Berajah Journal
Jurnal Pembelajaran dan Pengembangan Diri
ISSN (p): **2797-1805** | ISSN (e): **2797-1082**

EXPLORING PUBLIC PERCEPTIONS OF FIRE RISKS IN RESIDENTIAL AND COMMERCIAL AREAS NEAR FUEL STATIONS IN GHANA

Daitey William[1*], Owusu Panin Kwame Baah[2]
Department of Product Design and Entrepreneurship, AsanSka University College of Design and Technology, Ghana[1]
Department of Jewellery Design, AsanSka University College of Design and Technology, Ghana[2]
E-mail: ultimateprimeghana@gmail.com[1]*, pideckcompany@gmail.com[2]

ABSTRACT

The hazardous fire conditions at fuel stations threaten both residential and commercial sectors of Ghana. This study evaluated community perceptions regarding fire risks in gas stations and it measured both preparedness and fire safety educational levels. The researchers employed triangulated data collection tools using unstructured interviews, focus group discussions and observations which collected data from citizens, business owner and gasoline station employees. Study findings showed general public awareness about fire hazards but inadequate people had preparedness measures alongside weak adherence to rules throughout the community. The insufficient planning of many fuel stations close to residential areas created additional fire hazards due to inadequate town development practices. The report supports updated zoning rules that need better law enforcement combined with enhanced fire safety education and fire risk reduction activities involving local communities. The improvement of fire emergency readiness requires the establishment of fire hydrants together with standardized safety drills and increased enforcement of fire safety legislation. The planned steps will establish safer workplace environments in Ghana together with reduced gas station safety hazards.

Keywords: *Fire safety, fuel stations, public perception, urban planning, regulatory enforcement.*

INTRODUCTION

The outbreak of fires in areas surrounding gas stations leads to dangerous situations that endanger human lives along with properties and environmental elements. The population increase from urbanization throughout Ghana has triggered an increased number of gas stations in densely clustered areas (Amoako & Frimpong, 2019) yet fire dangers and safety issues remain concerning. Inadequate safety precautions, bad urban planning, and public disregard for fire safety regulations all increase these hazards (Owusu et al., 2020). The development of emergency policies for disaster mitigation requires accurate knowledge of public fire risk perceptions across relevant areas.

Forensic science identifies fuel stations as locations that bear high risks for fire catastrophes mainly because of their petroleum substance management including gasoline, diesel and liquefied petroleum gas (LPG). Improper handling of these compounds combined with external influences including electrical malfunctions and smoking and car accidents results in destructive explosions (Mensah et al., 2021). Various fuel station fire accidents in Ghana have revealed the urgent need for risk management along with public education systems to prevent future occurrences particularly after the June 3, 2015, Accra incident (Nyarko, 2018). The vicinity of residential areas and businesses to gas stations does not seem to create sufficient fire safety knowledge among local residents or businessmen.

Fire risk management depends heavily on public perception since how people think and what they believe affects their readiness

to face fire threats (Agyemang et al., 2022). Individuals operating near fuel stations who underestimate fire risks will likely remain unprotected because of their misconception about safety conditions. Higher community awareness about risks will often encourage safety initiatives that range from fire safety standard compliance to poverty reduction programs focused on fire safety. Insights from these perspectives enable authorities to assess their existing fire safety policies while enabling them to create specific public safety improvement interventions.

Ghana continues to face discussions about standards which govern petrol station siting as well as their operational policies. The National Petroleum Authority (NPA) along with Ghana National Fire Service (GNFS) and Environmental Protection Agency (EPA) have created guidelines but their enforcement difficulties let fuel stations stay close to residential and commercial areas (Boakye et al., 2020). Public opinion research sheds light on community fears about police compliance and shows options for enhancing relevant regulatory policies.

The research evaluates how the public perceives fire risks between residential and business zones which are located near fuel stations within Ghana. The research explores how public individuals comprehend their exposure to fire risks and their recognition of safety practices as well as their reactions to fire prevention initiatives. This knowledge assists researchers in developing better fire risk communication approaches and policy solutions which jointly promote safety and reduce fire disasters at gas stations.

Research on fire risks in Ghana grows in quantity yet several knowledge gaps remain unaddressed. Experts have not established any statistical evidence to show how public beliefs about fire dangers affect fire readiness and reactive behaviour around fuel stations. The literature shows limited research addressing the fire safety perspectives of people in contact with gasoline station risks (Mensah et al., 2021).

Studies have failed to evaluate how well current regulations protect people from fuel station fire risks effectively. Numerous scholarly works expose regulatory enforcement problems yet fail to investigate resident opinion regarding policy execution and regulatory observance (Boakye et al., 2020). Knowledge about public opinions would enable policymakers to create stronger responses which support the improvement of both regulatory standards and community-based safety needs.

The study must expand to establish what effect communities have on fire risk reduction activities. Current research into localized fire safety approaches specifically designed for the Ghanaian environment remains limited according to worldwide literature (Amoako & Frimpong, 2019). The research aims to close existing knowledge gaps by examining resident and business perceptions of nearby fuel station fire threats in order to provide guidance that supports safety policy development and public safety programs.

LITERATURE REVIEW

The study examined how residents and commercial operators interpret fire risks in surroundings of Ghanaian gas stations while applying the Social Amplification of Risk Framework (SARF) asserted by Kasperson et al. (2022) as analytical theory. SARF delivers a total system to explain the ways societal elements affect risk acknowledgment together with resource management.

SARF analytically follows some main elements during its operation:

The Event, in this case, the presence of fuel stations in proximity to residential and commercial areas, serves as the catalyst for risk perception.

The Psychological and Social Processes which determine how people from communities understand and respond to the event as personal experiences and cultural beliefs and media coverage jointly influence their reactions.

The Institutional Processes focus on governmental agencies together with regulatory bodies and community organizations which perform risk information distribution and safety implementation plus incident response duties.

These procedures produce three key results which include public risk understanding as well as collective and individual conduct and the effectiveness behind risk management approaches. An investigation into these SARF components conducts an analysis of how they affect Ghanaian public understanding of fire risks. This research explains how past fire accidents together with media coverage and social group conversations affect people's knowledge about fuel station risks. The research investigates the effect that these perceptions have on resident behaviours relating to evacuation preparations and fire hazards safety routines. The research explored the relationship between these key factors to generate strategic risk communication methods and community-based fire risk reduction initiatives for Ghana.

Fire Risks and Fuel Station Safety

Extensive research exists about fire safety in petrol stations due to their capability to trigger catastrophic incidents. Extremely flammable petroleum products including gasoline diesel and liquefied petroleum gas (LPG) are stocked and distributed inside fuel stations according to Mensah et al. (2021). Owusu and Tetteh (2020) identified fuel leaks together with electrical failures and cigarette smoking and incorrect storage and unintentional spills as possible sources of petrol station fires. A minor ignition source leads to dangerous fires or explosions because petroleum products possess extreme volatility (Agyemang et al., 2022).

Multiple fires at Ghanaian petrol stations demonstrate why proper safety standards must be followed. The Accra flood and fire tragedy of June 3rd 2015 became the defining disaster in Ghana after a fuel station explosion took more than 150 lives (Nyarko, 2018). The devastating fuel station disaster exposed multiple issues including dangerous placement of fuel stations and insufficient safety adherence and insufficient emergency readiness (Amoako and Frimpong, 2019). Multiple past incidents in the country demonstrate why proactive measures for managing fire risks become essential.

Public Perception of Fire Risks Near Fuel Stations

Societal preparedness to fire danger directly emerges from how the public perceives the threat. Studies show that personnel located near fuel stations develop different perceptions of fire risks which depends on their gathered understanding and prior experiences (Boakye et al., 2020). Mensah et al. (2021) showed that Ghanaian neighbourhoods adjacent to fuel stations consider their dangers low because there have been no recent fires and this has led to them not following fire safety protocols. People experience anxiety and have difficulty

sleeping after being present or learning about reports of fuel station accidents.

Some people of Kumasi identified the security hazards linked to fuel stations yet most demonstrated insufficient knowledge about fire precaution practices according to Agyemang et al. (2022). The public blamed station owners and national authorities for most fires even though the problem affected the community at large. According to Owusu and Anokye (2020) study company owners operating near fuel stations focused on business before fire safety and regularly avoided essential procedures which included maintaining fire extinguishers and creating emergency evacuation protocols.

Regulatory Framework and Safety Compliance

Three state entities lead the management of fuel station location and operations in Ghana's landscape through their oversight functions: the National Petroleum Authority (NPA) in addition to the Ghana National Fire Service (GNFS) and the Environmental Protection Agency (EPA). Fuel stations must obey safety regulations because various organizations have established recommendations that include keeping a safe distance from homes and businesses as well as implementing fire suppression systems and scheduling routine safety checks (Boakye et al., 2020). The problem of compliance endures as a major challenge since evidence shows fuel outlets operate in hazardous areas from both regulatory failures and political interference (Amoako & Frimpong, 2019).

The insufficient application of zoning regulations by Nyarko (2018) has led fuel stations to settle in crowded areas hence increasing fire risks. The majority of stations ignore safety requirements when they fail to install fire protocols and accessible fire exit routes and fire extinguishers and employee training (Mensah et al., 2021). Fire safety programs around fuel stations have shown irregular and ineffective execution because of which nearby households and business owners lack preparedness (Agyemang et al., 2022).

Community Engagement and Fire Risk Mitigation

Fire risk management through active community participation functions as an essential element which boosts public safety standards. Studies prove that involving neighbours in fire safety education drives substantially better readiness levels and faster responses (Owusu et al., 2020). Industrialized nations use community-driven fire prevention methods which combine education initiatives with emergency drills to decrease fire occurrences near fuel stations through their regulatory agency collaborations (Boakye et al., 2020).

The people of Ghana seem uninvolved with activities that aim to reduce fire risks in their area. Agyemang et al. (2022) note that fire departments operate outreach initiatives yet these programs are executed inconsistently and remain poorly utilized. People who live near petrol stations together with business operators in those areas do not possess enough knowledge about fire safety nor have sufficient emergency resources. The implementation of participatory community engagement initiatives strives to reduce regulatory differences with local populations so they can build shared knowledge in fire safety and prevention strategy development.

METHOD

The research employed a qualitative research approach to study how the public

views fire hazards that surround residential and commercial zones near fuel stations in Ghana. Qualitative research turned out to be the right method for this study since it provided detailed understanding of how people feel about fire safety (Creswell & Poth, 2018). The research collected first-hand accounts from citizens along with business owners and key stakeholders with the goal of establishing thorough description of fire risk recognition and preparedness levels.

The research implemented case study research design to examine fire safety risks within towns that house fuel stations. The research design allowed an in-depth examination of fire safety matters as well as regulatory compliance and local fire safety knowledge in particular regions (Yin, 2014). Different data collection methods were employed which included semi-structured interviews and focus group discussions along with observations to obtain diverse evaluations about safety compliance and fire risks near fuel stations. The research dependability and depth increased through the combination of distinct data collecting methods (Patton, 2015).

Several Ghanaian metropolitan communities' residents together with their company owners and fuel station attendants and regulatory officers formed the research audience. The selection of these groups occurred because they either encountered direct fire hazards in fuel stations or functioned as regulatory agents for fire safety standards. Multiple stakeholders participated in the study to establish complete understanding of the concern from different perspectives as per Bryman (2016).

The research employed purposive sampling to pick its participants. This sampling strategy represented an acceptable method to identify qualified individuals who possessed relevant expertise or fire hazard experience from the vicinity of fuel stations according to Etikan, Musa, & Alkassim (2016). Twenty (20) residents who live adjacent to fuel stations participated alongside ten (10) local business owners and five (5) personnel working at these stations as well as five (5) regulatory officers from the Ghana National Fire Service alongside the Environmental Protection Agency.

There were forty (40) participants enrolled in the research. The researchers considered the sample size to be sufficient for achieving data saturation thus preventing further emergence of new themes during information collection using 50% in representation of the sample size (Guest, Namey, & McKenna, 2020).

Category	**Target Population**	**Accessible Population**	**Sample Size 50%**
Residents living near fuel stations	50	30	20
Business owners near fuel stations	25	15	10
Fuel station attendants	10	7	5
Regulatory officers (GNFS, EPA, etc.)	10	7	5
Total	**95**	**59**	**40**

Source: Field Survey, 2025.

Three primary data collection methods were employed:

The research team performed an unstructured interview with citizens together with business owners and regulatory officials to learn about their thoughts regarding fire safety risks and both procedures and regulatory enforcement standards (Kvale & Brinkmann, 2015). The semi-structured approach allowed investigators to investigate participants' answers in more depth.

Two Focus Group Discussions (FGDs) conducted with participants between 5 to 7 examined the general understanding of fire danger threats (Krueger & Casey, 2015). The specific sessions provided additional knowledge regarding how the community functioned regarding awareness and preparedness.

The researcher evaluated fire safety amenities and regulatory adherence and station location relative to homes along with commercial properties through direct field inspections at selected gas stations. Observational checklists served to record safety precautions alongside firefighting equipment accessibility as well as zoning requirements (Angrosino, 2016).

The research of Braun and Clarke (2006) analysed thematic elements in documents containing interview and focus discussion transcripts. Thematic analysis served to extract recurring patterns along with connections between participant answers in this study. The NVivo software platform supported both the organization of data collections and automated coding methods. Data analysis of observed data confirmed the findings gathered from interview studies and group discussions.

To ensure the validity and reliability of findings, the study adopted several measures:

Data triangulation occurred through the combination of both interviews and focus groups and observations as research methods to enhance results reliability (Patton, 2015).

Member checking procedures allowed participants to evaluate preliminary research findings in order to verify accuracy according to Lincoln and Guba (1985).

The research findings received dual assessment through peer analysts who are experts in both academics and fire safety space.

The research team maintained complete records regarding data collection and analysis to improve study transparency and enable future replication according to Merriam & Tisdell (2016).

The desired approval for ethical research came from the relevant institutional review board prior to data collection. The study's main objective and participant consent process was explained to participants before focus groups and interviews by following the recommendations of Orb et al. (2001). Study participants were assured both privacy protection and disclosure anonymity status while keeping the right to leave the research anytime without facing any repercussions.

RESULTS AND DISCUSSION

Research findings regarding public understanding of fire-related perils affecting inhabitants and businesses in proximity to gas stations in Ghana appear within this section. Several relevant studies support the findings which are discussed here. Multiple essential topics emerged through the collected data which examined public understanding about fire hazards along with their sense of risk and their safety practices and compliance with regulations and limitations experienced in fire risk control.

Berajah Journal
Jurnal Pembelajaran dan Pengembangan Diri
ISSN (p): **2797-1805** | ISSN (e): **2797-1082**

Public Awareness of Fire Risks

Most survey participants understood how petrol station fires could appear but their knowledge about particular risk elements and protection processes remained restricted. The survey showed most residents and owners associated petrol station fire dangers with fuel leaks combined with incorrect handling techniques and electrical problems. The data revealed that minimal people comprehended all fire source origins beyond static electricity and vapor accumulation (Amoako, Asare, & Nyarko, 2020).

The public opinion indicated that gas station fire safety was solely based on protection measures established by owners. Research findings demonstrate that community members have a common habit of underestimating their responsibility towards fire prevention (Mensah & Agyeman, 2019). Low fire safety education in communities led to insufficient knowledge among citizens.

Plate 1: A fuel station situated close to residential buildings in an urban area
Source: By Researcher, 2025.

Perceived Vulnerability and Risk Tolerance

Household residents along with business owners expressed profound worry regarding their close proximity to fuel stations since they had experienced minimal fires and fuel spills that increased their alarm. Business owners running outlets by fuel stations frequently showed heightened distress because they considered their facilities vulnerable to possible fire dangers.

Numerous residents had learned to accept the dangers because they had faced them over multiple years according to "we have been dealing with this for years" (Owusu & Darkwah, 2021). The research findings about environmental dangers support the notion that experiencing these threats longer leads to reduced perceptions of danger (Boateng et al., 2022).

Fire Safety Practices Among Residents and Business Owners

The research revealed that both householders and business operators knew fire hazards existed yet most of them lacked contingency plans for fire situations. Key observations include:

Stores operated without fire extinguishers or had expired or nonfunctional fire extinguishers among their available equipment. The findings of Gyasi and

Aboagye (2020) support the proposition that small business owners in Ghana display minimal compliance with fire safety standards.

Most surveyed individuals admitted to lacking both skills to use fire extinguishers correctly and responding to fires through any means other than contacting the fire department. Fire safety training programs at these localities prove insufficient according to the obtained data.

Multiple building units were observed to violate the fire safety distance regulations established by the National Fire Protection Association (2019) because they received construction near fuel stations.

Regulatory Compliance and Fire Safety Enforcement

The regulatory authorities at the Ghana National Fire Service and Environmental Protection Agency admitted during interviews their difficulties in implementing fire safety standards. Fire safety certificates at certain fuel outlets were not up to date which created doubts about how well authorities enforce their regulations.

Procedures for routine facility inspections turned out to be ineffective because service providers struggled with limited manpower and insufficient resources.

The majority of residents along with business owners failed to participate in fire safety protocols by rejecting official relocation requests and fire safety protocol directions (Asante & Kusi, 2021).

Unlike regulatory intent the study identified that law enforcement faced financial and political barriers which affected their ability to close non-compliant fuel stations. The study of regulatory enforcement in Ghana is thoroughly documented in Agyekum et al.'s (2020) research.

Challenges in Fire Risk Management

A research investigation discovered several important elements that raise fire hazards when residential and commercial areas locate adjacent to petrol stations.

Fuel stations typically operated in high-density areas creating major problems because the urban expansion went without regulation. Zoning regulatory authorities state that fuel stations were built near schools and residential neighbourhoods and marketplaces because zoning regulations remain non-enforced (Owusu, 2019).

a) Inadequate firefighting infrastructure

Participants demonstrated concern about fire service response speeds particularly when water hydrants remain unavailable. The study results support earlier research which shows Ghanaian metropolitan regions do not have enough firefighting equipment (Boakye et al., 2021).

b) Socioeconomic Constraints

Even though small business owners recognized the importance of fire safety equipment numerous owners could not afford to make purchases due to financing strains. Government fire safety compliance incentives must be implemented to support small businesses because of their limited purchasing power (Aidoo & Appiah, 2022).

Perception of Fire Safety Responsibility

The research revealed conflicting perspectives regarding the entity that bears responsibility for fire protection measures at fuel stations.

Some managers and attendants at petrol stations viewed themselves as the primary fire safety actors due to their received fire prevention training. Fuel station operators became angry due to people living nearby and business owners who failed to follow basic

Berajah Journal
Jurnal Pembelajaran dan Pengembangan Diri
ISSN (p): **2797-1805** | ISSN (e): **2797-1082**

fire safety procedures that kept a distance from open flames around stations.

The majority of community people thought government organizations particularly the Environmental Protection Agency (EPA) and the Ghana National Fire Service (GNFS) should take full responsibility for fire safety according to Mensah & Agyeman (2019). Local residents maintained that fuel stations needed to bear responsibility in case of any fires that occurred.

People failed to take proactive actions toward fire protection because of this approach that allocated responsibility to others. The research shows that people in numerous Ghanaian villages prefer the government to take responsibility for environmental threats instead of holding themselves accountable.

Past Fire Incidents and Their Influence on Perception

The public formed their safety perceptions about fuel stations based on previous fire accidents that occurred.

Locations where gas station fires are absent showed residents minimizing risks because they never experienced a fire at these facilities. Some individuals doubted the occurrence of accidents because nothing had occurred previously (Owusu & Darkwah, 2021).

Communities exposed to fire explosions in the past both feared new incidents and backed extensive fire safety measures. The implementation of fire extinguishers and fire-resistant materials inside their structures was one of the personal safety practices adopted by numerous business owners who operated in these locations.

Plate 2: Three cars and a storey building are destroyed in a fire at the Bono gas station.
Source: (Graphic Online, 2024)

This difference in perception suggests that fire risk awareness campaigns should include case studies of past fuel station explosions to make the risks more tangible to the general public.

Community Engagement and Fire Safety Training

Community members exhibited insufficient training regarding fire safety principles during the investigative process.

A small number of locals together with company owners stated they did not attend

any fire safety training or safety workshops arranged by regulatory bodies. The people who completed training showed enhanced confidence to handle fires and actively established fire safety measures.

Basic fire safety abilities which included fuel spill clean-up together with fire extinguisher use were found more often among employees operating at fuel stations. Some advanced fire safety training remained insufficient to teach proper procedures for dealing with heavy explosions.

Risk Perception and Proximity to Fuel Stations

The risk perception of fire dangers fluctuated based on the spacing between residential dwellings and commercial buildings as well as fuel stations.

The residents who had their homes or places of business located less than 50 meters from petrol stations showed greater concern about potential dangers. Many individuals tried to relocate because of the concern yet financial constraints blocked their attempts.

People who resided beyond 100 meters showed minimal fire-related concerns since they believed additional moves and safety measures were unnecessary.

Research in urban planning suggests residential properties must maintain at least a 100-meter distance from fuel stations for minimizing fire-exposure risk (Boakye et al., 2021).

Compliance with Fire Safety Policies Among Fuel Stations

Petrol station managers and fire safety officers demonstrated different practices within the framework of required regulations.

Petrol station facilities belonging to recognized worldwide oil organizations displayed enhanced compliance levels. Petrol stations performed regular fire drills while using materials that resist fire as well as maintaining operational fire extinguishers.

Critically unsafe conditions were present in some independent smaller gas stations. The stations remained non-compliant due to their lack of fire safety inspections and their absence of emergency exits along with non-functional fire extinguishers.

Research confirms that independent fuel stations with limited financial capabilities may not have enough funds to establish complete fire safety systems.

Implications for Policy and Practice

Different policies emerge from the study findings that affect fire safety management in Ghana:

Public and company owners need better fire safety education so programs should intensify their efforts at awareness building.

The authorities must carry out regular inspections and enforce zoning restrictions with increased strictness to prevent buildings of new petrol stations near dangerous areas.

New investments in contemporary firefighting equipment should be complemented by new hydrant infrastructure to enhance emergency response capabilities in Ghana.

The government should provide financial incentives to business owners by offering tax benefits and supported fire safety equipment to improve fire safety compliance rates.

CLOSING

Conclusion

The research examined public fire risk perception in the area around fuel stations throughout Ghana. People recognized fire hazards although inadequate safety measures combined with noncompliance with

regulations was common. Public perception about fire risks at petrol stations depended on how far the stations were located from the community and past fire experiences and enforcement policies in the area. Based on these findings effective urban planning remains essential as well as increased enforcement and better fire safety education to minimize fire susceptibility. Residents who operate businesses near fuel stations showed major worry about potential fires yet many believed such incidents rarely happen even though no prior incidents exist. Fire safety education turned out to be insufficient throughout the study area. Staff at fuel stations underwent training but regular citizens together with business managers did not receive any official fire safety education. The insufficient knowledge about emergency protocols made people more susceptible to danger because they lacked awareness about proper safety procedures. The examination demonstrated a substantial difference between fire code adherence of existing fuel stations and independently-operated businesses. Established enterprises showed stronger fire prevention initiatives because they had functioning fire extinguishers together with trained personnel and scheduled facility inspections. Independent fuel stations usually didn't have enough money or drive to establish sufficient safety measures. Petrol station fire risk control requires multiple organizations to work together toward solving the issue. To enhance safety in petrol stations the public needs better education while station operators require more training and governments must both enforce safety regulations more aggressively and plan cities in safer ways. Joint efforts between various parties in Ghana will establish safer neighborhoods while reducing the chance of catastrophic fires occurring.

Recommendations

The research document presents an enhanced strategy to strengthen fire safety measures within areas surrounding petrol stations in Ghana both for residential and commercial space. The research demonstrates that residents together with workers near facilities require an extensive fire safety education program because they currently lack knowledge about these risks. The paper suggests the Ghana National Fire Service (GNFS) along with the Environmental Protection Agency (EPA) to design educational initiatives with workshops which will teach residents about fire perils together with prevention techniques and emergency response protocols. The research paper underlines how developed regulations and proper policy execution require immediate attention. The paper supports intensified inspection routines at petrol stations especially those independent and smaller sites to maintain compliance with warning sign placement and emergency exit regulations and fire extinguisher accessibility. The research proposes implementing multiple punitive measures for stations which do not comply with regulations through fines and permanent closures and license revocation. This research emphasizes that improved urban planning as well as zoning regulations must be developed to reduce potential fire dangers. New fuel stations would require security boundaries to separate them from residential districts and educational facilities and campuses along with markets in addition to high-density residential districts. The article promotes both lowering the station density in dense population zones and urging current stations

to adopt safety enhancements such as fireproof buildings and protective barriers.

REFERENCES

Agyekum, B., Danso, E., & Frimpong, K. (2020). The impact of fire incidents on small businesses near fuel stations in Accra. International Journal of Disaster Risk Reduction, 32, 102345.

Agyemang, K., Osei, J., & Boateng, R. (2022). Fire risk awareness and community preparedness in urban Ghana. Journal of Risk Management, 15(2), 112-130.

Aidoo, K., & Appiah, M. (2022). Fire risk management in urban settlements: Assessing the role of local authorities in Ghana. Journal of Urban Safety Studies, 15(2), 78-94.

Amoako, C., & Frimpong, P. (2019). Urban planning and fire safety: Examining the challenges in Accra's fuel station siting policies. Ghana Journal of Urban Studies, 10(1), 45-67.

Amoako, G., Asare, P., & Nyarko, J. (2020). Public perception of fire hazards near fuel stations: A case study in Ghana. Ghana Journal of Safety Research, 8(1), 45-62.

Angrosino, M. (2016). Doing ethnographic and observational research. SAGE.

Asante, R., & Kusi, A. (2021). Urban planning and fire risk management: The case of fuel stations in Ghanaian cities. Journal of Planning and Development, 14(2), 89-107.

Boakye, D., Asante, R., & Mensah, T. (2020). Regulatory challenges in Ghana's fuel station industry: A policy analysis. Environmental Policy Review, 8(3), 78-94.

Boakye, T., Owusu, F., & Amponsah, G. (2021). Challenges in enforcing fire safety regulations in commercial areas near fuel stations. Ghanaian Journal of Public Safety, 7(1), 67-82.

Boateng, K., Adu, S., Antwi, P., & Osei, Y. (2022). Regulatory compliance and fire safety measures at fuel stations: An empirical assessment from Kumasi, Ghana. Journal of Fire Safety and Risk Management, 9(4), 112-130.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101.

Bryman, A. (2016). Social research methods (5th ed.). Oxford University Press.

Creswell, J. W., & Poth, C. N. (2018). Qualitative inquiry and research design: Choosing among five approaches (4th ed.). SAGE.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1-4.

Graphic Online. (2024, June 13). Bono gas station fire incident destroys storey building, 3 vehicles. Graphic Online. https://www.graphic.com.gh/news/general-news/bono-gas-station-fire-incident-destroys-storey-building-3-vehicles.html

Guest, G., Namey, E. E., & McKenna, K. (2020). How many interviews are enough? An experiment with data saturation and variability. Field Methods, 32(1), 59-82.

Gyasi, K., & Aboagye, M. (2020). Fire risk perception and preparedness among fuel station attendants in Ghana: Implications for policy and training. Safety Science, 45(3), 123-139.

Kasperson, R. E., Webler, T., Ram, B., & Sutton, J. (2022). The social

amplification of risk framework: New perspectives. *Risk Analysis*, *42*(7), 1367-1380.

Krueger, R. A., & Casey, M. A. (2015). Focus groups: A practical guide for applied research (5th ed.). SAGE.

Kvale, S., & Brinkmann, S. (2015). Interviews: Learning the craft of qualitative research interviewing (3rd ed.). SAGE.

Lincoln, Y. S., & Guba, E. G. (1985). Naturalistic inquiry. SAGE.

Mensah, A., Kwame, P., & Adu, S. (2021). Fuel station safety and fire prevention in Ghana: An empirical assessment. Safety Science Review, 9(1), 23-39.

Mensah, E., & Agyeman, D. (2019). The socio-economic impact of fuel station fires in Ghana: A case study of Accra and Kumasi. Journal of African Studies on Risk Management, 6(2), 145-162.

Merriam, S. B., & Tisdell, E. J. (2016). Qualitative research: A guide to design and implementation (4th ed.). Jossey-Bass.

National Fire Protection Association. (2019). Fire safety standards for fuel stations: Guidelines for risk reduction and emergency response. NFPA Publications.

Nyarko, B. (2018). The June 3 disaster: An analysis of fire risk preparedness in Accra. Ghana Disaster Management Journal, 5(2), 67-84.

Orb, A., Eisenhauer, L., & Wynaden, D. (2001). Ethics in qualitative research. Journal of Nursing Scholarship, 33(1), 93-96.

Owusu, D. (2019). Assessing fire safety awareness among residents in high-risk areas: A study of Accra, Ghana. African Journal of Safety Studies, 10(1), 98-113.

Owusu, E., Anokye, P., & Tetteh, M. (2020). Public compliance with fire safety regulations in Ghana: A case study of high-risk areas. African Journal of Public Safety, 7(4), 145-162.

Owusu, K., & Darkwah, N. (2021). Zoning laws and fire risks: An evaluation of urban fuel station locations in Ghana. Journal of Environmental Policy and Planning, 12(4), 154-178.

Patton, M. Q. (2015). Qualitative research and evaluation methods (4th ed.). SAGE.

Yin, R. K. (2014). Case study research: Design and methods (5th ed.). SAGE.