Electrical faults were also noted as major cause of fire in Zambian markets by Mubita et. al. (2020).

Cooking accidents: Cooking accidents such as oil fires, gas explosions, and unattended cooking appliances are also common causes of fires in markets. A study by Ohen (2017) found that cooking accidents accounted for 24% of market fires in Ghana. In markets, some restaurants use fire wood or charcoal for cooking. Small kerosene stoves and camping gas cookers are also used in some shops for cooking, or heating up food for their children. All these practises can lead to outbreak of fire in markets when left unchecked. In a study

by Mubita et. al. (2020) cooking was noted as one of the main causes of fire in Zambian markets.

Cigarette smoking: Cigarette smoking and the improper disposal of cigarette butts can also cause fires in markets. Careless disposal of smoking materials and cigarettes is one of the leading causes of fatal market fires in Zambia (Mubita et. al. 2020). Most smoking fires start when cigarettes or burning embers are dropped on market infrastructure or trash. According to a report by the National Fire Protection Association (NFPA) (2018), smoking materials were responsible for 5% of structure fires in mercantile properties. *Arson:* Arson, or the deliberate setting of fires, is another cause of market fires. Arson can be motivated by various factors such as revenge, vandalism, or insurance fraud. According to a report by the NFPA (2018), arson accounted for 8% of structure fires in mercantile properties. Arson was also noted by Mubita et.al. (2020) one of the causes of fires in markets in Zambia, especially when the arsonists wanted to destroy evidence of crime committed.

Poor storage practices: Poor storage practices such as overcrowding, storing flammable materials near heat sources, and blocking exits can also lead to fires in markets. According to a study by Amponsah-Dacosta et al. (2019), poor storage practices were responsible for 15% of market fires in Ghana. *Use of Generators inside the Market:* According to Mubita et. al. (2020) using generators inside can also cause fire outbreak or fuel its spread. This is because fuels like petrol r diesel used to run generators can easily ignite when it comes in contact with heat. Some market authorities have been able to discourage individuals from using private generators but fire safety education seems to lack in some marketeers.

5.2 Effects of fire on selected market places of Lusaka district

Fires can have significant effects on marketplaces, both in terms of physical damage and economic disruption.

Physical Damage: Fires can cause significant physical damage to selected marketplaces in Lusaka city, destroying buildings and infrastructure. For example, fire incidents have been reported and recorded, and they include the following: the earliest Chisokone market of 1998, Tambalala market of 2016, Lusaka's Kamwala and City market of 2017. All these fires destroyed infrastructure in markets. A fire also broke out at the Grand Bazaar in Istanbul, Turkey, causing significant damage to the historic marketplace (Reuters, 2019).

Economic Disruption: Fires can also cause economic disruption, leading to loss of business and revenue. Fires that broke out in selected markets of Lusaka city brought about economic disruption to vendors. Likewise, in 2017, a fire broke out at the Camden Lock Market in London, UK, forcing many businesses to close and resulting in significant financial losses (The Guardian, 2017).

Impact on Small Businesses: Fires can have a particularly significant impact on small businesses operating in marketplaces. According to a report by the National Fire Protection Association, small businesses are more likely to be

affected by fires than larger businesses, and may be less able to recover from the financial losses incurred (NFPA, 2016).

5.3 Fire safety management strategies in selected markets of Lusaka city

Markets are busy places where people gather to buy and sell goods and services. With numerous stalls and vendors operating in a confined space, the risk of fire hazards increases significantly. Hence, it is critical to implement effective fire safety management strategies in markets to prevent and mitigate fire incidents. Here are some essential fire safety management strategies that were noted in selected markets in Lusaka city:

Installation of automatic fire detection and suppression systems: The installation of automatic fire detection and suppression systems can ensure a timely response in case of a fire in Lusaka markets. Mubita et. al (2020) proposed installation of fire detection and suppression systems in an effort to prevent and reduce loss of property due to fire in Zambian markets. The European Commission also recommends the installation of automatic fire detection and suppression systems in markets to protect people and property from the risk of fire (European Commission, 2019).

Installation of fire safety equipment in market places could help to protect both market infrastructures well as the people in and around it. Markets should have deterrent, detection, warning and firefighting components, such as smoke detectors, fire alarm systems, fire extinguishers, emergency lighting, fire hose reels, fire buckets and other firefighting equipment Mubita et. al. (2020). Installation of firefighting equipment in public places was also noted by Mubita and Namafe (2016) as an ideal way of enhancing fire safety and preparedness. But while having these individual pieces of equipment fitted is a great practice, looking after the safety of firefighting facilities should be an ongoing task which should not just be ignored (Mubita, K, Timothy K. Phiri, Pauline N. Monde, Steria M. Simooya, 2016).

Addressing fire hazards: Overcrowding, poor ventilation, and the use of open flames for cooking are significant fire hazards in markets. Liu et al. (2019) recommend the installation of fire alarms, smoke detectors, and emergency exits to mitigate the risks in China's markets.

Conducting fire drills and emergency response training: Fire drills and emergency response training can enhance the preparedness and response of market vendors in case of a fire. Park et al. (2020) highlight the effectiveness of fire drills and emergency response training in enhancing the preparedness and response of market vendors in South Korea.

Develop market-specific fire safety codes and regulations: The United Nations Economic Commission for Europe (UNECE) recommends the development of market-specific fire safety codes and regulations to address the unique challenges and risks in different market settings (UNECE, 2021).

Training and education: One of the key strategies to maintaining a safe market place from fires is through fire

safety training and education. Fire safety training and education teaches sellers and buyers how to prevent fires. If vendors are aware of the best ways to prevent and control fires, they can contribute significantly to a safer market place. Lack of training and orientation was also noted by Mubita (2016) as a barrier to effective safety and health management in public places like schools, markets and others. This was because an informed mind has the potential of acting responsibly. Adequate fire safety training should be provided to market vendors and staff to enhance their awareness and response in case of a fire. The UK Fire Protection Association (FPA) emphasizes the importance of fire safety training for market vendors and staff to ensure that they know what to do in case of a fire (FPA, 2020 and Mubita et al. 2020).

Improving Quality of Market Structures: Most market structures in Zambia according to Mubita et. al. (2020) are made up of flammable materials. Stands, shops and other buildings in markets are made of flammable materials such as wood, paper, textile, grass and other flammable materials. These could easily catch fire and help fire spread easily. This was also noted by Ozioma (2020) that in Nigeria, most of the shops that were shanty houses made with woods and metal sheets. Most of the stands and shops, especially in rural markets were of substandard. They were vulnerable to fire, strong winds and heavy rains. Therefore, in order to help reduce cases of fire outbreaks in Zambian markets, there are need to improve the quality of market infrastructure.

Security and Surveillance of Market Environments: Surveillance means constantly watching over something. In the context of this paper, it refers to monitoring or watching over the whole market premises closely (Mubita et. al. 2020). Market surveillance is meant to increased sense of security from intruders who could cause fire deliberately (arsonists). When establishing a surveillance system in markets, market property is protected. Market surveillance also entails prevention and investigation of abusive, manipulative or illegal trading practices in the markets that could cause fire. Another way to improve security of market places is to improve lighting of hidden social spaces, passages, pavements, entrances and exits so as to easily take note of intruders (Mubita et. al. 2020). This could help reduce the chances of fire events in markets due to arsonist.

6. CONCLUSION

The study was carried out with the objectives to ascertain the fire safety management strategies, to investigate the possible causes of fire accidents in selected market places of Lusaka district and to identify some negative impacts that market fire accidents pose to the socio-economic status of marketeers and other stakeholders in these same selected markets. It is important to mention that the results of the study showed that market fires have a very huge impact on the flow of business and social economic livelihood among marketeers and the residents of Lusaka at large. It was discovered that the impacts of market fires have had more negative consequences

on most if not all marketeers in the district due to lack of appropriate actions and strategies to address the various consequences such as death, stress and loss of properties. It was discovered that the in the process of saving properties from fires, some resident stole some properties and theft activities were high in Lusaka district. Adding to the impacts of market fires in the study area, was the dwindling and slow business activities within the selected markets, street vending due to lack of selling places and the breakout of waterborne diseases such as cholera due to none availability of proper sanitation.

7. RECOMMENDATIONS

Therefore, the following are the recommendations:

- i. to enhance fire safety education and literacy among marketeers and the entire community at large that surrounds these selected markets so as to handle fire incidences issues effectively. This will make people aware how fires can be fought and protect their properties and save lives.
- ii. to establish Market-Based firefighting departments in all affected markets with trained fire fighters who will be the first respondents when there is a fire accident and help enhance the impacting of firefighting education to the sellers and buyers.
- iii. the government of Zambia should train traders in these selected markets to make them competent and make sure they undergo a fire training before they are given a trading space.
- iv. existing legislation that requires prosecution of those who starts the fire deliberately should incorporate legal frameworks on fire investigations mitigations and adaptation planning in order to improve the investigation systems on fires as it has been noted that the cause of fires in all the selected markets are not known up to now.

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