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From Flames to Fortune by Improving Fire Risk Management in the Case of Ghana

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Abstract

The study delves into the awareness of fire insurance and fire safety practices among traders in developing economies, particularly focusing on market areas. It reveals a concerning lack of understanding among a significant portion of traders regarding the concept of insurance, leading to misconceptions about its relevance and benefits to their businesses. This highlights the urgent need for educational initiatives aimed at improving awareness and understanding of insurance among traders to mitigate potential risks associated with fire outbreaks. In terms of fire safety awareness, the study finds that traders are generally knowledgeable about the common causes of fire outbreaks, with electricity power fluctuations identified as the primary concern. This underscores the importance of addressing electrical safety measures and ensuring stable power supply in market areas to reduce the risk of fire incidents. However, despite this awareness, the study indicates limited familiarity with advanced fire suppression techniques among traders, such as the use of foam, carbon dioxide, and dry powder. While traders demonstrate basic knowledge of fire suppression methods like using water and sand, there is a need for comprehensive training programs to educate them on more effective and efficient techniques for controlling fire outbreaks. Such training initiatives can equip traders with the necessary skills and knowledge to respond promptly and effectively to fire emergencies, thereby minimizing potential damages and losses. The study also provides recommendations for both traders and policymakers to address the identified challenges. Traders are encouraged to seek information about fire insurance and consider obtaining policies to safeguard their goods and stalls against fire-related risks. Additionally, they should undergo training on fire safety measures and proper use of fire suppression equipment. Policymakers, on the other hand, can play a vital role in implementing fire safety regulations, improving market infrastructure to facilitate fire emergency response, and supporting educational campaigns on insurance awareness and fire prevention. The study underscores the importance of enhancing fire safety practices and insurance awareness among traders in developing economies. By addressing these issues through targeted interventions and policy measures, steps can be taken to mitigate fire risks and protect businesses in market areas, ultimately contributing to the safety and well-being of traders and the communities they serve.

Keywords: Fire Insurance, Fire Safety, Traders, Developing Economies, Market Areas

JEL Codes: O17, Q54, R11, D14

1. INTRODUCTION

Markets play a crucial role in the economy of every nation, and Ghana, a West African country with a population exceeding 23 million, is no exception. In Ghana, markets vary in scale, ranging from major commercial hubs to smaller, local trading centers. What sets Ghanaian markets apart is their remarkable diversity; unlike markets elsewhere, Ghanaian markets typically offer a wide array of goods and services, encompassing virtually everything one might need or desire (Abu, 2013; Wali, 2015). This characteristic reflects the rich tapestry of Ghanaian commerce and underscores the significance of markets as vibrant economic hubs within the country (Ministry of Trade and Industry, 2010). The tradition of trading in Ghana dates back to the arrival of the first settlers in the region (Jammazi and Mokni, 2020; Amartey, 2021). Initially, trade relied on the barter system, with individuals exchanging goods and services based on perceived value and utility. Over time, as trade evolved and became more formalized, cowries emerged as a commonly accepted medium of exchange, known locally as "cedie." Eventually, this currency system transitioned to the use of the Ghanaian cedi, which became the official currency of the country (Ministry of Trade and Industry, 2010). This historical evolution of trade in Ghana reflects the nation's dynamic economic landscape and the adaptive nature of its trading practices. From humble beginnings rooted in barter exchanges to the establishment of a formal currency system, Ghanaian markets have remained pivotal in facilitating economic transactions and fostering commercial activity. As Ghana continues to progress and modernize, its markets remain integral to the fabric of its economy, serving as vital centers of commerce, exchange, and social interaction for communities across the country.

In recent times, Ghana has experienced a concerning surge in fire outbreaks, with notable incidents occurring at various locations including the Ministry of Foreign Affairs, Kumasi Central Market, and the Swedru Melcom Super Market.

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According to Anaglatey (2013), the year 2013 alone saw a staggering 254 fire incidents within a mere 14-day period, highlighting the severity of the situation. Among these incidents, market fires have emerged as a recurring and particularly troubling issue faced by Ghanaian traders. Fire outbreaks pose a significant threat to traders across Ghana, exacerbating existing challenges and vulnerabilities within local markets. One of the primary factors contributing to the severity of this problem is market congestion. The densely packed layout of many markets in Ghana increases the likelihood of fire outbreaks and complicates efforts to effectively contain and mitigate such incidents (Anaglatey, 2013). The lack of proper layouts in Ghanaian markets exacerbates the challenges posed by fire outbreaks, as accessibility for fire tenders becomes severely compromised. Congestion is a pervasive issue across major markets in Ghana, further complicating the situation. Fire hydrants are often obscured by stalls, while lanes that would provide access for fire trucks are repurposed as additional vending spaces. These conditions create a perfect storm for widespread destruction during fire outbreaks, resulting in significant losses in terms of both goods and infrastructure, often amounting to substantial financial burdens for traders. (Boateng, 2013). Unfortunately, many traders do not have insurance coverage for their goods, leaving them vulnerable to the full extent of these losses.

In many developing nations, the informal sector plays a significant role in the economy, often employing a substantial portion of the workforce. However, despite its economic importance, workers in this sector are often marginalized and lack access to essential protections and benefits enjoyed by formal sector employees. This lack of social security leaves them particularly vulnerable to various risks and uncertainties, which can have profound implications for their livelihoods and well-being (Gupta et al., 2021). One of the most pressing concerns for informal sector workers is the lack of protection against financial shocks and emergencies. Without access to formal insurance mechanisms, such as health insurance or unemployment benefits, workers and their families are left exposed to the financial burden of unexpected events such as illness or job loss. In the absence of adequate savings or support networks, these events can push households further into poverty, perpetuating a cycle of vulnerability and economic instability. Moreover, informal sector workers often face precarious working conditions and safety hazards, including the risk of fire outbreaks in congested marketplaces, as highlighted in the case of Ghana. The absence of proper safety measures and fire insurance exacerbates the impact of such disasters, leading to significant losses for traders and hindering their ability to recover and rebuild their businesses (Kousky, 2022). Addressing the challenges faced by informal sector workers requires a multifaceted approach that combines policy interventions, social protection measures, and efforts to enhance financial inclusion. Governments and policymakers must prioritize the development of tailored solutions aimed at extending social safety nets to informal sector workers, ensuring access to essential services such as healthcare, education, and financial support. Additionally, efforts to improve workplace safety and resilience against disasters, such as fire outbreaks, are crucial for protecting livelihoods and promoting sustainable economic development. This may involve investing in infrastructure improvements, promoting awareness of safety practices, and facilitating access to affordable insurance options tailored to the needs of informal sector workers. By addressing the vulnerabilities faced by informal sector workers and empowering them with the necessary support and protections, governments can foster inclusive growth, reduce poverty, and build more resilient and sustainable economies. The lack of insurance coverage among informal sector workers exacerbates their vulnerability to financial shocks and emergencies, pushing many into poverty when unforeseen events occur. This situation is particularly prevalent in markets and trading hubs where workers often lack formal education and rely on informal learning from family members or peers to engage in commercial activities. Without access to formal education or training programs, informal sector workers in markets such as those in Ghana may not fully understand the importance of insurance or how to access relevant insurance products (Brown & Churchill, 1999). As a result, they remain largely unprotected against risks such as fire outbreaks, illness, or economic downturns, which can have devastating consequences for their livelihoods and financial well-being (Guha-Khasnobis & Ahuja, 2004). The reliance on informal channels for learning and knowledge transfer further perpetuates the cycle of vulnerability, as workers may not be exposed to information about available insurance options or understand how insurance can mitigate risks and provide financial security. Additionally, the informal nature of their employment often means that they do not have access to employer-sponsored insurance schemes commonly available to formal sector employees. Addressing the lack of insurance coverage among informal sector workers requires targeted efforts to improve financial literacy, expand access to affordable insurance products, and strengthen social protection mechanisms. This may involve initiatives such as financial education programs tailored to the needs of informal workers, partnerships between insurance providers and community organizations to increase awareness and accessibility of insurance products, and government-led interventions to extend social safety nets to marginalized populations. By empowering informal sector workers with the knowledge and resources to protect themselves against financial risks, policymakers can help break the cycle of poverty and promote economic resilience among vulnerable communities (Larsen, 2000). Additionally, ensuring inclusive access to insurance coverage can contribute to broader efforts to build more equitable and sustainable societies.

The informal sector, often referred to as a "survivalist" economy, is driven by individuals' innate desire to sustain themselves through various economic activities, as described by Akotey, et al, (2011). This sector exhibits distinct characteristics that set it apart from the formal economy. Firstly, it is characterized by the ease of entry, allowing individuals to engage in economic activities without significant bureaucratic hurdles or formal qualifications. Secondly, the informal

sector relies predominantly on indigenous resources, leveraging local materials, skills, and knowledge to conduct business operations. This reliance on local resources fosters economic resilience and reduces dependence on external factors. Family ownership is another hallmark of the informal sector, with many businesses being owned and operated by families or small groups of individuals. This familial structure often facilitates flexibility, quick decision-making, and intergenerational continuity within businesses. Moreover, operations within the informal sector tend to be small-scale, catering to local or niche markets rather than mass production or widespread distribution (Calabrò et al., 2021). This small-scale nature allows for greater adaptability to changing market conditions and customer preferences. Labour-intensive methods and adaptive technologies are commonly employed in the informal sector, reflecting the resource-constrained environment in which businesses operate. These methods prioritize human capital and manual labor over capital-intensive machinery, making them accessible to a wide range of individuals with varying skill levels. Skills acquisition within the informal sector typically occurs outside formal channels, with individuals learning through hands-on experience, apprenticeships, or informal training programs. This informal learning environment fosters practical skills development and entrepreneurship among participants. Furthermore, the informal sector operates within unregulated and competitive markets, where businesses face minimal government oversight or intervention. This lack of regulation can provide opportunities for innovation and entrepreneurship but may also expose businesses to risks such as unfair competition or exploitation.

2. METHODOLOGY

The study focused on assessing the awareness of fire insurance within the informal sector, particularly among traders at Kumasi Central Market. A case study research design was employed to investigate this real-life scenario, allowing for an in-depth examination of whether traders comprehend the concept of fire insurance and whether they have procured insurance policies to safeguard their trading activities. According to Yin (1994), case studies are particularly suitable when researchers seek to explore "how" and "why" questions within a real-life context, especially when investigators have limited control over events and when the focus is on contemporary phenomena. By adopting a case study approach, the research delved into the specific circumstances and experiences of traders at Kumasi Central Market, offering insights into their understanding of fire insurance and their actions regarding insurance coverage. This methodological choice facilitated the exploration of nuanced factors influencing traders' decisions regarding insurance, including their perceptions, attitudes, and experiences related to fire risk and insurance practices (Loewe, 2006). Through the case study methodology, the research aimed to capture the complexities and intricacies of traders' perspectives and behaviors concerning fire insurance within the unique context of the Kumasi Central Market. By examining the realities of traders' experiences and perceptions, the study sought to provide valuable insights for policymakers, insurers, and stakeholders involved in enhancing risk management and insurance practices within the informal sector.

The structured questionnaire aimed to gather comprehensive insights into the traders' awareness and understanding of fire insurance, as well as their uptake of insurance policies to safeguard their trading activities. Each questionnaire item was carefully crafted to elicit specific information related to the traders' perceptions, knowledge, and behaviors regarding fire insurance (Anderson, 1980). The Likert scale response format allowed participants to express varying degrees of agreement or disagreement with statements pertaining to fire insurance awareness and utilization. Out of the 100 questionnaires administered, an impressive 95 were returned, resulting in a high response rate of 95%. This high response rate indicates a strong level of engagement and interest among the traders in participating in the study, enhancing the reliability and validity of the data collected. The selection of Kumasi Central Market as the study setting was deliberate, considering its status as one of the largest and busiest markets in Ghana. This choice ensured a diverse pool of participants representing various sectors and levels of trading experience, thereby enhancing the generalizability of the study findings. Moreover, the random sampling technique employed minimized selection bias and ensured that each trader had an equal chance of being included in the sample (Akakpo, 2004). The demographic characteristics of the participants, such as age range and years of trading experience, were carefully considered to capture a broad spectrum of perspectives and experiences within the trader community. This approach facilitated a nuanced analysis of how age, experience, and other factors might influence traders' attitudes towards fire insurance. Expert validation of the questionnaire by a representative from the Ghana National Fire Service added rigor to the instrument's design, ensuring that it effectively captured relevant aspects of fire insurance awareness and uptake among traders. The pre-test conducted at Bantama Market further bolstered the questionnaire's reliability, demonstrating its stability and suitability for the study context. The meticulous planning and execution of the data collection process underscored the study's commitment to generating robust insights into the awareness and adoption of fire insurance among traders in Kumasi Central Market. By employing rigorous methods and ensuring methodological validity, the study aimed to provide valuable information that could inform policy interventions and initiatives aimed at enhancing risk management practices within the informal sector.

3. RESULTS AND DISCUSSIONS

Table 1 provides insights into the understanding of the concept of fire insurance among traders, offering a comprehensive view of the distribution of respondents' perceptions. Among the surveyed traders, a notable proportion, comprising 10 individuals, express a strong understanding of fire insurance. This indicates a solid grasp of the principles and benefits

associated with insuring against fire-related risks, constituting 10.53% of the total sample. Furthermore, there is a considerable portion of traders, totaling 15 respondents, who indicate that they understand the concept of fire insurance. This group likely possesses a reasonable comprehension of the fundamentals and importance of securing insurance coverage against fire hazards, representing 15.79% of the surveyed population. Interestingly, a significant number of traders, accounting for 22 individuals, remain undecided about their understanding of fire insurance. This suggests a level of ambiguity or lack of clarity among this segment of respondents, making up 23.16% of the total sample. On the other hand, a noteworthy proportion of traders, comprising 18 respondents, admit to not understanding the concept of fire insurance. This group likely lacks sufficient knowledge or awareness regarding the principles and mechanisms of fire insurance, representing 18.94% of the surveyed traders. Moreover, the highest percentage of respondents, consisting of 30 traders, strongly indicate that they do not understand fire insurance. This suggests a significant gap in knowledge or misconceptions about the concept among this segment, making up 31.58% of the total sample. Overall, the distribution of respondents across these categories highlights varying levels of comprehension and awareness regarding fire insurance among traders, indicating potential areas for education or clarification within the trading community.

Table 1: Outcomes Traders Understanding

Respondents	Strongly understand	Understand	Undecided	Do not understand	Strongly Do not understand	Total
Traders	10	15	22	18	30	95
Percentages	10.53%	15.79%	23.16%	18.94%	31.58%	100

Table 2 presents the possible causes of fire outbreaks in the Kumasi Central Market, providing valuable insights into the primary factors contributing to such incidents. The data is organized based on the responses received, along with corresponding percentages and rankings. At the forefront, power fluctuations emerge as the leading cause of fire outbreaks, with 25 respondents, constituting 26.32% of the total responses, attributing fires to this factor. This indicates a significant concern regarding the instability of the power supply and its potential to trigger fire incidents within the market. Following closely, cooking with naked fire in the market ranks as the second most cited cause, with 18 responses representing 18.95% of the total. This highlights the risks associated with open flames and cooking practices within the market premises, underscoring the need for safer cooking methods and fire prevention measures. Additionally, overloading of electrical appliances is identified as another prominent cause of fire outbreaks, with 15 responses accounting for 15.79% of the total. This suggests a potential issue with electrical safety practices and the need for proper management of electrical loads to mitigate fire risks effectively. Moreover, respondents also point out improper and old electrical wiring systems as contributing factors, with 12 responses accounting for 12.63% of the total. This underscores the importance of maintaining and updating electrical infrastructure to prevent fire incidents resulting from faulty wiring. Furthermore, illegal tapping of electrical power from the national grid and the use of substandard electrical materials are identified as significant concerns, garnering 10 responses (10.52%) and 8 responses (8.42%), respectively. These findings emphasize the risks associated with unauthorized electrical connections and the importance of quality control in electrical installations. Lastly, the use of defective generators is mentioned by 7 respondents, representing 7.37% of the total responses. This highlights the need for proper maintenance and inspection of power generation equipment to minimize fire hazards. In summary, the data underscores a range of factors contributing to fire outbreaks in the Kumasi Central Market, highlighting the importance of addressing electrical safety practices, fire prevention measures, and infrastructure maintenance to enhance safety within the market premises.

Table 2: Possible Causes of Outcomes

Causes	Responses	Percentages	Rankings
Power Fluctuations	25	26.32%	1
Cooking with naked fire in the market	18	18.95%	2
Overloading of electrical appliance	15	15.79%	3
Improper and old electrical wiring system	12	12.63%	4
Illegal tapping of electrical power from the national grid	10	10.52%	5
Use of substandard electrical materials	8	8.42%	6
Use of defective generators	7	7.37%	7
Total	95	100.00	

Table 3 provides insights into traders' knowledge regarding the utilization of firefighting gadgets to control fire outbreaks in the Kumasi Central Market. The data presents the number of respondents who are aware of various firefighting materials and their corresponding percentages. All respondents, accounting for 100% of the total, demonstrate knowledge of using water as a firefighting agent. Water is a fundamental and widely available resource for extinguishing fires, and the high percentage reflects a strong understanding among traders regarding its effectiveness in firefighting. Similarly, all

respondents also exhibit awareness of using sand as a firefighting material, representing another 100% of the total. Sand is commonly used for smothering small fires and preventing the spread of flames, and the unanimous recognition of its utility reflects a comprehensive understanding among traders. In contrast, a smaller percentage of respondents demonstrate familiarity with other firefighting materials. Only 5.26% of traders are aware of using foam, highlighting a relatively limited understanding of this firefighting agent among respondents. Similarly, a slightly higher percentage of traders, 7.37%, indicate knowledge of using carbon dioxide for firefighting purposes. Carbon dioxide is typically employed for suppressing fires involving flammable liquids and electrical equipment, and the moderate level of awareness suggests a partial understanding among traders regarding its application. Additionally, dry powder, another firefighting agent, is recognized by 8.42% of respondents. Dry powder is effective for tackling fires fueled by combustible materials such as wood, paper, and textiles, and the percentage indicates a relatively lower level of familiarity among traders compared to water and sand. The traders demonstrate comprehensive knowledge of using water and sand for firefighting, there appears to be room for improvement in understanding the application of foam, carbon dioxide, and dry powder. Enhancing awareness and education regarding the usage of these firefighting materials could contribute to better fire safety preparedness and response strategies within the market premises.

Table 3: Outcomes Traders Knowledge

Respondents	Water	Sand	Foam	Carbon dioxide	Dry powder
Traders	95	95	5	7	8
Percentages	100%	100%	5.26%	7.37%	8.42%

4. CONCLUSIONS

The role of traders in economic development cannot be overstated, as they play a pivotal role in linking producers with consumers and facilitating the flow of goods and services within the economy. They serve as intermediaries, breaking bulk quantities into smaller units that are accessible to consumers, thus meeting the diverse demands of the market. Without traders, the economy would face significant disruptions, as other sectors would struggle to access the goods they need for production, potentially leading to stagnation. However, despite their crucial role, traders in informal markets often lack the financial protection necessary to safeguard their livelihoods. This study highlights the challenges faced by informal market traders, who operate without adequate financial security. The absence of protection leaves them vulnerable to various risks, including fire outbreaks and natural disasters, which can have devastating consequences and push them deeper into poverty. Informal market traders, despite their hard work and efforts, remain susceptible to unforeseen events that can wipe out their livelihoods and push them back to square one. Therefore, addressing the financial vulnerability of informal market traders is essential for promoting economic development and poverty reduction. Providing them with access to financial services, insurance, and support mechanisms can help mitigate risks and empower them to invest in their businesses and improve their economic well-being. By protecting and supporting traders in the informal sector, policymakers can contribute to more inclusive and resilient economic growth, ensuring that the benefits of development reach all segments of society.

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