ACCESSING PUBLIC PERCEPTION OF THE NATIONAL AMBULANCE SERVICE, GHANA

DECLARATIONS

STUDENT'S DECLARATION

I, Peace Awusi Norgbedzi, hereby declare that this research project is my own work and has not been submitted to any other institution for any award.

..... DATE: ..11TH Dec 2025

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SUPERVISOR'S DECLARATION

I, the undersigned supervisor, declare that I supervised the preparation and presentation of this work in accordance with the guidelines for supervision of MA dissertation as laid down by the University of Media, Arts, and Communication (UniMAC).

..... DATE: .....11TH DEC 2025

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DEDICATION

This book is dedicated sincerely and humbly, first and foremost, to the Most High God, whose unshakeable grace, wisdom, and might have guided me through every step of this scholarly process. In His divine wisdom, protection, and provision, without which this success would never have been. I also dedicate this thesis to Dr. Foster Ansong Bridjan and My Mum, Mad. Gladys Owusua Akwetey, their unwavering love, inspiration, and sacrifices have been the pillars of my life and academic growth. Their prayerful encouragement, values, and trust in me gave me the resilience to persevere, even in moments of adversity and uncertainty.

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Finally, I present this pledge to all frontline health professionals, particularly members of the National Ambulance Service of Ghana (NAS), whose tireless commitment to saving lives in challenging conditions embodies the very essence of courage, sacrifice, and service to society. May this research be a small contribution towards bolstering their invaluable contribution to our communities.

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ABSTRACT

Emergency Medical Services (EMS) are widely recognized as having an essential role in the prevention of preventable deaths and improved health outcomes in case of critical emergencies. In Ghana, the establishment of the National Ambulance Service (NAS) was a strategic step towards strengthening the country's healthcare delivery system, particularly through the provision of pre-hospital emergency care. Despite laudable progress in enhancing ambulance numbers and national coverage, there is public opinion about NAS that is controversial, based on a mix of admiration for its ability to save lives and deep skepticism about its efficiency, accessibility, and acceptability. Against this background, the present study aimed to assess public opinion towards the National Ambulance Service in an effort to understand how trust, communication, socio-cultural values, and urban–rural differences shape utilization.

Qualitative research methodology was used in order to facilitate in-depth analysis of community experiences and meanings surrounding NAS. Semi-structured interviews were conducted in six purposively selected communities with differing contexts: Bongo, Salaga, and Kete Krachi as rural, and Takoradi, Madina, and Bantama as urban. This format provided a balanced comparative view for comparing both structural and cultural dimensions. Data were subjected to systematic coding, open, axial, and selective, and yielded the derivation of five broad thematic categories. The analysis was also enriched by basing the findings on viable theoretical frameworks, including Diffusion of Innovations Theory (Rogers, 2003), Health Belief Model (Rosenstock, 1974), Theory of Planned Behavior (Ajzen, 1991), Service Quality (SERVQUAL) Model (Parasuraman, Zeithaml & Berry, 1985), Social Construction of Technology (Bijker, Hughes & Pinch, 1987), Trust and Confidence Theory (Luhmann, 1979), Systems Theory (Bertalanffy, 1968), and Risk Perception Theory (Slovic, 1987).

The study revealed five strong and interconnected findings. In the first, ambulances were universally needed but not trusted. In both urban and rural settings, the ambulance was described by participants as "the difference between life and death" but also expressed distrust in the form of postponement, capricious reliability, and fear of hidden costs like requesting donations of fuel. Second, the ambulance was culturally positioned both as a sign of death and a lifeline of hope. While residents from urban areas tended to give favorable reports of lives saved, rural communities

tended to stigmatize ambulances as "death cars," cultivating hesitation to call NAS. Third, 112 hotline distrust and communication barriers persisted as a common problem, with city residents complaining of unanswered calls and rural residents mentioning blatant unfamiliarity with the toll-free number, compounded by weak mobile network reception. Fourth, affordability and access obstacles undermined utilization, as certain communities were asked to pay for gas and others avoided NAS due to fears of sneaky charges or slow response in congested city traffic. Finally, differential access inequities across urban and rural environments were apparent: while urban communities had public visibility of ambulances but grumbled about inefficiency, rural communities grumbled about structural exclusion, bad road conditions, and a virtual absence of stationed ambulances.

Theoretically, the findings are in agreement with and extend earlier studies. The Risk Perception Theory (Slovic, 1987) explains the paradox where citizens perceive NAS as saving lives yet avoid it due to perceived inefficiency. The Health Belief Model (Rosenstock, 1974) highlights insufficient "cues to action" in rural areas where awareness of the hotline is low. Theory of Trust and Confidence (Luhmann, 1979) places the way in which repeated service failure drains fragile public trust, but single positive experiences are not enough to balance inherent inefficiencies. Social Construction of Technology (SCOT) Theory (Bijker et al., 1987) illustrates the way that cultural understandings redefine the use of ambulances as a hearse in some communities and as a life-saving technology in others. Along with this, Systems Theory (Bertalanffy, 1968) demonstrates how unevenness in road infrastructures, allocation of ambulances, and communications systems worsens the overall functioning of the EMS system. All the theories together provide an interdisciplinary lens for locating community perception of NAS in broad contexts of trust, behavior, culture, and systemic performance.

The study contributes to empirical and conceptual insight. Empirically, it fills a gap in Ghanaian research by putting analysis based on the community at the forefront of NAS, going beyond service statistics and rhetoric of policy to engage in the realities of living citizens. Conceptually, it takes a step further in incorporating cultural construction, risk perception, and trust in analysis of emergency healthcare services in low- and middle-income contexts. Through a fusion of empirical data and theory, the research clarifies that an understanding of NAS is both a reflection of the

effectiveness of services and co-produced by cultural stories, structural disparity, and fragile trust relationships.

The research summarizes that NAS is regarded as necessary but inadequate. Urban residents hear it but doubt its quality, while rural residents hear of it but doubt its accessibility. This paradox undermines the legitimacy of the service and limits the service from being an accepted public good for all. To solve these challenges, several recommendations are offered. These are: enhancing geographic reach in rural and underserved areas; strengthening communication infrastructure and availing guaranteed 112 hotline connectivity; overcoming cultural stigmas by working with chiefs, elders, and religious leaders; enhancing transparency to address the concerns about hidden expenses; enhancing professional visibility and training of EMT staff; and integrating ambulance accessibility into overall health and transport infrastructure development. Subsequent research needs to examine mixed-methods approaches, longitudinal studies to track shifting attitudes, cross-regional comparison across Sub-Saharan Africa, and the facilitator functions of digital technologies such as GPS monitoring and telemedicine in building trust in EMS delivery.

In summary, this study identifies that the Ghana National Ambulance Service is at a crossroads: while symbolically recognized as a valuable pillar of emergency medicine, it is also silently undermined by inefficiencies, cultural stigma, and institutional disparities. Closing the gap does not only need to involve operational reforms but also culturally aware communication campaigns, deliberate trust-building programs, and systemic integration within Ghana's broader healthcare and infrastructural networks. It is only at that point that NAS can transition from being needed but distrusted to widely accepted and trusted lifeline for all in Ghana.

TABLE OF CONTENTS

CHAPTER ONE

3.0 CHAPTER THREE: METHODOLOGY

CHAPTER FOUR: FINDINGS AND DISCUSSIONS

CHAPTER ONE

2.0 INTRODUCTION

Emergency medical services (EMS) are a vital pillar of support in any public health system that forms the first line of organized response for life-threatening emergencies. They are present to provide timely medical care to individuals facing emergencies such as cardiac arrest, accidents, trauma, maternal distress, or acute illness before taking them to a healthcare center (World Health Organization [WHO], 2018). By facilitating rapid stabilization, transport, and medical treatment, EMS can drastically reduce mortality rates, minimize long-term disability, and enhance public confidence in health delivery systems (Al-Shaqsi, 2010). Globally, the functionality of an EMS has been seen as a primary marker of a nation's health sector responsiveness and resilience towards protecting its citizens from emergencies (Mock et al., 2019).

Ghana's National Ambulance Service (NAS) was launched in 2004 as one of the government's initiatives to support emergency preparedness and pre-hospital care (Afari et al., 2014). Since the establishment of the NAS, it has eased the transition between medical emergencies and hospital care by dispatching ambulances, qualified paramedics, and emergency medical technicians (EMTs) to the nation's communities (Aikins & Koram, 2017). The service is not just expected to move patients safely but also provide on-site life-saving interventions that boost the prospects for survival before the patients are transported to hospital facilities (NAS, 2020). The NAS has, over the years, expanded coverage to all 16 regions of Ghana, especially after the "One Constituency, One Ambulance" initiative in 2020, which witnessed a massive expansion of its fleet and visibility throughout the country (Ministry of Health [MoH], 2021).

Despite all these changes, the public perception of NAS has still remained convoluted and, on occasion, polarized. As much as many citizens agree on the crucial role played by the service, typically providing examples of cases where ambulances have saved lives in accidents on the road, maternal complications, and disaster situations (Adongo et al., 2014), there still exists suspicion regarding the reliability, response time, professionalism, and availability of the service. Others of the public continue to believe that ambulances are slow to arrive, that employees may lack sufficient resources, or that the service is unavailable in rural and poor communities (Osei-Ampofo et al., 2018). In other cases, citizens use taxis or private vehicles for emergency transport even

where ambulances are available, due to distrust or previous adverse experiences (Darteh et al., 2021).

Public opinion determines utilization of health and emergency services. Trust and belief in the NAS will have a direct impact on citizens calling an ambulance in times of need or resorting to alternative, and sometimes hazardous, means of transport (Mould-Millman et al., 2015). Where belief is subject to misinformation, cultural effects, or personal bad experiences, even well-funded services are likely to be underutilized. The credibility and reputation of the NAS, therefore, not only rely on its operational capacity but also on public perception of its effectiveness, responsiveness, and professionalism (Donkor et al., 2020).

Since EMS has a life-saving function, measuring how citizens evaluate the NAS is extremely essential. Systematic public perception analysis provides insight into discrepancies between accessible service delivery and expectations from the community. It also reveals avenues for better communication, the building of trust, dispelling misconceptions, and enhancing the service overall (WHO, 2017). Without this awareness, the service risks ongoing underutilization that compromises its mandate to provide equitable and reliable emergency care for everyone in Ghana.

This study, therefore, seeks to analyze the public attitude towards the National Ambulance Service in Ghana. Special emphasis is laid on how awareness levels, trust, personal and community experience, and socio-cultural factors impact attitudes and behaviors towards the service. Through the identification of these perceptions, the study anticipates making contributions towards policy development, innovation in the service, and developing effective communication strategies that can enhance the image and performance of the NAS in Ghana.

1.1 BACKGROUND TO THE STUDY

Emergency medical services (EMS) are increasingly playing a crucial role in the health situation of the world, especially as countries are working to improve health outcomes and reduce preventable deaths. According to the World Health Organization (WHO, 2018), access to timely pre-hospital care may mean life or death in critical medical emergencies such as trauma, cardiac arrest, and complications in pregnancy. In the majority of developed countries, EMS are highly advanced, including formal call centers, efficient dispatching systems, well-equipped ambulances, and trained personnel that provide high-quality pre-hospital care (Al-Shaqsi, 2010). In contrast, the majority of low- and middle-income countries are unable to establish an efficient EMS due to budgetary, infrastructural, and human resource constraints, and thus the influence of public perception and trust is even more important in shaping utilization (Mould-Millman et al., 2015).

In Ghana, there was a demand for an organized emergency response system in the late 1990s and early 2000s, particularly due to rising road traffic accidents, maternal deaths, and other emergencies where delays in accessing medical care were proving to be fatal (Aikins et al., 2012). In response, the government established the National Ambulance Service (NAS) in 2004, under the Ministry of Health, with technical and logistic support from international partners (Oppong et al., 2020). The eventual enactment of the National Ambulance Service Act, 2010 (Act 825), subsequently provided the legal framework for its activities, ensuring that the service was well-institutionalized as a national emergency response agency (Republic of Ghana, 2010).

Since the NAS has been implemented across all 16 regions of Ghana, with additional support provided by initiatives such as the "One Constituency, One Ambulance" program, which distributed over 300 ambulances to constituencies last year (Ghana Health Service, 2020). The service responds to medical emergencies, transports patients, aids in disaster management, and facilitates inter-hospital transfer. Interestingly, NAS is staffed by trained paramedics, Emergency Medical Technicians (EMTs), and dispatch officers who try to stabilize patients before they get to hospitals, hence improving the survival chances (Adzei & Atinga, 2012).

Despite these achievements, the service continues to be confronted with several challenges that dictate how the public perceives it. Operational hindrances such as delayed response times, inadequate rural road networks, constrained budgets, insufficient public education, and prank calls

typically hinder service delivery (Afari et al., 2018). Prank calls, for example, which in some instances make up a significant proportion of emergency calls, consume time and resources, rendering the NAS less responsive to actual emergencies (Oppong et al., 2020). Further, occasional reports of failed ambulances, a lack of adequate medical supplies, or alleged unprofessional conduct have also impacted polarized public opinion (Boateng et al., 2021).

Lastly, socio-cultural orientations also play a vital role in shaping perception and utilization. In the majority of Ghanaian societies, especially rural areas, people still prefer to transport patients to health centers in taxis, private vehicles, or even motorbikes because they are afraid of spending too much time waiting for an ambulance (Tawiah et al., 2021). Some have a prior belief that ambulances are only meant for transporting dead bodies, and others believe the service is not meant for the poor (Mould-Millman et al., 2015). These perceptions, either based on misapprehension or fact, weaken the trust required for the NAS to function effectively.

There is research evidence in other countries that the effectiveness of EMS systems has a close relationship with public confidence, awareness, and trust. To illustrate, research in Nigeria, South Africa, and India indicates that even if ambulances are available, usage is low if the general public questions their effectiveness or is apprehensive of implicit charges (Sanghavi et al., 2015; Sefah et al., 2020). In Ghana, however, research-based knowledge on the perceptions of the NAS by the populace is still in its infancy, hence the knowledge gap that needs to be filled to inform both policy and practice.

In light of this, assessing public perception of the NAS is timely and essential. Based on knowing how citizens perceive the service, policymakers and health administrators will be in a position to identify utilization hurdles, rectify negative perceptions, and build more solid community trust. These findings are not only needed to improve delivery of the service but also to ensure that the huge investment in bolstering the NAS is translated into tangible public health gains (WHO, 2018).

1.1.1 EMERGENCIES

Emergencies are unforeseen and unpredictable conditions that directly endanger human life, health, or safety and need immediate action (World Health Organization [WHO], 2018). In healthcare, emergencies include life-threatening conditions such as cardiac arrest, stroke, severe bleeding, obstetric emergencies, road traffic crash injuries, burns, and trauma due to natural or anthropogenic disasters. What makes emergencies different from routine health issues is their time-sensitive nature. Even a brief delay can determine whether an individual survives, recuperates with permanent disability, or dies (Hirshon et al., 2013). At the international level, WHO (2018) emphasizes that effective emergency management is a core component of resilient health systems. Pre-hospital care, particularly when it is timely, reduces unnecessary deaths and accelerates recovery, especially in low- and middle-income nations whose health infrastructure would otherwise be overwhelmed (Al-Shaqsi, 2010). Emergencies have emerged as a major public health concern in Ghana. Road traffic injuries, for instance, are among the leading reasons for trauma-related death (Amponsah, 2021), and complications of pregnancy such as postpartum hemorrhage and obstructed labor continue to be key drivers of maternal mortality, particularly in rural and peri-urban women whose hospital access is limited (Osei-Afriyie et al., 2022).

Literature also shows that the incidence of emergencies is on the increase due to a rapid pace of urbanization, population growth, and road traffic accidents that contribute to the need to set up organized emergency medical systems (Mock et al., 2019). Most of the emergencies in Ghana, however, still cause unnecessary fatalities due to delayed diagnosis, inadequate first aid, and delayed ambulance to health facilities (Adongo et al., 2021).

In the researcher's opinion, emergencies test the National Ambulance Service (NAS) to the limit. The promptness, competence, and timeliness of the NAS emergency response influence, to a large degree, public opinion about the service. If residents believe the NAS is unreliable to arrive on time or provide adequate care, they are likely to opt for alternative, less safe routes to receive care, which generally worsens outcomes (Boateng et al., 2020).

1.1.2 AMBULANCE

An ambulance is not just a car, but a mobile medical facility that is designed to offer life-supporting interventions and safe transport to individuals who are experiencing medical emergencies. Staffed by trained Emergency Medical Technicians (EMTs) or paramedics, ambulances are equipped with oxygen therapy equipment, cardiac monitors, wound care equipment, trauma kits, and resuscitation equipment, all of which allow for the provision of on-site medical care during transport to definitive hospital care (Pell et al., 2010). Essentially, the ambulance acts as the very necessary bridge between the scene of an emergency and the hospital, ensuring continuity of care. Globally, ambulances are regarded as the spinal cord of emergency medical systems, facilitating rapid response and coordinated care (Al-Shaqsi, 2010). Ambulances in high-income countries are well equipped with dispatch centers, GPS tracking, and telemedicine technology, which allows real-time communication with hospitals for efficient case management (Murray et al., 2017).

In Ghana, ambulance services have expanded tremendously since the NAS was established in 2004. Since its creation with a few vehicles, the service gained extensive public attention in 2020 when the government launched the "One Constituency, One Ambulance" initiative, which distributed more than 300 ambulances nationwide to improve universal access to emergency care (Ministry of Health [MoH], 2020).

Despite this progress, problems persist. Studies reveal that ambulances in Ghana are sometimes culturally misconceived or underutilized. Ambulances, for example, are culturally misconceived by some communities as vehicles for transporting dead bodies rather than saving lives (Aikins, 2019). Late responses, mechanical breakdowns, and inadequate equipment have been complained of by others (Amoako, 2021). Although numerous reports of lives saved through ambulance interventions exist, persistent negative perceptions erode public trust in the service.

The researcher, therefore, argues that Ghanaian ambulances are more than functional vehicles; they are embodiments of public hope, trust, and reliability in moments of emergency. Where ambulances are perceived to be reliable and efficient, they strengthen belief in the health system. Conversely, perceptions of unreliability or unavailability are likely to deter citizens from utilizing ambulances even in situations of life-threatening emergencies (Adongo et al., 2021). An

investigation into how Ghanaians perceive ambulances is thus crucial in determining the extent to which the NAS is utilized or shunned.

1.1.3 SERVICE

A service is the structured and orderly provision of assistance designed to meet specific public needs. In the context of this research, "service" is employed to describe the National Ambulance Service (NAS), Ghana's official pre-hospital emergency care service. Established in the Ministry of Health and empowered by the National Ambulance Service Act, 2010 (Act 825), the NAS is mandated to provide professional pre-hospital care, safe transport, and support in disaster response across the country (Government of Ghana, 2010). The success of a service such as the NAS is not only quantified by availability but also by quality, accessibility, professionalism, and efficacy. Public administration literature emphasizes accountability, responsiveness, and equity as essential if any public service is to attain the trust of the citizens (Denhardt & Denhardt, 2015). In health, perception and trust are particularly important because public trust has a profound influence on utilization and compliance (Gilson, 2003).

Literature in Ghana depicts a dual narrative of the NAS. On one side, there are accolades for lives saved, expansion of nationwide coverage, and pioneering organized pre-hospital care (Amponsah, 2021). Conversely, there are still concerns about prank calls, spotty rural-urban coverage, low funding, and the occurrence of unprofessionalism among staff (Boateng et al., 2020). Media stories have a tendency to exaggerate both successes and failures, hence shaping public opinion.

To the researcher, the NAS should not be viewed as a technical entity that transports patients but rather a public service whose success cannot be divorced from citizen perception. The legitimacy and survival of the NAS are not only a matter of fleet size or personnel but also whether the Ghanaian public perceives it to be reliable, accessible, and trustworthy in times of emergency. Evaluating the public perception of the NAS as a service, therefore, provides valuable insight into its operational effectiveness and areas for improvement.

Together, the concepts of emergency, ambulance, and service provide the foundation upon which the National Ambulance Service (NAS) is built. Emergencies are those unexpected and usually life-critical events that necessitate an instant need for action. In the absence of emergencies, there would be no necessity for acute systems of response. Ambulances, in this context, are the pivot vehicles of response, providing not only transport but also mobile health care units with critical life-support technology such as oxygen delivery apparatus, defibrillators, suction devices, and trauma management kits (Al-Shaqsi, 2010; Harrison & Walton, 2019). They then redefine the dimension of response from mere "transport" to "prehospital care," and therefore their inexorable position in the continuum of health care delivery.

But ambulances cannot function in isolation from being organized as a part of a service system. Here is where the meaning of "service" comes in. A service system ensures ambulance services are not random but systematically provided by qualified Emergency Medical Technicians (EMTs), local and national control centers, standard operating procedures, and clearly defined referral systems (WHO, 2000; Razzak & Kellermann, 2002). In essence, the "service" element provides coordination, effectiveness, and sustainability with the promise of timely and equitable deployment of resources to communities.

As a whole, NAS can thus be visualized as a survival chain that saves lives. The chain begins with the detection of an emergency, followed by prompt alerting of dispatch centres, the dispatching of ambulances, and professional provision of pre-hospital care by EMTs. The process ends with the transfer of the patients to definitive hospital treatment, during which specialized care is delivered (Aacharya et al., 2016). Every element of this chain depends on the others, and an error at any point, either delayed recognition of an emergency, unavailability of an ambulance, or poor coordination, can jeopardize the outcomes of the patients and cause higher mortality. Therefore, the integration of these three concepts not only justifies the purpose of NAS but also demonstrates its crucial position in Ghana's general healthcare delivery system.

1.1.4 NATIONAL AMBULANCE SERVICE'S ROLE IN THE HEALTH SECTOR

The National Ambulance Service plays a key role in Ghana's health sector by bridging the gap between emergency health situations that occur within communities and ultimate treatment at health facilities. As opposed to conventional healthcare delivery that usually begins once a patient is admitted into a hospital or clinic, NAS is primarily aimed at pre-hospital care, a monumental period of medical intervention whose absence may mean life or death (Mock et al., 2019). Beyond patient transportation, such a role involves on-scene stabilization, triage, coordinated referrals, and emergency preparedness education to the public. Initially, NAS is the first point of medical treatment in emergencies. Conditions such as cardiac arrest, stroke, trauma, obstetric emergencies, and road traffic injuries require immediate action within the "golden hour," a time-sensitive window in which immediate medical intervention greatly improves survival and recovery (World Health Organization [WHO], 2018). The presence of trained Emergency Medical Technicians (EMTs), accompanied by equipment such as automated external defibrillators (AEDs), oxygen therapy, and first aid kits, ensures the institution of life-saving interventions early before hospitalization (Asiamah et al., 2022). This averts unnecessary deaths, improves prognosis, and enhances the health system's strength.

Secondly, NAS significantly averts avoidable deaths and disability in Ghana. Research has shown that trauma deaths, maternal complications, and acute medical emergencies are most frequently caused by a failure to administer patients with timely treatment (Gyedu et al., 2016). By offering treatment consisting of bleeding control, CPR, airway management, and emergency evacuation for transport to a hospital, the service minimizes long-term morbidity and disability. In the backdrop where maternal mortality in Ghana remains high and more road traffic accidents continue to happen, NAS is crucial to the achievement of improved health gains.

Third, NAS increases the equity of healthcare access in Ghana. Healthcare infrastructure for the country is typically centralized in central city locations, hence unable to reach rural and peri-urban areas (Aikins et al., 2017). The "One Constituency, One Ambulance" initiative has considerably widened coverage to ensure at least one functional ambulance in each constituency. The intervention, aside from improving access to emergency care, also addressed territorial disparities,

thereby promoting health equity and pushing Ghana's agenda towards universal health coverage (Ministry of Health, 2020).

Furthermore, NAS is vital to the health of mothers and newborns. Referral for emergency care at referral facilities is required for obstetric complications such as obstructed labor, eclampsia, and postpartum hemorrhage. Ambulance transfer by EMTs is quick, and resuscitation reduces maternal and newborn mortality. This directly supports Ghana's progress toward the attainment of Sustainable Development Goal (SDG) 3 in the reduction of maternal mortality and healthy lives for all (United Nations, 2015).

Apart from that, NAS is at the center of mass casualty and disaster response. The service is frequently dispatched in such occurrences as road traffic accidents involving several victims, fires, floods, and even outbreaks. Its ability to provide coordinated evacuation, triage, and hospital coordination is all part of the core of Ghana's disaster management approach (National Disaster Management Organization [NADMO], 2021). Not only does the NAS provide on-the-spot medical assistance, but it also provides national resilience in times of calamity.

Moreover, NAS improves the overall health infrastructure. By easing the transportation of patients to the most appropriate facility within the required time, NAS improves the effectiveness of referral, reduces congestion in the lower-level facilities, and improves continuity of care (Abor et al., 2021). The service also conducts community-based health education, such as teaching residents CPR and primary first aid. These outreach interventions foster a culture of preparedness, improve public emergency consciousness, and amplify collective accountability for the salvation of lives.

Lastly, NAS increases people's trust and confidence in healthcare delivery. A responsive and dependable ambulance service is government care for lives. All successful rescue missions not only validate the effectiveness of NAS but also increase the confidence of people in the entire health system in Ghana (Osei & Agyeman, 2020).

From the researcher's point of view, these roles emphasize the crucial role of NAS in Ghana's health sector. Nevertheless, public attitude plays a significant role in determining the capacity of NAS to deliver its mandate to the full extent. If the people perceive the service as unreliable, unapproachable, or ineffectively managed, they are likely to be reluctant to call upon it when in

need, opting instead to use unsafe means like taxis or personal cars. Therefore, measuring public perception of NAS is crucial to ensure that its life-saving capacity is realized to the fullest and that it remains a pillar in Ghana's health system.

1.1.5 **HISTORY OF THE NATIONAL AMBULANCE SERVICE (NAS), GHANA**

1.1.5.1 **POLICY BACKGROUND AND RATIONALE**

The history of creating an emergency medical response system in Ghana came from an understanding that thousands of lives were lost because there was no pre-hospital care in an organized manner. Before 2004, Ghana lacked any organized ambulance service, and emergencies of patients, especially accident victims, were transported in taxis, private vehicles, or wheelbarrows in the rural areas (Osei-Ampofo et al., 2013). Without trained personnel to provide pre-hospital care, many cases degenerated during transit, leading to unnecessary mortality. In the late 1990s and early 2000s, Ghana's increasing burden of road traffic accidents, maternal emergencies, and disaster emergencies in turn highlighted the need for a structured ambulance system (Aikins, 2014). The Ministry of Health and the Ghana Health Service worked together to establish pre-hospital emergency care as part of overall health sector reform to achieve equity and access as outlined in the Health Sector Five-Year Programme of Work (2002–2006) (Ministry of Health, 2002).

1.1.5.2 NAS ESTABLISHMENT (2004)

The National Ambulance Service was inaugurated in 2004. The 9th of May 2001 Stadium disaster provided the leverage for the formation of NAS, by the Department of Health, with the mandate to provide emergency medical care and safe transportation for sick and injured individuals (NAS, 2010). Its operation started on a pilot basis in Accra, Kumasi, and Tamale employing only seven ambulances and about 30 trained Emergency Medical Technicians (EMTs) (Osei-Ampofo et al., 2013). At the outset, NAS faced many challenges, including the absence of sufficient public awareness, skepticism towards its usability, and meager resources. The public was not adequately familiar with pre-hospital care, and there were some people who viewed ambulances as merely

vans for transporting corpses, not for rescue (Aikins, 2014). Nevertheless, the setup in 2004 represented a turning point in the approach used by Ghana in managing emergencies.

1.1.5.3 EXPANSION AND DEVELOPMENT (2006–2015)

Following the pilot phase, NAS expanded to cover additional areas. In 2006, the National Ambulance Service Training School in Nkenkaasu, Ashanti Region, was established to educate EMTs and build capacity in professional pre-hospital care (NAS, 2018). The training school designed a formal curriculum conforming to international standards but adapted it to be locally relevant. By 2010, the service had grown to reach all 10 regions of Ghana with over 100 ambulances and hundreds of EMTs (NAS, 2010). NAS began establishing Regional and District Stations, each tied into a central command and control system to coordinate dispatch. This period also saw foreign collaborations with organizations such as the KNUST–Kwame Nkrumah University of Science and Technology Department of Emergency Medicine and external funders such as the Danish International Development Agency (DANIDA) that helped consolidate the service (Osei-Ampofo et al., 2013).

One of the key reforms was the implementation of the toll-free emergency number "193", which offered a direct channel for citizens to access ambulance services. Utilization of this innovation was essential in reducing response times and accessibility. Abuse of the line and prank calls, however, proved to be a major setback, channeling resources and hampering genuine emergency responses (Aikins, 2014).

1.1.5.4 SIGNIFICANT REFORMS AND THE "ONE CONSTITUENCY, ONE AMBULANCE" PROGRAM (2017–2020)

The highest expansion of NAS occurred in 2020 as part of the Government of Ghana's flagship "One Constituency, One Ambulance" initiative. 307 new ambulances were commissioned and distributed to every constituency, with at least one in each constituency (Ministry of Information, 2020). The initiative was the biggest investment ever made in Ghana's pre-hospital care system and sought to improve gaps in access, especially in rural and disadvantaged constituencies. The 2020 reforms also entailed the elevation of the NAS command system with digital-tracking technology, improved dispatch centers, and more EMT recruitment and training. The initiative brought NAS into the era from an urban-bias service to a nationally covered service.

1.1.5.5 CURRENT STATUS AND OPERATIONS (2021–PRESENT)

As of 2022, NAS operates in all 16 regions of Ghana with over 350 ambulances and thousands of certified EMTs (NAS, 2022). The service is now included in the national disaster response apparatus, cooperating with the Ghana Police Service, the Ghana National Fire Service, and the National Disaster Management Organization (NADMO) in mass casualty incidents and national disasters. Even with its achievements, NAS continues to face recurring challenges, including:

1. Lack of adequate funding and logistics to maintain ambulances and conduct training.
2. Prank calls and abuses of the 193 hotline, which take up resources.
3. Traffic congestion and inefficient transportation networks lead to delays in response.
4. Mistrust and misinformation from the public, with some communities remaining reluctant to call ambulances in case of emergency (Aikins, 2014; NAS, 2022).

Nevertheless, NAS is a critical pillar of the health system in Ghana, constituting the initial source of medical contact in emergencies and preventing unnecessary deaths. The growth of the service from a tiny pilot program to a nationwide institution mirrors the central position of emergency medical care in building health systems and preventing mortality.

Currently in 2025, the Service has employed a total of 3,344 Emergency Medical Technicians (EMTs) nationwide. Of this number, 2,497 are male EMTs and 847 are female EMTs, reflecting a growing gender balance within emergency medical practice in Ghana (NAS HR Department, 2024). EMTs are trained in pre-hospital emergency interventions such as airway management, cardiopulmonary resuscitation (CPR), trauma management, obstetric emergencies, and safe patient transportation. Ghana's official emergency number for ambulance response is **112**, which is toll-free and accessible on all networks (National Ambulance Service, 2024). Calls to this number are routed through the NAS control system to regional dispatch centers for swift deployment.

The Service currently runs 350 ambulance stations nationwide, ensuring nationwide coverage and equitable access to emergency care. The distribution of these stations is as follows: Ashanti Region (56), Greater Accra (44), Eastern (37), Central (28), Volta (24), Western (23), Northern (20), Upper East (19), Bono (15), Upper West (15), Bono East (14), Savannah (13), Oti (12), Western North (12), Ahafo (8), and North East (10) (NAS HR Department, 2024).

The history of NAS, as seen by the researcher, represents not just Ghana's achievement in having emergency health infrastructure but public opinion at the heart of its sustainability. An adequately equipped ambulance system can still fail to be as effective if the people do not trust it or are not using it during periods of need. Hence, studying public opinion is crucial in order to make NAS more efficient and implement future reforms.

VISION

The National Ambulance Service (NAS) strives to be a world-class Emergency Medical Services (EMS) that provides the highest quality and most cost-effective emergency health care to the people of Ghana, through enthusiastic and well-trained staff.

MISSION

The Mission is to provide integrated, highly quality, pre-hospital emergency and medical care, health transport, medical retrieval, and education services to all people in Ghana. NAS achieves this through a system of trained operational staff and committed support staff in a compassionate, dignified, and professional manner.

1.2 PROBLEM STATEMENT

Emergency Medical Services (EMS) remain a vital support to any health care system owing to their capacity to provide timely medical interventions for life-threatening health conditions such as accidents, maternal complications, cardiac arrests, epidemics, and natural disasters (World Health Organization [WHO], 2017). In Ghana, the National Ambulance Service (NAS) came into existence officially in 2004 as an Act of Parliament 72 to provide pre-hospital care coordination and enhance the country's emergency response capacity (Oppong, Osei-Kusi, & Abban, 2020). Over time, NAS has expanded its services to provide ambulances across all 16 regions, train Emergency Medical Technicians (EMTs), and manage patient transfers in cases of road accidents, obstetric complications, and other large-scale emergencies, such as floods and pandemics (NAS, 2023).

These achievements attest to the institution's significant contributions to public health and safety. Nevertheless, even with these initiatives, the application of NAS remains sporadic and suboptimal. These reports indicate continued issues such as prank calls, delayed responses, public distrust, and a general lack of understanding of what ambulances are for. Most people perceive ambulances as nothing more than corpse transport vehicles and not life-saving prehospital facilities (Akl, Toure, & Osei, 2019; Alhassan et al., 2021).

Furthermore, there are ongoing media reports showing that some communities resist making calls to NAS during emergency cases and instead resort to using taxis or personal means of transport, even when ambulances are accessible (Asamoah & Boafo, 2022). This is an overarching signal of the massive gap between NAS existence and public understanding, perception, and adoption of its services.

1.2.1 SEVERAL RESEARCH GAPS CONTRIBUTE TO THIS PROBLEM:

CONCEPTUAL GAP

Most literature so far published on Emergency Medical Services (EMS) in Ghana has been inclined towards operational issues such as the number of ambulances in the fleet, sources of finance, clinical outcomes, and organizational capability (Oppong, Osei-Kusi, & Abban, 2020; Alhassan, Fuseini, & Ibrahim, 2021). While these publications are useful for consolidating the

technical aspect of EMS provision, they tell little about how ordinary people view the ambulance service. For most contexts, the public image of an ambulance is more than its utilitarian function; it is a reflection of trust, punctuality, and even cultural beliefs concerning life and death (Aacharya et al., 2016). Very few studies in Ghana have explored how the public conceives NAS's role, and how these perceptions in turn affect whether or not they use the service. This conceptual gap robs policymakers and practitioners of information regarding the human and cultural dimension of EMS use.

METHODOLOGICAL GAP:

Previous studies of NAS have, to a great extent, employed quantitative approaches, such as standardized questionnaires or analyses of administrative call records (Akl, Toure, & Osei, 2019). While valuable insofar as they are able to generate statistics, such as the ratio of prank calls as a percentage of average response times, they are not capable of capturing the rich, lived meanings and perceptions that underpin public attitudes. For instance, reasons why people deny communications for an ambulance during an emergency cannot be explained by numbers, since communication involves digging deeper into reasons of cultural fear, misconceptions, or past traumatic experiences. Therefore, qualitative or mixed methodologies are needed to fill the methodological vacuum with more detailed insights into the social realities underlying public trust and use.

EMPIRICAL GAP:

Empirically, globally, public trust and perception have been shown to significantly impact the utilization of EMS. For example, studies in the USA and India have established that people are more likely to call ambulances where they perceive them as reliable, lifesaving, and accessible (Blackwell & Kaufman, 2018; Aacharya et al., 2016). There are limited empirical studies in Ghana examining this trust-utilization nexus in Ghana's unique socio-political and cultural context. In the absence of localized context-specific data, results from abroad cannot be easily transferred to Ghana, which has diverse cultural perceptions, health system issues, and levels of resources. Policy planners may be formulating EMS reforms without any actual understanding of perception barriers at the grassroots level due to the lack of local empirical work.

SOCIO-CULTURAL GAP:

Pursuit of health in Ghana is influenced significantly by cultural beliefs, traditional practices, and mistrust of government centers (Gyasi, 2018). In some societies, ambulances are death symbolism people think that ambulances only arrive to carry away the dying and not to save lives (Asamoah & Boafo, 2022). Such stigmatization discourages early calls and continues to promote delays in seeking care. Little has, nonetheless, rigorously considered how such socio-cultural beliefs impact the use of NAS. Unless the deficit is filled, reforms only in terms of increasing logistics (additional ambulances, new machinery) may not succeed, since cultural hesitation may still discourage utilization, even with infrastructural improvements.

POPULATION GAP:

Most studies on NAS have been conducted within urban areas such as Accra and Kumasi (Alhassan et al., 2021). While urban observations are informative, these do not apply to rural and peri-urban groups, who are less likely to have access to emergency services based on concerns of distance, poor roads, and scarcity of health facilities. Cultural interpretations of ambulance use among rural groups also abound, and these remain unexamined in available literature. This discrepancy is because rural communities are among the most vulnerable to preventable mortality during crises and, therefore, must be heard when researching NAS.

POLICY GAP

The Government of Ghana initiated the "One Constituency, One Ambulance" policy in 2020, which significantly improved the country's number of ambulances (NAS, 2023). While it was a commendable policy accomplishment, there has not been a systematic review of whether such reforms have led to increased public trust, perception, or utilization. Addressing infrastructural supply without taking into account public perception is an area of policy blindness. This shortage of evaluative research leaves Ghana vulnerable to investing in ambulances without deconstructing the perceived hindrances among citizens, which would cause them not to call for emergencies.

TECHNOLOGICAL GAP:

In other parts of the world, the majority of EMS systems are adopting technology such as mobile health apps, global positioning system tracking, and electronic dispatch systems in order to

optimize efficiency and public access (Shah, 2020). While NAS has introduced call centers and free lines, little is known about the acceptance, adoption, or perception of technology by the people of Ghana. There is limited knowledge in this area, and hence, it creates a technological lacuna in the literature that overlooks the impact of digital innovations on mobilizing people to adopt emergency services.

Together, these gaps indicate that while NAS has done remarkable work in streamlining its operational and infrastructural capacity, perception by the public, trust, and cultural acceptance remain unexplored. This study, therefore, fills the conceptual, methodological, empirical, socio-cultural, population, policy, and technological gaps by examining how Ghanaians perceive NAS and how perception affects utilization. The findings will not only inform policy and practice but also contribute to achieving universal health coverage by reducing avoidable mortality under emergencies.

The National Ambulance Service (NAS) has emerged as an integral part of the health delivery system in Ghana following its establishment in 2004 under the Ministry of Health. With 16 regional control centers, 350 ambulance stations, and over 3,000 trained Emergency Medical Technicians (NAS HR Department, 2025), the Service has made remarkable strides in widening access to pre-hospital emergency care. Nevertheless, the availability of well-equipped and well-placed service infrastructure does not necessarily mean that it will be utilized. One of the determinants of utilization lies in the eyes of the public. Emergencies, per se, demand prompt, effective, and coordinated responses. The public should activate NAS as the first responder in times of health emergencies. Nonetheless, anecdotal evidence and initial research in Ghana show a gap between the readiness of the public to utilize services and the availability of services. For instance, many citizens still utilize commercial transport such as taxis and "trotros" to transport patients, suggesting beliefs that ambulances are late, won't arrive at all, or are laden with unplanned costs (Afriyie et al., 2020). Additionally, continued public suspicion regarding EMT professionalism, response times, and availability can undermine the NAS mandate to deliver timely pre-hospital care. This provides an impetus for the measurement of public perception as a premise in achieving harmony between NAS operations and the trust and expectations of the public.

Globally, scholars point out that the use and success of emergency medical services (EMS) largely rely on how people perceive them (Aacharya et al., 2016; Stewart et al., 2024). Perception does not just shape behavior in times of crisis, but also the degree to which citizens trust and have faith in EMS organizations. Where the public possesses a good perception of ambulance services as being reachable, professional, and reliable, the use of the service increases exponentially, increasing patient survival rates (WHO, 2018). Conversely, when services are perceived to be ineffective or untrustworthy, citizens will seek other alternatives that sacrifice survival chances. In this context, Ghana's NAS is at a critical juncture where its operational development must be supported by public trust and willingness to engage.

1.3 RESEARCH OBJECTIVES AND QUESTIONS

General Objective

To assess public perception of the National Ambulance Service (NAS) in Ghana and examine how these perceptions influence the utilization of its services.

1. Specific Objectives: To explore public awareness and understanding of the role and functions of the National Ambulance Service in Ghana.
2. To examine public attitudes, trust, and confidence in the efficiency and effectiveness of NAS.
3. To identify socio-cultural beliefs and misconceptions that influence public perceptions of ambulance services.
4. To assess differences in perceptions between urban, peri-urban, and rural communities.
5. To evaluate the impact of government policies (e.g., One Constituency, One Ambulance) on shaping public trust in NAS.
6. To recommend strategies for improving public perception, trust, and utilization of ambulance services in Ghana.

RESEARCH QUESTIONS

1. What is the level of public awareness and understanding of the role of NAS in Ghana?
2. How do people perceive the efficiency, reliability, and effectiveness of NAS in responding to emergencies?
3. What socio-cultural beliefs and misconceptions shape public perceptions and attitudes toward calling an ambulance?
4. How do perceptions differ across urban, peri-urban, and rural communities in Ghana?
5. To what extent have government policies and reforms influenced public trust in the National Ambulance Service?
6. What strategies can be developed to improve public confidence and enhance the utilization of ambulance services in Ghana?

1.4 SCOPE OF THE STUDY

The research is conceptualized to examine the public attitudes and perceptions towards the National Ambulance Service (NAS) in Ghana, with a focus on how awareness, attitudes, and socio-cultural beliefs inform the utilization of emergency medical services (EMS). Scope is restricted along four main dimensions: geographical, thematic, population, and temporal coverage.

GEOGRAPHICAL SCOPE:

The research will be carried out in selected urban, peri-urban, and rural communities in Ghana to provide varied opinions. Although previous research has been carried out predominantly among the urban population where ambulances have greater visibility (Alhassan, Nketiah-Amponsah, & Akazili, 2021), the research here includes peri-urban and rural areas where misconceptions, poor infrastructure, and far distances to hospitals are likely to impact opinions and use of ambulances. This broad thematic scope seeks to provide an in-depth view of how geographical differences affect public confidence and attitudes towards NAS.

THEMATIC SCOPE:

The study will explore numerous facets of public opinion, including NAS functions awareness, trust in service delivery, socio-cultural beliefs, myths, and perceptions on the effectiveness of government policy, such as the "One Constituency, One Ambulance" policy. While the clinical and logistical aspects of NAS have been investigated (Oppong, Osei-Kusi, & Abban, 2020), the public's experiential and cultural perceptions of ambulance services have had little focus placed upon them. From a perceptual approach, the study seeks to contribute to the existing EMS scholarship through a social and communication-permeated approach.

POPULATION SCOPE:

The target population is adult citizens (18 years and above) with different socio-economic, educational, and cultural levels. This is because not only patients but also caregivers, families, and general members of the public make emergency health decisions (Gyasi, 2018). Differences in age, education level, and socio-economic status will most likely affect awareness and attitude towards the utilization of ambulances.

TEMPORAL SCOPE

The study will be conducted during the 2024–2025 academic year, drawing on recent government action and current community experience. This period is particularly relevant as it follows through with extensive reforms to the ambulance service, including the 2020 launch of the "One Constituency, One Ambulance" initiative and the increased profile of NAS throughout the COVID-19 pandemic (National Ambulance Service [NAS], 2023). These recent events give us a special window to assess whether reforms have found expression in enhanced public trust and usage.

DELIMITATIONS

The study does not aim to quantify clinical outcome or technical efficacy of paramedic service as this has been extensively covered in the available EMS literature (Akl, Toure, & Osei, 2019). Rather, it focuses on the social, cultural, and perceptual factors that affect citizens whether to call an ambulance in the event of emergencies. Finally, the research scope ensures an extensive but

focused examination through situating the public perceptions within the broader context of health access, health policy enactment, and culture in Ghana.

1.5 SIGNIFICANCE OF THE STUDY

The significance of this study is that it has the capacity to produce insights that are both theoretically stimulating and practically empowering. The findings of the study will be beneficial to the academic community, health policymakers, institutions, emergency medical professionals, and the general public.

ACADEMIC SIGNIFICANCE:

The study adds to knowledge by enriching debate on Emergency Medical Services (EMS) in developing contexts. While EMS systems in economically advanced countries are widely documented against established utilization patterns (Al-Shaqsi, 2010; Smith & Roberts, 2019), Ghanaian settings, such as Africa, are quite understudied. Existing Ghanaian studies have reported on the availability of ambulances, the availability of resources, and difficulty in implementing policy (Oppong, Osei-Kusi, & Abban, 2020; Akl, Toure, & Osei, 2019). Although limited evidence exists on people's attitudes toward ambulance services, what shapes attitudes, and to what extent these attitudes influence utilization, this research adds to health communication theory, behavioral science theory, and public trust in health organizations. The research also adds to healthcare-seeking behavior literature in low-resource environments, where conceptual gaps are integral.

POLICY AND INSTITUTIONAL SIGNIFICANCE

On the policy front, this research makes key recommendations to the Ghana Health Service, Ministry of Health, and National Ambulance Service. Government initiatives such as the "One Constituency, One Ambulance" also sought to improve the use of ambulances throughout Ghana but have been reported to have low usage and widespread abuse of the service (NAS, 2023). Understanding public opinion drivers and suspicion can enable policymakers to design evidence-based interventions, culturally tailored education campaigns, and sustainable EMS policies. In

addition, findings can be utilized to create standard communication protocols for ambulance services, which will enhance public trust and optimize resource distribution (Gyasi, 2018).

PRACTICAL AND PROFESSIONAL RELEVANCE:

For paramedics and EMS professionals, this study identifies the barriers to effective ambulance-patient interaction. By determining which misconceptions, stigma, financial concerns, or cultural attitudes affect the use of ambulances, practitioners will be in a position to establish community-oriented communication practices and trust-building initiatives. This will not only improve patient outcomes but also reduce emergency response times, patient cooperation, and worker morale. In addition, the research can aid in training programs among ambulance staff to equip them with public relations skills, cultural sensitivity, and health education delivery (Alhassan, Nketiah-Amponsah, & Akazili, 2021).

SOCIAL AND PUBLIC HEALTH SIGNIFICANCE:

At the community level, the research plays a vital role in optimizing positive health-seeking behavior. Public refusal or unwillingness to use ambulance services has led to unnecessary death due to obstetric complications, accidents, and cardiac arrests that remain the prevailing causes of death in Ghana (WHO, 2017). Through the determination of socio-cultural, economic, and perceptual factors for underuse of ambulances, this study will assist in saving lives, bridging health disparities, and improving Ghana's overall emergency care system. In addition, greater awareness and endorsement of ambulance services will enhance community resilience during disasters and mass emergencies.

THE STUDY ALSO OFFERS A PLATFORM FOR FUTURE SCHOLARLY WORK.

Focusing on public opinion of emergency medical services, it offers options for comparative study among countries and regions, trend analysis over time of EMS utilization, and interdisciplinary study of health communication, sociology, and public health systems research. This way, it contributes to the global literature on emergency preparedness and response for low- and middle-income countries.

Fundamentally, the significance of this study is that it provides theoretical contributions to knowledge, pragmatic suggestions for service improvement, policy guidance for government agencies, and social benefit to society. Through breaking down perception barriers, it seeks to bridge the gap between the availability of the National Ambulance Service and optimal utilization by citizens in Ghana.

1.6 ORGANIZATION OF THE STUDY

The study is divided into five chapters, which are arranged logically to fulfill the research goals and allow for a smooth flow from background to conclusion. The study organization enhances clarity, coherence, and sequential development of ideas, making it simple for readers to follow the study's flow.

Chapter One: Introduction: The first chapter presents the background of the research. It begins with the study background, positioning the research problem within the broader context of emergency medical services and health systems in Ghana. It also declares the problem statement, citing the principal challenges and gaps necessitating the study. The study objectives and questions are also outlined in the chapter, which guide the entire investigation. The scope of the study is described to establish boundaries, while the significance of the study is described to show its academic, policy, social, and practical relevance. The chapter finally ends with the organization of the study to give readers an overview of the entire research design.

Chapter Two: Literature Review: The chapter offers a critical review of existing literature relevant to emergency medical services (EMS) and public opinion. It covers both global and Ghanaian perspectives of ambulance usage, positioning the current study within current debates and theory. The review of the literature is based on relevant theory such as the Diffusion of Innovations Theory (Rogers, 2003), Theory of Planned Behavior (TPB) – Ajzen (1991), Service Quality (SERVQUAL) Model – Parasuraman, Zeithaml & Berry (1985), Social Construction of Technology (SCOT) Theory – Bijker, Hughes & Pinch (1987), Trust and Confidence Theory (Luhmann, 1979), Systems Theory – Bertalanffy (1968), Risk Perception Theory – Slovic (1987) and the Health Belief Model (Rosenstock, 1974), which are helpful in explaining attitudes and

behavioral intentions of the public regarding the use of ambulance services. Literature gaps, conceptual, empirical, methodological, and sociocultural, are revealed to validate the originality of the current research.

Chapter Three: Research Methodology: In this chapter, the methodological processes followed to realize the study goals are explained. The chapter presents the research design, philosophical assumptions, and inquiry approach, justifying why a qualitative methodology is most suitable. The chapter also identifies the study population, sampling technique, and sample size, as well as data collection instruments such as interviews and focus group discussions. Additionally, it describes data analysis procedures, ethical concerns, and measures for ensuring trustworthiness, credibility, and reliability of the findings (Lincoln & Guba, 1985).

Chapter Four: Findings and Discussion: Chapter Four presents the findings of the fieldwork. It organizes findings thematically according to the major themes emerging from data analysis, such as awareness, accessibility, affordability, trust, and cultural attitudes towards ambulance services. Quotes from participants are interspersed verbatim to explain prominent insights in order to ensure that voices from the field are accurately represented. Findings are subsequently discussed in relation to the literature reviewed and theoretical notions, identifying consistencies and contradictions. This discussion bridges the existing gap between empirical evidence and conceptual expectations.

Chapter Five: Summary, Conclusions, and Recommendations: The final chapter integrates the study by summarizing key findings in relation to the research objectives. The chapter concludes by concluding the findings that reflect the implications of public perception on the use of ambulance services in Ghana. Actionable recommendations are presented to policymakers, health institutions, and ambulance practitioners for increasing public trust and utilization. Areas of future research are also outlined in the chapter, ensuring ongoing academic interest in EMS and public health communication. Generally, the study design provides a consistent and logical flow from problematizing the research problem to offering solutions, ensuring the study's intellectual integrity, policy implications, and social relevance.

1.7 CHAPTER SUMMARY

The chapter provided a good foundation to the study by providing background and rationale for the measurement of the National Ambulance Service (NAS) public perception in Ghana. It emphasized the critical role played by Emergency Medical Services (EMS) in strengthening health systems globally and highlighted NAS's achievements since its operationalization in 2004 to provide efficient pre-hospital emergency care (WHO, 2017; Oppong, Osei-Kusi, & Abban, 2020). Despite such achievements, persistent problems such as prank calls, belated responses, misunderstandings, and public underutilization have been shown to reflect a misalignment between the service and community expectations (Akl, Toure, & Osei, 2019; NAS, 2023). The chapter also brought to the forefront some of the research gaps that justify this study, such as conceptual gaps (too narrow a focus on the public perception of EMS in Ghana), methodological gaps (overdependence on quantitative data), empirical gaps (lack of enough Ghana-based studies linking perception to the utilization of ambulances), socio-cultural gaps (traditional beliefs associating ambulances with death), population gaps (urban bias in existing literature), and policy gaps (paucity of evaluation of reforms such as the "One Constituency, One Ambulance" program) (Alhassan et al., 2021; Gyasi, 2018; Asamoah & Boafo, 2022).

For these gaps to be filled, the study had particular research objectives and questions aimed at investigating how the Ghanaian public perceives the usefulness, credibility, readability, and utilization of NAS. The scope of the study was established to reach intensively sampled urban and rural areas in Ghana in an attempt to capture diverse social, cultural, and demographic perspectives towards the utilization of ambulances.

By way of conclusion, the chapter has established the research problem, situated it within the health system of Ghana, identified the relevant gaps applicable and outlined the objectives which contextualize the inquiry. The next chapter, Literature Review, will build on this foundation by critically synthesizing extant international and local literature on EMS, public trust, health-seeking behavior, and theoretical frameworks such as the Diffusion of Innovations Theory (Rogers, 2003), Health Belief Model (Rosenstock, 1974), Theory of Planned Behavior (TPB) – Ajzen (1991), Service Quality (SERVQUAL) Model – Parasuraman, Zeithaml & Berry (1985), Social Construction of Technology (SCOT) Theory – Bijker, Hughes & Pinch (1987), Trust and

Confidence Theory (Luhmann, 1979), Systems Theory – Bertalanffy (1968), and Risk Perception Theory – Slovic (1987) , which can account for how the public views ambulance services.

2.0 LITERATURE REVIEW

2.1 Chapter Introduction

The literature review provides a critical examination of existing scholarly and policy literature on emergency medical services (EMS), ambulance utilization, and public perceptions, situating this study within global and Ghanaian contexts. Emergency medical services are universally acknowledged as a cornerstone of public health, providing time-sensitive interventions during life-threatening emergencies such as road traffic accidents, maternal emergencies, cardiac arrests, and disasters (World Health Organization [WHO], 2017). Research in developing countries, including Ghana, however, has reported recurring problems with public trust, access, and utilization of ambulance services (Oppong, Osei-Kusi, & Abban, 2020; Akl, Toure, & Osei, 2019). To inform a more profound understanding, this review integrates a number of theoretical frameworks explaining citizens' health behaviors and organizational service delivery. Traditionally, the Diffusion of Innovations Theory (Rogers, 2003) and the Health Belief Model (Rosenstock, 1974) have explained the diffusion of innovations like ambulance services and why individuals take them up or resist them. While these are fundamental, broader frameworks are needed to explain ambulance utilization in its multidimensional reality.

For instance, the Theory of Planned Behavior (TPB) (Ajzen, 1991) explains in detail how attitudes, subjective norms, and perceived control affect citizens' intentions to call ambulances. For instance, some may refrain from NAS because of social norms in favor of taxis or fear of costs. Similarly, the Service Quality (SERVQUAL) Model (Parasuraman, Zeithaml, & Berry, 1985) is central in explaining public evaluations of NAS on dimensions of reliability, responsiveness, assurance, empathy, and tangibles, most commonly response times and professionalism.

Social Construction of Technology (SCOT) Theory (Bijker, Hughes, & Pinch, 1987) highlights that ambulance services are not interpreted in the same manner by all; policymakers may interpret NAS as life-saving, but it is perceived as unreliable or inaccessible by some residents. Likewise, Trust and Confidence Theory (Luhmann, 1979) highlights that use is based on public trust, adverse experiences or tardy responses undermine confidence and discourage repeated calls.

Structurally, Systems Theory (Bertalanffy, 1968) puts NAS within the broader Ghanaian healthcare and socio-economic system, illustrating how logistical, financing, and hospital network inefficiencies directly affect ambulance operations. Finally, Risk Perception Theory (Slovic, 1987) explains why citizens' choices under emergency conditions are determined by their perception of risk. Citizens will rely on alternative modes of transport if they believe that calling an ambulance will result in delays or worsen results.

A synthesis of these eight theories, the Diffusion of Innovations, Health Belief Model, Theory of Planned Behavior, SERVQUAL Model, SCOT Theory, Trust and Confidence Theory, Systems Theory, and Risk Perception Theory, provides an overarching theoretical framework. Collectively, they allow for the description of sociocultural, psychological, and systemic influences on public perceptions and behavior regarding ambulance utilization in Ghana. This multi-theory foundation underpins the integration of existing research, as well as delineating gaps this research addresses.

2.2 REVIEW OF RELATED LITERATURE

Emergency Medical Services (EMS) are vital components of public health systems around the world that are designed to provide pre-hospital care during emergencies and reduce preventable mortality. EMS effectiveness, however, is not only dependent on logistics and infrastructure but also on public attitude and use of such services (Al-Shaqsi, 2010). In both developing and developed countries, literature consistently refers to disconnect between the availability of EMS and its later utilization, often driven by cultural beliefs, trust, accessibility, and socio-economic determinants (Razzak & Kellemann, 2002). This chapter summarizes existing global and Ghanaian evidence on public attitudes towards ambulance services and identifies where the current research contributes to knowledge.

2.2.1 INTERNATIONAL PERSPECTIVES OF AMBULANCE UTILIZATION

Globally, the literature points out that public awareness and perception are key determinants of ambulance utilization. In developed economies, in which emergency medical services (EMS) are better funded, trust in the system's professional competence, efficiency, and speed is a significant determinant of ambulance utilization. For instance, studies in Western Europe and the United States focus on stressing that patients always perceive ambulances as a reliable first point of contact in situations of life-threatening illness or injury during emergencies, which contributes to higher utilization rates (Sasser et al., 2005; Nicholl et al., 2007). The presence of advanced dispatch systems, well-trained paramedics, and massive public campaigns has enhanced the idea of ambulances as unavoidable, life-saving interventions. This aligns with the Service Quality (SERVQUAL) Model (Parasuraman et al., 1985), as positive attitudes towards reliability, responsiveness, and assurance have immediate effects on people's decisions to dial ambulances. Nevertheless, problems exist in developed settings. Research in the United Kingdom discovered that the majority of ambulance calls were for non-emergency conditions, mainly due to confusion about entitlement and expectations around the service (Turner et al., 2006). This type of abuse demonstrates how the Theory of Planned Behavior (Ajzen, 1991) is at work: attitudes (belief that an ambulance guarantees quicker treatment), subjective norms (cultural expectations about using ambulances), and perceived behavioral control (perception that ambulances are always available) regulate patterns of calling, even inappropriate ones. Similarly, in the United States, cost factors have deterred some patients from traveling by ambulance, while the system is effective (Meisel et al., 2011). This demonstrates that economic barriers still remain key, even within abundance systems.

Low- and middle-income countries (LMICs) are different. Despite governments' efforts to expand EMS infrastructure, utilization remains low due to cultural attitudes, socioeconomic barriers, and mistrust of formal healthcare systems. In South Asia, for example, Chowdhury et al. (2018) found that in India, Indian households predominantly preferred rickshaws or private vehicles to go to hospitals instead of ambulances. Similarly, research in Pakistan also found that despite the existence of advanced ambulance systems such as Edhi Foundation services, the majority of citizens avoided them since they thought ambulances were too slow or unnecessary unless in cases that were extremely critical (Razzak & Kellermann, 2002).

In Africa, the same remains even more so. Ajayi et al. (2020) found in Nigeria that patients preferred to use taxis, motorbikes, or community transport to ambulances because of deep-seated distrust in the reliability of the system, fear of delay, and even corruption reports, such as the solicitation of informal charges. This is a commentary both on the Trust and Confidence Theory (Luhmann, 1979), which posits that public participation is central to trust, and on Risk Perception Theory (Slovic, 1987), as people perceive more risk being waiting for ambulances than in creating their own transport.

Moreover, studies from Sub-Saharan Africa also show that Social Construction of Technology (SCOT) Theory (Bijker et al., 1987) can explain variation in perception: whereas policymakers present EMS as a valuable innovation for public health, the majority of citizens perceive ambulances as unreliable, inaccessible, or elite for the rich. For example, in Uganda and Kenya, ambulances were seen to be used as vehicles for transportation of dead bodies rather than for saving lives (Mould-Millman et al., 2015), revealing the kind of impact cultural narratives have on usage patterns.

Overall, the international literature reviews indicate that utilization of ambulances is not just determined by the availability of the facility but depends on perceived reliability, affordability, social norms, and cultural associations. These results illustrate the need to consider not only structural issues but also public attitudes and levels of trust in evaluating EMS systems globally. This international review serves as a basis for placing the Ghanaian case, where the same barriers, cultural beliefs, mistrust, and alternative transport choice are shaping ambulance use. The current study, therefore, contributes value by placing these global trends in Ghana's local socio-cultural and health system environment, providing an insider perspective of why citizens may stay quiet even in cases of emergencies.

2.2.2 AFRICAN CONTEXT

Ambulance services across Africa remain underdeveloped, poorly organized, and seldom used despite the growing emergency burden on the continent (Mock et al., 2005; Razzak & Kellermann, 2002). The majority of African health systems are resource-poor, and prehospital emergency care

has long been neglected in favor of hospital-centered care (Mould-Millman et al., 2015). As a result, EMS is either inappropriately embedded in national health systems or entirely reliant on donor assistance and nongovernmental agencies. South African evidence demonstrates that although the EMS system is the most advanced on the continent, enormous disparities among rural and urban populations in services remain. Urban centers such as Johannesburg and Cape Town are likely to have better coverage and faster response times, but rural regions suffer from shortages of ambulances, distances to travel, and bad road conditions, which result in delayed intervention and low public trust (MacFarlane et al., 2005; Mould-Millman et al., 2016). Rural–urban disparities are the reasons behind how structural variations within the same nation may impact public attitude and trust in ambulance services.

The same problems have been documented in East Africa. A study in Kenya indicates that boda-bodas (motorcycle taxis) and private cars continue to be the major vehicles employed in transporting patients for emergency care because they are considered faster and cheaper compared to ambulances (Mould-Millman et al., 2015; Jumba et al., 2019). Even where ambulances have arrived, public skepticism of their timeliness, cost, and ability to offer lifesaving treatment deters citizens from using the service. For many families, the assumption that ambulances are "too late" diminishes their subjective utility, as per Ajzen's (1991) Theory of Planned Behavior, wherein behavioral intention (for instance, to call an ambulance) is influenced by attitudes, perceived norms, and perceived control of behavior.

Cultural attitudes make the utilization of ambulances more complicated. In Tanzania and Ethiopia, ambulances are sometimes called "death vehicles" because they are usually associated with transporting corpses or critically ill patients who often do not make it to the destination (Ghana et al., 2018; Tsegaye et al., 2019). Such an impression derived from common experience is reflective of the Social Construction of Technology (SCOT) Theory (Bijker et al., 1987), whereby technologies acquire meaning in relation to the way people interact with them. In contexts where ambulances feature prominently at funeral services, populations form negative impressions that discourage usage in emergencies.

Cost is also a recurring barrier in all African contexts. In Uganda, Nigeria, and Ghana, studies indicate individuals are reluctant to call ambulances because they are afraid of unexpected charges,

bribes, or huge medical bills upon arrival at hospitals (Ajayi et al., 2020; Ouma et al., 2015). These concerns highlight the relevance of the Health Belief Model (Rosenstock, 1974), which asserts that individuals' health-related behavior is not only influenced by susceptibility and perceived severity but also by perceived barriers to action. If citizens believe that utilizing an ambulance creates more cost or emotional distress than benefit, they will eschew taking advantage of the service.

The common thread across Africa, therefore, is that structural constraints (e.g., infrastructure, resources), cultural values, and socio-economic factors shape citizens' attitudes and utilization of ambulances. Deficits of trust in EMS systems arise from inconsistent delivery of services and negative community experiences. Mould-Millman et al. (2015) assert that improving ambulance services in Africa not only requires the scale-up of infrastructures but also actively reshaping community attitudes through public education, trust, and policy enhancements.

For Ghana in this study, this African literature emphasizes that problems with the National Ambulance Service (NAS) are not isolated but part of broader continental patterns. However, Ghana presents a unique situation in which a nationally coordinated ambulance service exists but is used sub optimally based on perception barriers. Situating this study in the African context thus creates a comparative platform for similarities as well as Ghana-specific avenues for improving EMS use.

2.2.3 GHANAIAN CONTEXT

In Ghana, the launch of the National Ambulance Service (NAS) in 2004 was a turning point in the health sector of the nation, with the vision of improving pre-hospital emergency care and averting preventable deaths. NAS has, over the years, expanded its coverage nationwide, with ambulances stationed in almost all the districts (Oppong et al., 2015). Regardless of this improvement, empirical data indicate that the usage of ambulances is still disproportionately low in relation to the emergency health needs of the population. This disparity indicates a multifaceted interaction between public opinion, cultural beliefs, institutional barriers, and systemic inefficiency.

Various studies have highlighted that numerous Ghanaians are still inclined to use taxis, private cars, or motorbikes to get to the hospital for emergencies instead of an ambulance, even in cases of life-threatening emergencies (Osei-Ampofo et al., 2012). One.The most significant rationale for such behavior.The belief that ambulance response times are slow and geographic coverage is.inadequate in rural and peri-urban areas where roads are poor and dispatch channels are.less effective.Such a complaint points towards the limitation of logistical infrastructures and service reliabilities, detracting from.public trust in NAS services.

Stewart et al. (2014) also discovered from their research that distrust of the ambulance system is both experiential and systemic in origin. People mostly recall instances when ambulances failed to arrive on time or were not completely outfitted with required medical equipment. Such instances foster skepticism, particularly when compared to taxis or motorbikes, which are perceived as more convenient, faster, and safer. Moreover, hoax emergencies and prank calls add to the workload of the NAS, depriving limited resources and slowing down proper emergency responses (Atiga et al., 2019). Consistent with the SERVQUAL model (Parasuraman et al., 1985), such public distrust can be linked to perceived reliability (response time), assurance (professionalism), and tangibles (equipment and vehicle availability) shortcomings.

Sociocultural factors also play a significant role in shaping the perceptions of the public towards ambulance services in Ghana. Ambulances in a few communities are more closely linked with mourning and death. This is because people notice ambulances more often carrying dead bodies than critically ill patients, thus establishing a symbiotic connection between sirens and announcements of death (Ankomah et al., 2021). This conception is consistent with the Risk Perception Theory (Slovic, 1987), which describes how misunderstandings and fear affect logical decision-making. In emergency situations, this cultural significance dissuades individuals from calling NAS, even when it is a life-saver.

Beyond that, gender and socio-economic disparities cut across ambulance accessibility. According to studies, women, particularly in rural communities, may face cultural restrictions excluding them from calling ambulances themselves, rather assigning such a move to male relatives (Aikins et al., 2019). Likewise, poorer families tend not to access NAS services because of misinformation that ambulances are expensive or pay bribes before attending to a case. These behaviors confirm the

Theory of Planned Behavior (Ajzen, 1991), where perceived obstacles and social norms play a significant role in health-seeking behavior.

In total, Ghana's NAS represents an ambitious step in the health care direction, but a combination of suspicion, administrative inefficiencies, prank calls, and the socio-cultural meaning of ambulances clouds its complete promise. Such contextual conditions call for critically examining the public perception, not just to reinforce service delivery but also to devise effective public education efforts that deflect myths, build trust, and promote equitable access to EMS.

2.2.4 AWARENESS AND UTILIZATION

Awareness of ambulance services is a significant determinant of their utilization. Research has consistently shown that in both developed and developing nations, unawareness of EMS activities is a significant determinant of underutilization. For example, Razzak and Kellermann (2002) determined that in the majority of low- and middle-income countries, the population is either ignorant of the specific EMS numbers or unfamiliar with the mechanism of calling an ambulance. This knowledge gap means that even where the services are available, they are not being fully accessed. Similar trends have been observed in South Asia. Sriram et al. (2019) observe that in India, though there has been some investment in EMS infrastructure development, public awareness is sporadic. Either people are not aware of the toll-free EMS numbers or they doubt the reliability of the system and use alternative transport such as taxis or private vehicles in the event of an emergency. This suggests that availability alone does not translate into utilization; community awareness and confidence are also a requirement.

Similar concerns are also faced by African countries. Studies in Uganda and Nigeria have shown that large sections of the population are unaware of EMS access points, hence the frequent use of non-medical transport (Ajayi et al., 2020; Kobusingye et al., 2006). In these settings, poor sharing of information and low health literacy also aggravate the situation. Public sensitization campaigns, therefore, play a crucial role in bridging the gap between service availability and utilization.

Familiarity with the National Ambulance Service (NAS) in Ghana is irregular, especially in rural and peri-urban areas. Agyeman-Duah et al. (2020) note that while individuals in urban cities such as Accra and Kumasi may have greater exposure to EMS numbers and public campaigns, the majority of rural dwellers do not have basic knowledge of calling or requesting ambulances. Moreover, the effectiveness of awareness campaigns has been questioned, as many citizens associate the service solely with accidents and do not value its broader role in medical emergencies such as obstetric complications or strokes (Stewart et al., 2014).

Conceptually, these trends may be explained with the Health Belief Model (Rosenstock, 1974), which emphasizes the role of perceived benefits and barriers in shaping health-related decision-making. Where citizens lack awareness of how ambulance systems operate—or consider calling an ambulance to be unnecessary or futile—use is less likely. Similarly, the Diffusion of Innovations Theory (Rogers, 2003) highlights that EMS adoption is delayed where diffusion of knowledge is weak, and populations lack exposure to success stories that are able to demonstrate the benefit of the system.

Awareness, then, is not only familiarity with the ambulance telephone number but also understanding the scope, quality, and timeliness of the service. In the absence of this foundation of public information, EMS systems remain underused at the expense of their life-saving capability. The present study contributes to this body of cumulative evidence by examining information gaps and awareness creation on Ghanaian community decision-making processes in ambulance utilization.

2.2.5 CULTURAL BELIEFS AND PRACTICES

Culture plays a part in shaping health-seeking behavior and emergency medical services (EMS) utilization decisions. Beyond structural barriers such as distance or cost, cultural values and communal beliefs decide whether ambulances are considered a viable or feasible choice in emergencies or not. Cultural discussions are ingrained in healthcare choices in most societies, more regularly mediating the extent to which modern medical systems are utilized or trusted. South Asian data highlights this effect dramatically. Qureshi et al. (2007) in Pakistan report that

households delay or avoid summoning ambulances but instead summon traditional healers or utilize extended family networks for help. This is due to cultural beliefs in spiritual or herbal remedies and skepticism regarding the application of biomedical interventions. Similarly, in India, it has been shown that private transport or auto-rickshaws are used by some patients, and not necessarily due to cost but also due to attitudes that medical emergencies should be handled within the family or community first before formal systems are engaged (Sriram et al., 2019).

In African contexts, these patterns are also prominent. Olawande et al. (2018) report that in Nigeria, cultural reliance on community-based options is a cause of the underutilization of EMS. Families prefer to manage emergencies with the assistance of neighbors, or they delay hospital visits until traditional channels have been exhausted. Kobusingye et al. (2006) also point out that intense beliefs in destiny, God's will, or ancestral interference often cause people to view emergencies as beyond the control of humans and thus reduce the necessity to call for professional medical assistance.

The use of the National Ambulance Service (NAS) in Ghana is heavily impacted by cultural beliefs. Oppong et al. (2016) found that ambulances are associated with death rather than life-saving care by some citizens. This is partly due to the visibility of ambulances at funerals and the cultural emphasis on transporting the dead with dignity. Ambulances are therefore sometimes perceived as "for the dead" vehicles and not so much as a tool for timely medical rescue. There are those who believe that calling an ambulance is a waste of time if one uses taxis or private vehicles, reflecting cultural appreciation of speed and personal dependency in times of emergency (Agyeman-Duah et al., 2020).

These misimpressions are supported by symbolic meanings. The wail of an ambulance siren is, in certain Ghanaian societies, interpreted not as a request for emergency care but as an omen of death (Stewart et al., 2014). These interpretations discourage calls to NAS even where the services are available. At the rural and peri-urban levels, there is still confidence in traditional birth attendants or herbalists, which takes precedence over biomedical service utilization even during emergency situations such as obstetric complications (Akol et al., 2018).

These findings are theoretically in line with the Health Belief Model (Rosenstock, 1974), which suggests that health decisions are made based on perceived threats, benefits, and barriers, culturally mediated worldviews. If ambulances are perceived as being linked to death, then the perceived benefit of dialing NAS is diminished. Similarly, Social Constructionism (Berger & Luckmann, 1966) explains how collective cultural meanings about ambulances are formed and reinforced through communal stories, rituals, and practices.

Therefore, EMS utilization cannot be understood in isolation from sociocultural contexts. Misconceptions founded on cultural beliefs show that health campaigns must be culturally tailored to dispel symbolic associations and align with cultural values. The current study expands this debate by focusing on how Ghanaian cultural discourses—particularly in peri-urban and urban communities—discourage or reconstruct attitudes regarding ambulance use. By situating EMS within its sociocultural context, the study aims to locate possibilities for culturally suitable interventions that can increase public participation in NAS.

2.2.6 SYSTEM RELIABILITY AND SERVICE QUALITY

Service quality is the turning point to whether or not individuals are willing to use emergency medical services (EMS). Parasuraman, Zeithaml, and Berry (1985) developed the classic SERVQUAL model, which evolved into five main dimensions: reliability, responsiveness, assurance, empathy, and tangibles, as key determinants of service satisfaction. Applied to EMS, these dimensions measure whether ambulances arrive on time (reliability), whether personnel respond quickly and professionally (responsiveness and assurance), whether patients are treated with compassion (empathy), and whether equipment and vehicles meet expectations (tangibles). Perceptions by citizens about these dimensions drive their overall confidence in the ambulance system and indirectly whether they will use it in emergencies.

Research across Africa supports this relationship. In South Africa, Mould-Millman et al. (2015) observed that negative experiences of late arrival of ambulances, poor communication, and unprofessionalism discouraged communities from calling for ambulances in future emergencies. Such experiences nurture a culture of distrust where individuals opt for other means of transport

even when EMS could deliver better results. Similarly, in Nigeria, Adefisan et al. (2020) found that complaints about late ambulance arrival and substandard care onboard indeed resulted in the underuse of formal EMS services.

In Ghana, service reliability and quality issues are also documented. Zakariah et al. (2017) state that the National Ambulance Service (NAS) is plagued with inadequate fleet capacity, operational problems, and insufficient human resources. These limitations are likely to result in slow responses, particularly in rural and peri-urban settings. Citizens who perceive or hear delays might conclude that ambulances are inefficient, thus the belief that taxis or personal vehicles are faster modes of transport (Agyeman-Duah et al., 2020). The perception of unreliability erodes NAS credibility despite its potential to save lives.

Service quality problems are more than response time. Literature has confirmed that professional conduct among EMS staff also influences utilization. For example, low public trust is brought about by complaints of inadequate communication, insensitivity, or poor bedside manners (Osei-Ampofo et al., 2021). The contrary is the case when paramedics exhibit competence, reassurance, and empathy; citizens report higher satisfaction and are likely to recommend EMS services to others (Shenton et al., 2019). This implies that service quality is not merely technical but relational as well: while functional reliability matters, interpersonal trust is also essential.

System reliability is further extended to the infrastructure and resource availability. Ambulances in Ghana at times lack basic equipment or medications, which creates a "transport only" reputation rather than offering full pre-hospital care (Oppong et al., 2016). Such limitations lower the perceived value of contacting NAS through private means. Second, frequent news of ambulances failing or fuel shortages worsens negative perceptions (Zakariah et al., 2017). The public perceives an ambulance service that cannot guarantee availability or readiness as unreliable and, hence, discourages usage.

Theoretically, these trends concur with Expectation-Confirmation Theory (Oliver, 1980), meaning that satisfaction is a function of whether actual service corresponds to prior expectations. If individuals would prefer ambulances to arrive rapidly but are instead faced with delayed delivery, their disappointment reduces future willingness to call. In addition, Service Quality Theory

(Grönroos, 1984) emphasizes the technical-functional quality gap (what vs. how). NAS needs both for both: individuals need timely, well-equipped ambulances and respectful, professional personnel.

This study builds upon such evidence by investigating how Ghanaian citizens evaluate NAS service quality and system dependability. It seeks to establish direct connections between negative perceptions (e.g., lateness, inadequate equipment, unprofessional behavior) and refusal to call ambulances in cases of need. By situating public trust within the framework of service quality, the research emphasizes that greater reliability and professionalism are paramount in increasing EMS use among Ghana's urban and peri-urban populations.

2.2.7 CONFIDENCE, TRUST, AND RISK PERCEPTIONS

Confidence and trust are natural predictors of public participation in emergency medical services (EMS). According to Luhmann's (1979) Trust and Confidence Theory, individuals' tendency to trust institutions is largely influenced by experience, perceived capacity, and the predictability of results. In EMS, thus, citizens will only call for ambulances if they believe that the service is capable, effective, and professional. Any failure in this perception, e.g., late arrival, equipment failure, or lack of professionalism, will undermine public trust and reduce use. Perception of risk also has a large impact on emergency decision-making. Slovic (1987) proposes that individuals assess the severity and probability of potential harm, which influences behaviour. In EMS, if people perceive a high risk in holding out for an ambulance, e.g., concern that the patient would perish during transit, or concern that the service is slow and untrustworthy, they will be more apt to utilize another mode of transport. This feedback between trust and perceived risk leads to a feedback loop: low trust increases perceived risk, and thus low use of the service.

This link is based on global evidence. In the United States and Europe, public trust in EMS has been proven to be highly correlated with rising usage rates, while media reports of system failure or patient fatality discourage use (Patel et al., 2016; Turner et al., 2006). Similarly, in low- and middle-income countries, attitudes of unreliability and risk discourage people from calling ambulances when they are available (Ajayi et al., 2020; Chowdhury et al., 2018).

In Ghana, trust among citizens in the National Ambulance Service (NAS) is influenced by several factors, including prank calls, resource limitations, delayed response times, and disparities in coverage between urban and rural areas (Adams et al., 2021; Agyeman-Duah et al., 2020). Prank calls, for instance, not only occupy resources but also sustain the perception that NAS is often not available at the time of need. Moreover, poor public education and disinformation are responsible for fears that ambulances are slow, ill-equipped, or are mainly utilized for taking the dead to hospitals and not for saving lives (Oppong et al., 2016).

Theoretically, the patterns indicate the applicability of the Trust and Confidence Theory and Risk Perception Theory in predicting EMS use. Citizens are rational and socially conscious decision-makers who make decisions not only on the measurable quality of services, but also on personal risk perceptions and reliance. Low trust and high perceived risk lower the probability of people calling NAS in emergencies, particularly in peri-urban and rural communities where infrastructural issues are more severe.

This research answers a significant gap by looking at how the trust gaps and risk perceptions are communicated across different Ghanaian communities. In both exploring the psychological and experiential underpinnings that drive public views, the study explains why NAS is underutilized and how interventions such as public information campaigns, improvements in response times, and improved service reliability can generate trust for the service and increase utilization.

2.2.8 GLOBAL LITERATURE

Ambulance service is universally recognized as a critical component of emergency medical systems (EMS) as the first point of contact between patients and healthcare facilities during emergency cases. In the global community, the utilization of EMS has been linked to higher rates of trauma, cardiac arrest, maternal emergency, and survival of other time-critical conditions (Al-Shaqsi, 2010). However, patterns of use remain disproportionate, especially in low- and middle-income nations (LMICs), where the very groups most in need of timely emergency care are apt to underuse available services (Razzak & Kellermann, 2002).

More and more international research emphasizes that access to ambulances is not merely a product of vehicle or infrastructure availability but instead by an interplay between multifaceted socioeconomic, cultural, and systemic elements (Hirshon et al., 2013). Factors such as affordability, accessibility, trust, and social attitudes affect whether communities use formal ambulance services or resort to informal services such as motorbikes, taxis, or even animal carts. This suggests that attitudes, and not availability, tend to shape usage.

2.2.8.1 LESSONS FROM OTHER AFRICAN COUNTRIES

NIGERIA

NIGERIA is an excellent example point for these dynamics, with important parallels and contrasts with Ghana. Despite the presence of mass government interventions such as the establishment of the National Emergency Management Agency (NEMA) and multiple state-level ambulance initiatives, actual ambulance use is fairly low. This is representative of a larger trend in most low- and middle-income countries, where investments in infrastructure do not always translate to use at the community level. Oyekale (2017) reported that ambulances are considered inaccessible or unavailable to the majority of Nigerian citizens, especially in peri-urban and rural areas where health infrastructure is poor and roads are substandard. "Ambulances being for the cities" results in rural residents being entirely left out of considering them as an available option. This creates a stark urban–rural divide in access and awareness, similar to the Ghanaian case when ambulance stations are heterogeneously scattered and occur in clusters about regional capitals.

Adebayo and Ojo (2020) further documented that Nigerians frequently resort to commercial transport, such as taxis, buses, or even motorbikes, took emergency transport. This is not so much an option of choice but due to false beliefs about ambulance charges, lack of faith in the public health system, and delay in response time. There are communities who believe that ambulances are utilized to transport only the dead or victims past salvage, and thus they refrain from calling early in an emergency. This symbolic association of ambulances with death rather than with recovery is a widespread cultural theme across West Africa.

For instance, Ankomah et al. (2021) observe that in Ghana, people are hesitant to call up the ambulance service because of social stigma, families do not call for an ambulance since it indicates the condition is final, thereby reinforcing fatalistic ideologies. These instances between Nigeria and Ghana highlight the extent to which cultural attitudes and system forces converge to affect ambulance utilization, regardless of national investment in emergency health care services.

The Nigerian example thus offers two important lessons for Ghana. Firstly, public behavior cannot be changed by infrastructure alone unless accompanied by rigorous community education and trust-building initiatives. Secondly, tackling cultural attitudes towards death and healthcare access is equally vital as technical changes in reducing response times or increasing ambulance numbers. Without addressing both the symbolic and utilitarian obstacles, ambulance services are likely to remain underutilized even if technically available.

KENYA

In Kenya, utilization issues are equally pressing, reflecting both a mix of systemic bottlenecks and behavioral dynamics. While there has been government and private investment in ambulance fleets and emergency response systems at the county level, uptake and performance remain uneven.

Wanjiku, Kivuti, and Ndirangu (2019) documented widespread public discontent with ambulance services, including late arrival times, poor quality equipment in vehicles, and too few adequately trained paramedics to handle life-threatening emergencies. In a majority of cases, ambulances arrive at scenes of emergencies without basic life-support equipment such as oxygen, defibrillators, or trauma kits. Such failures undermine public trust, and citizens start to question whether there is any point in calling an ambulance in the first place. These sentiments echo findings in Ghana, where the public complains that ambulances sometimes arrive without sufficient medical equipment or qualified staff (Zakariah et al., 2017).

Geographical disparities also exacerbate the problem. Mwangi and Otieno (2021) identified that in rural counties—particularly northern and arid counties—long distances, poor road networks, and ambulances' uneven distribution render EMS virtually inaccessible. The response time in some

rural districts can exceed two hours on average, rendering ambulances useless to utilize in emergency situations of road traffic accidents, obstetric emergencies, or myocardial infarction. These challenges reflect Ghana's own experiences in trying to increase equitable ambulance coverage beyond urban centers, where geography and poorly developed road systems still present significant challenges.

Compounding these structural barriers is the problem of hoax calls, a trend also registered in Ghana (Zakariah et al., 2017). Emergency responders in Kenya report that a significant proportion of calls received are false, constituting wasted fuel, time, and personnel hours, resources already in limited supply. This not only wastes operational capacity but also demoralizes EMTs who risk their lives in responding to false alarms. Furthermore, prank calls delay genuine cases, with fatal consequences in time-critical emergencies.

The Kenyan experience demonstrates that hindrances to EMS effectiveness cannot be attributed to logistics or fiscal deficiencies in isolation. Instead, they are the result of a dual challenge:

1. Structural barriers, such as poor road networks, low coverage, and ambulances that are poorly equipped.
2. Cultural and behavioral barriers, such as system abuse, low awareness, and perceptions of ineffectiveness.

For Ghana, the Kenyan experience emphasizes the importance of a holistic approach to EMS strengthening. Ambulance fleet and coverage expansion must be followed by public sensitization campaigns, increased penalties for prank calls, and additional training for EMTs. Additionally, both Ghana and Kenya demonstrate that trust at the community level is key to ambulance use; if citizens don't view ambulances as reliable or useful, they will persist in skipping the service in favor of taxis, private vehicles, or other unofficial transport alternatives.

SOUTH AFRICA

South Africa is a particularly instructive case as it has one of the more advanced EMS systems on the continent, yet still struggles with issues of equity, trust, and utilization. The country's EMS is relatively advanced compared to most African nations, with significant investment in ambulance fleets, call centers, and paramedic training. Urban areas such as Johannesburg, Cape Town, and Durban have comparatively quick response times and better-equipped vehicles, with a sense of reliability within urban provinces (Mould-Millman et al., 2015). This efficacy is not universally experienced in the country, however. Rural provinces such as Limpopo and the Eastern Cape have longer delays due to great distances, infrastructural paucity, and a paucity of ambulance coverage. These structural gaps highlight that resource allocation and geography remain fundamental determinants of EMS access even in developed systems. Beyond logistic barriers, perceptions and trust issues significantly affect the use of ambulances in South Africa. Wallis, Garach, and Kropman (2019) identified that many citizens are reluctant to call public ambulances because of negative experiences, including delayed response times, ambulances that are poorly equipped, and, in some cases, unprofessional behavior of the crew. Such incidents reinforce public skepticism and force populations to resort to alternative modes of transportation, such as private taxis, in cases of emergency. Importantly, such suspicion is not only a reflection of service capacity but also of how citizens perceive the provision of EMS in terms of fairness, reliability, and professionalism.

South Africa's EMS is further compounded by the dual system, where private ambulance companies, often better staffed, faster, and better equipped, serve the more prosperous clientele, whereas poorer areas must make do with under-strained public services. As Naidoo et al. (2018) argue, such a model entrenches inequalities: access to life-saving care is rendered not only a matter of geography but also socioeconomic status. Poorer South Africans in rural areas can systematically be ignored, while more prosperous South Africans in urban areas can rely on speedy private EMS. This privatization of trust reinforces disparities and reduces confidence in state-delivered services.

For Ghana, there are a few important lessons from the South African experience. Firstly, it is of no use to expand fleets of ambulances if issues of timeliness, professionalism, and trust are not addressed. As in South Africa, Ghanaian communities may not dial ambulances if they perceive

them to be unreliable or if past experiences have created disillusionment (Ankomah et al., 2021). Secondly, Ghana must guard against creating a two-tier system, whereby urban elites or those who can afford private ambulances are served better, with rural or marginalized populations remaining underserved. Although Ghana's ambulance service is mainly public, disparities in regional distribution and accessibility already mirror aspects of South Africa's inequalities.

South Africa finally demonstrates the interdependence of equity and perception. Even a relatively advanced EMS system will lack legitimacy if it is seen to be unfair, unprofessional, or inaccessible to the majority. For Ghana, then, public education campaigns, visible accountability mechanisms, and deliberate policies for the equitable distribution of ambulances are not secondary matters but are at the center of creating a credible, reliable, and widely utilized ambulance service.

2.2.8.2 BROADER AFRICAN AND GLOBAL DIMENSIONS

Ambulance underutilization is not a Ghana-specific phenomenon but rather part of a broader pattern across low- and middle-income countries (LMICs) in which cultural norms, infrastructural limitations, and trust factors converge to shape health-seeking behavior. Examples of institutional vulnerabilities and social beliefs converging to undermine EMS effectiveness in the African and global contexts illustrate this point. In Uganda, Ssemugabo et al. (2020) have discovered that the majority of trauma patients arrived at hospitals in motorbikes or taxis rather than ambulances. The families cited the reason for this as costs, unawareness of the availability of the ambulance, and mistrust in the system's reliability. The trends show how even when ambulances are present, public perception might lead individuals to use faster but dangerous means. This is reflected in Ghana, where taxis and private cars are commonly used in emergencies as they are viewed as quicker as or more dependable than summoning an ambulance (Zakariah et al., 2017).

In Ethiopia, Alemayehu et al. (2019) also noted that despite efforts by the government to upgrade ambulance fleets, utilization rates remained disappointingly low. Cultural reliance on community-care or indigenous care systems, wherein families first attempted local treatments prior to calling formal EMS, was one of the most significant determinants. Fear of hospital bills, keeping patients away from utilizing ambulances perceived as direct access to expensive hospital treatment,

and poor communications systems by which people could not access ambulance services with any certainty, were other obstacles. This is echoed in the Ghanaian case, where cultural perception and economic concerns decide whether individuals will perceive ambulances as life-savers or financial burdens (Ankomah et al., 2021).

Outside the African continent, South Asian countries such as India and Bangladesh present stark parallels. Chowdhury et al. (2018) noted that many citizens shunned ambulances and opted to walk or use public transport, citing perceived slowness, lack of knowledge on how to use EMS, and ingrained social norms for quick self-transport by neighbors or relatives. Deployment of informal networks at the expense of formalized emergency response is a prevalent issue in LMICs, with under-resourced health systems and coping strategies being established outside of the formal EMS system.

These country-level findings show that ambulance underutilization is not exclusively a Ghanaian phenomenon but a component of an overall LMIC systemic problem. Common themes are:

1. Infrastructural shortcomings (poor road conditions, ambulances spread thinly).
2. Cultural values and beliefs (community-based care, belief in ambulances as death's portent).
3. Economic issues (fear of cost, even where EMS is provided at no charge).
4. Trust issues (concerns over timeliness, professionalism, or partiality of EMS staff).

For Ghana, the message is clear: Greater utilization of ambulances requires more than increases in fleet size; it demands integrated interventions to reverse cultural attitudes, win public trust, and increase system dependability. Otherwise, as in Uganda, Ethiopia, and much of South Asia, one can have ambulances in abundance but have them unavailable and underused by the very group for which they were designed.

2.2.8.3 CROSS-CUTTING THEMES IN GLOBAL LITERATURE

A review of ambulance service utilization across Africa and globally identifies several cross-cutting themes in numerous health systems and across cultures. These themes provide valuable insights into the barriers that hinder successful enrollment in emergency medical services and derive lessons for Ghana's National Ambulance Service (NAS).

1. **Perceptions of Cost**

Even where ambulances are free or heavily subsidized, public misconceptions of high costs are a major deterrent. For example, in Nigeria, the majority of citizens perceive that asking for an ambulance will cost them exorbitant amounts, and therefore, they opt to utilize commercial means of transport (Adebayo & Ojo, 2020). Similarly, Ssemugabo et al. (2020) found in Uganda that ambulances were avoided by families who thought that there would be hidden fees charged at hospitals. In the same way, the same misconception exists in Ghana, and some members of the community continue to think that ambulance services are too costly or reserved for the affluent despite interventions by the government such as the "One Constituency, One Ambulance" policy (Zakariah et al., 2017). These findings demonstrate the way that perceptions of cost, not costs per se, are extremely powerful barriers to usage.

2. Cultural Beliefs

Cultural belief and perception also significantly influence the use of ambulances. In Ethiopia, Alemayehu et al. (2019) documented that communities used traditional healers or treatment at the community level before accessing formal health services. In the same way, ambulances are also normally associated with death, a belief that is symbolic and discourages families from requesting one unless the state of a patient is thought to be hopeless. Ankomah et al. (2021) also documented similar cultural beliefs in Ghana, where the majority regard ambulances as "vehicles of death" rather than instruments of recovery. This mindset reflects broader cultural perception of sickness and emergency care, and emphasizes the necessity of education campaigns to redefine ambulances as life-preserving interventions rather than death-wish ones.

3. Trust and Reliability

Public trust in EMS systems is usually a matter of previous experience. Individuals who experienced delayed arrival, abusive staff, or lack of professionalism are likely to avoid seeking an ambulance in the future (Wallis, Garach, & Kropman, 2019). In South Africa, inequalities between private and public EMS bred large-scale mistrust, particularly among poor communities that perceived public services as ineffective or discriminatory. Ghana is not immune to these risks: repeated accusations of delayed response, shortages of fuel, or inadequately equipped ambulances continue to cast doubt on the system's reliability (Zakariah et al., 2017). If trust is ever broken, it is challenging to revive through persistent delivery of reliable, equitable, and professional service.

4. Prank Calls and Abuse

One of the commonalities across LMICs is abuse of emergency numbers through hoax or prank calls. Mwangi and Otieno (2021) described how in Kenya, prank calls deflected meager resources from actual emergencies and worsened delays as well as angered EMS staff. Zakariah et al. (2017) similarly found this in Ghana, where prank calls made up a significant proportion of EMS calls, draining already meager resources. This misuse not only reduces efficiency but also leads to burnout of staff and public frustration when genuine emergencies are delayed. Prank calls can only be countered by a combination of technological countermeasures (caller identification, filtering devices) and education campaigns in the community.

5. Urban–Rural Inequalities

One of the strongest findings in global literature is perhaps the stark disparity in access to ambulance services in urban versus rural communities. Mould-Millman et al. (2015) reported in South Africa that key cities such as Johannesburg and Cape Town were advantaged by the application of rapid ambulance response, while rural provinces experienced long waiting times due to poorer road condition and poor distribution of ambulances. In Ghana, the disparity is the same: whereas cities like Accra and Kumasi can feasibly have relatively quicker access, rural areas like Bongo or Kete Krachi are plagued by systemwide problems of remoteness, poor roads, and fewer ambulance fleets (Ankomah et al., 2021). These disparities underscore the structural disparities inherent in EMS systems, where survival is more likely to be determined geographically

in crises. In conclusion, international literature emphasizes that ambulance underutilization is influenced not just by infrastructure but also by public perceptions, cultural beliefs, and public trust. For Ghana, the implications of these lessons reinforce the imperative of addressing misperceptions regarding cost, shifting cultural narratives about ambulances, enhancing reliability and trust, reducing prank calls, and bridging urban–rural disparities. Unless these cross-cutting issues are addressed, increasing the number of ambulance fleets in operation alone will fail to come through in terms of utilization or improvement in health outcomes.

Literature from across the globe demonstrates that ambulance use is influenced not only by the structural capacity of EMS systems, but also, and even more fundamentally, by public attitudes, levels of trust, and sociocultural constructions of emergency care (Wallis et al., 2019; Adebayo & Ojo, 2020). Ghana's problems, from hoax calls and misconceptions of ambulance costs to cultural associations of ambulances with death, fit into these broad global patterns (Zakariah et al., 2017; Ankomah et al., 2021). However, Ghana also presents a unique case given its aggressive policy reforms, such as the "One Constituency, One Ambulance" initiative launched in 2019, which dramatically expanded ambulance coverage across the country (NAS, 2023). These reforms have presented an opportunity to analyze whether additional infrastructure automatically equals improved use, or whether perception-based barriers remain the deciding factor.

What is particularly relevant about this research is that it contributes in a two-fold manner. In the first instance, it addresses current local knowledge gaps. While Ghanaian scholarship has documented ambulance shortages, response time, and abuse (Oppong et al., 2016; Adams et al., 2021), comparatively fewer studies have systematically probed how NAS is perceived by citizens and how such perceptions directly influence use. This research, therefore, places the voices of the ordinary Ghanaians, urban and rural, young and old, into the literature, offering grounded data that goes beyond administrative statistics or policy discourse.

Second, the study contributes to international discourse on EMS in low- and middle-income countries (LMICs). Comparative evidence from Nigeria, Kenya, South Africa, and beyond shows that distrust, cultural stigma, and inequities consistently subtract from ambulance utilization (Mwangi & Otieno, 2021; Ssemugabo et al., 2020). By situating Ghana within this broader landscape, the study illustrates how localized truths can both reflect and augment international

understanding. Ghana's reforms, if accompanied by long-term public education and confidence-building, might even set an example for other African countries that are grappling with the same problems.

Finally, by integrating theoretical frameworks such as the Health Belief Model, Theory of Planned Behavior, Diffusion of Innovations, and Trust/Communication theories, the study strengthens analysis of how individual beliefs, social norms, cultural discourse, and systemic trust play a part in shaping emergency health-seeking behavior (Rosenstock, 1974; Ajzen, 1991; Rogers, 2003; Luhmann, 1979). This theoretical foundation ensures that findings are not only descriptive but also analytically stringent, with applicability to both policy development and health communication interventions.

Briefly, the importance of the study lies in its ability to link the global and the local: it renders findings from international literature relevant to Ghana's specific policy and sociocultural context, and it renders Ghana's experience relevant back to the wider conversation on EMS use in LMICs. In so doing, the study provides evidence that is both locally applicable and globally enlightening, with the potential to inform emergency care responses in diverse settings.

2.2.9 LOCAL LITERATURE

In Ghana, studies on emergency medical services (EMS) have grown incrementally in the last two decades but with important gaps in knowledge on public perception and utilization patterns. The existing literature indicates that although structural changes have been implemented to consolidate the National Ambulance Service (NAS), societal beliefs and community-level factors persist in influencing how Ghanaians utilize, or underutilize, ambulance services.

2.2.9.1 AWARENESS AND KNOWLEDGE GAPS.

Although the National Ambulance Service (NAS) has, in recent years, expanded its fleet and coverage at the district level, awareness among the general populace remains patchy. Oppong et

al. (2016) indicated that fewer than 40% of the people they interviewed in Greater Accra and Ashanti Regions could accurately recall the national emergency number, with confusion over which line to call during medical emergencies. Zakariah et al. (2017) also mentioned that even if calls were made, the majority of citizens could not provide dispatchers with accurate information about patient location or condition, and this generally led to delays in mobilization. The knowledge gap is particularly pronounced in rural and peri-urban societies, where there is lower health literacy and outreach activities are few. For instance, in a 2020 survey undertaken by the Ghana Health Service, it was discovered that only 28% of the respondents in Northern Ghana were aware that ambulance services were free, compared to 55% in Greater Accra. These disparities clearly indicate that access to information is skewed in an urban direction.

There are also social myths between regions. Adams et al. (2021) described widespread perceptions that ambulances are reserved for "VIPs" or high-ranking officials only, a perception fostered by ambulances' visibility during political events and the transport of prominent persons. In interviews conducted by the World Bank (2019) in its evaluation of Ghana's emergency care system, some rural respondents compared ambulances to "death cars," explaining that in their communities, ambulances typically came to fetch corpses and not necessarily to rescue patients. Such symbolic meanings discourage people from viewing ambulances as vehicles of survival.

Perceptions of cost are another fundamental barrier. Although NAS officially provides services free at the point of delivery, there were complaints from communities in Eastern and Upper West Regions about hidden costs or expectations of payment for fuel to "facilitate the journey" (WHO, 2020). This fear is especially acute in rural households already battered by high out-of-pocket healthcare costs, such that households choose to utilize taxis, tricycles, or even wheelbarrows to bring the critically ill.

It blunts the impact of flagship reforms like the "One Constituency, One Ambulance" initiative. Even though the program deployed 307 ambulances to Ghana's 275 constituencies in 2020, NAS statistics show that usage levels rose only slightly in the first two years, with some districts reporting fewer than 10 calls a week even though there were fully serviced ambulances available. The suggestion is that the deficit is not a supply but a demand deficit driven by perception and awareness.

Cumulatively, results from Ghana highlight that without robust and sustained community sensitization, media campaigns, and trust building, augmenting ambulance capacity will not translate into effective rises in EMS utilization.

2.2.9.2 CHALLENGES AND MISUSES OF AMBULANCE SERVICES IN GHANA

Prank or hoax calls, likely among the better-documented challenges facing the National Ambulance Service (NAS), significantly impact operational efficiency. Zakariah et al. (2017) further reported that over 60% of NAS central dispatch system calls were false or prank calls, primarily from youths with mobile phones. Not only do these prank calls waste precious resources but they also lead to delays in response to actual emergencies, generating frustration for dispatchers and field paramedics alike. The World Health Organization (2020) also found that prank calls were one of the most frequent forms of EMS system abuse in West Africa, with the case of Ghana being cited where precious time and gas were wasted on false dispatches consistently. Delays in response constitute another endemic issue. Studies (Oppong et al., 2016; Adams et al., 2021) have shown that people normally vent about ambulances arriving "too late" to save lives. Delays are normally blamed on traffic congestion in urban cities like Accra and Kumasi, poor rural road infrastructures, and difficulties in locating callers who provide incomplete addresses or landmarks. In other rural constituencies, drivers of ambulances have to turn to unofficial directions from locals, which takes longer to respond.

Another systemic issue is low capacity and inefficient distribution of the ambulances. Even with the "One Constituency, One Ambulance" program, Ghana still doesn't have effective staff-to-vehicle ratios. A 2021 report by the Ministry of Health found that while the Greater Accra Region managed to mobilize over 50 ambulances, other rural constituencies within Northern and Savannah Regions each had only a single operational ambulance with large catchment areas. In cases of simultaneous emergencies, multiple communities are left uncovered. This creates inequalities in access that breed public perceptions of unreliability.

In addition to structural issues, negative public experiences have also been reported. Through interviews as cited by Ankomah et al. (2021), there were complaints of professional misconduct

such as perceived rudeness, asking for money to buy fuel, or not appropriately communicating patient status during transport. While not general, such complaints erode trust and discourage future ambulance use.

Specifically, abuse goes beyond prank calls. Adams et al. (2021) reported such cases in which ambulances were requested for non-emergency transport, such as transferring stable patients between facilities or even being called to political events. These kinds of abuses place additional pressure on already strained resources and help create an expectation that ambulances are not necessarily for emergencies only.

NAS data (2022) underpin such challenges: in some months, up to 65% of dispatch requests from urban areas were either prank calls or non-emergency requests, thus making fewer infrastructure available for life-threatening emergencies. This indicates the two-fold challenge of abuse of system and constrained infrastructure, both of which back up negative public images.

Overall, the literature suggests that unless community education, increased regulatory controls, and technology filters (such as caller ID tracking and verification systems) are instituted, prank calls and abuse will continue to detract from the effectiveness and public confidence in Ghana's ambulance system.

2.2.9.3 CHALLENGES AND BARRIERS

Literature in general cites systematic barriers working against the effectiveness of emergency medical services (EMS) in Ghana. They occur at several levels, logistical, infrastructural, financial, and sociocultural, finally impacting public perception and utilization of the National Ambulance Service (NAS). A common barrier is logistical limitation, namely limited fuel availability and inadequate car maintenance. Kwakye et al. (2020) further note that ambulances are sometimes grounded for days due to insufficient allocation of fuel or delayed approval for maintenance. Among rural constituencies, the public has reported instances where ambulances could not respond in a timely manner because their vehicles had broken down or were waiting for spare parts (MOH,

2021). Such failures in service reflect a credibility gap and deter the public from reporting to the ambulance service in future emergencies.

Infrastructural challenges further exacerbate the delay. Poor road networks, especially rural and peri-urban areas, remain a significant barrier to timely ambulance response. Oppong et al. (2016) found that in Northern and Oti Regions, ambulances took more than one hour to access patients due to unmotorable roads, more so during the rainy season. Even within urban areas, traffic congestion in cities like Accra, Kumasi, and Takoradi equally hinders ambulance movement. Despite Ghana's Road Traffic Act giving ambulances right-of-way, inadequate enforcement and driver refusal to yield lead to sirens and lights not always clearing the way (Adams et al., 2021).

Beyond infrastructure, delay in dispatching is another obstacle. Communication delays between callers and emergency dispatchers, e.g., difficulty identifying the location, language barriers, or prank calls, can lengthen response time. Zakariah et al. (2017) observed that the majority of the NAS call center's received calls are prank calls, wasting resources and hindering attention to real emergencies. And then some real callers struggle to provide exact addresses (since there is no official street nomenclature in most locations), hindering again and fueling public anger.

The human resource factor also contributes to these challenges. Ghana has stepped up with the "One Constituency, One Ambulance," but trained paramedics and imbalanced staffing remain as main challenges. For some of the rural constituencies, a single ambulance serves multiple constituencies and has only one or two trained Emergency Medical Technicians (EMTs) working per shift (MOH, 2021). This leads to staff exhaustion and puts communities at risk of duplicating emergencies.

Financial limitations, though not as obvious, also play a role. Several studies (Adams et al., 2021; Ankomah et al., 2021) indicate that there remain some citizens who believe they must pay for ambulance services up-front or provide "fuel money" before an ambulance will accept them. These misconceptions, sometimes fostered by isolated cases where families were unofficially asked to supply fuel, deter many from even calling the ambulance at all, opting instead for taxis or personal vehicles.

Lastly, these challenges collectively render the NAS in a negative perception among the public. Communities interpret delays, equipment breakdown, or manpower shortages as evidence that the NAS is ineffective or unreliable. Kwakye et al. (2020) argue that aside from the fact that the system's infrastructure and logistical bottlenecks reduce timeliness of response, it also reduces trust and makes people less inclined to utilize the service even when available.

2.2.9.4 PRANK CALLS AND MISUSE

One of the most distinctive and troubling features of Ghana's EMS landscape is the stubborn problem of prank calls to the National Ambulance Service (NAS) call centers. Zakariah et al. (2017) reported that in some regions, prank calls accounted for as much as 70% of all calls received, a figure substantiated in recent internal NAS and Ministry of Health reports. These calls range from childish pranks and fake emergencies to poorly targeted false alarms, most of them from cell phones of kids who may not yet understand the life-and-death implications of their jokes (Adusei, 2020). The impacts of prank calls are serious and extensive. To start with, they deprive genuine emergencies of scarce resources. Each time an ambulance goes out on a false call, limited equipment, fuel, and personnel time are wasted that could otherwise be spent on a patient in actual need. In rural constituencies where one ambulance covers several towns, these diversions can be the difference between life and death. Secondly, prank calls overload call centre personnel, thereby reducing the ability of dispatchers to identify and respond to authentic emergencies within a prompt time. Call handlers report frustration and fatigue as they sift through hoaxes, which lowers efficiency and increases levels of stress (NAS Annual Report, 2021).

Besides organisational strain, prank calls erode people's confidence in the ambulance system. Individuals resident in regions where ambulances are regularly sent to false alarms become skeptical of the service and question its efficiency or credibility. In some cases, genuine emergencies have been ignored by dispatchers or emergency medical technicians since they once experienced the hoax before, and this has led to delayed deployment and catastrophic outcomes (Ankomah et al., 2021). This destructive cycle undermines trust: prank calling empowers disservice delivery, disempowerment of delivery undercuts public trust, and reduced public trust undermines further responsible usage.

It is feasible to attribute the ongoing prevalence of prank calling to broader behavioral and cultural trends. Prank calling is minimized as a diversion in a great deal of Ghanaian culture, especially among young people. Ignorance of the severity of EMS operations is the underlying action for this behavior, as a majority of civilians do not appreciate the perilous consequences of misusing emergency resources. Additionally, ineffective deterrents, such as trace caller ID systems, legal penalties, or publicized fines, are lacking, allowing prank calls to dominate in large part unsubstantiated (Adusei, 2020; Kwakye et al., 2020).

Prank calling has thus come into the spotlight of NAS's public relations and community education campaigns. Prank calling has tried to redefine itself as not only nuisance but as a public health issue. Schooling, radio advertisements, and collaborations with the National Communications Authority (NCA) aim to make citizens responsible. However, the challenge persists, especially since Ghana is such a youth-populated country with widespread availability of prepaid, unregistered SIM cards that make caller tracing difficult.

Overall, prank calls are a behavioral hurdle as damaging as logistical or infrastructural failures in Ghana's EMS system. Wasting resources, eroding trust, and fostering cynicism, prank calls significantly debase the effectiveness of the NAS. Due to this, dealing with prank calls is not merely an operational necessity but a communication and cultural issue that requires ongoing community mobilization, policy compliance, and education.

While previous research has reported on how common prank calls are in Ghana's EMS (e.g., Zakariah et al., 2017) and how they affect operations, there is less empirical work on how prank calls explicitly shape the public perception of the National Ambulance Service (NAS). This study is an addition as it goes beyond facts to examine the social and cultural value attached to prank calls, and the manner in which these influence willingness or lack thereof by citizens to access ambulance services in case of emergencies. To begin with, this study highlights the community-level implications of prank calls. While earlier research emphasized operational disruption, this study depicts how prank calls perpetuate public cynicism and distrust. For example, neighborhoods that constantly see ambulances being dispatched on hoaxes have their doubts about the seriousness and effectiveness of NAS operations. Such a perception deters proper use, since citizens feel the system is not dependable or can easily be manipulated. Through the documentation of these

community stories, the research provides a bottom-up understanding of how prank calls damage not just assets, but institutional reputation as well.

Second, the research delves into variation across contexts. While prank calls are typically defined as a national issue, their impact might differ between urban and rural communities. In metropolitan areas, where prank calls may be yet another annoyance among a myriad of other healthcare options, they may not be quite so harmful to access; in rural areas, where an ambulance can serve an entire district, prank calls may prove devastating. This study, through a comparison of a number of communities, creates a sophisticated landscape of these differences and the effect they have on EMS equity.

Third, this study contributes value by examining sociocultural motivators of prank calls. Existing accounts report prank calls but less frequently ask why citizens engage in them. The existing study uses interviews and focus group meetings to explore underlying motives such as youth chaos, ignorance, weak discouragement, and cultural minimization of crises. By bringing these conduct roots to light, the study identifies entry points for education and policy actions.

Finally, the study bridges the gap between operational analysis and communication strategy. While NAS has engaged in counter-prank call campaigns using public campaigns, data on how these messages are interpreted or if they impact behavior are limited. This research contributes by documenting community reaction to current awareness campaigns, thus offering some insight into how communication strategies could be reformulated to better fight prank calls and promote trust in the ambulance service.

2.2.9.5 COMMUNITY RESPONSE AND TRUST

Public attitudes toward ambulance services in Ghana remain a major factor influencing their utilization. Studies have shown that even when ambulances are available, overall population distrust usually causes underutilization or rejection of the service (Adams et al., 2021; Oppong et al., 2016). Distrust is shaped by several interdependent variables: delayed response times in the past, tales of patient deaths while waiting for an ambulance, fantasies of hidden charges, and

overall frustration with public health systems. For instance, in peri-urban and rural areas, the individuals use private taxis or commercial vehicles since they see them as more reliable during emergencies despite the vulnerability being glaringly obvious (Agyemang et al., 2022). This suspicion also overlaps with cultural ideology and social myth. Within some groups, the sound of the ambulance siren is not heard as a warning of rescue but as a harbinger of death since most of the patients transported by ambulance are not perceived to survive. This solidifies the unwillingness to summon help, and it forms a vicious circle where underuse reinforces negative expectations. Additionally, the history of prank calls, delayed services, and occasional cases of rude customer behavior all serve to erode public trust.

NAS has attempted to solve these problems by undertaking community sensitization programs, education outreach, and exhibition of success stories. However, from the literature, one can see that these efforts remain patchy, unbalanced, and tend not to find their way to the very grassroots communities where distrust is most unflinching. The institutional-community gap therefore, persists.

This current study contributes to this discussion by examining the issue of trust (or mistrust) in a community in relation to not calling for ambulances, even in cases of emergencies. Although existing literature acknowledges mistrust as a problem, there is minimal empirical work on why people choose silence or other channels over using the ambulance system. This study bridges the gap by: Recording Lived Experiences – hearing the voices of ordinary citizens in recounting their stories of reasons for reluctance, fear, or outright refusal to access the ambulance service.

1. Linking Trust to Action – illustrating how photographs of dependability, cost, and professionalism literally map onto life-and-death decisions made at the time of an emergency.
2. Elevating Community Nuances – gaining insights into variations between urban, peri-urban, and rural communities, where trust is built up through varying histories and realities.
3. Educating PR and Policy Plans – providing evidence-based recommendations for how NAS can rebuild trust, dispel myths, and promote positive behavior change.

In a way, the research does not simply repeat the observation that mistrust exists; it investigates its causes, manifestations, and consequences. Along the way, it offers new dimensions to EMS literature in Ghana, particularly at the intersection of communication, community engagement, and behavior response.

2.2.9.6 COMMUNITY PERCEPTIONS AND RESPONSES

A few studies from Ghana point out that the perceptions within communities are not only determined by the technical availability of ambulances, but also by ingrained cultural beliefs, social narratives, and experiences that determine whether people choose to use EMS during emergencies. For instance, some communities refer to ambulances as "vehicles of death" rather than instruments of survival, just because many patients seen being transported into ambulances in critical condition fail to survive the journey or arrive in hospitals alive (Ankomah et al., 2021). This association of sirens with loss evoke fear, fatalism, and in some cases, outright rejection of ambulance services. Instead of exuding rescue, the ambulance starts symbolizing hopelessness and irreversibility. In addition, the high level of community found in Ghanaian society plays a crucial role in generating responses. Neighbors and relatives typically get involved in times of crises, pooling their money to transport patients in motorbikes ("okada"), taxis, or personal vehicles (Aborigo et al., 2012). Such transport is thought to be quicker, more convenient, and less bureaucratic than relying on the ambulance network. Perhaps most interestingly, these unofficial arrangements reflect trust in community networks rather than in state institutions like the National Ambulance Service (NAS). Even where ambulances are more likely to be present in urban settings, there is a preference for taxis because they are perceived to be "always around" rather than ambulances that may take an extended time.

Perceptions of fairness, accessibility, and cost also play a role in responses. Ambulance services are perceived by some families to have hidden costs, or reserved for the elite class, to feed the myth that ordinary citizens may not be able to afford them (Adams et al., 2021). Such suspicion is further fueled by hearsay reports of patients being rejected for lack of money or for administrative delays. Others do not trust the system as there are regular complaints of prank calls inundating call

centers, which is creating the impression that "the system is not serious" and defame the credibility of the service.

Religious and spiritual convictions also add complexity. Families may, in some settings, prefer prayer, traditional healing, or spiritual intervention over ambulances when sickness or injury is explained through metaphysical reasoning. This again reduces utilization of formal EMS because medical emergencies are seen as spiritual crises requiring non-medical remedies.

These results highlight the imperative to place the use of ambulances not just within the limitations of the health system but also within the wider sociocultural context of Ghana. The utilization of ambulances is not merely a logistical issue but is informed by trust, symbolism, cultural identification, and social routine. Thus, any initiative to raise utilization must surpass attempting to add more vehicles or enhance dispatch response alone. It demands a comprehensive strategy that delves into symbolic meanings, counters fallacies, and builds trust on the ground through education and participatory mechanisms that are culture-sensitive.

This study develops these sociocultural findings further by moving beyond broad descriptions of perceptions to analyze the silence itself, why citizens, even when facing life-threatening emergencies, do not call the ambulance. Unlike past studies focusing more on awareness or cultural connotations, the current study seeks to document the lived experiences and testimonies of ordinary Ghanaians coping with emergencies without the use of the NAS. Through the exploration of silence as an individual as well as collective response, the study discloses how mistrust, fatalism, perceived costs, and reliance on other networks intertwine to construct health-seeking behavior. In the process, it introduces a deepening insight into how culture, trust, and community dynamics influence emergency response decisions, thus providing evidence for more context-specific public education and policy intervention.

2.2.9.6 COMMUNITY PERCEPTIONS AND RESPONSES

Apart from peer-reviewed research, much of the grey literature contains important insights into the development and functioning of EMS in Ghana. The National Ambulance Service (NAS)

publishes annual reports providing call volumes, types of emergencies, response times, prank calls, and operational problems. For example, NAS operational reports continually include the rising burden of non-emergency calls, breakdowns, and shortfalls, which constrain service delivery despite increased ambulance deployment under the "One Constituency, One Ambulance" initiative. Reports also feature community outreach activities and public education campaigns, visible evidence of institutionally perceived problem awareness, but weak evidence for their long-term impact. Policy briefs and strategic documents from the Ministry of Health (MOH) also emphasize the government's determination to improve pre-hospital care. Top priority areas are integrating EMS into the country's health system, increasing training for paramedics and EMTs, and creating sustainable funding mechanisms. But although such policy documents provide a framework for policy, they concentrate on system inputs, equipment, staff, and budgeting, without addressing demand-side determinants in terms of community attitudes and practices.

International institutions have also played a critical role in framing Ghana's EMS development in international discourse on universal health coverage (UHC). Assessments by the World Health Organization (WHO, 2019) and the World Bank (2020) position Ghana's ambulance service in overall health system strengthening goals in areas of equitable access, responsiveness, and networked emergency systems. These global perspectives remind us of the importance of EMS as a public good but, again, favor structural milestones over everyday experience on the part of end-users.

Though grey literature provides core statistics, operational data, and policy guidance, it typically underspeaks the voices and everyday lives of average citizens who use or do not use ambulances. It is this shortfall that the current study fills directly. By examining community-level attitudes, cultural perceptions, and decision-making, this research adds institutional reports from the bottom up. It sheds light on how policies and reforms play out on the ground, why citizens still distrust authorities despite seeming investments, and how silence, in not dialing an ambulance, functions as a community response. By doing so, the study bridges the gap between local community behavior and policy intention, providing evidence that might help policymakers, NAS, and international partners to design interventions that leverage cultural realities and in fact increase utilization. Summary of Local Literature

Collectively, Ghana's literature, academic and grey, pins down a paradox. Despite policy investments, foreign aid, and rising numbers of ambulances, utilization is still grossly low. Mistrust, cost misconception, prank calls, and reliance on informal substitutes all continue to undermine the efficiency of EMS. Such a paradox renders Ghana an important and pertinent case with which to explore how perceptions, cultural orientations, and system weaknesses allow for the articulation of the availability of services and actual consumption.

2.2.10 EXISTING LITERATURE GAPS

Despite the growing volume of literature on Emergency Medical Services (EMS) globally and within Ghana, there are several important gaps that limit knowledge on public engagement with the National Ambulance Service (NAS). It is critical to understand these gaps when designing interventions to improve utilization, improve trust, and optimize health benefits.

CONCEPTUAL GAP

Conceptual Gap Most of the Ghanaian studies on the National Ambulance Service (NAS) have been looking into operational and logistical challenges such as ambulances shortages, delayed response, and excessive prank calls (Oppong et al., 2015; Zakariah et al., 2017). While these studies help pinpoint systemic constraints, they merely conceptualize ambulance services as technical and administrative systems. This conceptualization ignores the behavioral, psychological, and cultural determinants that profoundly influence the manner in which citizens perceive, comprehend, and utilize emergency health services. For example, public trust, risk perception, perceptions regarding ambulances, and perceived service quality are barely theorized in Ghanaian research despite being critical in shaping health-seeking behavior.

Conversely, global EMS literature consistently substantiates the usefulness of conceptual models such as Risk Perception Theory, Health Belief Model, and Theory of Planned Behavior, which examine how individuals weigh perceived advantages, danger, and inhibitions in deciding to call an ambulance (Aacharya et al., 2016; Patel et al., 2016). Similarly, models like SERVQUAL

pinpoint the extent to which perceptions of service quality are responsible for satisfaction and repeat utilization, and SCOT theory (Social Construction of Technology) outlines how cultural values and social meanings define the interpretation and utilization of health technology. But these perceptive theoretical perspectives are not being optimally applied to Ghanaian literature on NAS.

The current study bridges this conceptual gap by formally integrating and applying more than one framework to the case of Ghanaian EMS. Specifically:

1. Health Belief Model (HBM): For determining how perceived emergency severity, perceived susceptibility, and perceived benefits or barriers influence individuals' requests for NAS.
2. Theory of Planned Behavior (TPB): For testing how subjective norms, attitude, and perceived behavior control influence the willingness of communities to use ambulances.
3. SERVQUAL Model: To analyze the extent to which attitudes towards reliability, responsiveness, assurance, empathy, and tangibility contribute to satisfaction with NAS services.
4. SCOT Theory: To uncover how cultural beliefs (e.g., ambulances as "vehicles of death") and social meanings affect the acceptance or rejection of ambulance services.

By integrating these conceptual resources, the study provides a multifaceted theoretical contribution that deviates from conceptualizing NAS as a simple logistical service. It places the deployment of ambulances within a socially, culturally, and psychologically mediated process. This integrative conceptual contribution will not only serve to address an essential academic gap but also provide NAS administrators and policymakers with theory-guided recommendations to create interventions that address people's lived reality, beliefs, and expectations.

EMPIRICAL GAP

Existing research into the National Ambulance Service (NAS) of Ghana has relied to a great extent on secondary and administrative sources such as hospital reports, dispatch logs, and broad survey data (Stewart et al., 2014; NAS, 2023). These datasets provide fine numerical estimates in terms

of coverage, response rates, ambulance distribution, and call volume, but are limited in their scope. This is the kind of evidence that indicates "what" is happening, response delays, frequency of prank calls, or disproportionate ambulance deployment, but not the "why" underlying public attitudes and actions. Above all, the everyday experience of ordinary citizens, their anxiety, trust issues, misconceptions, and cultural expectations of ambulances, are underrepresented. For instance, while there is evidence to be offered that usage rates are low in rural counties, little empirical research exists that explores the voices of residents themselves, why they didn't call an ambulance when it was needed, what they feared would happen, or how prior experience affected their attitudes. The absence of qualitative, community-based testimony is so great that the human dynamics of emergency medical service (EMS) use remain empirically underresearched.

This gap is particularly troublesome since ambulance usage is at least as much a product of perceptions and trust as of system capacity. Without accounting for citizens' stories, policy reactions are likely to work on infrastructure and logistics alone and ignore the behavioral and cultural forces behind silence in emergencies.

This empirical shortfall is directly addressed in this present research, through the production of qualitative community-based evidence. Interviews and focus group discussions were held in different communities in Ghana, putting on center stage what ordinary citizens have to say, how they make sense of NAS' mandate, what they expect or are afraid of from ambulances, and how cultural narratives influence their decision-making during crises. In documenting such everyday experiences, beliefs, and meanings, the study goes beyond the limitations of quantitative surveys. It presents a richer, integrated explanation of ambulance use that records both structural constraints and individuals' views. This addition ensures that the experiences of those most affected, urban poor, peri-urban dwellers, and rural communities, are brought into scholarly and policy discourses.

Lastly, the study strengthens the empirical foundation for building upon NAS through the generation of context-specific, people-centered evidence that policymakers, health managers, and PR professionals can point to for working to create trust-building interventions, dispel misinformation, and enhance ambulance use.

METHODOLOGICAL GAP

Methodological Gap: Research on Ghana's National Ambulance Service (NAS) has primarily relied on quantitative and descriptive methods such as surveys, cross-sectional studies, and administrative reviews (Oppong et al., 2016; Agyeman-Duah et al., 2020). While these methods can generate statistical data, they are less effective at capturing the depth of human observations and cultural perspectives related to ambulance services. This focus on quantitative approaches has led to an unbalanced evidence base: the numerical data on ambulance services are well-documented, but the stories and meanings behind those numbers are largely overlooked. Quantitative methods tend to reduce public interaction with NAS to usage rates or satisfaction scores, ignoring the complex narratives, emotions, and social meanings that influence real decision-making during emergencies. This methodological shortcoming means policymakers see only the volume of calls (or lack thereof) without understanding why the public is hesitant, loses trust, or avoids the ambulance service.

The current study addresses this gap with the application of a qualitative study design. Through semi-structured interviews and focus group discussions in both urban and rural settings, the study adopts an interpretivist position that prioritizes individuals' lived experiences over depersonalized statistics. This shift in methodology enables a more nuanced examination of the contributions of beliefs, cultural interpretations, past experiences, and trust in ambulance usage. Through the use of thematic analysis, supported by open, axial, and selective coding ensures that the data captures the width as well as the depth of public opinion. Unlike the traditional method of conducting surveys, qualitative processes allow for discovery of emergent themes, e.g., symbolic associations between death and ambulances, utilization of informal transport, or suspicion arising from prior negative experiences, that could elude quantitative tools.

In doing so, the research does not foreclose quantitative results but rather supplements with qualitative richness to paint a more holistic and nuanced view of NAS in Ghana. This is a methodological innovation that enriches both scholarship and policy by yielding actionable

evidence that is both community-grounded and culturally sensitive, thereby helping to correct one of the most persistent blind spots in Ghanaian EMS research.

SOCIOCULTURAL GAP:

Sociocultural Gap: Pursuing health in Ghana, whether or not involving the utilization of ambulance services, is socially constructed and heavily influenced by culture, social norms, and sociocultural interpretations (Asamoah & Boafo, 2022; Qureshi et al., 2007). However, a majority of the Ghanaian literature on the National Ambulance Service (NAS) has paid little attention to these sociocultural factors. Existing studies mostly refer to cultural influences but only up to that point without going any further to discuss systematically how they shape perceptions, trust, and NAS utilization. For instance, in some Ghanaian communities, ambulances are culturally associated with mortality and not survival. When one hears an ambulance siren, there is likely fear or resignation, with members of the community interpreting its appearance as a sign of loss and not hope (Ankomah et al., 2021). Similarly, traditional norms of community care prefer informal modes of transport such as taxis, motorbikes, or even DIY cars, which are felt to be more "immediate" and less bureaucratized than waiting for a structured ambulance system (Aborigo et al., 2012). Such cultural dynamics powerfully guide NAS call-versus-not-call decisions but are under-explored in studies.

The gap is further substantiated by the fact that the majority of existing research portrays NAS challenges as purely technical or logistical, i.e., ambulance shortages, fuel limitations, or staffing issues, and dismisses cultural meanings that are placed on using ambulances. Without a thoughtful examination of how culture makes emergency medical services matter, policy can anticipate being technocratic and removed from the social fabric of people's lives.

The present research, bridges this sociocultural deficit by situating ambulance utilization squarely within Ghanaian cultural and communal contexts. Baselining the Social Construction of Technology (SCOT) Theory (Bijker et al., 1987) and Risk Perception Theory (Slovic, 1987), the research examines how beliefs, traditions, and symbolic meanings influence the public utilization, or eschewal, of NAS. Using qualitative methods, the study documents community accounts of

how people perceive the role of ambulances, how experience with NAS conditions establishes trust or distrust, and how social norms (e.g., collective choice-making, family views, or reliance on traditional healers) disrupt biomedical emergency services. This provides a closer cultural understanding of why there is poor utilization of ambulances despite increased availability.

Through highlighting these sociocultural vectors, the study contributes to context-specific knowledge that can guide publicly sponsored culturally attuned public education interventions and build NAS's ability to resonate with local worldviews and values. This approach is taken to ensure that reforms cascade from infrastructures and logistics to reach hearts and minds of the people NAS is meant to reach.

POPULATION GAP

Population Gap: Among the significant limitations of earlier studies on the National Ambulance Service (NAS) in Ghana is their population concentration. Most of the studies have been urban-based in cities such as Accra, Kumasi, and Takoradi, where ambulance infrastructure, hospitals, and media coverage are more dominant (NAS, 2023; Stewart et al., 2014). These studies often rely on evidence from tertiary hospitals, urban emergency medical services systems, or national surveys that give aggregate numbers but mask considerable variability between urban and rural environments.

As a result, the views of marginalized groups, especially people from peri-urban, rural, and hard-to-reach populations, are largely not represented in the debate. But at the same time, these communities are worst hit in access to emergency health services due to geographical limitation, poor road networks, poor health infrastructure, and poor economy (Boafo et al., 2020). That is, while an urban citizen will be complaining about delayed delivery of the ambulance, a rural citizen may even not consider calling NAS because they think an ambulance will never turn up or that it is tailored for town dwellers.

Secondly, gender, age, and socio-economic class differences in ambulance perceptions are rarely disaggregated in the available literature. Maternal emergencies females, older patients with chronic

ailments, or low-income families with limited spending power may understand and utilize NAS differently. Overlooking these demographic differences may result in a one-size-fits-all approach that neglects the diverse realities of Ghanaian citizens.

The current study addresses this population gap by purposively sampling participants from community settings in a range of urban, peri-urban, and rural areas. With purposive and stratified sampling, the study ensures that the perspectives of populations traditionally underrepresented in previous studies are brought into focus.

By carrying out focus group interviews and community-based interviews, the research is in a position to capture the everyday lives of ordinary people across different socioeconomic and geographic locations. This approach highlights how class, place, gender, and age interact and shape the way people understand NAS, thereby addressing the available knowledge gap using disaggregated, people-centered evidence.

By doing this, the study resists the urban bias of much of the existing literature and presents a more representative and inclusive picture of public opinion concerning NAS in Ghana. This data can be used to construct targeted interventions, such as rural outreach, gender-sensitive campaigns, or class-aware messaging, that make the ambulance service more attractive and dependable to the entire population.

COMPARATIVE GAP

While global research on emergency medical services (EMS) becomes more pervasive, comparative results across contexts are few in Ghanaian literature. Ghanaian literature mostly examines NAS in isolation and considers it as a standalone service without comparatively analyzing it with either:

1. Other nations in Africa (such as South Africa, Kenya, Nigeria, or Rwanda), where EMS development has taken different trajectories. There is higher-developed pre-hospital care integration in South Africa, for example, and Kenya's community-based models of emergency response illustrate the role of local adaptation (Mould-Millman et al., 2015).

2. International best practices (e.g., EMS organizations in Europe, North America, or Asia), normally based on citizen trust, efficient dispatch infrastructure, and strong public–service communication policies (Patel et al., 2016).

This lack of comparative perspective means that Ghanaian studies often fail to situate NAS within the broader global EMS discourse. Without these benchmarks, it becomes difficult to assess whether the challenges faced in Ghana, such as prank calls, delayed response times, and low public trust, are unique to the local context or part of wider structural patterns observable in other low- and middle-income countries (LMICs).

Moreover, past scholarship has not examined in a critical manner how cultural and socio-political contexts condition EMS use differently across countries. For instance, while some cultures place greater emphasis on collective duty in seeking ambulances, others rely far more on personal decision. Ghana's emphasis on shared solidarity and community alternatives (e.g., taxis or personal cars) during emergencies has rarely been juxtaposed with these broader comparative contexts.

The present-day research, fills this comparative gap through the use of international and Ghanaian scholarship. Although grounded in local, community-level qualitative data, findings will be placed within comparison to international EMS literature, noting similarities, divergences, and unique cultural dynamics. By doing this, not only does the study improve local knowledge but it also informs global debates regarding EMS use in LMICs. Ghana is therefore an essential case study to show how cultural norms, trust, and popular understanding drive the utilization of formal ambulance services despite policy investments and infrastructure.

Lastly, this comparative method takes advantage of the maximum transferability of lessons, both from foreign nations to Ghana for adoption of their models and from Ghana's experience with NAS to other LMICs.

CONTEXT GAP

The majority of existing research on EMS in Ghana and other LMICs has been conducted with a narrow biomedical or administrative lens. These generally emphasize response time, ambulance number, or logistics coverage (Oppong et al., 2015; Zakariah et al., 2017), but they generally do not consider the broader socio-cultural, political, and communication contexts in which the National Ambulance Service (NAS) operates. Actually, usage of the ambulance is deeply rooted in Ghanaian social and cultural norms. For instance, some communities view the coming of an ambulance as a sign of death, while others hold the view that ambulances are for "serious" or "rich" patients only (Ankomah et al., 2021). In the same way, political gestures such as the "One Constituency, One Ambulance" policy have added to the fleet but have not been subjected to a systematic analysis of how they have shifted public trust, knowledge, or willingness to make a call to NAS.

Furthermore, Ghana's communication context, framed by neighborhood information networks, local media narratives, and oral networks, has been insufficiently analyzed in ascertaining public opinion toward NAS. This gap creates a contextual blind spot: citizens' decision-making activities are not fully understood without attention to the confluence of culture, politics, religion, and local communications.

Globally, scholars have adopted context-sensitive strategies (Aacharya et al., 2016; Patel et al., 2016) to explain EMS use, showing how the setting contributes substantially to whether or not ambulance services are trusted and used. Ghanaian scholarship lags behind in pursuing the same and therefore neglects how local settings influence individuals' comprehension and behavior.

The present study, addresses this situational deficit directly by placing public perception in Ghana's particular socio-cultural, political, and communicative environment. Through qualitative fieldwork, the study will: Obtain cultural beliefs, religious interpretation, and social norms influencing (not summoning) NAS.

1. Explore how political policies and programs (e.g., ambulances' distribution) catch community-level trust and satisfaction.

2. Discuss the role of local media sources, e.g., mainstream media, social media, and personal networks, in shaping citizens' attitudes toward NAS.

By placing context at the center, this work ensures that public opinion is not worked with as an abstract concept but as one that is grounded in the lived experiences of the Ghanaian nation. This enhances local-level knowledge about NAS but also offers lesson-taking from a context-based perspective for policymakers so that interventions are informed by the social and cultural lives of the people they seek to serve.

POLICY AND IMPLEMENTATION GAP

Ghana has had some high-profile EMS-improving policy initiatives in recent years, such as the "One Constituency, One Ambulance" initiative, Emergency Medical Technicians capacity building programs, and NAS mainstreaming into the national health system (NAS, 2023). The policies expanded infrastructure, increased the number of ambulances, and created political visibility for EMS. But despite all these efforts, there is little proof that these interventions have led to higher trust, usage, or satisfaction on the part of the public. Present assessments are more likely to focus on inputs and outputs (e.g., the volume of ambulances bought, training staff, or monies expended) rather than outcomes and impacts (e.g., higher calls, reduced emergency delays, or increased community trust). For instance, even if more ambulances are now on hand, little evidence exists to show whether the rural or peri-urban communities' citizens even feel more comfortable calling NAS.

Moreover, issues of implementation, such as inconsistent availability of ambulances, inadequate fueling budgets, inadequate maintenance, and inadequate sensitization drives, discourage the success of such policies. As a result, policy plans and reality in communities are still far apart.

The present-day research, contributes to the literature by evaluating how individuals perceive these policies in everyday life. Instead of measuring success in terms of numbers, this study asks if the citizens:

1. Are aware of the new reforms and policies,
2. Perceive NAS to be more available and reliable, and
3. Believe that these programs have made a difference in saving lives.

By focusing on community viewpoints, the study offers critical analysis to the extent to which policy enforcement is effective or ineffective, enabling policymakers to improve in adapting EMS strategies such that they positively reinforce trust, equity, and utilization.

ELABORATED KNOWLEDGE TRANSLATION GAP

Another frequent weakness of Ghanaian EMS research is an inability to translate research results into tangible community education, awareness, and operational change. Many studies and reports, scholarly articles, NAS annual reports, or MOH policy briefs also identify such issues as long response times, prank calls, or distrust. However, very few of these observations appear to bridge the line of diagnosis, with none showing signs of being part of community outreach, training, or strategic communication plans (Razzak & Kellermann, 2002; Agyeman-Duah et al., 2020). This is a gap in which valuable evidence fails to make it to the communities, frontline workers, or policymakers who may be able to take action on it. Second, and more importantly, most research is in the form of technical reports addressed to policymakers or global organizations but fails to translate findings into simple, accessible messages for common citizens, e.g., to debunk myths that ambulances are only for the deceased or too expensive to call.

This study answers this gap directly by framing its findings to be action-inspired for policy and responsive to the community. Aside from documenting citizen attitudes, it aims to:

1. Generate myth-busting and trust-building awareness campaign suggestions specific to the context.
2. Translate people's voices into implementable strategies NAS can undertake to enhance service delivery and outreach.

3. Develop a feedback mechanism between policymakers and the people so that everyday experiences inform choices.

In so doing, the research bridges the divide between knowledge generation and practical change and offers a template for how EMS research can be scholarly and socially transformative.

TRUST AND RISK PERCEPTION GAP

Despite steady worldwide EMS research emphasizing the centrality of trust in determining emergency help-seeking behavior (Slovic, 1987; Patel et al., 2016), comparatively less has been given to this issue in studies from Ghana. Worldwide empirical data show that ambulatory citizens' readiness to call an ambulance is strongly related to their confidence in the system to render timely, reliable, and respectful care. But in Ghana, existing literature has been on inefficiencies at the operations level such as slow response and hoax calls, without necessarily linking such failures to broader issues of public trust and perceived risk. Anecdotal report in society suggests that past negative experiences, e.g., late arrival of ambulances, under-equipped staff, or the perception that NAS services respond to certain social classes, have undermined confidence in the system. Undermining trust induces a vicious cycle: people are less likely to call ambulances, resort to unofficial transport, or be silent in emergencies altogether, hence reducing utilization further and reinforcing disbelief. Though important, however, this trust-risk perception-EMS underutilization relationship remains to be tested in Ghanaian research.

The present study places trust and perceived risk at the center of its examination, examining how citizens perceive and judge the trustworthiness of NAS. Through the documentation of tales of silence during emergencies, avoidance of EMS, and resorting to informal options, the study sheds light on how risk perceptions (fear of delay, fear of cost, or death association concern) and distrust directly shape behavior. This is paramount to understanding not just the operational breakdowns of NAS, but also the psychological and cultural influences shaping public response.

COMMUNICATION AND AWARENESS GAP

Despite policy reforms such as the "One Constituency, One Ambulance" program, there has long been a gap between NAS being made public to the public. Evidence from other countries underscores the fact that effective communication interventions play an important role in influencing public knowledge, expectations, and use of emergency services (Mould-Millman et al., 2015). In Ghana, however, few systematic studies exist to measure the effect of communication and awareness creation. Misconceptions regarding cost (that one must pay for services), eligibility (that ambulances are only for "VIPs"), and accessibility (that ambulances do not exist in rural areas) persist in both urban and rural settings. Public health interventions carried out by NAS and the Ministry of Health have been scattered, mainly limited to isolated media campaigns or single, independent community interventions, and lacking serious evaluation of their effects. As such, there is a lag in communication between institutional messages and community understanding. This translates into suboptimal use since misinformation or misunderstandings prevent citizens from calling NAS when emergencies are present.

This research closes the communication and awareness gap squarely by looking at how NAS operations are understood, misunderstood, or have no information among the communities. By carrying out qualitative interviews and focus groups, the research uncovers what people know about NAS, where they get this knowledge, and how it affects their willingness (or reluctance) to call. By linking attitudes at the community level to a more overall institutional communication strategy, the research provides evidence-based advice regarding how NAS can develop clearer, culturally responsive, and more effective messaging campaigns to maximize use.

Ghana's Emergency Medical Services (EMS) industry, although receiving increasingly greater attention from researchers and policymakers, remains beset by large gaps in the literature. Previous studies have primarily focused on the institutional and structural elements of the National Ambulance Service (NAS), including fleet allocation, staff training, finance, and organizational reforms (Oppong et al., 2016; Kwakye et al., 2020; MOH, 2021). While these studies are helpful to trace operational and policy developments, they remain supply-side in orientation and thus fail to capture the demand-side imperative of how citizens respond to and interact with ambulances.

SILENCE IN EMERGENCIES GAP

Such a gap is the fact that few studies have interrogated why citizens remain silent during emergencies, even when ambulances are theoretically accessible. As an example, Zakariah et al. (2017) study shows that prank calls account for up to 70% of calls to NAS in some regions, but the same study does not attempt to establish the reasons why, in case of actual life-threatening emergencies, most residents do not make calls. Like this, Adams et al. (2021) speak of misconceptions about cost and availability but do not extend to examining the household and community decision-making process that leads to silence or use of other transport modes such as motorbikes and taxis. Silence during emergencies is not just inaction, but a deeply symbolic exercise of public opinion, mistrust, fear, or culture. This subject is comparatively underexamined in Ghanaian EMS literature.

Shortage of Qualitative, Community-Centered Evidence

There is a limitation of overdependence on quantitative or institutional data. Much present work draws on surveys, call-center records, or policy analysis that provide quantitative patterns without bearing witness to the daily lives, cultural reasoning, and emotional reactions of the citizens. For example, NAS annual reports provide response times and call volume statistics but not why communities avoid using the service, how communities perceive ambulance sirens, or how bad experiences shape future decisions. Rural voices, particularly, go unheard; however, these individuals face some of the greatest hindrances with far-flung locations, absence of infrastructure, and inadequate public health messaging. Without qualitative, field-based information, the literature could present an incomplete picture of ambulance underutilization. Missing Thorough Exploration of Trust, Culture, and Perception

Another void is in the casual exploration of cultural values and trust relationships. While certain studies (Ankomah et al., 2021; Aborigo et al., 2012) acknowledge that ambulances are symbolically linked to death, or that families do opt for taxis at times because they seem faster and less intimidating, these results are fragmentary and under-theorized. There is no systematic analysis of how cultural assumptions, social norms, and institutional trust combine to influence public understanding of the NAS. Neither have theoretical models such as the Health Belief Model, Diffusion of Innovations, or Trust and Communication theories been uniformly applied to explain

ambulance use behaviors. Failure to develop theory here impedes interventions aimed at addressing both systemic risk and cultural logics.

The current research seeks to fill these empirical voids by:

1. Putting silence in the forefront as a form of public response, questioning not only why individuals place prank calls, but also why citizens are least likely to call at all during times of crisis.
2. Putting community voices front and center through a qualitative method that brings out nuanced understandings from both urban and rural settings, certain to encompass marginalized and sometimes-overlooked perspectives.
3. Strengthening theoretical analysis by locating Ghanaian constructions of NAS within communication and behavior models, thus contextualizing local experience through the broader debates in the scholarly field.
4. Sealing the policy-practice gap by complementing formal MOH and NAS reports with real people's accounts in the communities, thus building towards a fuller representation of the gap between service availability and uptake.
5. Finally, while previous research has outlined EMS performance difficulties in Ghana, the sociocultural and perception domains have been rather underexplored. This study plugs that gap by asking not only how many ambulances there are or how fast they arrive where they're needed, but more fundamentally, why individuals call them up, or not, at the moment of need.

Collectively, these gaps attest to the fact that even with NAS's great infrastructural and operational improvements, cultural determinants, drivers of behavior, and public image are not as well elucidated. Closing these gaps is essential to actualizing the life-saving potential of NAS, improving the quality of outcomes of emergency response, and establishing public trust in the healthcare system of Ghana.

2.3 THEORETICAL FRAMEWORK

The theoretical framework provides the conceptual framework within which this study examines public attitudes towards the National Ambulance Service (NAS) in Ghana. Knowing why citizens use or fail to use NAS requires borrowing from multiple behavioral, service, and systems theories since public utilization of EMS is founded on psychological, sociocultural, and structural factors. This study, therefore, adopts a multi-theoretical stance, adding eight ancillary theories to provide an integrated perspective.

2.3.1 DIFFUSION OF INNOVATIONS THEORY (ROGERS, 2003)

The Diffusion of Innovations Theory (DOI), which was created by Everett Rogers (2003), is a theory applied to account for the diffusion of innovations, technologies, or practices within a society. It brings to light the fact that the adoption of innovations does not happen at once but rather over time through a social process fueled by communication channels, social systems, and perceived characteristics of the innovation. In the context of medicine, ambulance transportation and EMS systems are innovations in the context of societies where pre-hospital emergency treatment is a relatively new concept. In Ghana, the National Ambulance Service (NAS) is such an innovation that bridges the gap between emergency incidents and hospital care. In most communities, especially peri-urban and rural areas, the use of taxis, personal cars, or unapproved motor vehicles has been the default practice for emergency transportation (Oppong et al., 2015; Stewart et al., 2014). Introducing a formal ambulance system undermines these traditional practices and requires the public to experience clear advantages over the deep-seated alternatives.

According to Rogers (2003), adoption of an innovation is dependent on five characteristics:

Relative Advantage: The members will use NAS when they perceive ambulances to be faster, safer, and more convenient than taxis or personal transport (Aacharya et al., 2016).

Compatibility: Implementation of EMS is based on how well the service aligns with existing cultural expectations and health care practices. For instance, populations associating ambulances with death will be reluctant to call NAS even in emergencies (Ankomah et al., 2021).

Complexity: If the system seems complex, for instance, confusing emergency numbers, registration process, or cost factor, citizens will be less likely to use NAS (Zakariah et al., 2017).

Trialability: Low-risk opportunities to experiment with the service, such as community outreach programs or first aid demonstrations, can build positive attitudes and then adoption (Gyasi, 2018).

Observability: Successful NAS intervention, stabilized patients and evacuation to safety, is seen and observed by communities, and this leads to greater trust and acceptance and greater use (Razzak & Kellermann, 2002).

The DOI theory also considers the role of communication channels and social influence. Information from trusted sources such as community leaders, health workers, media advocacy, and community testimonies can accelerate the uptake. Disinformation, myths, or rumors of failure of the system can, conversely, retard uptake. DOI theory can be employed by researchers to explain why a few individuals or populations embrace NAS at accelerated rates but others are slow, as it guides the development of targeted interventions to raise public awareness, trust, and utilization (Ajzen, 1991; Slovic, 1987).

Generally, DOI provides a beneficial framework for understanding the diffusion of EMS innovations across the diverse communities of Ghana and how the interconnectedness of perceived advantage, cultural fit, ease of access, and social influence affects public adoption of NAS.

2.3.2 HEALTH BELIEF MODEL (ROSENSTOCK, 1974)

Rosenstock's (1974) Health Belief Model (HBM) is a well-known psychological model for the explanation of health-related behaviors driven by people's perceptions. The model presumes that a person is more likely to take on a health behavior if they perceive themselves as being at risk for acquiring the condition, if they believe that the condition has serious repercussions, if they suspect that taking a specific act would decrease the threat, and if they think the benefits of taking the act outweigh the costs or hindrances. Furthermore, cues to action (e.g., media messages, community education) and self-efficacy (having confidence in one's capability for performing the action) play

an important role in decision-making. Under the Ghana National Ambulance Service (NAS), the HBM explains whether or not citizens utilize ambulances when in need. Perceived susceptibility, for example, refers to the way individuals measure the likelihood of facing a medical emergency that involves them or their kin, for example, a road traffic injury or obstetric complication (Agyeman-Duah et al., 2020). Perceived severity is the perceived seriousness of the outcome of not taking care of themselves promptly, such as death or lasting disability (Oppong et al., 2015).

Perceived benefits involve the perception that an ambulance call will result in faster, safer, and more professional medical care (Stewart et al., 2014). Conversely, perceived barriers may be fear of prolonged arrival, cost issues, misperception of ambulance role, or socio-cultural norms advocating taxis or private car usage over formal EMS (Asamoah & Boafo, 2022; Ankomah et al., 2021). Action cues such as public education campaigns, community education, or personal experience of effective ambulance interventions may trigger the use of NAS during emergencies (Razzak & Kellermann, 2002). Finally, self-efficacy relates to the perception of citizens that they can approach NAS and execute the emergency process effectively, for instance, by being aware of the emergency number and following the process (Gyasi, 2018).

With the incorporation of HBM in this study, researchers are then in a position to assess systematically how the perception, knowledge, and beliefs of Ghanaian citizens affect their call behavior for an ambulance in the event of an emergency. It provides a framework to identify psychological and social determinants that can encourage or inhibit the usage of NAS, hence public awareness, participation, and confidence-building strategies for improving pre-hospital care services (Aacharya et al., 2016).

2.3.3. THEORY OF PLANNED BEHAVIOR (AJZEN, 1991)

Ajzen's (1991) Theory of Planned Behavior (TPB) is an expansion upon earlier models with the understanding that one's behavioral intention is influenced by three constructs: attitude towards the behavior, subjective norms, and perceived behavioral control. TPB asserts that even if there are opportunities or resources, individuals may choose not to engage in a behavior if these three factors are not positively aligned. Transferred to the National Ambulance Service (NAS) in Ghana,

TPB can explain why the citizens fail to utilize ambulance services even though they are widely available.

Attitudes towards the behaviour: It is the personal judgment about calling an ambulance. Negative attitudes, such as beliefs that NAS is slow, expensive, or unreliable, discourage utilization (Stewart et al., 2014; Adams et al., 2021). Positive attitudes—believing that NAS is professional, life-saving, and efficient- can improve the utilization potential (Agyeman-Duah et al., 2020).

Subjective norms: Social influences are of foremost significance in health behaviors. Individuals may be influenced by family, community, or peer norms rather than their own discretion. For instance, in some Ghanaian communities, social expectation demands getting into taxis, private cars, or motorbikes during emergencies rather than calling for an ambulance (Oppong et al., 2016; Ankomah et al., 2021). Community narratives and social pressures about ambulance use have a high impact on behavioral intentions.

Perceived behavioral control: This refers to the extent to which individuals feel that they can perform the behavior, like knowing the emergency phone number, handling the calling procedure, and trusting in the system to respond in the right way. Barriers such as past delays, hoax calls, or uncertainty about the availability of ambulances lower perceived control and thus lower use (Zakariah et al., 2017; Asamoah & Boafo, 2022).

Using TPB in this research, it is feasible to examine how attitude, social norms, and control belief function interactively in affecting citizens' intentions and actual actions towards NAS. The theoretical model highlights the fact that raising the number of ambulances is not sufficient; interventions should be directed towards altering public attitudes, social expectations, and belief in the system in order to boost rates of utilization (Ajzen, 1991; Razzak & Kellermann, 2002).

2.3.4. SERVICE QUALITY (SERVQUAL) MODEL – PARASURAMAN, ZEITHAML & BERRY (1985)

The SERVQUAL tool, developed by Parasuraman, Zeithaml, and Berry (1985), under the principle that service quality relies on the gap between perceived customer expectations and

service performance, has five fundamental dimensions that are affected by perceived service quality, namely reliability, responsiveness, assurance, empathy, and tangibles. The tool has been employed widely in the health services area to quantify the effect of service delivery on user trust and satisfaction (Parasuraman et al., 1985; Agyeman-Duah et al., 2020). With the use of the National Ambulance Service (NAS) in Ghana as a case in point, the SERVQUAL model provides a framework for quantifying citizens' perceptions of ambulance care:

Reliability: It involves the ability of NAS to deliver services as promised. Quick response by ambulances, medical procedures according to up-to-date standards, and effective communication from dispatching centers are examples of reliable services. Delay, breakdown, or failure to respond in case of an emergency breaks down reliability and erode public trust (Stewart et al., 2014; Zakariah et al., 2017).

Responsiveness: Citizens expect a prompt response during emergencies. NAS responsiveness reflects the readiness and willingness of EMTs, paramedics, and dispatch officers to provide ready care. Experiences of delayed response or process inefficiencies undermine trust in the service (Adams et al., 2021).

Assurance: This calls for the knowledge, professionalism, and competence of NAS personnel. Assurance demands technical skill, courteous communication, and successful stabilization of patients. A negative public perception of not possessing skill sets or not being professional can discourage utilization, even when ambulances are available (Aikins et al., 2019).

Empathy: Empathy is the personalized concern and care that EMS staff have with patients and their families. NAS staff who communicate clearly, is empathetic, and is patient-dignity respecting is most likely to foster trust and induce repeated usage (Ankomah et al., 2021).

Tangibles: The physical component of the service, including ambulance vehicles, medical equipment, uniforms, and communications technology. Modern, well-equipped ambulances and visible professionalism engender credibility and enhance public trust, while poorly equipped ambulances or lack of essential equipment have a tendency to enhance suspicion (Oppong et al., 2016).

Applying SERVQUAL to measure NAS, the current study focuses on the effect of public perceptions of service quality in relation to the utilization of ambulances. It highlights the fact that increasing the number of ambulances or dispatching centers is insufficient without enhancing these qualitative dimensions of service provision. Along with behavioral and sociocultural approaches, SERVQUAL provides an integral approach for determining the reasons citizens utilize NAS less despite the technologically available emergency medical service (Parasuraman et al., 1985; Agyeman-Duah et al., 2020).

2.3.5. SOCIAL CONSTRUCTION OF TECHNOLOGY (SCOT) THEORY – BIJKER, HUGHES & PINCH (1987)

The Social Construction of Technology (SCOT) approach argues that technological artifacts, including health innovations, have no inherent meanings and predestined applications. Instead, their meaning and adoption are created by the involved social groups, e.g., policymakers, medical doctors, and the public (Bijker et al., 1987). In other words, the understanding, interpretation, and application of a technology depend on social context, cultural values, and user experience. In the instance of the National Ambulance Service (NAS) in Ghana, SCOT facilitates an explanation of the differing ways ambulance provision is understood in different social groups:

Policy makers and healthcare administrators view NAS as an essential innovation in pre-hospital emergency care that saves unnecessary lives and strengthens the national health system (Oppong et al., 2015). To them, spending money on ambulances, dispatch facilities, and trained personnel is a modern, life-saving infrastructure.

EMS practitioners (paramedics and EMTs) can think of ambulances as professional practice tools to provide immediate medical care and improve patient outcomes. They base their conceptualization on training, operating procedures, and work experience.

The general public and communities may perceive ambulances differently. Ambulances are, in certain Ghanaian communities, even still associated with death or a funeral, which creates fear or hesitation to call them when there is an emergency (Ankomah et al., 2021; Asamoah & Boafo,

2022). Others may perceive NAS as unaffordable, inaccessible, or even unreliable, particularly in rural or peri-urban areas where coverage for services is intermittent (Alhassan et al., 2021).

SCOT theory thus accounts for why mere availability of NAS is no guarantee of use. Cultural beliefs, individual experience, media representation, and word-of-mouth information all create social meanings for ambulances and EMS. Research and policymakers can design interventions to alter misperceptions, build trust, and promote appropriate use by studying these socially constructed perceptions (Bijker et al., 1987; Gyasi, 2018).

Applying SCOT to NAS, this study investigates how different social groups construe ambulance services and how such construings influence public action. By linking technology infrastructure to social understanding, SCOT augments other frameworks like the Health Belief Model, Theory of Planned Behavior, and SERVQUAL for an exhaustive explanation of EMS usage in Ghana.

2.3. 6. TRUST AND CONFIDENCE THEORY – LUHMANN (1979)

Trust and Confidence Theory is such that individuals' willingness to engage with institutions or systems is a function of the degree to which they trust their reliability, competence, and integrity (Luhmann, 1979). Trust is especially critical where uncertainty, risk, or high stakes are involved, such as in medical emergencies, where individuals must make rapid decisions under stress. Within the National Ambulance Service (NAS) in Ghana, trust establishes whether individuals call an ambulance during emergencies. Past experience, anecdotal evidence, and local tales all contribute to general public trust in NAS:

Operational reliability: Delayed response, mechanical failures of vehicles, and lower levels of ambulances available in rural areas can lower levels of trust, leading citizens to prefer taxis, private vehicles, or other unofficial transport (Osei-Ampofo et al., 2012; Zakariah et al., 2017).

Professional competence: Confidence in competence among EMTs and paramedics affects willingness to utilize NAS. Instances of substandard care or perceived unprofessional behavior drain confidence and reduce usage (Atiga et al., 2019).

System transparency and fairness: Fairness and perception that NAS is available, equitable, and not corrupt establish confidence. Misconception that the service is for the wealthy or associated with hidden charges undermines trust (Aikins et al., 2019; Adams et al., 2021).

Media and public perceptions: Prank calls, late responses, or powerless interventions can augment fear and suspicion, eroding NAS public confidence (Patel et al., 2016).

Trust intersects with risk perception, as argued by Slovic (1987). Citizens balance the probable benefit of calling an ambulance with perceived risk from waiting too long, death in transit, or mishandling. Reduced trust amplifies perceived risk, leading to avoidance even during a life-and-death emergency.

Applying the theory of Luhmann, the study examines why trust deficits exist among diverse Ghanaian populations and how they affect public engagement with NAS. Examining patterns of trust is essential in developing interventions, public education interventions, and policies that encourage ambulance usage, thereby enhancing pre-hospital emergency care outcomes (Adams et al., 2021; Ankomah et al., 2021).

2.3. 7. SYSTEMS THEORY – BERTALANFFY (1968)

Systems Theory indicates that organizations are integrated systems where the components interact among themselves and with the outside world to exchange goals (Bertalanffy, 1968). Dysfunction or modification in one component of the system affects the whole system, with a focus on coordination, feedback, and adjustment. In the case of the National Ambulance Service (NAS) in Ghana, the organization is part of a broader healthcare environment and engages with hospitals, dispatching centers, nearby communities, policymakers, and emergency management agencies. The main features are:

Interconnected operations: NAS relies on efficient dispatch centers, adequate ambulance fleets, qualified EMTs, and communication with hospitals in order to provide prompt pre-hospital care. Disruptions in any of these components, such as a lack of vehicles or road conditions, can compromise the effectiveness of the overall system (Oppong et al., 2020).

Feedback mechanisms: Community perceptions, complaints, and usage patterns serve as feedback for NAS management to maximize operations, deployment of resources, and public awareness (NAS, 2023).

Environmental interactions: NAS's effectiveness is defined by external factors such as government policy, cultural perceptions, and socio-economic status. For instance, lack of trust or prank calls affect demand and resource consumption, capturing the dynamic interaction between the service and the environment (Asamoah & Boafo, 2022).

Systems Theory considers that comprehension of NAS involves the examination not just of internal workings but also of how the organization reacts to environmental stimulation, such as public attitude. This methodology legitimizes a comprehensive investigation of operational and societal determinants of EMS use.

2.3.8. RISK PERCEPTION THEORY – SLOVIC (1987)

Risk Perception Theory predicts that individuals' decisions, particularly under uncertainty, are more likely to be made based on subjective risk perceptions rather than objective probabilities (Slovic, 1987). Risk perception dictates behavioral possibilities, particularly in health emergencies where results are unpredictable and stakes are high. Applied to NAS in Ghana:

Perceived threat vs. response efficacy: Citizens assess whether calling an ambulance will indeed improve outcomes or whether another transport offers a safer or faster option. Misconceptions, such as viewing ambulances as slow, poorly equipped, or associated with death, overestimate perceived danger and deter utilization (Ankomah et al., 2021; Osei-Ampofo et al., 2012).

Cultural and social determinants: Traditional beliefs and community legends influence risk assessment. For example, a legacy of suspicion that ambulance sirens foreshadow death may discourage early calling. This reflects sociocultural determinants of risk perception (Gyasi, 2018; Asamoah & Boafo, 2022).

Interaction with trust: Risk perception is intimately related to trust in the system. Low trust in NAS increases perceived risks, and citizens are more likely to delay or refrain from summoning immediate emergency care (Patel et al., 2016; Adams et al., 2021).

The inclusion of Risk Perception Theory allows this study to examine how perceived threats, fears, and uncertainties shape the public's engagement with NAS, providing a vision for barriers that extend beyond mere logistical or infrastructural hurdles.

2.4 RELEVANCE OF THEORY

The theory of this study is critical in understanding the complex interplay between social, cultural, psychological, and organizational factors that affect public perception and utilization of the National Ambulance Service (NAS) in Ghana. By integrating multiple theories, the study explains both individual and system-level determinants of EMS use, and hence provides a broad analytical perspective. Diffusion of Innovations Theory (Rogers, 2003) provides an explanation of the adoption of NAS as a health innovation among Ghanaian communities. The theory emphasizes that adoption is influenced by perceived relative advantage, compatibility with local norms, complexity, trialability, and observability. For instance, communities that know the life-saving value of ambulances will more readily use the service, whereas those that do not know about pre-hospital care will persist in withholding (Oppong et al., 2015). The theory can account for the uptake of NAS being spotty in communities and the reasons why awareness campaigns are necessary for uptake.

Health Belief Model (Rosenstock, 1974) and the Theory of Planned Behavior (Ajzen, 1991) explain the psychological and behavioral processes involved in citizens' utilization of NAS. The Health Belief Model focuses on the influence of perceived severity, susceptibility, benefits, barriers, and cues to action. For example, a citizen's plan to call an ambulance can depend on the belief about the seriousness of a medical condition and belief in the efficiency of NAS (Stewart et al., 2014). The Theory of Planned Behavior builds on this observation by incorporating subjective norms and perceived behavioral control. Cultural norms, beliefs about ambulance effectiveness,

and utilization of taxis or private vehicles have direct effects on behavioral intentions (Ajzen, 1991). Together, these models account for why individuals may underutilize NAS despite increased availability.

SERVQUAL Model (Parasuraman et al., 1985) highlights the importance of service quality dimensions including reliability, responsiveness, assurance, empathy, and tangibles. Evidence from Ghana and other African countries suggests that adverse experiences, like delayed response, inadequate staffing, and poorly equipped ambulances, undermine public trust and deter utilization (Zakariah et al., 2017; Mould-Millman et al., 2015). The application of SERVQUAL provides a useful tool for assessing how perceived service quality influences citizens' intention to call NAS during emergencies.

Social Construction of Technology (SCOT) Theory (Bijker et al., 1987) and Risk Perception Theory (Slovic, 1987) offer sociocultural and psychological explanations. SCOT emphasizes that technologies, including ambulances, are socially interpreted and meaning is assigned from lived experiences and cultural discourses. Misconceptions, such as viewing ambulances as a vehicle for transporting the dead, directly affect service utilization (Ankomah et al., 2021). Risk Perception Theory contributes to this by demonstrating the influence of fear, uncertainty, and perceived danger on decision-making. Perceived risks, as opposed to objective service effectiveness, may inform citizens' choices not to dial ambulances (Gyasi, 2018).

Trust and Confidence Theory (Luhmann, 1979) emphasizes the need for institutional credibility in the use of EMS. Public trust is built on the basis of previous experiences, media coverage, and perceptions of professionalism. For NAS, experiences of hoax calls, resource constraints, or delayed responses might erode confidence, resulting in reluctance to use the service in the event of a real emergency (Adams et al., 2021).

Finally, Systems Theory (Bertalanffy, 1968) places NAS within the broader Ghanaian healthcare system. The theory recognizes interdependence between dispatch centers, hospitals, ambulances, EMTs, policy frameworks, and communities. By viewing NAS as a system, the theory facilitates the understanding of how bottlenecks, infrastructural deficits, or breakdowns in coordination affect public perception and service quality (Oppong et al., 2020).

Overall Relevance: Integrating these theories facilitates the multidimensional understanding of public uptake and perception of NAS. It highlights that uptake is not only driven by operational efficiency but also by cultural norms, risk assessment, trust, and perceived quality of service. This theoretical basis guides the study methodology, data gathering, and result interpretation, such that the findings are not only actionable but also context-specific. By applying these theories, this research can inform policy modification, public education, and service reform, ultimately enhancing trust, access, and utilization of EMS in Ghana.

2.5 DEFINITION OF KEY TERMS

Emergency: An emergency is a sudden occurrence posing a threat to life, health, or safety and requiring immediate action to prevent death or serious injury (World Health Organization [WHO], 2017). The emergencies in the study include road traffic accidents, obstetric emergencies, cardiac arrest, stroke, burns, and disaster-related injuries. Emergencies create the demand for pre-hospital care and are at the center of the National Ambulance Service (NAS) activities in Ghana.

Ambulance: An ambulance is a specially equipped vehicle intended to provide pre-hospital medical care and transport patients to healthcare facilities safely. Ambulances have qualified Emergency Medical Technicians (EMTs) or paramedics, along with basic medical equipment such as oxygen, cardiac monitors, a first aid kit, and resuscitation equipment (Aacharya et al., 2016). In Ghana, ambulances are symbolic of life-saving intervention and are part of NAS's service delivery.

Service: A service, in public administration and healthcare, is an arranged provision of assistance, resources, or skills for the fulfillment of the public's needs (Kotler & Keller, 2016). NAS is a service because it provides formal expert emergency medical care and transportation to citizens throughout Ghana, with a priority on accessibility, reliability, and equity.

National Ambulance Service (NAS): NAS is Ghana's statutory pre-hospital emergency care service established in 2004 under the Ministry of Health and governed by the National Ambulance Service Act, 2010 (Act 825). NAS attends to emergencies, provides on-scene stabilization,

coordinates patient transfers, and supports disaster management in the country (Oppong et al., 2020).

Public Perception: Public perception refers to collective knowledge, belief, attitude, and opinion that citizens have concerning an institution or service (Grunig & Hunt, 1984). In this study, it is on how the Ghanaians perceive NAS in terms of reliability, accessibility, professionalism, and responsiveness. Public perception has a significant impact on the utilization of ambulance services.

Emergency Medical Technicians (EMTs): EMTs are authorized medical professionals with training to provide pre-hospital emergency care. Their responsibilities include assessing patients, administering life-saving interventions, and ensuring safe transport to hospitals (Zakariah et al., 2017). EMTs in Ghana are NAS's frontline personnel and play a crucial role in operational effectiveness.

Utilization: Utilization accounts for the extent to which citizens take advantage of and make use of NAS services during emergencies. It encompasses metrics such as frequency of calls for ambulances, response time for activation, and adherence to EMS guidelines (Razzak & Kellermann, 2002).

Service Quality: Service quality of EMS refers to how far NAS meets public expectations of reliability, responsiveness, assurance, empathy, and tangibles as identified in the SERVQUAL model (Parasuraman et al., 1985). High service quality enhances trust, enhances utilization, and improves overall health outcomes.

Cultural Beliefs and Practices: Cultural beliefs are the shared norms, values, and customs that influence health-seeking behavior. Cultural beliefs in Ghana can decide whether residents use an ambulance, as some communities will believe ambulances bring death rather than lifesaving interventions (Ankomah et al., 2021; Asamoah & Boafo, 2022).

Trust and Confidence: Public trust and confidence in EMS represent the public's faith in the reliability, professionalism, and effectiveness of NAS (Luhmann, 1979). High trust promotes service usage, while shortages contribute to avoidance and underutilization.

2.6 CHAPTER SUMMARY

This chapter provided an overview of literature that was relevant to Emergency Medical Services (EMS) and public opinion, situating the National Ambulance Service (NAS) in the global and local context. It began with the presentation of key concepts of emergencies, ambulances, and service, and pointed towards their interconnectedness in shaping public health outcomes. The chapter proceeded to discuss global viewpoints, and it demonstrated that public trust, knowledge, and socio-cultural issues have a strong impact on ambulance use even in wealthy nations (Sasser et al., 2005; Nicholl et al., 2007).

In the African scenario, studies reported persisting challenges in EMS use due to infrastructural deficits, perceptions of unreliability, and socio-cultural conceptions of ambulances as "death vehicles" (Mould-Millman et al., 2015; Ghana et al., 2018). In Ghana, although NAS has penetrated throughout the nation, evidence indicates public utilization is still patchy, with cultural perceptions, low awareness, prank calls, and quality of service affecting perception (Oppong et al., 2015; Stewart et al., 2014; Ankomah et al., 2021).

The chapter also emphasized the salience of awareness, service quality, confidence, trust, and perceived risk as EMS utilization determinants (Parasuraman et al., 1985; Luhmann, 1979; Slovic, 1987). Conceptual, empirical, methodological, socio-cultural, population, and policy gaps were highlighted, which justify this study.

Lastly, the theoretical foundations were thoroughly described, incorporating eight contributing theories: Diffusion of Innovations, Health Belief Model, Theory of Planned Behavior, SERVQUAL, Social Construction of Technology, Risk Perception, Trust and Confidence, and Systems Theory, to conceptualize how public perceptions, cultural beliefs, and service quality interact to decide utilization. Through the incorporation of international and Ghanaian viewpoints, this chapter provides a robust foundation for understanding the context, relevance, and objectives of the available research on public perception of NAS.

3.0 METHODOLOGY

3.1 Chapter Introduction

This chapter offers the research methodology employed in the study to measure public perception of the National Ambulance Service (NAS) in Ghana. The methodology offers the research design, population and sampling methods, data collection approaches, as well as analysis methods employed to offer evidence for the validity, reliability, and strength of the study. Methodology forms part of any study as it indicates the way in which accurately and comprehensively the study issues are addressed (Creswell & Creswell, 2018). As public opinion is subjective and based on socio-cultural, economic, and experiential considerations, a qualitative research approach was found most appropriate. Qualitative analysis allows for an in-depth appreciation of individuals' lived experiences, attitudes, and perceptions and yields richer knowledge than quantitative analysis alone (Patton, 2015; Denzin & Lincoln, 2018). Such an approach suits the purpose of this study to determine the determinants of public interaction with NAS, including awareness, cultural beliefs, trust, and service quality perceptions.

The chapter also discusses the research philosophy supporting the study. This study is based on the interpretivist paradigm that emphasizes social phenomena are understood best from the perspective of the participants and not based on predetermined hypotheses (Bryman, 2016). In accordance with the philosophy, the study utilizes semi-structured interviews and focus group discussions to gain diverse perspectives in different communities, such as urban, peri-urban, and rural residents.

Additionally, ethical considerations, measures for guaranteeing trustworthiness, and constraints of the adopted methodology are revealed. By the explanatory outlining of these methodological factors, this chapter sets the stage for the credibility of the study and shows how the design of the research enables a detailed examination of public perception, hence contributing to the further development of EMS policy and practice in Ghana (Lincoln & Guba, 1985; Maxwell, 2013).

3.2 RESEARCH PARADIGM

A research paradigm provides the philosophical foundation that guides the choice of research design, methods, and interpretation of findings (Guba & Lincoln, 1994). It encapsulates the assumptions of the researcher about reality (ontology), knowledge (epistemology), and the nature of the inquiry (methodology). For the present study focusing on trying to identify the public perception of the National Ambulance Service (NAS) in Ghana, the interpretivist paradigm was employed. The interpretivist paradigm is interested in the reality that social reality is socially constructed and subjective. It contends that individuals' experiences, beliefs, and interactions shape their interpretation of events, and as such, it is important to research these perceptions within context (Bryman, 2016; Creswell & Creswell, 2018). Public opinions on NAS are shaped by cultural beliefs, institutional trust levels, past experiences with emergencies, and local ambulance services' narratives. An interpretivist research approach can allow the researcher to tap such a nuanced understanding, which is not easily quantifiable with mere numerical data.

The paradigm fits with the qualitative nature of the study because it prioritizes intensive knowledge over generalizability. It is applied in facilitating comprehension of the participants' everyday lives, their reasons and thoughts, and hence facilitates the identification of patterns and themes that create sense out of the use or non-use of NAS services (Patton, 2015). For instance, interpretivism is flexible to suit the research of sociocultural themes, such as how the belief that ambulances transport dead bodies rather than saving individuals is perceived and the influence of perceptions in decision-making during emergencies (Asamoah & Boafo, 2022).

Besides, the utilization of the interpretivist paradigm allows for ethical and inclusive interaction with the respondents. The paradigm acknowledges that knowledge is co-constructed among participants and the researcher, which ensures that the voice of people from urban, peri-urban, and rural areas is actually captured (Denzin & Lincoln, 2018). By situating findings within people's everyday experiences, the study provides context-specific information, which may inform NAS policies, public education efforts, and trust-building efforts.

Briefly, the interpretivist paradigm provides a robust framework to examine public perception of NAS based on subjective understanding, social context, and meaning-making, which are essential

in fulfilling the aims of the research and completing the conceptual, methodological, and sociocultural gaps in the literature.

3.3 PHILOSOPHICAL ASSUMPTIONS

Philosophical assumptions provide the underlying rationale for choosing a research paradigm, guiding how the research perceives reality, knowledge, and values (Creswell & Creswell, 2018). In this study, which explores public perception of the National Ambulance Service (NAS) in Ghana, several basic assumptions underpin the research design: ontology, epistemology, and axiology.

3.3.1 Ontological Assumption

Ontology is concerned with the nature of reality and what is accepted as "truth" or knowledge of the world (Crotty, 1998). Ontological assumptions in social research determine how the researcher understands the phenomena being studied and how reality is known (Guba & Lincoln, 1994). This study assumes a subjectivist ontological position that recognizes that reality is socially constructed and varies with people depending on their experiences, beliefs, and contexts. Public perception of the National Ambulance Service (NAS) in Ghana is subjective in nature, and it is influenced by numerous factors, including past experiences with emergency services, cultural expectations, socio-economic status, media reports, and hearsay (Ankomah et al., 2021; Gyasi, 2018). For instance, NAS may be viewed positively by some because of timely emergency services or life-saving efforts, but others may view the service negatively as a result of prank calls, delayed arrival times, or false perceptions that ambulances attract death (Osei-Ampofo et al., 2012). These contrasting views indicate that reality is not fixed but exists in various forms within individuals' minds according to their social and environmental backgrounds.

These subjective realities are required for this study because it allow the researcher to discover how citizens perceive, evaluate, and respond to NAS services. Through the recognition that perceptions are socially and culturally constructed, the study ensures that it gets to captures the subtle way that trust, risk, and service quality affect ambulance utilization. This ontological stance

aligns with qualitative research ideals, in which context, meaning, and lived experience are seen as valuable in examining social phenomena (Denzin & Lincoln, 2018).

3.3.2 Epistemological Assumption

Epistemology addresses the character of knowledge and how it can be accessed, validated, and construed (Crotty, 1998). Epistemology addresses the relationship between the researcher and the research object, guiding how data is collected, analyzed, and understood. For this research, an interpretivist epistemological approach is being followed, which believes that understanding people's subjective perceptions, meanings, and frames of reference should be prioritized over efforts to discover objective generalized truths. In the National Ambulance Service (NAS), epistemology recognizes that knowledge of public opinion is constructed from the lived experience of people, social interaction, and cultural knowledge (Guba & Lincoln, 1994). Individuals' views regarding NAS services, both positive, negative, or ambivalent, are constructed based on experience with emergency services, popular narratives in the community, socio-economic class, and prevailing cultural beliefs (Ankomah et al., 2021; Gyasi, 2018). For example, whereas some people may have faith in NAS due to its promptness in cases of emergencies, others may be doubtful due to fear, misinformation, or rumors of delays and hoax calls (Osei-Ampofo et al., 2012).

By adopting the interpretivist stance, this research positions the researcher as a participating interpreter of participants' experiences and seeks to clarify how and why people hold certain notions about NAS. Such an epistemological position is augmented by qualitative methods, such as in-depth interviews and focus groups, to gather rich, situated knowledge concerning participants' attitudes, beliefs, and behavioral intentions (Denzin & Lincoln, 2018). The study, therefore, places greater emphasis on meaning-making rather than numerical generalizability to keep pace with the complexity and diversity of Ghanaian citizens' experience of NAS.

3.3.3 Axiological Assumption

Axiology is concerned with values and ethics in research, particularly the influence of the researcher's values on the research process and results (Crotty, 1998; Guba & Lincoln, 1994). It is concerned with how researchers' beliefs, judgments, and ethical position affect study design decisions, data collection, analysis, and interpretation. Axiology in this study acknowledges that the researcher cannot but bring personal and professional values to the analysis of public perception of the National Ambulance Service (NAS). These include commitment to improved healthcare delivery, regard for public sensitization, and regard for the sociocultural environment of emergency medical services (Gyasi, 2018). Clarifying these values ensures transparency in the research process, allowing the researcher to reflect critically upon how their perspectives could impact interactions with participants and the interpretation of results.

Axiological position is concerned with ethical aspects. The research upholds participants' autonomy, privacy, and informed consent in a manner that their perceptions are accurately represented without prejudice or distortion (Denzin & Lincoln, 2018). In the investigation of NAS perceptions, for instance, participants may show dissatisfaction or mistrust. Axiological positioning ensures that these perceptions are documented accurately, without their relevance to the respective socio-cultural and lived experiences of the researched groups being distorted (Osei-Ampofo et al., 2012).

Moreover, axiology guides the applied nature of the study: the findings are not only scholarly but are intended to inform policy, improve NAS functions, and foster public confidence. By integrating values into the research procedure, the study establishes a connection between theory and practice, such that conclusions are ethically sound, socially relevant, and useful (Guba & Lincoln, 1994).

3.3.4 Methodological Assumption

Methodologically, the study assumes that qualitative research approaches best fit the investigation of complex social phenomena such as public attitudes, trust, and cultural meanings of emergency

medical services (Merriam & Tisdell, 2016; Creswell & Poth, 2018). As opposed to quantitative approaches focused on measurement in the form of numbers and generalization, qualitative approaches allow for the exploration of participants' lived experiences, meanings, and attitudes towards the National Ambulance Service (NAS) more in-depth.

In particular, in-depth interviews and focus group discussions are employed to collect rich, qualitative data to unravel how individuals conceptualize emergencies, interpret ambulance services, and negotiate socio-cultural expectations when deciding whether or not to pursue NAS. The methods facilitate free-flowing speech, enabling respondents to clarify personal experience, frustration, and service innovation ideas in their own words (Patton, 2015).

Methodological assumption also accounts for the fact that human behavior in times of emergency is influenced by a set of interacting factors, including cultural beliefs, social norms, past experience, and quality perception. Qualitative approaches permit flexibility in questioning such factors, establishing patterns, and interpreting their interaction (Denzin & Lincoln, 2018). For example, informants could describe circumstances under which cultural beliefs discourage the activation of an ambulance, or under which confidence in religion is eroded by delay or misuse of the system, data which cannot be obtained from questionnaires or administrative files solely (Osei-Ampofo et al., 2012; Ankomah et al., 2021).

Also, qualitative methods align with the interpretivist paradigm of the research, in which reality is socially constructed and context relative. Thus, findings reflect the subjective realities of Ghanaians from diverse urban, peri-urban, and rural environments, providing a grounded understanding of NAS utilization facilitators and barriers.

Finally, the presumption of method, together with subjectivist ontology, constructivist epistemology, and value-conscious axiology, provides a unified foundation for adopting a qualitative, interpretive research design. This research design best suits the task of bridging conceptual, empirical, and sociocultural gaps identified in the literature and providing actionable results to inform policy, public education, and NAS service improvement.

3.4 RESEARCH STRATEGY

The study utilizes a qualitative strategy, which is appropriate for examining the complex social, cultural, and behavioral determinants that account for how the National Ambulance Service (NAS) in Ghana is viewed by members of the public (Creswell & Poth, 2018; Merriam & Tisdell, 2016). Qualitative research focuses on understanding phenomena in terms of participants' perspectives, focusing on meanings, experience, and context, as opposed to statistical representativeness. The choice of a qualitative design is informed by several factors. To begin with, public opinion towards NAS is socially constructed and subjective in nature and influenced by personal experiences, cultural predispositions, socio-economic status, and previous encounters with emergency health services (Ankomah et al., 2021; Gyasi, 2018). Quantitative measurements may help in measuring trends or rates, yet they cannot fully convey the richness and depth of these everyday lived experiences.

Second, qualitative inquiry enables adaptable and iterative data collection to enable the researcher to follow up on emerged themes, explore implicit attitudes, and clarify uncertainties in interviews or focus group discussions (Patton, 2015). This is particularly significant in the context of EMS in Ghana, since misconceptions, suspicion, and cultural beliefs have significant roles to play in shaping behavior (Oppong et al., 2015; Agyeman-Duah et al., 2020).

Third, the qualitative method is aligned with this study's interpretivist paradigm. Through a recognition of reality being constructed variably by a myriad of individuals (Guba & Lincoln, 1994), the method provides a framework through which to investigate how groups perceive NAS and why some barriers to utilization persist. It also provides for the use of theoretical lenses, such as the Health Belief Model, Theory of Planned Behavior, and SERVQUAL, through which to frame results in context.

Finally, a qualitative approach ensures that the research produces rich, detailed, and contextually embedded findings to inform public education campaigns, policy interventions, and trust-building and use-enhancing measures for NAS. It also closes methodological holes in the current literature that have increasingly relied on quantitative surveys or administrative records (Stewart et al., 2014; NAS, 2023).

In general terms, the qualitative approach is best suited to provide a sense of the public attitude, the effect of socio-cultural norms, and the behavioral forces on the use of the National Ambulance Service in Ghana.

3.5 RESEARCH DESIGN

This approach is a qualitative case study, and the National Ambulance Service (NAS) is the unit of analysis. The case study is particularly well-suited to the examination of complicated, context-dependent phenomena in depth (Yin, 2018; Stake, 1995). By focusing on NAS as a single case, the study seeks to develop in-depth, contextually situated understandings of public attitudes, trust, usage patterns, and socio-cultural variables that might be hard to gather using quantitative surveys or administrative records.

The case study design is justified on several grounds. First, NAS is a bounded and defined system within Ghana's healthcare system, with structured policies, staff hierarchies, ambulance stations, and national programs such as "One Constituency, One Ambulance" (NAS, 2023). Examining NAS as a case allows for examination of institutional arrangements and service delivery structures alongside public experiences and perceptions, providing an integrated view of EMS in Ghana.

Second, a case study offers the potential for integrating multiple sources of data, e.g., in-depth interviews, focus group discussions, and document analysis, which adds depth and credibility to the research (Creswell & Poth, 2018). The triangulation renders the findings more comprehensive, reflecting the perspectives of diverse stakeholders, including community members, EMS personnel, and healthcare managers.

Third, the design of the case study aligns with the interpretivist paradigm that recognizes reality as socially constructed and understandings as shaped by lived experience, cultural beliefs, and past interactions with emergency services (Guba & Lincoln, 1994; Ankomah et al., 2021). In accepting such subjective realities, the study is capable of recording the subtle way in which communities view, trust, and utilize NAS services.

Fourth, the qualitative case study approach allows the study to situate findings within real-world contexts, linking systemic determinants, such as ambulance availability, staffing ratios, response times, and quality of service, with individual and community behaviors, including trust, cultural beliefs, and utilization patterns. In this way, this methodology addresses conceptual, empirical, and methodological gaps in the literature and produces findings of immediate applicability to public policy, service development, and community engagement initiatives.

Finally, a case study allows for an exploratory in-depth investigation of NAS as both a social service and healthcare organization, emphasizing the dynamics between public perception and organizational performance. It captures the complexity of EMS delivery in Ghana, where cultural and infrastructural dynamics are woven together in influencing the receptiveness of the public to ambulance services.

In conclusion, the qualitative case study design provides a flexible, context-sensitive framework for investigating public perceptions of NAS. It allows the study to generate policy-relevant, in-depth findings that can be utilized to inform interventions aimed at increasing trust, utilization, and overall effectiveness of Ghana's pre-hospital emergency care system.

3.6 SAMPLING STRATEGY

Sampling in qualitative studies is intentional and strategic to select participants who are able to provide the richest and most relevant information about the phenomenon of study (Patton, 2015). Since this study seeks to investigate public sentiments toward the National Ambulance Service (NAS) in Ghana, it is important that participants who are directly or indirectly exposed to EMS services be enlisted in such a manner that information reflects lived experiences, cultural feelings, and day-to-day interactions with the system. The study employs purposive sampling as the primary strategy. Purposive sampling enables the researcher to select participants who are experienced or have knowledge about the subject of inquiry, in this research case, emergency medical emergencies and encounters with NAS (Creswell & Poth, 2018). They are drawn from peri-urban and urban, and rural dwellers from across Ghana to yield rich qualitative information of different perspectives based on geographic location, socio-economic status, educational status, and cultural

beliefs. The city inhabitants, for example, will enjoy improved accessibility to NAS through mass media campaigns or faster ambulance response, while rural dwellers will experience delays and bad accessibility, affecting their attitudes.

As an adjunct to purposeful selection, snowball sampling is the process of identifying additional participants through referrals by initial respondents (Noy, 2008). Snowball sampling is particularly useful in reaching out to participants unlikely to be actively involved in NAS or whose lives are not externally apparent, such as participants in remote or underserved populations. Snowball sampling allows for the sharing of hidden knowledge and minority opinions, enriching the depth and breadth of data.

The design of the sampling also considers demographic stratification, e.g., age, sex, occupation, and socio-economic status. This ensures that the research receives a wide spectrum of viewpoints, e.g., gender perception differences between women and men, young and old subjects, or urban and rural inhabitants. Such stratification enhances transferability since it provides full insight into how perceptions vary among various demographic groups (Lincoln & Guba, 1985).

Sample size adheres to the principle of data saturation, where additional interviews or focus groups do not yield new themes or concepts (Guest, Bunce, & Johnson, 2006). In this study, approximately 30–40 in-depth interviews and 5–6 focus group discussions of 6–8 participants each are planned. This proportion is enough to represent the views of the community without offering dense, context-rich descriptions of NAS experiences.

Finally, the sampling design is aligned with the study's interpretivist paradigm and qualitative case study approach (Stake, 1995; Yin, 2018). By targeting participants with the capacity to articulate their perceptions, beliefs, and experiences, the research is capable of capturing the socially constructed realities of citizens' experience with and understanding of NAS that are practically relevant and theoretically informed.

In summary, the use of purposive and snowball sampling, demographic stratification, and data saturation ensures that the research collects varied, meaningful, and representative information on public opinions of the National Ambulance Service in Ghana, which encompasses both empirical as well as sociocultural gaps reported in the literature.

3.7 DATA COLLECTION METHOD

Data collection constitutes the point of turnaround in qualitative research since it necessarily influences the credibility, validity, and depth of findings (Creswell & Poth, 2018). In this study, the dominant methods employed are in-depth interviews and focus group discussions (FGDs), alongside document analysis of NAS reports, policies, and public communication. These methods are specifically chosen in order to investigate the perceptions, attitudes, trust, and socio-cultural factors regarding the National Ambulance Service (NAS) in Ghana. 3.7.1 In-Depth Interviews

In-depth interviews afford rich insight into personal experience and beliefs, obtaining information on personal experiences with NAS, perceptions of service quality, and drivers of usage (Kvale & Brinkmann, 2009). Semi-structured interviews are utilized, guided by an interview schedule that is intended to address key issues with participants being able to introduce new, unanticipated ones (Patton, 2015). The interviews will last approximately 45–60 minutes and may be conducted in English or local languages (Twi, Ewe, Ga), as desired by participants. Audio recordings with careful field notes will ensure accuracy and facilitate proper transcribing for analysis (Creswell & Poth, 2018). This method is particularly well-adapted to getting nuanced perceptions of NAS, such as delay, prank calls, or beneficial interventions, which do not easily lend themselves to quantification.

3.7.2 Focus Group Discussions (FGDs)

FGDs provide an opportunity to explore community-level opinions and publicly held social norms that regulate public access to NAS (Krueger & Casey, 2015). 6–8 participants per FGD will be stratified across age, gender, and urban or peri-urban residence to represent diverse opinions. FGDs are optimally suited to reveal socially constructed meanings, consent, and dissent at the community level regarding the utilization of ambulances. Discussion topics include emergency number consciousness, response time experience of ambulances, cultural beliefs, trust in paramedics, and NAS attitudes in the community. Interaction with the group during discussion facilitates easier observation by the researcher of social pressures, peer pressure, and group misconceptions that might be avoided in individual interviews (Morgan, 1997).

3.7.3 Document Analysis

Document analysis involves the study of official NAS reports, policy documents, media accounts, and public information campaigns. The approach provides historical and contextual data on NAS policy, activity, and public communication practice, complementing primary qualitative data (Bowen, 2009). From analysis of documents such as the "One Constituency, One Ambulance" policy and annual operational reports, the study can locate public attitudes within broader organizational, policy, and system horizons. 3.7.4 Rationale for Technique Choice

The concurrent use of interviews, FGDs, and document review enhances triangulation, supporting the validity, reliability, and richness of the findings (Denzin, 2012). The procedures are aligned with the interpretivist paradigm and recognize that reality is socially constructed and individuals' understanding regarding NAS varies based on experiences, cultural beliefs, and interactions within the system (Guba & Lincoln, 1994; Ankomah et al., 2021). Qualitative methods are particularly suited to analyzing complex social phenomena such as trust, cultural meaning, perceived risk, and satisfaction with services, all of which are central to explaining utilization of NAS (Creswell & Poth, 2018; Luhmann, 1979; Slovic, 1987). The methods allow the researcher to explain both subjective personal impression and broader community-level standards, providing a holistic explanation of the public's utilization of NAS.

Overall, the methods of data collection in this study are meticulously selected to yield rich, contextualized, and contextually embedded information on popular understandings of NAS to enable the formulation of pragmatic recommendations to improve health emergencies medical service delivery in Ghana.

3.8 DATA COLLECTION PROCESS

The data collection process is crucial in order to ascertain that the study develops credible, reliable, and contextually meaningful findings about public perception of the National Ambulance Service (NAS). The study employed a multi-stage process, with interviews, focus group discussions

(FGDs), and document reviews aimed at capturing both personal experiences and general perceptions (Creswell & Poth, 2018; Bowen, 2009).

3.8.1 Preparatory and Planning Phase

Before fieldwork, the researcher engaged in a serious preparatory phase through readings of NAS policy documents, operational reports, and public campaigns. This provided a clear understanding of the mandate of the service, organizational structure, and previous challenges. Ethical clearance from the institutional review board was pursued, with adherence to research ethics, including consent of participants, confidentiality, and withdrawal at any given point in time (Kumar, 2019). Furthermore, data collection instruments, semi-structured interview guides, and FGD guides were pilot-tested on a small sample to refine questions for clarity, cultural relevance, and pertinence.

3.8.2 Participant Recruitment

Participants were purposefully chosen for representative inclusion by demographics of age, gender, occupation, and geographic location (Palinkas et al., 2015). Recruitment targeted urban, peri-urban, and rural communities that reflect the various levels of accessibility and utilization of NAS. Local gatekeepers, community leaders, and health workers helped in participant introduction and trust facilitation; thus, participants were more likely to give candid experiences and perceptions (Krueger & Casey, 2015).

3.8.3 In-Depth Interviews

In-depth single community member, medical practitioner, and local authority interviews were conducted to elicit personal experiences, views, and understanding of NAS use. Each interview lasted between 45–60 minutes, conducted in a convenient yet comfortable location for participants to ensure anonymity and minimize interruptions. Interviews were tape-recorded with permission and supplemented with field notes to capture non-verbal cues, affect, and contextual data (Kvale & Brinkmann, 2009). Open-ended questions triggered reflection on personal experience with NAS, barriers to use of ambulances, and exposure to emergency response systems.

3.8.4 Focus Group Discussions (FGDs)

FGDs enabled community-level understanding, with common beliefs, norms, and social influences shaping attitudes towards NAS revealed. Participants were divided into groups of 6–8, and discussions lasted for 60–90 minutes. An FGD facilitator with open-ended questions led a discussion for awareness of emergency numbers, belief in NAS, cultural perceptions of ambulances, and previous experience. FGDs gave participants space to interact, disagree, and confirm each other's assumptions, generating useful data regarding social and cultural dynamics influencing EMS use (Krueger & Casey, 2015).

3.8.5 Document Review

For primary data triangulation, policy statements, media articles, and official documents of NAS were analyzed. These included operational guides, annual reports, and public education documents. Document analysis helped to contextualize FGD and interview results by providing background information regarding institutional practice, coverage, and communication strategies, enabling a holistic view of NAS operations (Bowen, 2009).

3.8.6 Ethical Considerations

Ethical principles were maintained at all stages in gathering the data. Informed consent, anonymity, and voluntary involvement were emphasized. Cultural sensitivity was maintained, particularly in raising sensitive topics such as death, sickness, or crisis (Creswell & Poth, 2018). Participants were reassured that their data would be anonymized and individual identifiers would not be disclosed in any publications. 3.8.7 Reflexivity and Field Notes

The researcher maintained a reflexive journal, where reflective thoughts, personal observations, and potential biases were noted during the fieldwork. This process ensured openness and strictly enhanced the credibility of findings by acknowledging the influence of the researcher on the data collection process (Lincoln & Guba, 1985).

3.8.8 Summary

Finally, the research procedure combined semi-structured interviews, FGDs, and document review to yield a rich, comprehensive image of public perceptions of NAS. Triangulation, increased credibility of data, and recovery of individual-level experience and social and cultural factors at the community level were made possible by employing a multiple-method strategy. Through focused involvement of heterogeneous participants and Institutional documents review, the study responds to conceptual, empirical, methodological, and sociocultural concerns identified in the literature, producing rich, actionable information for practice and policy.

3.9 ETHICAL CONSIDERATIONS

Ethical considerations are necessary to guarantee that human participant research is conducted responsibly, is respectful of rights, and maintains the integrity of the study (Creswell & Poth, 2018). As this research examines public perceptions of the National Ambulance Service (NAS) in Ghana, a topic that may entail personal, sensitive experiences in terms of emergencies, accidents, and death, ethics have to be strictly adhered to throughout the research process.

3.9.1 Informed Consent

Informed consent ensures that the participants understand clearly the purpose, process, benefits, and risks of the study before giving consent (Israel & Hay, 2006). During this study, participants were provided with clear explanations about the purpose of the study, the type of participation, and the estimated time needed for interviews or focus group discussions. They were also informed that the participation was voluntary, that they could withdraw at any time without penalty, and that non-participation would not affect their access to services. Transparency was emphasized to help assure trust and cooperation in providing honest answers about NAS.

3.9.2 Confidentiality and Anonymity

As the information regarding public experience with NAS was sensitive in nature, confidentiality and anonymity were critical. The identities of participants were secured by using pseudonyms while transcribing and interpreting those (Orb et al., 2001). Contact information or specific locations of individuals were not disclosed in reports or publications. Data were stored in password-protected devices securely, and access was restricted to the research team to limit the risk of accidental release or misuse of information.

3.9.3 Reducing Harm

Discussion of emergencies, health emergencies, and negative experiences with NAS may evoke emotional distress or unease. Psychological safety in research was maintained by design through offering participants the right to cease or terminate the process of the interview at any moment. Participants were also provided with guidance on managing as well as, when applicable, referrals to supportive healthcare or community networks (Creswell & Poth, 2018). These measures eschew potential harm and provide a safe environment for the revelation of sensitive experiences.

3.9.4 Cultural Sensitivity

Ghana is a multicultural nation, and there are variations in health beliefs, death, and emergency care from one community to another (Gyasi, 2018). The study was culturally sensitive through the involvement of local leaders and gatekeepers, respectfulness in matters of discussion on emergencies and health interventions, and rephrasing questions to suit cultural acceptance. It also established rapport and trust so that participants were able to open up freely about perceptions and experiences of NAS.

3.9.5 Ethical Approval

Before data collection, ethical clearance was obtained from the relevant institutional review board (IRB), promising that the research design was compliant with national and global ethical principles, including the Declaration of Helsinki (World Medical Association, 2013). The

clearance confirmed that the research complied with the principles of voluntary participation, protection of vulnerable participants, and ethical management of sensitive data.

3.9.6 Research Integrity

The study was maintained transparent, honest, and accountable throughout the research process. The results were portrayed objectively, and the interpretations were drawn from data gathered from participants. Reflexivity was utilized by the researcher to exhibit awareness of potential bias and ensure that the voices of the participants were heard in reality (Lincoln & Guba, 1985). This makes the study credible while ensuring ethical accountability.

3.9.7 Summary

Ethical principles in this study are informed consent, confidentiality, minimization of harm, sensitivity to culture, ethical approval, and research integrity. They are imperative not only for the protection of participants but also for producing credible, reliable, and socially accountable findings that reflect as accurately as possible the true public attitudes toward the National Ambulance Service in Ghana. By scrupulous adherence to these ethical safeguards, the research can guarantee respect for participants' rights, protect sensitive data, and promote policy and practice in pre-hospital emergency care effectively.

3.10 AUTHENTICITY AND TRUSTWORTHINESS

Authenticity and trustworthiness are crucial in qualitative research since they impart the rigor, credibility, and dependability of results (Lincoln & Guba, 1985). In the situation of this study, including public awareness of the National Ambulance Service (NAS) in Ghana, these elements are required to reflect participants' experiences, beliefs, and cultural meanings regarding EMS usage.

3.10.1 Credibility

Credibility alludes to the believability and truthfulness of the findings. Credibility in this study was evidenced by triangulation, integration of multiple sources of data, like in-depth interviews, focus group discussions, and NAS-related documents. Triangulation facilitates cross-validation of information, preventing bias and increasing trustworthiness of findings (Creswell & Poth, 2018). Member checking was also followed, where members reviewed transcripts and initial interpretations to confirm the correctness of the response. Extended immersion within communities provided greater insight into local understanding, enabling the researcher to understand context-dependent nuances and reducing the potential for misinterpretation (Shenton, 2004).

3.10.2 Transferability

Transferability deals with whether or not results can be transferred to other environments beyond the sample under investigation. Thick descriptions were provided to ensure maximum transferability, such as participants' demographics, community settings, and socio-cultural contexts informing NAS use. Readers and policy makers, through rich contextual data, can determine if the findings are transferable elsewhere in Ghanaian communities or similar EMS in low- and middle-income countries (Polit & Beck, 2010).

3.10.3 Dependability

Dependability refers to the stability and consistency of research procedures over the long term. All steps were traced from data collection through coding and thematic analysis in this research, and the research had a full audit trail. Through this documentation, other researchers can trace the research procedure, replicate methods if necessary, and evaluate the study findings' reliability (Lincoln & Guba, 1985).

3.10.4 Confirmability

Confirmability ensures findings are based on participants' accounts and not the researcher's bias. This was achieved by reflexive journaling where the researcher recorded their own thoughts,

assumptions, and decisions during the data collection and analysis. Peer review and external audit further reinforced confirmability, with independent verification of accuracy coding and thematic descriptions (Shenton, 2004).

3.10.5 Authenticity

Authenticity is concerned with presenting participants' realities fairly and accurately. The study employed direct quotations and anecdotes from interviews and focus group stories to advance participants' voices. It sought to include diverse perspectives, particularly those of marginalized groups such as peri-urban and rural community dwellers, women, and people of diverse socio-economic backgrounds. By taking multiple viewpoints, the study is capable of presenting NAS perceptions in authentic and balanced terms.

3.10.6 Application within the NAS Study

In this way, the study increases the reliability and validity of its results and findings so that data about public trust, perceptions, and the application of NAS is sound and reliable. Trustworthy qualitative data facilitate policymakers and healthcare administrators in making informed decisions on public education, EMS policy, and interventions to enhance community engagement and confidence in the National Ambulance Service.

3.11 DATA ANALYSIS PROCEDURES

Data analysis in qualitative research involves an explicit and cyclical process of coding, interpretation, and sense-making of textual data to locate patterns, connections, and meanings regarding the research questions (Creswell & Poth, 2018). Analysis for this research, investigating public image of the National Ambulance Service (NAS) in Ghana, was guided by a thematic analysis approach. This was undertaken as it allows researchers to identify, explore, and record patterns (themes) within data while not being insensitive to participants' experiences and sociocultural backgrounds (Braun & Clarke, 2006).

3.11.1 Transcription and Familiarization with Data

Interviews and focus group interviews were tape-recorded with participants' informed consent and subsequently transcribed verbatim. Transcription converts oral stories into words and provides a verbatim record of participants' words, talk, pauses, and affect displays. The researcher read over the transcripts repeatedly to obtain data familiarization, a requirement to construct an in-depth knowledge of the content, context, and meaning of participants' responses (Braun & Clarke, 2006). This stage avoids subtler details, such as cultural cues or regional expressions of the employment of an ambulance, from being overlooked.

3.11.2 Coding Process

The study employed a systematic coding process, which involves open, axial, and selective coding, in accordance with grounded theory methodology (Strauss & Corbin, 1998):

Open Coding: Data were read line by line to identify relevant statements, sentences, or phrases related to NAS use, trust, cultural beliefs, barriers, or experiences. Each meaningful unit was assigned a code summarizing its meaning, for example, "delayed ambulance response," "ambulance siren fear," or "prank call experience."

Axial Coding: Open codes were then coded into more abstract categories on the basis of conceptual similarities and interrelationships. For example, codes regarding delays in logistics, poor fleet, and staff shortages were coded under "Perceived System Challenges," whereas codes related to beliefs linking ambulances with death were coded as "Sociocultural Influences."

Selective Coding: During this stage, key themes were obtained by synthesizing categories into higher-order constructs that respond to the research questions. The themes here are trust and confidence, awareness and knowledge, service quality and reliability, and cultural beliefs influencing utilization. This activity bridges participants' experiences to theoretical models, such as the Health Belief Model, Theory of Planned Behavior, SERVQUAL, and Risk Perception Theory.

3.11.3 Thematic Analysis

Thematic analysis (Braun & Clarke, 2006) was used to analyze data systematically as follows:

1. Checking codes and categories for coherence and consistency
2. Identifying patterns between communities and demographic groups
3. Combining codes into themes that map onto research questions and theoretical constructs
4. Interpreting themes to investigate how individual perception, socio-cultural beliefs, and system factors influence NAS use

3.11.4 Use of Qualitative Data Software

In order to enable accuracy, transparency, and organization, as well as code and manage the data, NVivo 12 software was used. NVivo allows researchers to store, organize, and retrieve codes in an orderly fashion, visualize theme relationships, and maintain an audit trail of analytically made decisions, hence increasing the credibility of findings (Bazeley & Jackson, 2013).

3.11.5 Relation to Research Purposes

The approach to analysis ensures that the study addresses its core purposes:

1. Assessing public awareness and awareness of NAS services
2. Examining sociocultural determinants of ambulance use
3. Assessing public trust and confidence in NAS
4. Identifying barriers and facilitators to use

Through the integration of systematic coding, thematic analysis, and theory interpretation, the research produces rich contextually informed and actionable results influencing policy, public education, and how the public can be best engaged with NAS.

3.12 CHAPTER SUMMARY

This chapter has offered an elaborate description of the research methodology employed to examine public perception of the National Ambulance Service (NAS) in Ghana. The chapter began by placing the study within a qualitative, interpretivist paradigm, observing the philosophical assumptions informing the research, namely subjectivist ontology, constructivist epistemology, value-conscious axiology, and interpretive methodology (Guba & Lincoln, 1994; Creswell & Poth, 2018). They justify the choice of a qualitative case study design with its emphasis on an in-depth exploration of complex social processes such as trust, cultural beliefs, and usage behaviors. The chapter elaborated on the research design, approach, and the rationale for why NAS was selected as a single case study. The chapter provided a clear explanation of the sampling design, noting purposive sampling of participants from different communities to gather divergent opinions. Data collection tools, including in-depth interviews and focus group discussions, were expounded, along with the step-by-step data collection process to allow rigor, ethical compliance, and safety of participants. Ethical considerations were highlighted, with respect to informed consent, confidentiality, and respect for participants' rights.

Furthermore, the chapter detailed ways of ensuring authenticity and trustworthiness, including credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). The data analysis methods section explained transcription, coding (open, axial, and selective), thematic analysis, and the use of NVivo software for systematic coding and interpretation of data (Braun & Clarke, 2006; Bazeley & Jackson, 2013). Collectively, these strategies ensure the study achieves rich, contextually grounded understandings of public perceptions of NAS.

Concisely, this chapter dictates a stringent methodological design aligned with the research intentions, addresses existing conceptual, methodological, empirical, and sociocultural gaps, and provides a feasible platform for creating substantial results in the subsequent chapters.

CHAPTER FOUR FINDINGS AND DISCUSSIONS

4.1 CHAPTER INTRODUCTION

The chapter presents and discusses the major findings of the study on public perceptions of the National Ambulance Service (NAS) in Ghana. The impetus for the study was rooted in the curiosity to understand why, despite significant infrastructural development of the NAS, the majority of citizens continue to shun or underspend on the service in emergency cases. Findings come from qualitative data collected through semi-structured interviews and focus group discussions in six purposively chosen communities: three urban, Madina (Greater Accra Region), Bantama (Ashanti Region), and Market Circle in Takoradi (Western Region), and three rural, Bongo (Upper East Region), Kete Krachi (Oti Region), and Salaga (Savannah Region). These populations were selected to provide contrasting perceptions between high-density cities and poor rural regions, hence providing a general picture of how socio-cultural, infrastructural, and behavioral variables influence the utilization of ambulances.

The fact that there are urban areas such as Madina, Bantama, and Market Circle is indicative of segments where emergency demand is high with population, car traffic, and high accident incidence, but where optimal use is limited by traffic obstructions, sluggish response, and misconceptions regarding the cost of service. Conversely, the rural sites, Bongo, Kete Krachi, and Salaga, illustrate environments of physical distance, unmetalled roadways, weak telecommunication networks, and limited health centers, all of which aggravate obstacles to accessing timely ambulance services. These diverse settings provide an invaluable comparative basis for understanding how place, culture, and daily life influence public attitudes towards emergency services.

Reporting of findings is thematic. First, the chapter examines public awareness and understanding of NAS, establishing correct and misconceived notions of its purpose and operation. Second, it establishes trust and perceptions of risk, showing how experience, delay, and systemic weaknesses shape community faith in calling for ambulances. Third, the chapter discusses gaps in communication and awareness, specifically the partial inefficacy of public awareness campaigns and the persistence of myths such as that ambulances carry corpses only. Fourth, it considers socio-cultural determinants of ambulance utilization, including reliance on alternative modes of

transport (motorbikes, tricycles, taxis) and traditional medicine, as well as the influence of local languages and trust networks within the community on service use.

Second, the report underscores coping mechanisms and indigenous recommendations to improve ambulance services. These involve calls for deploying additional ambulances in rural regions, assured fuel availability, training community health workers in basic first aid, and greater sensitization of the public through local media and durbars. Such findings point to the sense of initiative among locals, who, despite frustrations with institutional failure, still articulate solutions to bridge the gap between policy intentions and lived realities.

Throughout the discussion, there is an interweaving of the theoretical bases for this study: Health Belief Model, Theory of Planned Behavior, Risk Perception Theory, and Social Construction of Technology (SCOT). These theories guide an understanding of how beliefs, perceptions, and cultural meanings intersect with infrastructure and policy to shape behavior. For example, the Health Belief Model explains how perceived barriers (cost, delay, mistrust) discourage action, while Risk Perception Theory explains how citizens weigh uncertainties when deciding whether to activate the ambulance. Similarly, SCOT explains how communities reframe ambulance services in terms of local meanings, sometimes as lifesaving, but other times as inapplicable or unavailable.

One of the most salient trends that emerges in both urban and rural environments is the paradox of recognition and reluctance: citizens spontaneously express admiration for the life-saving role of NAS, yet remain indecisive in actuality, resort to informal alternatives, and are mute in instances when calling the ambulance would save a life. The paradox makes it clear that, whereas infrastructure and logistics must be tackled, so too should the psychological, cultural, and communicative dimensions of service provision.

By highlighting the quotidian life experience of ordinary Ghanaians, this chapter assists in filling some of the literature gaps identified in Chapter Two. It offers qualitative, local-level evidence regarding the diversity of public interaction with NAS and, therefore, it generates usable knowledge to foster trust, improve communication, and promote fair emergency medical service access in Ghana.

4.2 PRELIMINARY DESCRIPTIONS (PRESENTATION OF DEMOGRAPHIC DATA/UNITS OF ANALYSIS)

The study was undertaken in six sampled communities consisting of three urban (Madina in the Greater Accra Region, Bantama in the Ashanti Region, and Takoradi Market Circle in the Western Region) and three rural (Bongo in the Upper East Region, Kete Krachi in the Oti Region, and Salaga in the Savannah Region). These locations were picked to ensure heterogeneity of Ghana's socio-cultural, geographical, and infrastructural environments, and provide a general representation of public perception concerning the National Ambulance Service (NAS). Through the targeting of both urban and rural respondents, all stakeholders were included, and opportunities for comparison were offered among contexts where the accessibility of health infrastructure and attitudes towards emergency interventions differ significantly.

56 respondents participated in focus group discussions (FGDs). There were nine or ten participants in each FGD, except in Bongo, where three FGDs were done to provide a total of 28 participants. This was deliberately selected as Bongo is among the poorest areas in terms of having access to ambulances, and there are vast differences between its sub-communities. Increasing participation in Bongo allowed the study to gather a wider range of opinions and daily life experiences, resulting in richer data. The other five communities each yielded one FGD with 9–10 participants, corresponding to a relatively balanced allocation.

Community	**Type**	**Participants (n)**	Male	Female	Age Range (Years)
Madina (Accra)	Urban	9	5	4	22 - 54
Bantanma (Kumasi)	Urban	9	4	5	24 - 50
Takoraddi Market Circle	Urban	10	6	4	23 - 55
Bongo (Upper East)	Rural	28 (3 FGDs)	19	9	21 - 65
Kete Krachi (Oti)	Rural	9	5	4	25 - 60
Salaga (Savannah)	Rural	9	5	4	26 - 58
Total	**-**	**56**	**34**	**22**	**21 - 65**

GENDER ALLOCATION

34 men and 22 women were among the 56 participants, corresponding to a slight majority of men. The allocation aligns with tendencies in community-based studies in Ghana, where men tend to be more readily available or more forthcoming when appearing in public forums, particularly within rural contexts (Asamoah & Boafo, 2022). In the urban settings, there was a more balanced male-to-female ratio because women (especially traders, nurses, and young mothers) actively expressed their views concerning the application of ambulances and emergencies in health. The rural FGDs, especially in Bongo and Salaga, were dominated by men, and fewer female voices were heard by women. However, the input of women, while smaller in number, was highly personalized and directly linked to maternal health emergencies, giving birth delays, and psychological stress of poor ambulance access. This qualitative richness enriched the analysis significantly, with gendered differences evident in perceptions of NAS emerging.

AGE DISTRIBUTION

The respondents' ages ranged from 21 to 65 years, thereby including both the young and the old generations. Younger respondents (21–35 years) included students, apprentices, teachers, craftsmen, and traders. They drew their information about ambulances from hearsay, which in the majority of cases came from social media, the radio, or friends, and many of them also questioned the veracity of NAS since they heard stories, not witnessed things personally. Middle-age participants (36–50 years) included farmers, drivers, traders, and health workers, who presented frequent shared experiences with emergencies such as birth complications, road traffic injuries, and conditions requiring urgent transfer. Old-age participants (51–65 years) would primarily consist of elders, retired workers, and traditional leaders. Their narratives carried cultural definitions of ambulances, with some imaginatively conceiving them as "dead cars" or equating them to final trips, while others narrated sparsely but life-preserving interventions in their communities.

COMMUNITY DISTRIBUTION AND UNITS OF ANALYSIS

1. **Urban Communities:** Madina, Bantama, and Takoradi Market Circle depicted diverse urban realities. These areas are characterized by dense populations, heavy vehicular flow, and relatively better hospital accessibility. However, respondents in these groups listed concerns regarding slow response times, public ignorance of the NAS hotline telephone number (112), and the challenge of driving through crowded roads in emergencies. Mistrust of the ambulance service in these situations generally stemmed from perceived inefficiency and not outright inaccessibility.
2. **Rural Areas:** Bongo, Kete Krachi, and Salaga had commonalities of limited infrastructure, too great a distance to referral centers, poor road conditions, and lower awareness of NAS. Bongo's three FGDs noted recurring themes of fuel shortages, network disruptions, and dangerous overdependence on motorbikes and tricycles for emergency transportation. Kete Krachi interviewees highlighted challenges in water transport and noted that ambulances were virtually inaccessible in lake-fringing villages. Salaga respondents emphasized the absence of locally stationed ambulances, i.e., services had to be dispatched from distant towns. Perceptions of NAS were strongly conditioned by structural barriers and not by service quality alone, across rural settings.

INTERPRETIVE NOTE

Distribution of participation by gender, age, and community type is more than descriptive but an essential pathway to an interpretation of the findings. Men constructed the application of ambulances in terms of logistics, availability, and infrastructure, while women offered experiences based on maternal health, child care, and household emergencies. Young participants were inclined to voice suspicion, frustration, or lack of trust towards NAS, while older participants assigned cultural and symbolic meanings to ambulance services. Urban respondents highlighted efficiency gaps (e.g., delay, congestion, lack of awareness), whereas rural respondents shed light on accessibility gaps (e.g., bad roads, distance, fuel shortages, language differences).

This population diversification of representation of communities heightens the validity of the study by ensuring that observations capture Ghana's varied realities. It stresses that pictures of NAS cannot be read in technical jargon (e.g., number of ambulances offered or time of response), but must be read through the lenses of geography, culture, age, and gender. These population specifications thus serve as the foundation for the thematic analysis presented in succeeding sections.

4.3 FINDINGS FOR RESEARCH QUESTIONS

Presentation of findings follows the focal research question of this work: to measure public perception of the National Ambulance Service (NAS) in Ghana. Data collection was undertaken among both rural communities (Bongo, Kete Krachi, and Salaga) and urban communities (Madina, Bantama, and Market Circle–Takoradi). The rural–urban division allows for a nuanced understanding of socio-economic, geographic, and cultural contexts of similarity and difference.

Each of the research questions is discussed in turn with evidence from participants' lived experiences, stories, and observable actions.

4.3.1 RESEARCH QUESTION 1: WHAT IS THE PERCEPTION OF COMMUNITIES REGARDING THE ROLE AND SIGNIFICANCE OF NAS IN EMERGENCY HEALTHCARE PROVISION?

The findings reveal that both in rural and urban societies, the National Ambulance Service (NAS) was broadly understood to be a life-saving institution in principle, but in reality was discredited by perceived issues of access, punctuality, and visibility. Insofar as many respondents strongly identified NAS's essential role in bridging the gap between pre-hospital care and formal centers of health, striking contrast was met between rural and urban experience. Recognition of NAS's importance

In all three urban sites, Madina, Bantama, and Takoradi, citizens noted the important role that NAS plays. Ambulances were widely regarded as "life bridges" when a sudden crisis occurs. A 29-year-old man in Madina articulated, "The ambulance is life and death in instances such as road accidents or if one suddenly collapses." This is supported in international literature that substantiates EMS systems as essential links in the chain of survival (Mould-Millman et al., 2015). Concurrently, in Takoradi, a woman (35 years, trader) reported an experience during a market fire: "That day, people realized the ambulance is not just a car but a lifesaver." These testify to the deeper community awareness of NAS as part of Ghanaian modern healthcare infrastructure, at least in theory.

1. **Perception of absence in rural areas**

Conversely, among Bongo's, Kete Krachi's, and Salaga's rural dwellers, the respondents emphasized not the function but the absence of NAS. Bongo farmer 45 complained: "Here, we only know ambulance by name. When it matters, we don't see it." This suggests a broad service visibility gap within rural regions, where physical distance, poor road networks, and low ambulance-to-population ratios impede functional access (NAS, 2023). Salaga respondents suggested unevenness in distribution, with a 31-year-old leader remarking that "ambulances are for the big hospitals or politicians." Such exclusionary views not only undermine trust but also reinforce disparities in emergency response within rural and urban Ghana (Adams et al., 2021).

2. **Dual perceptions: admiration and critique**

What was noteworthy was the duality of perception of respondents in terms of both admiration and criticism. For instance, a Bantama elder (age 67) reported: "The ambulance is professional in equipment but unreliable in time." This coexistence, recognizing NAS's symbolic meaning but critiquing its functional effectiveness, is the tension between symbolic salience and practical utility. Such behaviors have been described in EMS literature globally, where populations appreciate the idea of ambulances but complain about unpredictable delivery (Slovic, 1987; Patel et al., 2016).

Overall, the results indicate that NAS enjoys clear symbolic legitimacy throughout Ghanaian society as an indicator of modernization of healthcare and preparedness for emergencies. However,

its functional legitimacy is uneven, with rural dwellers perceiving virtual invisibility and urban dwellers facing challenges of timeliness. The two experiences of NAS as necessary and unreliable suggest an overall trust and performance gap, lending support to demands for policies that boost the availability, equity, and reliability of the service across Ghana.

The differing views of the applicability and function of NAS can be defined based on the Diffusion of Innovations Theory. According to Rogers (2003), in a bid to attain full adoption, a service or an innovation should be viewed by communities as possessing relative advantage, compatibility with local needs, and observability. Where the urban settings of Madina and Takoradi were involved, the activities of the ambulance in observable emergencies (e.g., road accidents or market fire) increased observability as well as relative advantage. However, in rural contexts such as Bongo and Salaga, non-sight of high-frequency ambulance activity minimized observability and correspondingly compatibility with people's everyday life, making adoption hard and eroding trust. This acts to explain how citizens "only know ambulance by name" without physical evidence of its usefulness. In addition, Relationship Management Theory posits that trust, satisfaction, and mutual commitment are the foundations of effective organizational-public relationships (Ledingham, 2003). The dual perception of NAS as both "professional" and "unreliable" reflects a contentious relationship dynamic. Although communities respect the symbolic presence of NAS as a healthcare partner, uneven delivery erodes satisfaction and subverts trust. This implies NAS must not only provide technical services but also actively cultivate long-term relational relationships with communities through the virtue of sustained dependability and open interaction.

To this end, the evidence proves that NAS has achieved symbolic legitimacy but trails behind on functional legitimacy. This gap precisely aligns with theoretical insights regarding adoption and relationship formation. Closing the gap entails building up both innovation adoption dimensions (visibility, accessibility, compatibility) and relational qualities (trust, communication, and commitment).

4.3.2 RESEARCH QUESTION 2: WHAT DRIVES CITIZENS' CALLS, AND FAILURES TO CALL, THE AMBULANCE IN EMERGENCIES?

The analysis revealed that four major determinants conditioned citizens' choice-making surrounding the use of the ambulance: trust and reliability, perceived expense, cultural symbolism, and accessibility of alternative transport. The determinants intersected in complex ways, and it emerged that the choices were not simply practical but deeply embedded in psychological, cultural, and relational contexts.

1. **Trust and reliability.**

Lack of trust was the most common barrier in all communities. Some participants remembered previous cases of delay that had denied them the use of NAS in later emergencies. At Bantama, a male (42 years) testified: "We waited 45 minutes after calling.". A taxi on the roadside had already taken the patient to Komfo Anokye before the ambulance came." In rural Bongo and Kete Krachi, members totally dismissed NAS as unreliable, with reports of multiple failed attempts at contacting ambulances. This is consistent with work by Patel et al. (2016) and Slovic (1987), who note that perception of risk and trust shape health-seeking behavior. If a service is perceived as unsafe by the public, they avoid it even if technically available.

2. **Perceived cost and financial uncertainty.**

Although NAS was officially free, rumors about fees persisted. One of the Kete Krachi youth leaders explained: "Unless you show them money, they won't start the engine." Some of the participants even asserted to be asked to pay for fuel. Among respondents in urban Madina, there were concerns about hidden hospital fees associated with ambulance use. This is consistent with Mould-Millman et al. (2015), which indicated widespread misconceptions about EMS spending in African contexts. This financial uncertainty lowers perceived accessibility to service, even if policy indicates that it is free.

3. **Cultural stigma and symbolism.**

Ambulances were strongly associated with death. A 38-year-old woman from Salaga explained: "When you see an ambulance entering the house, you know that person has gone." This association encouraged delay in calling NAS early since families did not want the ambulance to "invite" death rather than rescue a life. As Asamoah & Boafo (2022) highlight, health-seeking behavior in Ghana is strongly influenced by sociocultural norms. Symbolic meaning given to ambulances is in this case a cultural barrier to timely use. Alternative transport availability.

In nearly every culture, taxis, tricycles ("aboboyaa"), and motorbikes were utilized in their place as quicker and more accessible. A Madina teacher described: "If someone faints at the station, we just leave them in a taxi. Who is there to wait?" Tricycles were even referred to as "the real ambulance for our people" in rural Bongo. It illustrates utilitarian decision-making when availability and speed prioritize over official emergency procedures (Razzak & Kellermann, 2002).

Theoretical connections.

The outcomes correlate closely with several theoretical models.

1. **Health Belief Model (HBM):** Perceived barriers (cost, delays, stigma) suppressed perceived benefits, and citizens utilized informal transportation instead of ambulances.
2. **Theory of Planned Behavior (Ajzen, 1991):** Negative attitudes (distrust), subjective norms (societal perception that ambulances indicate death), and low perceived behavioral control (cost anxiety not accounted for, unreliability) collectively explained the reluctance to call NAS.
3. **Risk Perception Theory (Slovic, 1987**): Avoidance choices were driven less by objective risk and more by subjective uncertainty, unreliability, and symbolic dread.
4. **SCOT Theory (Bijker et al., 1987**): Ambulances were designed differently in social settings: as "potential lifesavers" in towns but as "cars of death" or impossible luxuries in rural areas.

This research addresses a number of gaps outlined in Chapter Two. First, it fills the trust and perception of risk gap by illustrating how past experiences of unreliability and delay depreciate future use. Second, it fills the sociocultural gap by illustrating how cultural beliefs about death shape reluctance. Third, it fills the communication and awareness gap by unveiling common

misconceptions about ambulance costs. Finally, it provides the empirical gap by employing qualitative evidence from community standpoints in comparison to administrative records.

Ultimately, whether to refer NAS or not was never a simple logistical question. It was filtered through trust, financial concerns, cultural symbolism, and practical options. This suggests that for NAS to be optimally effective, it would have to address not only operational effectiveness but relational trust, public education, and cultural reorientation.

4.3.3 RESEARCH QUESTION 3: HOW DO COMMUNICATION STRATEGIES, PUBLIC AWARENESS, AND TRUST-BUILDING AFFECT THE USE OF AMBULANCES?

The findings indicated that while the communities were aware of the National Ambulance Service (NAS), there existed wide misconceptions, poor communication strategies, and insufficient trust-building that significantly affected use patterns.

Awareness and misconceptions. Awareness of NAS varied based on whether the participant was in a rural or urban setting. In Madina and Bantama, high proportions of participants were at least aware of the NAS hotline (112). However, details on its dependability and scope were limited. For instance, one of the traders in Takoradi (35 years old) asked: "If I call 112, will they carry a pregnant woman? Or is it just for accident persons?" Such miscalculations highlight the subtlety in public education campaigns. In Bongo, awareness was even less. One farmer (60 years old) conceded: "People don't even know the number.".

They know police number but not ambulance. This agrees with Mould-Millman et al. (2015), who found that competing community education diverts EMS uptake in African contexts. Communication barriers.

Respondents reported major difficulties with how information was shared when calling during emergencies. In Salaga, a female respondent (24 years) grumbled: "When you call, they ask too many English questions. They should use our language." This serves to illustrate how differences

in language were causing stress and delays when things mattered most, eroding faith in the system. In addition, network coverage problems in Kete Krachi and Bongo made access to emergency numbers entirely impossible, leaving dwellers in these areas unable to even make contact. Trust building and public attitudes. In neighborhoods, the survey respondents had conflicting emotions: gratitude for NAS professionalism when they did arrive, but skepticism towards reliability. In Bantama, one elderly respondent said, "Their performance is good, but how often do you see them? That is the issue." It lends support to Slovic's (1987) theory that trust is built not from single successes but from the reliability and dependability of risk management systems.

In rural areas, where services were not evident, mistrust grew stronger, bolstering reliance on unauthorized alternatives like tricycles and taxis.

Theoretical linkages.

1. Diffusion of Innovations Theory (Rogers, 2003): NAS awareness diffused into communities, but adoption remains halted due to low trialability (few have ever used NAS), weak observability (rare ambulance visibility in rural towns), and perceived complexity (language barriers, complex processes).
2. Relationship Management Theory (Ledingham, 2003): NAS did not sustain relational trust with citizens. Satisfaction and trust, the most important relational consequences, were inconsistent, resulting in fragile relationships between the service and communities.
3. Health Belief Model (Rosenstock, 1974): Misconceptions (e.g., ambulances are only for politicians or for the dead) shaped perceived benefits and susceptibility, so that people were unlikely to consider NAS in emergencies. Filling the gaps. These findings directly speak to Chapter Two's gap of communication and awareness, where little research had been conducted into the effect NAS's messaging actually has on public understanding. They also carry the gap in trust and risk perception further by showing that trust is not just a function of response time but also how communities perceive NAS's communication and transparency style.

Furthermore, this question addresses the gap in knowledge translation by showing how government policy on "use of free ambulances" has not been appropriately translated into sound,

credible community-level knowledge. Summary. More generally, the study indicates that communication strategies are not logistical afterthoughts but at the very center of ambulance use. Misconceptions about eligibility, cost, and process, coupled with language and accessibility problems, undercut trust and deter calls. Without conscious, localized, and culturally sensitive communication strategies, NAS can easily be seen as a service "for others" and not for the ordinary Ghanaian.

4.3.4 RESEARCH QUESTION FOUR: WHAT SOCIO-CULTURAL NORMS AND COMMUNITY BELIEFS INFLUENCE HOW PEOPLE PERCEIVE AND MAKE USE OF AMBULANCES?

The study revealed that socio-cultural forces are important determinants of ambulances' perception and use in Ghanaian societies. Far from a neutral health technology, ambulances are interpreted through religious life, cultural meaning, and communal decision-making institutions. Such interpretations influence ambulance utilization patterns significantly, particularly in rural areas, where cultural norms are more salient and obligatory.

1. **Ambulance as a Hearse**

Perhaps the most powerful of the socio-cultural motifs was equating ambulances with death. At Bongo, staff members openly chuckled and explained that "ambulance is for the dead, not the living." This vision portrayed ambulances more in terms of hearses with bodies than as emergency health vehicles. The symbolic association with death created a psychological hurdle that discouraged initial calls; families held back until the illness had become lethal before calling NAS.

This attunement pushes back against the relative advantage principle in Rogers' (2003) Diffusion of Innovations (DOI) model, as communities are not perceiving ambulances as having a clear survival advantage over alternatives (e.g., motorbikes or taxis). Instead, ambulances possess negative symbolic meaning and are thus less desirable as an innovation. Similar findings have

been documented across the remainder of Sub-Saharan Africa, where health interventions tend to be mediated by culture-based lenses for comprehension that preoccupy mortality (Amoah & Gyasi, 2021).

2. Religious Dependence

Another consistent theme was the priority of religious faith in emergency decision-making. In Salaga, for example, a female respondent (38 years) said: "Prayer is faster than waiting for an ambulance that may not arrive." Respondents described calling on pastors or elders to pray prior to medical intervention being sought. This testifies to the deeply embedded role religion plays in Ghanaian health-seeking behavior, where spiritual aetiologies of illness frequently coexist with biomedical ones (Asamoah-Gyadu, 2019).

From a DOI standpoint, it is a sign of incompatibility: ambulances are not fully compatible with the cultural and spiritual frameworks of the people. People feel more comforted in seeking divine assistance than relying on unproven state institutions. From the Relationship Management Theory (RMT) framework (Ledingham, 2003), this is a sign of a relation gap: NAS has been unable to establish trust with faith-based organizations or pay attention to the positioning of religion in the serviced communities. Formation of alliances with churches, mosques, and religious leaders would therefore improve legitimacy and credibility.

3. Elder and Family Decision-Making

The study also found that in rural areas, health emergencies were not personal but group problems. Families waited before calling NAS and instead consulted with elders, chiefs, or other elder persons. Respondents in Salaga and Kete Krachi explained that emergency calls were likely to be made subject to cultural processes, including the consent of elders or heads of extended families. This contrasted with urban areas like Madina or Bantama, where individuals were likely to take unilateral, quick decisions.

In DOI language, this shows the determining role of diffusion by the social system. Opinion leaders, chiefs, elders, religious leaders, function as gatekeepers whose endorsement or disbelief hastens or inhibits the adoption of ambulance use (Rogers, 2003). For RMT, it specifies the central

importance of networked relationship-building: NAS cannot limit outreach to individual citizens but must establish relationships with the broader community structure, traditional authorities included.

Theoretical Connections

Diffusion of Innovations (DOI): The utilization of ambulances is prevented by cultural beliefs that reduce its relative advantage (ambulance = death), misplace its compatibility (ambulance ≠ prayer/traditional healing), and hinder adoption in the social system (approval from elders is necessary). Such barriers are responsible for the non-random ambulance utilization rate, even when service is accessible.

Relationship Management Theory (RMT): The evidence suggests that NAS has not built strong relational trust among cultural and religious stakeholders. Poor engagement with pastors, chiefs, and elders erodes mutuality, trust, and commitment, leading communities to regress to traditional norms instead of institutional healthcare. RMT therefore accounts for how the ambulance services have not achieved strong relational legitimacy in most communities.

There has been substantial literature in Ghana's National Ambulance Service on structural and operational issues, such as low numbers of ambulances, poor road infrastructure, and low funding (Zakariah et al., 2017; Osei-Ampofo et al., 2018). While these are some of the challenges, relatively less emphasis has been placed on the socio-cultural determinants of the use of ambulances. In this study, the gap is filled by highlighting the manner in which beliefs, symbols, and decision-making social norms shape citizens' engagement with NAS.

By uniting DOI and RMT, this research extends beyond logistics to show how relational trust and cultural meaning-making are just as important as infrastructure is to the use of ambulances. By doing this, it provides a more comprehensive account for why Ghanaian citizens tend to underutilize ambulances even when they physically exist.

4.3.5 RESEARCH QUESTION FIVE: HOW DO URBAN AND RURAL COMMUNITIES DIFFER IN PERCEPTIONS AND EXPERIENCES OF NAS?

The study found unmistakable and consistent contrasts between urban and rural areas regarding how citizens experience and perceive the National Ambulance Service (NAS). These contrasts highlight how geography intersects with infrastructure, culture, and trust to produce differential results in emergency healthcare delivery.

Urban Communities (Madina, Bantama, Takoradi). In the urban communities that are being studied, the ambulances became more visible and increasingly became a feature of the health care landscape. Interviewees recalled ambulances waiting outside hospitals, traveling along city roads, or being summoned to market or road accident emergencies. Grumbles raised by urban dwellers were generally on efficiency and reliability of services, and not necessarily about their absence.

Timeliness and congestion: One respondent in Bantama (42 years, trader) stated: "The ambulance will come, but by the time it arrives, traffic has already delayed everything." Congested traffic and slow response created frustration.

Awareness of the hotline: Urban respondents were more aware of the 112 emergency number compared to rural residents, but misconceptions persisted. Some felt that the line was often "busy" or "reserved for exceptional cases."

Alternative mode of transport: Despite visibility, the majority of city dwellers used tro-tros and taxis because of speed and accessibility. This is what a Madina informant (teacher, 30 years) contributed: "If someone collapses, tro-tro drivers are the true first responders."

This shows that in the city of Ghana, absence is not an issue but efficiency. The ambulance is familiar but cannot rival quicker, informal transport modes (Mould-Millman et al., 2015).

Rural Communities (Bongo, Kete Krachi, Salaga). In the rural areas, it was even worse, with complaints centering on structural impediments and plain inaccessibility.

Absence of stationed ambulances: In Bongo, a farmer (45 years) bemoaned: "Here, we only know ambulance by name. When it matters, we don't see it." Rural communities were prone to rely on faraway ambulances stationed in regional capitals, leading to life-threatening delays.

Structural barriers: The state of roads being poor, fuel shortages, and distance were identified by the respondents as the major barriers. In Kete Krachi, a community health volunteer clarified that even if the ambulance was dispatched, "the bad road and fuel issue make it useless."

Cultural stigmas: Rural communities also registered stronger ambulances-to-death associations. In Salaga, one of the female respondents, aged 38, emphasized: "When you see an ambulance, it means a funeral will follow." Such stigma promoted reluctance to call.

Weak awareness: In contrast to their urban counterparts, a majority of rural participants were unfamiliar with the hotline or did not know that ambulances were free. Some believed ambulances were "for politicians" or "for transfers to hospitals only."

This indicates that ambulance concerns for rural areas are existential rather than functional. Concern is not simply delay but systemic non-availability, inadequate communication, and mistrust (Oppong et al., 2015).

Urban–Rural Divide Urban-rural disparities underscore the systematic differences in access to healthcare. In the city, NAS is visible but curtailed by inefficiency, overcrowding, and misdirected misconceptions. In rural Ghana, NAS is out of sight, unsightly when present, or altogether out of reach, exacerbated by stigma and structural exclusion.

This gap is reflective of broader health inequalities throughout Ghana, in which rural residents continue to suffer from resource shortages, compromised infrastructure, and reduced penetration of services (Aikins et al., 2019). It also manifests the rationale behind limited ambulance use among rural communities despite improving national coverage.

Theoretical Connections Diffusion of Innovations (DOI): In urban areas, the ambulance as an innovation has a relative advantage problem; citizens perceive taxis or tro-tros to be faster and reliable, hence adoption becomes undesirable even upon awareness. In rural areas, the issue is primarily of trialability and observability: one does not even witness ambulances in practice, and

minimal first-hand experience continues to feed skepticism regarding their effectiveness (Rogers, 2003).

Relationship Management Theory (RMT):–urban divide also means poor relationship building. There is at least a recognition-based relationship (citizens are aware that NAS is present, but don't have trust in efficiency) in the urban setup. In rural settings, there is a lack of trust, NAS hasn't built mature relationships with local institutions (chiefs, religious leaders, health volunteers). This unbalances mutuality and trust, which are RMT's foundation stones (Ledingham, 2003).

This finding bridges the population and context gaps described above. Existing literature has been prone to generalizing the inefficiency challenges of the ambulance without geographic stratification (Zakariah et al., 2017). By differentiating urban inefficiency challenges from rural access challenges, this study demonstrates that underutilization of the ambulance is not homogeneous but constrained by place-contingent drivers.

Besides, the research adds to the literature through the articulation of structural imbalances (roads, availability) with cultural beliefs (ambulance as death) and decisional choices (defaulting to taxis). The multi-dimensional explanation, based on DOI and RMT, is more subtle than that of operational studies in reduced focus.

Briefly, the urban–rural divide shows that citizens' engagement with NAS depends on their geography, culture, and trust, and not just infrastructure alone. In order to allow NAS to achieve its life-saving potential, reforms must be context-specific: solutions in urban areas would be about communication and efficiency, and those in rural areas would have to deal with underlying accessibility, rapport, and cultural realignment.

The findings of this research confirmed wide disparities between urban and rural communities concerning their perceptions, experiences, and use of the National Ambulance Service (NAS). While both settings recorded worries about trust, punctuality, and reliability, disparities like these worries were wide-ranging, a factor that reflected systemic differences existing in Ghana's emergency medical services system. Urban Communities (Madina, Bantama, Takoradi)

In the urban communities, ambulances were more visible, and there was more awareness of NAS and the national toll-free line. However, respondents usually grumbled about concerns of efficiency, such as response times, city traffic jams, and communication quality between dispatcher and caller. Despite this awareness, citizens would usually use other means of transportation, such as taxis and trotros, because these were perceived to provide faster and more convenient transportation to hospitals. One of the interviewees in Bantama emphasized: "If you wait for an ambulance in town, you will lose the person; taxis are everywhere." In this case, the problem in urban areas was not a complete lack but discontent with performance and dependability. Rural Communities (Bongo, Kete Krachi, Salaga)

Respondents in rural communities indicated fundamental issues of accessibility. A. Some of the communities lacked stationed ambulances, and therefore, emergency calls were either ignored or received from distant places after traversing long distances on poor roads. Bongo and Kete Krachi complainants cited fuel shortages as well as situations where ambulatory drivers demanded cash outlays for fuel. Moreover, cultural perceptions were more entrenched in the rural setting, where many people saw ambulances as "death cars." Low levels of NAS operation and hotline awareness contributed to this problem, causing citizens to rely on tricycles, motorbikes, and taxis as the "real ambulances" for their villages. Theoretical Connections

The results substantiate and complement the three supporting theories of this study: Diffusion of Innovations (Rogers, 2003):

The rural–urban divide locates variation in innovation adoption. Urban respondents are further along the adoption stage and better informed about NAS and the hotline, but are still limited by efficiency concerns. Rural societies, however, remain at the knowledge or persuasion stage due to insufficient infrastructure, cultural stigma, and misinformation that prevent diffusion. This offers proof that EMS adoption is not normative but context-specific, based on structural inequality. Health Belief Model (HBM) (Rosenstock, 1974):

The HBM explains variation in perceived benefit and susceptibility. Urban participants saw benefits of ambulances but offset them with the perceived barrier of delay (too slow). Rural participants saw low benefit from inaccessibility and stigma, but barriers (cost, cultural values,

distance) were high. This discrepancy explains why rural residents often eschew NAS entirely. Relationship Management Theory (Ledingham, 2003):

In the cities, dissatisfaction was framed as failure in communication between NAS and the public—lack of updates, delay, or not responding. This shows that failure to manage the relationship weakens public trust. In the countryside, the relationship was almost non-existent, as the public did not have much contact with NAS, and thus, weakening trust. Establishment of credibility and two-way communication building are thus key to raising the level of use. Social Constructionism (Berger & Luckmann, 1966):

This perspective outlines how cultural meaning changes according to context. Rural study participants socially constructed the ambulance as symbolizing death, cementing avoidance practices. Urban dwellers, less fatalistic, still constructed ambulances as slow and unreliable, guiding their choice of alternative transport. This highlights the socially located nature of perception, as opposed to merely logistical. Systems Theory (von Bertalanffy, 1968):

The disparities confirm institutional defects in Ghana's EMS delivery. Urban inefficiencies stem from subsystem issues of the system (management of traffic, hospital congestion, and dispatching), whereas rural inequities are evidence of structural system issues (weak infrastructure, uneven distribution of resources). Looking at NAS as a system accounts for both settings being problematic, though in a different manner. Filling the Research Gap

Previous research had tended to outline generalized problems of EMS in Ghana, such as poor finance, poor road infrastructure, and inadequate public recognition (Aveh et al., 2021; Osei-Ampofo et al., 2018). This work, however, undertakes a basic gap-filling in establishing that urban and rural experiences are not merely different in degree but also in kind: Urban Ghana is struggling with efficiency and trust, which is a service that is there but one that does not deliver.

Rural Ghana has core access obstacles and ingrained cultural stigma, reflecting a service close to non-existent.

Drawing on a number of theories, this study confirms that the uptake of EMS in Ghana is far from a uniform process but is shaped by the intersection of structural disadvantage, cultural practices,

and communication differences. It thereby fills the gap by providing a comparative, theory-driven understanding of how different contexts uniquely shape ambulance use decisions.

Urban groups show higher awareness but frustration with efficiency, while rural groups have structural exclusion and cultural barriers. Overall, the findings illustrate how innovation diffusion, health behavior, relationship management, social construction, and systems thinking theories converge to explain variance in EMS use. Importantly, they close research gaps by illustrating that greater use of ambulances in Ghana requires context-specific interventions in contrast to blanket solutions.

4.3.6 HOW ARE URBAN AND RURAL GROUPS DIFFERENTIATED IN THEIR EXPERIENCES AND PERCEPTIONS OF NAS

Theoretical linkages and gap-bridging The findings show a clear urban–rural divide in the manner people experience and use the National Ambulance Service (NAS). Urban respondents (Madina, Bantama, Takoradi) lament increased visibility of ambulances but primarily grumble about efficiency (lateness, traffic congestion, dispatch communication). Rural interviewees (Kete Krachi, Salaga, Bongo) refer to absence or unavailability (no nearby station, bad roads, petrol shortages) and higher cultural stigma (ambulance = death), with considerably poorer awareness of the hotline and rights. I proceed below to sharpen this comparison and accurately contextualize the findings within the full range of theoretical frameworks used in the research, and illustrate how the findings bring the literature gaps addressed above to a close.

1. **How the results fall under each theory (and what each theory allows us to explain)**

Diffusion of Innovations (Rogers, 2003) Urban: Greater observability, ambulances are observed in action (markets, highways) so the potential for adoption is greater, but relative advantage is counteracted by traffic and slow perceived response (people use taxis instead). Rural: Low observability and low trialability, ambulances do not get to see many people often, so the innovation has not diffused; low local practice compatibility (motorbikes, tricycles, and community transport).

Implication: Interventions must raise observability in rural (demonstrations, parked cars) and raise perceived benefit in urban (improved response times). (Rogers, 2003).

Health Belief Model (HBM — Rosenstock, 1974)

Perceived susceptibility/severity: City dwellers perceive severity (e.g., traffic crashes) but weigh perceived benefit against obstacles (delay, myths about cost). Rural folks under-perceive benefit because of fatalistic cultural meanings (ambulance = demise). Cues to action / self-efficacy: Urban residents have more cues (media, visibility of ambulances) but self-efficacy to call diminished by lack of trust; rural residents have ineffective cues. HBM portrays that awareness alone will not result in action without perceived benefits and reduced barriers. (Rosenstock, 1974).

Theory of Planned Behavior (Ajzen, 1991)

Attitudes: Mixed, respect for EMS proficiency, but negative attitudes towards system reliability. Subjective norms: Rural high, religious leaders, older, and local community norms discourage early summoning of ambulances; peer norms in urban areas are more inclined towards taxis.

Perceived behavioral control: Lower in rural (no local ambulance, poor roads), moderate in urban (busy streets, traffic). TPB explains why intentions to call do not necessarily materialize as behaviour. (Ajzen, 1991).

SERVQUAL (Parasuraman, Zeithaml & Berry, 1985)

Urban complaints map onto SERVQUAL dimensions: reliability (on-time arrival), responsiveness (notification of dispatch), assurance (professionalism positively perceived), tangibles (vehicle condition). Reliability was the negative factor. Rural environments: tangibles and responsiveness do not happen (no depot, no petrol), so service quality perceived is very low. SERVQUAL allows operationalization of the "service-quality" drivers of trust and usage. (Parasuraman et al., 1985).

Social Construction of Technology (SCOT — Bijker et al., 1987)

Ambulances are socially constructed differently: as life-saving technology in some urban communities, and as a death symbol in the majority of rural communities. SCOT explains how the

same technology acquires different meanings within various social groups, resulting in adoption trajectories. (Bijker et al., 1987). Trust & Confidence Theory (Luhmann, 1979) / Risk Perception (Slovic, 1987)

Trust: Urban respondents show conditional trust (paramedics are admired, but system reliability is doubted). Rural respondents show weak trust (absence + symbolic fear). Risk perception: Perceived risk of waiting for an ambulance vs. perceived risk of being taken by taxi/tricycle controls behavior. Where an ambulance is perceived as high-risk (death or delay symbol), people will avoid it. These theories explain why objective improvement in the service must be supplemented by trust-building. (Luhmann, 1979; Slovic, 1987).

Systems Theory (Bertalanffy, 1968)

NAS is functioning in a health system made up of roads, fuel access, hospitals, telecommunication, and local councils. Urban problems are system overload (call-load, traffic), rural problems are system unavailability (no station, no fuel, remoteness). Systems Theory indicates that NAS interventions must be multi-sectoral. (Bertalanffy, 1968).

2. How the findings fill the gaps in the study

Here are presented below the contribution of the research (from the urban–rural findings) to the gaps you have earlier identified: Conceptual gap: By utilizing HBM, TPB, SERVQUAL, SCOT, DOI, Theory of Trust and Systems Theory in conjunction, the research builds on logistics to a multi-faceted conceptualization of ambulance adoption (behavioural, service-quality, cultural, systemic). This addresses the earlier lack of combined frameworks (Oppong et al., 2015).

Empirical gap: The study provides qualitative community-level findings across six heterogeneous sites (rural & urban), and captures lived experience, cultural meaning, and real instances of service failure/success, filling in for the absence of ground-level data.

Methodological gap: Uses in-depth interviews + FGDs across heterogeneous sites (rural/urban) rather than just surveys or admin stats, providing richer narrative evidence about why behaviour occurs.

Sociocultural gap: Systematically documents symbolic meanings (ambulance = death), faith-first practices, and older-adult decision-making, enhancing previous underdeveloped cultural analysis (Asamoah & Boafo, 2022).

Population/contextual gap: By the breakdown of urban versus rural, research corrects overgeneralized findings and finds place-specific challenges (e.g., traffic vs. bad roads/fuel).

Policy/Implementation gap: The research determines the degree to which "One Constituency, One Ambulance" and other similar policies have increased visibility but not actually utilization, illustrating the deficit of implementation (NAS, 2023).

Trust & Risk Perception gap: Provides qualitative evidence of how trust is eroded by delay, prank calls, and invisibility, creating the trust–utilization linkage concrete in Ghanaian life.

Communication & Knowledge Translation gap: Refers to national messaging (e.g., "112 is free") not having filtered down to rural dialect societies or being addressed to symbolic fears; suggests targeted, multilingual knowledge translation.

Theoretical gap: Empirically tests and demonstrates the complementary explanatory validity of multiple theories in a single empirical setting, a contribution towards EMS theory in LMICs.

3. Practical implications arising from the theory-informed urban–rural differences

Urban focus: Increase SERVQUAL responsiveness and reliability (dispatching protocol, traffic management corridors, stationing in congestion points); conduct visibility campaigns based on successful rapid responses (DOI: increase observability). Rural focus: Create observability/trialability (local demonstration units, periodic stationing of ambulances or rapid-response motorbike EMTs), involve religious and traditional leaders to redefine symbolic meanings (SCOT; RMT), and resolve system-level constraints (roads, fuel) based on Systems Theory.

In both: Build trust by keeping channels of communication open, use local languages, involve community leaders in planning (TPB & RMT), and tailor messages to counteract the "ambulance=death" myth (HBM: reappraising perceived benefits).

4. Brief conclusion (what this extended analysis contributes

By employing a number of theoretical frameworks, this extended urban–rural analysis not only accounts for what the differences are, but why and how NAS and policy can respond to them in a targeted way. The findings move beyond infrastructural accounts to illustrate cultural meaning-making, trust, service quality, behavioural intention, and systems constraints all combine to shape ambulance uptake, and the study fills meaningful conceptual, empirical, methodological, sociocultural, population, and policy gaps in EMS Ghanaian scholarship.

4.3.7 TABLE: CODING FRAMEWORK FOR FINDINGS

RESEARCH QUESTION	OPEN CODING (PARTICIPANT VOICES)	AXIAL CODING (CATEGORIES)	SELECTIVE CODING / THEMES	ILLUSTRATIVE QUOTES
RQ1: What is the perception of communities regarding the role and significance of NAS in emergency healthcare provision?	"Ambulance is the difference between life and death." / "We only know ambulance by name here." / "Professional equipment but unreliable in time."	Recognition of ambulance importance; Perceived absence in rural areas; Admiration vs. criticism.	Ambulance as Necessary but Distrusted	"They are essential, but you hardly see them in our community unless there is a big accident." (Participant, Bongo)
RQ2: What drives citizens' calls, and failures to call, the ambulance	"Sometimes you call but nobody answers." / "Unless you show them money, they won't start the	Delays and inefficiency; Perceived hidden costs; Alternative transport; Lack of	Perceived Inefficiency and Distrust as Barriers to Use	"If it is very serious, we try to call. But if you don't have money, you won't risk it." (Participant, Takoradi)

in emergencies?	engine." / "Ambulance is too late, we use taxis."	reliability.		
RQ3: How do communication strategies, public awareness, and trust-building affect the use of ambulances?	"People don't know the number to call." / "Ambulance is for politicians." / "We fear hidden hospital bills."	Poor awareness of the hotline; misinformation on eligibility and costs; weak community outreach.	Poor Communication and Low Awareness	"Many people don't know the number to call. Even those who know don't trust they will answer." (Participant, Kete Krachi)
RQ4: What socio-cultural norms and community beliefs influence how people perceive and make use of ambulances?	"Ambulance is for the dead, not the living." / "Prayer is faster than calling an ambulance." / "We consult elders first."	Ambulance as hearse; Religious reliance; Elder/family decision-making.	Cultural Stigmas and Traditional Norms	"In our place, when you call the ambulance, it means the person is almost gone. That's why people prefer taxis." (Participant, Madina Zongo)
RQ5: How do urban and rural communities differ in perceptions and experiences of NAS?	Urban: "Ambulance comes but too late." / Rural: "Here, we never see it at all." / "Our tricycles are the real ambulance."	Urban: Visibility but inefficiency; Rural: Absence and inaccessibility; Symbolic stigmas.	Urban–Rural Inequities in Access	"In our place, when you call the ambulance, it means the person is almost gone. That's why people prefer taxis." (Participant, Salaga)

4.3.8 SUMMARY OF FINDINGS

The study revealed the National Ambulance Service (NAS) as widely perceived as a needed but highly controversial institution in Ghana. Across urban and rural communities, respondents embraced the usefulness of having a specialized emergency medical system. However, its practical applicability was consistently challenged by low trust, misinformation, cultural stigma, and inequitable accessibility. While urban residents were more aware of NAS and its hotline, but dissatisfied with inefficiencies and delays, rural residents would more likely doubt its very existence, viewing it as an unreliable or unreachable service.

Core Findings

1. **Low trust and fluctuating reliability**

Trust in NAS was among the strongest predictors of use. In both urban and rural settings, participants cited previous delays or failed responses as a reason not to use ambulances. For urban dwellers, inefficiencies, i.e., lack of punctuality or uncommunicative dispatchers, were the overriding concerns. Rural dwellers discussed sheer unavailability, where bad roads, fuel shortages, or long distances to stationed ambulances complemented a sense of having been forsaken. Such suspicion confirms that technical availability alone does not guarantee utilization; reliability and consistency are also crucial (Rogers, 2003).

2. **Pervasive misinformation about cost and eligibility**

Even though NAS is supposedly free, the majority of respondents believed otherwise. Rural and urban respondents alike cited rumors or personal experiences of being asked to pay fuel money or fearing hidden hospital fees. This shows a gap in communication and public education, whereby the advantages of the service are not effectively transmitted among the prospective users. Based on the Health Belief Model (Rosenstock, 1974), such false impressions create high perceived barriers, discouraging the uptake of the ambulance.

3. Cultural stigmas associated ambulances with death

It was a prevalent cultural perception, especially in rural areas, that ambulances are a sign of death rather than life-saving. The saying, "ambulance is for the dead, not the living," promoted avoidance until emergencies had arrived at a terminal stage. Even among urban areas, this association influenced decisions, though not as intensely. This is in harmony with Social Constructionist perspectives (Berger & Luckmann, 1966), illustrating how meanings attached to symbols are socially embedded and influence behavior. It also suggests a lack in the literature that minimizes cultural beliefs as critical barriers to EMS use.

4. Poor communication strategies and weak public education

Across all communities, NAS was beset by a lack of citizen involvement. City citizens complained of a lack of information in times of crisis, while rural citizens reported close to zero awareness of the hotline or procedures for service. This points to a failure of relationship management (Ledingham, 2003) in that NAS has not built strong two-way communication, with the result that rumors and mistrust have been able to take root.

5. Urban-rural differences in service visibility and accessibility

Most pronounced, perhaps, was the systemic divide between rural and urban Ghana. Whereas urban residents encountered inefficiencies, they at least recognized NAS as an existing service. Rural residents, in contrast, perceived it as all but imaginary, with bad roads, resource shortages, and cultural stigmas reinforcing inaccessibility. This aligns with Systems Theory (von Bertalanffy, 1968), whereby asymmetrical subsystems (logistics, infrastructure, communication) yield disparate outputs across spaces. It also fills a literature gap as not many preceding studies undertook context-specific comparisons of EMS experiences in Ghana.

INTEGRATIVE INSIGHTS

The findings collectively show that issues are not just bound by infrastructural or technical deficits but also deeply rooted in behavioral, cultural, and communicative problems.

From the Diffusion of Innovations theory, urban communities show later stages of adoption (with awareness but rejection due to dissatisfaction), while rural communities are in earlier stages of adoption, hindered by misinformation and lack of exposure.

From the Health Belief Model, high perceived barriers (cost, stigma, unreliability) overshadow perceived benefits, which explains low utilization despite availability.

From Relationship Management Theory, NAS's failure to build public trust and engage in dialogue has undercut its legitimacy.

From Social Constructionism, ambulances have been socially reconstructed as "death vehicles," demonstrating how public meaning-making processes can directly undermine health innovation.

From Systems Theory, inequities demonstrate how EMS cannot function well if subsystems (dispatch, infrastructure, resource allocation) are weak or unbalanced.

While there has been literature identifying EMS problems in Ghana (Aveh et al., 2021; Osei-Ampofo et al., 2018), this study makes three important contributions to knowledge:

1. **It distinguishes between urban and rural attitudes,** showing that problems differ in kind, as well as degree.
2. **It highlights cultural and symbolic barriers**—such as death stigma—that have had little consideration in EMS research.
3. **It integrates several theories to explain adoption**, perception, and relational trust and thus presents a comprehensive, multi-faceted explanation of why citizens are reluctant to call NAS.

In short, the findings highlight that gap closure requires more than infrastructure and ambulances. NAS reforms must address trust building, culturally sensitive outreach, and equitable distribution

while optimizing systemic efficiency. Only through compound operational and communicative gains can NAS transition beyond current perceptions and realize sustainable uptake.

4.4 DISCUSSIONS OF FINDINGS

4.4.1 EMPIRICAL FINDINGS AND LITERATURE

This study's empirical findings offer a multi-dimensional description of how the National Ambulance Service (NAS) is perceived by Ghanaian communities and what challenges affect its utilization. The respondents positively identified the urgency of NAS as a means of accessing emergency healthcare, particularly in cases where time counts, such as in road accidents, maternal complications, and acute sickness. This is in line with the Diffusion of Innovations Theory (Rogers, 2003), wherein the NAS has been seen as a social innovation that offers a relative advantage in terms of increasing rates of survival. Adoption of the innovation still lags and is uneven, with communities attaining varied degrees of awareness, acceptance, and trust. A pervasive empirical theme was trust in, or distrust of, the system. They explained the reluctance to call ambulances based on past experiences of delay, ambiguity in the arrival of ambulances, or a preference for taxis and private cars as safer options. This is a direct reference to the Trust and Confidence Theory (Luhmann, 1979), where trust takes center stage in reducing social uncertainty. Where ambulance services are not meeting expectations, the failure of trust translates to reliance on informal means, no matter the added risk. This is also in line with Risk Perception Theory (Slovic, 1987), where individuals' choices in crises are less influenced by statistical safety but more influenced by perceived immediacy and dependability.

Public comprehension and awareness of NAS operations were found to be mixed in the study. Urban respondents indicated awareness of emergency numbers and protocols, but rural respondents did not have such awareness. This echoes communication strategy and awareness creation gaps, which are central to the Diffusion of Innovations Theory, most specifically the role of the communication channels in spreading new practice. Without sustained education, as Sasser et al. (2005) also noted, innovations like EMS cannot diffuse broadly. The Health Belief Model (Rosenstock, 1974) also shows how an individual will first need to feel vulnerable to threats to

health and appreciate the benefits of calling for an ambulance before adopting these actions as their own.

Another dominant theme was that of socio-cultural norms and beliefs. Participants intimated that some communities require family members or elders to respond first during crises, while others blamed illness on spiritual factors that need traditional or religious intervention. These outcomes find support in the Social Construction of Technology (SCOT) Theory (Bijker, Hughes & Pinch, 1987), which holds that technology use is filtered by social and cultural interpretations. In this case, ambulances are not treated as objective devices but socially constructed items whose take-up is dependent on cultural legitimacy.

Urban and rural perceptions of NAS also differed. Although urban inhabitants were impatient with delays, they loved NAS as part of their emergency provision system, while rural inhabitants mentioned exclusion due to distance, poor road conditions, and a shortage of coverage. This finding is an echo of Systems Theory (Bertalanffy, 1968), wherein healthcare is defined as a system wherein a lack in one of its components (e.g., infrastructure) results in the overall system's functionality losing its effectiveness. This also follows the Service Quality (SERVQUAL) Model (Parasuraman et al., 1985), wherein reliability, responsiveness, and accessibility are determinants of service measurement. Rural sentiments of exclusion point to inadequacies in service quality that undermine trust and fair access.

In general, the conclusions of this study affirm and complement the literature. NAS is recognized as an essential innovation in Ghana's health system, whose take-up and effects are constrained by aspects of trust, communication channels, cultural beliefs, and systemic inequities. These are dynamics with theoretical resonance: through trust as an antecedent to adoption (Luhmann, 1979), consciousness as pivotal to diffusion (Rogers, 2003), socio-cultural construction of technology (Bijker et al., 1987), and perceived risk influencing conduct (Slovic, 1987). Overcoming these challenges requires not only technical upgrades but also culturally attuned communication, building trust, and system transformation to improve equity between urban and rural environments.

4.4.2 SYNTHESIZING FINDINGS WITH THEORY

The findings of this research, drawn from the perceptions of the National Ambulance Service (NAS) among six urban and rural towns in Ghana, can be meaningfully interpreted by drawing on a variety of interconnected theories. Collectively, these theoretical constructs provide a multi-faceted explanation of why citizens do not call ambulances, how they make sense of the service, and what organizational features underpin their decisions.

DIFFUSION OF INNOVATIONS THEORY (ROGERS, 2003)

Diffusion of innovations theory argues that the adoption of innovation hinges on awareness, relative advantage, compatibility with the culture, and communication networks. The ambulance service, as a social and technological innovation in this study, has been attained but not fully diffused. For instance, urban locations such as Madina and Bantama are more exposed to ambulances and have some experience with the emergency number, yet they still utilize taxis during emergencies. Rural locations such as Bongo and Kete Krachi, respondents revealed that "ambulance is only a name" and not a practical reality. This suggests that diffusion is unequal: the innovation has come to some environments but has failed to do so elsewhere due to ineffective communication plans and a lack of education tailored to cultures. In application of this theory, the study fills the knowledge translation gap in the literature by demonstrating how limited diffusion inhibits the adoption of EMS in Ghana (Rogers, 2003).

HEALTH BELIEF MODEL (ROSENSTOCK, 1974)

The health belief model would lead us to expect that health-seeking behavior is a function of perceived severity, susceptibility, benefits, and barriers. The findings fall perfectly in line. Individuals consider emergencies (e.g., accidents or collapses) to be severe and observe the potential role of ambulances. But barriers such as cost misconceptions, delays, and cultural "ambulance as a hearse" stigma reduce perceived benefits. As one woman of Salaga said, "When you see an ambulance go inside a house, you know somebody is dead." This illustrates that cultural framing is a psychological barrier. The HBM therefore accounts for why so many of the citizens prefer alternative modes (taxis, motorbikes) even with the added dangers. By doing so, the study is contributing to reducing the behavioral gap in EMS research by illustrating that symbolic stigma

perceptions have just as much influence on health decisions as do logistical barriers (Rosenstock, 1974).

THEORY OF PLANNED BEHAVIOR (AJZEN, 1991)

TPB assumes that attitudes, subjective norms, and perceived behavioral control dictate behavior. The study concluded that although individuals carried a positive belief regarding NAS ("ambulance is the difference between life and death"), they did not act upon it. Rural subjective norms, like waiting for chiefs or elders to approve actions, and urban low perceived control (fear of ambulances not showing up), overpowered intention. For example, one of the inhabitants of Bantama reported that he waited for 45 minutes before deciding to take a taxi. This illustrates the "intention-action gap" predicted by TPB theory. Based on this theory, the study educates us as to how individual intentions are circumscribed by social and cultural constraints and thus closes the psychological gap in EMS behavior research (Ajzen, 1991).

SERVICE QUALITY (SERVQUAL) MODEL (PARASURAMAN, ZEITHAML & BERRY, 1985)

The SERVQUAL model measures service performance on five dimensions: reliability, responsiveness, assurance, empathy, and tangibles. The results identify that reliability and responsiveness are the lowest-rated dimensions of NAS. Respondents commonly cited delays, unanswered calls, or asking for fuel money. For example, a young leader in Kete Krachi said, "Unless you show them money, they won't start the engine." Urban respondents identified the new machines (tangibles) but emphasized poor communication and timeliness. From the guarantee perspective, suspicion that the service is not genuinely free erodes trust. With the application of SERVQUAL, the study connects perception to measurable service quality, closing the policy and implementation gap by showing that, besides fleet size increase, NAS needs to enhance on service delivery experiences (Parasuraman et al., 1985).

SOCIAL CONSTRUCTION OF TECHNOLOGY (SCOT) THEORY (BIJKER, HUGHES & PINCH, 1987)

SCOT highlights that technologies are given meaning by social interpretation and not by intrinsic design. The fact that ambulances are commonly thought to be for the dead, not the living, is a textbook example of this process. Whereas NAS views ambulances as devices of survival, groups re-fashion them as signs of death. Thus, the ambulance has been socially "re-scripted" to convey meanings that discourage use. Using SCOT, this study finds that challenges for EMS are infrastructural as well as socio-symbolic. This fills the gap in cultural determinants by showing that public resistance is connected with social meaning, rather than ignorance or irrationality (Bijker et al., 1987).

TRUST AND CONFIDENCE THEORY (LUHMANN, 1979)

Luhmann argues that trust facilitates coping with complexity under a state of uncertainty, enabling individuals to act in risk. The research revealed pervasive mistrust: citizens were complaining of recurrent delays, inadequate communication, and hidden costs, which eroded confidence. The moment trust is lost, citizens turn to taxis or tricycles as "the actual ambulance." In a sense, thus, the ambulance system in Ghana is confronted by both personal trust (experience-based) and system trust (institutional reputation) gaps. It is this reason why repeated service failure is realized as behavior disengagement. Applying this theory, the study fills the gap on trust, showing how restoring EMS usage requires not only operational adjustments but regular confidence-gaining exercises (Luhmann, 1979).

SYSTEMS THEORY (BERTALANFFY, 1968)

Systems theory views organizations as systems consisting of interdependent components whose failure has a cascading effect on the entire system. The study identified how substandard road networks, shortages in fuel, and dispatching bottlenecks contribute to the overall perception of inefficiency. For example, in Salaga, interviewees argued that ambulances were "reserved for politicians" because there were no stationed units in rural areas. Such systemic disparity means that even when individual components function (e.g., trained EMTs, fully equipped ambulances), the overall performance is a failure. Systems theory operates to explain that perception is not

subjective but grounded in systemic dysfunctions. This closes the operational gap by situating perception within larger systemic deficits (Bertalanffy, 1968).

RISK PERCEPTION THEORY (SLOVIC, 1987)

According to risk perception theory, people respond to risks intuitively based on experience, cultural beliefs, and emotions as opposed to statistical probability. The groups in question saw ambulances not as reducing risk but actually as raising it: calling the ambulance was also equated with writing off the patient. For instance, families thought that "once the ambulance comes, death is close." This incorrect belief altered behavior away from ambulances and towards taxis, which symbolically represented survival. Theory, therefore, explains why communities avoid ambulances even in the face of their lifesaving role. By applying risk perception theory, this research fills the psychological-cultural gap, illustrating how perceived risks override rational health choices (Slovic, 1987).

SYNTHESIS

Together, they provide a holistic platform for interpreting the study's findings. They indicate that poor ambulance utilization in Ghana is not only due to operational or infrastructural shortcomings but also due to cultural constructs, psychological barriers, communication failures, and system inequities. Significantly, the integration of these theories indicates that solutions must be multi-level: improving service quality (SERVQUAL), rebuilding trust (Luhmann), re-framing cultural meaning (SCOT), enabling fair diffusion (Rogers), and overcoming perceived obstacles (HBM, TPB). Along the way, this research fills the nine listed gaps of literature, cultural determinants gap, behavioral gap, trust gap, and knowledge translation gap, by producing evidence that situates ambulance use both in theory and in the lived world. Not only does this synthesis in theory advance scholarship, but it also provides applied information for policymakers intent on enhancing public trust and fair access to the NAS.

4.4.3 CONTRASTING DOMINANT THEMES

Findings suggest that the public attitudes toward the National Ambulance Service (NAS) in Ghana are far from unidirectional. Instead, they are comprised of diverse experiences, meanings, and expectations on the part of communities. By comparison of the emergent themes, it can be seen that while NAS is recognized to be part of emergency care, its acceptance is marked by tension between trust and distrust, awareness and unawareness, tradition and modernity, and urban and rural realities.

1. AMBULANCE AS NECESSARY BUT SUSPICIOUS

In all six study communities, there was a general consensus that ambulances were necessary during emergencies. Urban areas like Madina and Bantama had respondents mentioning in unison how ambulances provide lifesaving services during emergencies. One of the Madina participants described ambulances as "the difference between life and death" when a neighbor passed out at the bus stop, and another in Bantama recounted how the quick arrival of an ambulance in a road traffic accident prevented further deaths. These narratives underscore the recognition of the National Ambulance Service (NAS) as a vital health infrastructure in urban Ghana. But while in more peri-urban and rural locations such as Bongo and Salaga, this recognition of need was complemented by an overall distrust concerning the actual existence and reliability of ambulances,". One farmer in Bongo said, "We know ambulance by name only; when we need it, we don't see it." A woman who sells at the market in Salaga also mentioned that while ambulances were frequently heard of on radio health programs, few in her area had ever seen or received an ambulance. This means that in certain contexts, the ambulance is now more of a symbolic promise of healthcare rather than an omnipresent service.

This contradiction aligns with Slovic's (1987) Risk Perception Theory, which explains how people may intellectually value the usefulness of a service but emotionally distance themselves from it due to perceived risks or inefficiencies. Here, "risk" is not only delayed health care but also the emotional and psychological disappointment of heightened expectations. When communities

perceive that dialing an ambulance will not likely lead to timely help, they do not use it at all or substitute it with other arrangements such as taxis, motorbikes, or community volunteers.

The findings also refer to the Trust and Confidence Theory (Luhmann, 1979), whereby trust is posited to be central to institutional operation. Where communities like Madina and Bantama offer firsthand positive narratives, trust is bolstered, creating a feedback process that institutionalizes the application of ambulance services. In others, like Bongo and Salaga, chronic unavailability erodes trust and renders adapting to the service irrational despite its value being acknowledged.

What is disclosed is a two-fold story: while urban users increasingly normalize the use of ambulances as a legitimate emergency alternative route, rural users normalize the avoidance of ambulances due to a context of unmet expectations. The result is this: a geographical trust gap wherein urban Ghanaians may find NAS an efficacious lifeline, whereas rural dwellers regard it as an uncertain or even irrelevant lifeline.

Lastly, the conflict between trust and recognition is a mask for an underlying challenge to public health equity. While the ambulance is internationally regarded as a necessary intervention, it cannot advance beyond the symbolic stage in rural societies where trust has been undermined. Unless institutional changes address reliability, accessibility, and visibility, the ambulance risks becoming a "necessary but distrusted" institution within Ghanaian communities.

2. PERCEIVED INEFFICIENCY AND DISTRUST AS BARRIERS TO USE

Reliability and timeliness were the issues that brought out the most polarizing discussion among communities. Respondents reiterated again and again that while ambulances are essential, inefficiencies in response times actually render them very unreliable. In Bantama, for example, participants openly complimented NAS staff professionalism and preparedness, citing the presence of sophisticated medical equipment and EMT competence. However, this respect was eroded through complaints about the delay. One interviewee captured it nicely: "Professional in equipment but unreliable in time." These comments suggest that even when the quality of service is perceived as high once the ambulance has arrived, inefficiencies in timeliness erode general

trust in NAS. In Takoradi, however, other tales unfolded. Respondents recognized how quickly ambulances moved in areas where there was a market fire incident, with one respondent recalling that "their timely arrival saved many lives that day." The successes of these instances helped establish localized areas of trust, which showed the potential for good experiences.". By comparison with the broader history of delay and non-responsiveness, the evidence does show that failures in efficiency dominate public memory more than achievements.

The dualism works to highlight a fundamental challenge: trust in NAS is weak, unevenly distributed, and extremely context-dependent. While sporadic successful interventions can build credibility, repetition of delays or failure in service feeds widespread cynicism. Communities like Bantama develop a perception that, although the service has the technical competence, it lacks the operational efficiency necessary for consistent reliability. Conversely, Takoradi's relatively positive accounts show how contextual success stories can foster trust, but even there, the overarching narrative of unreliability looms in the background.

The Trust and Confidence Theory (Luhmann, 1979) provides a useful explanatory lens. Luhmann has speculated that trust is built up over time due to successive positive experiences, but can be readily destroyed. For NAS, one successful intervention generates goodwill, but a succession of delayed reports erodes trust easily. Also, once trust is lost, its absence creates a ripple effect: during subsequent emergencies, citizens may hesitate to call for ambulances lest there be inefficiency. Instead, they take taxis, motorbikes, or community volunteers and consider them faster alternatives, albeit medically below optimal.

This loss of trust is compounded by the Service Quality (SERVQUAL) Model (Parasuraman, Zeithaml, & Berry, 1985), which holds reliability to be a foundation of service quality. In the findings, "reliability" was also the most contentious dimension: while technical competency (assurance, tangibles, empathy) was occasionally noted, the loss of reliability continuously undermined perceptions of general quality. The ambulance service is thus at risk of being remembered less for its life-saving capacities and more for its late arrivals.

Furthermore, Risk Perception Theory (Slovic, 1987) adds one more factor: people's fear of delay and feelings of inefficiency often override their awareness of the ambulance's supposed superior

capability. Even if people are aware that ambulances are medically more advanced than other options, the waiting too long factor is the deciding issue in their choice. In case of emergency, where every second counts, people choose routes that appear faster, even if they do not involve professional medical care.

Finally, the contrast between professionalism and inefficiency comes sharply into focus against the fragile status of NAS in public perceptions. While areas of success have the possibility of promoting trust, the collective force of inefficiencies serves to promote an image of distrust. Unless reliability and response time improvements are NAS's priority, the image of inefficiency will continue to act as a dampener for mass usage.

3. POOR COMMUNICATION AND LOW AWARENESS

Another striking difference that the findings have is in how aware respondents in the National Ambulance Service as well as access points, are. Urban communities like Bantama and Madina had respondents demonstrate relatively higher awareness of NAS activities, particularly the 112 toll-free emergency line. Such awareness was largely because of the exposure to highly organized media campaigns via the radio, TV, and the occasional billboard. One Madina respondent commented: "We know about the 112 number. They advertise it on the radio and sometimes on television, so at least in town we do hear of it." Such accounts suggest that where there is strategic communication applied, awareness can be translated into some level of confidence in the service. For rural societies, such as Kete Krachi and Salaga, significant knowledge deficits were elicited. Some of the participants admitted not knowing the toll-free number at all or associated the ambulance service with only large cities. As one of the Salaga respondents summarized: "Here, most people don't even know which number to call. They only hear ambulance is for Accra people." Such geographical exclusion of perception invalidates not just awareness but also trust in NAS's commitment to universal national coverage. The finding is a sign of systemic imbalance in Ghana's health communication system, with rural areas inadequately served by structured public education initiatives (Boateng & Kusi, 2020).

In accordance with the Health Belief Model framework (Rosenstock, 1974), the finding suggests an underlying absence of "cues to action." Cues such as frequent jingles, community sensitization interventions, or education in school would be cues or reminders that motivate citizens to call NAS in crises. In rural areas where such stimuli are lacking, people will be less inclined to consider calling an ambulance even in the event of emergencies. The failure to call, then, is not necessarily a reflection of service refusal but rather lack of awareness that the service is there and can be accessed by them.

The Diffusion of Innovations Theory (Rogers, 2003) is also a useful explanatory framework. Here, NAS services awareness, above all, knowledge of the 112 number, is the initial diffusion step. Urban residents, with greater media and information institutional accessibility, are "early adopters" of the information. Rural residents are still in the "late majority" or even "laggards" status, not due to lower interest, but due to the structural limits of information circulation. This anomalous diffusion of information slows down the overall assimilation of NAS as an indexed emergency response mechanism across the country.

The Systems Theory (Bertalanffy, 1968) also suggests that the breakdown in communication between central NAS institutions and rural communities is a sign of the non-integration of the system. Good systems rely on good feedback loops; in this case, however, the lack of rural-specific communicatory approaches ensures that blind spots exist where the system fails to function as an integrated whole. The perception of exclusion by rural communities is thus not merely a communications problem but an indicator of a systemic misalignment.

Also, the Trust and Confidence Theory (Luhmann, 1979) accented the manner in which a shortage of information can ruin trust as much as service inefficiency. When individuals are not informed of the ambulance service, or when they are unaware of its hotline, citizens will make assumptions, which tend to be negative, i.e., "ambulance is not for us" or "ambulance is only for Accra people." These assumptions reinforce distrust and discourage involvement, even before any actual failure of the service.

Finally, the urban-rural difference has significant health equity implications. Unless attention is also directed toward rural populations, use will be unequal and rural populations will continue at

risk for preventable death. As can be seen from the statistics, where there is communication, trust is fostered, but where there is not communication, distrust accelerates. To bridge this gap, targeted recruitment, culturally sensitive education efforts, and frequent visibility in rural settings are needed. Otherwise, NAS threatens to continue to underuse populations that perhaps most critically require its service.

4. TRADITIONAL NORMS AND STIGMAS OF CULTURE

The symbolic meaning of ambulances was one of the most vivid cultural contrasts within this study. Within Bongo and Salaga villages, respondents consistently associated ambulances with death, equating ambulances with hearses. One respondent stated: "When you see an ambulance enter a house, you know someone is dead." This deeply entrenched view discourages families from summoning ambulances in time. Instead, the service is usually considered a last resort, only having been used when death is inevitable or after all else has been tried. In contrast, urban communities such as Takoradi and Madina painted a more positive tale. Traders in Takoradi described how ambulances saved lives in case of a fire in a market, while the Madina residents described heart attack victims who were saved due to quick ambulance response. In these, ambulances were not constructed as symbols of death but as harbingers of survival and hope. This reveals how social and cultural meanings are dynamic rather than fixed.

There is another difference in decision-making processes. In rural areas, emergencies were rarely treated as individual concerns. Families would wait for advice from elders, chiefs, or pastors before NAS was called, resulting in delays. One informant in Salaga stated: "Before we call ambulance, we need to inform the pastor and head of the family. They will make the decision." In contrast, urban areas like Bantama had respondents mention more individualized responses, where individuals called without prior clearance from extended family systems. This emphasizes the way common cultural norms determine attitudes as well as daily behavior patterns of seeking healthcare.

It is appropriate to apply the Social Construction of Technology (SCOT) Theory (Bijker, Hughes & Pinch, 1987) in understanding the findings of the study. SCOT believes that technologies are not innocent but that their meaning is created by the interpretations of groups. In Bongo and Salaga,

ambulances are socially constructed as "carriers of death" while in Takoradi and Madina they are socially constructed as "savers of life." These reverse constructions are based on everyday experiences, awareness of successful salvage operations, and cultural definitions of death and survival.

The Health Belief Model (Rosenstock, 1974) explains this dynamic as well. Rural respondents' perception of ambulances as death vehicles decreases perceived benefits of calling, but increases perceived barriers in the form of stigma, spiritual consultation, and fear of social judgment. In the absence of culturally relevant interventions to reinterpret ambulances as lifesaving equipment, these perceptions are most likely to dominate, sustaining underutilization.

From a Risk Perception Theory (Slovic, 1987) viewpoint, the rural perception of ambulances with death is a demonstration of the cultural amplification of risk. The mere presence of an ambulance raises anxiety and sensitizes to danger, making it futile to bring one in. In urban areas, multiple cases of successful rescues reduce perceived risk and instead emphasize the possibility of survival.

Also, the Theory of Planned Behavior (Ajzen, 1991) states that social norms are essential in shaping calls to NAS intentions. In rural settings, the normative pressure to approach elders or pastors prior first significantly reduces the call probability immediately. In urban areas, where norms support autonomy and rapid individual decision-making, call intentions are strengthened and less deliberate.

Finally, these findings help to fill a gap in Ghana's EMS literature by demonstrating that cultural uses of ambulance are not peripheral but front and center in public understanding and use. Although technical concerns such as delay and cost have been central determinants in earlier research (Agyeman, Osei, & Tetteh, 2022), this article demonstrates that cultural shame and community norms are also compelling determinants of whether or not NAS is engaged in emergencies.

On the whole, the study finds a cultural chasm: rural society constructs ambulances as symbols of death and subjects their operation to public control, while urban society progressively accepts them as life-saving tools used by individuals for personal purposes. To achieve even-tempered nationwide acceptance by NAS, interventions need to actually reverse these socio-cultural

constructions by means of intense public education, leader involvement, and culturally powerful story reconstruction that rescues ambulances from fear to hope.

5. URBAN–RURAL DISPARITIES IN ACCESS

The findings emphasize a dramatic and persistent urban–rural difference in perception as much as in experience of the National Ambulance Service (NAS). While the respondents in all six communities acknowledged the abstract usefulness of ambulances, the degree to which they gained benefit from the service was largely a matter of geographical location. In the cities such as Madina, Bantama, and Takoradi, complaints were largely efficiency-related. Respondents often cited delays because of traffic jams, communication system problems, and occasional tardiness. As illustration, one respondent from Madina stated: "If they fall, we know ambulance can help, but traffic alone will kill them before they get there." Similarly, in Bantama, respondents identified NAS staff competence but resented delayed arrivals: "They have the equipment, but they don't come on time." These anecdotes reflect a paradox: in urban areas, ambulances are visible and accessible, but delays in timeliness undermine confidence and deter usage.

On the other hand, rural areas such as Bongo, Salaga, and Kete Krachi expressed anger rooted not in efficiency but structural and systemic factors. A farmer in Bongo complained: "Here, we only hear of ambulance. We don't see it." In Salaga, citizens noted that ambulances were typically kept for referral hospitals or politics, further solidifying perceptions of abandonment. In Kete Krachi, meanwhile, respondents described functional challenges: "When the ambulance comes, they insist on fuel cash. If you don't, they won't move." Frequent cited were poor road infrastructure, poor ambulance coverage, and shortages in stationed units, emphasizing rural lives being back-pedaled in the national emergency response system.

This disproportion reflects broader systemic disparities in Ghana's health delivery. Stewart et al. (2014) argue that rural Ghana is still disproportionately short of health facilities, from hospitals and qualified personnel to reliable transport infrastructure. The case of NAS illustrates the situation: while urban residents complain about shortages of efficiency, rural residents lament simple availability and right.

From a Systems Theory perspective (Bertalanffy, 1968), such disparities highlight the way in which subsystem vulnerabilities undermine the overall effectiveness of the emergency response system. For example, one link in the chain, e.g., third-world-quality roadways or poor ambulance deployment, is causing bottlenecks that make the NAS mandate problematic throughout the country. The Ghanaian EMS network as an abstract interdependent system is fragmented into partial functioning in urban areas and under-provision in rural areas.

Rogers' (2003) Diffusion of Innovations Theory also provides an explanatory model. In the urban areas, ambulances are relatively more visible and used, representing the "early adopters" of the service. In rural areas, however, the innovation has not diffused well due to infrastructural gaps, ineffective communication campaigns, and socio-cultural constraints. The uneven diffusion of the innovation inhibits NAS from acquiring legitimacy at the national level and reinforces the urban–rural service gradient.

Moreover, the Parasuraman et al. (1985) Service Quality (SERVQUAL) Model focuses on the manner in which different dimensions of service quality unfold throughout the gap. In rural areas, complaints fall under responsiveness (delays), reliability (unpredictable arrival hours), and assurance (public distrust). In rural areas, failure is more structural: tangibles (no ambulances deployed, poor road infrastructures) and accessibility (concealed charges, unawareness about the hotline number). This contrast reveals how perceptions of quality are context-driven and impacted by whether or not there is basic infrastructure.

Risk Perception Theory (Slovic, 1987) is also relevant. Urban dwellers perceive the risk of delayed ambulances but also perceive ambulances as saviors and therefore practice careful dependence. Rural dwellers perceive the risk of seeking NAS as larger than the benefit, delays, expenses, or total lack, so they opt to use taxis, motorbikes, or tricycles ("aboboyaa") as alternatives.

This urban–rural difference finally fills an essential lacuna in previous studies. Past literature on EMS in Ghana has had a tendency to focus on aggregate national statistics or on the city environment only. This research depicts how public opinion is not homogeneous but is rather geographically differentiated. Although NAS is present but ineffective within the city, it is not present or accessible within most of the rural areas. This distinction is significant for policy change

in that it shows that city-level efficiency will not suffice. True equity demands intervention in the rural areas, deploying more ambulances in rural areas, enhancing road infrastructure, investing in fuel subsidization, and stepping up rural-targeted public education campaigns.

Briefly, the contrast between urban and rural experience with NAS indicates that while efficiency is the constitutive problem of cities, structural exclusion is the constitutive problem of rural places. Until these imbalances are addressed, NAS will be perceived as an unevenly distributed service that contributes to consolidating distrust and constraining its national value.

SYNTHESIS OF CONTRASTS

Synthesizing these contrasts is a paradox at the heart of Ghana's National Ambulance Service (NAS): vital yet insufficient. Communities, on one hand, observe that no institution is better placed to quickly respond to emergencies in large numbers; but on the other hand, the lived experience of delay, absence, or miscommunication has entrenched consistent public distrust. This doubleness is not merely anecdotal but reflects underlying social, cultural, and systemic contradictions in shaping the ways Ghanaians interact with health technologies and emergency infrastructures. Urban–rural contrasts illustrate this paradox most acutely. In cities such as Madina, Bantama, and Takoradi, citizens see ambulances frequently but do not have faith in their speed and efficiency due to traffic, communication failures, and untimely arrival. Rural residents of Bongo, Salaga, and Kete Krachi rarely catch sight of ambulances at all; for them, the service exists as a policy rather than a practice. Urban suspicion stems from inefficiency, whereas rural suspicion stems from a shortage. This brings to light two aspects of inequity: one of operational performance and one of infrastructure distribution.

Cultural understandings complicate things even further. In some rural communities, ambulances carry the symbolic weight of death, tantamount to hearses, and this discourages families from placing the call even during dire emergencies. But within city markets, vendors replete with tales of how ambulances saved lives redefine the vehicle as a lifeline rather than a harvester of death. These competing readings illustrate the Social Construction of Technology (SCOT) model (Bijker et al., 1987), which suggests that a technology's meaning is not fixed but rather socially constructed

within contextual and cultural frameworks. In this example, the ambulance is not a fixed medical piece of equipment; it is a negotiated symbol shaped by common experience, fears, and narratives.

Decision-making styles also depend on context. Rural households delay making calls until family elders, chiefs, or pastors approve the decision, emphasizing collective agency over prompt medical treatment. Urban residents, on the other hand, make individual, rapid calls, reflecting individual agency over group consensus. This distinction aligns with Hofstede's individualism versus collectivism cultural dimensions, showing the extent to which cultural values affect access to and utilization of emergency care.

Communication channels show parallel cracking. In some areas of the nation, citizens recognized that NAS hotlines were responsive, whereas in others, participants reported receiving unanswered or redirected calls. These inconsistencies vindicate systems theory (Bertalanffy, 1968): breakdown in one sector of the system, whether dispatch responsiveness, road upkeep, or public awareness, invalidates the functioning of the overall emergency response network.

Overall, these fractured perceptions illustrate that while NAS has made giant strides in geographic coverage and visibility, the service still falls short of dependable trustworthiness, legitimacy, or equity of use across Ghana. To some citizens, the ambulance remains a service "out there," periodically present but not necessarily trustworthy. To others, it is an "ambiguous symbol" of promise and dread, life and death.

Through surfacing these widespread contrasts, the study not only fills the empirical gap of grassroots knowledge but also fills the conceptual gap with the incorporation of NAS perception into general theoretical frameworks, trust and risk theory (Luhmann, 1979), cultural construction of technology (Bijker et al., 1987), and systems thinking (Bertalanffy, 1968). Cumulatively, these approaches shed light upon why a single national service causes unequal local experiences, and why institutional legitimacy is not a given but needs to be earned in each infrastructural and cultural context.

Lastly, these paradoxes must be solved and not as an ancillary exercise but as a strategic necessity if NAS is to transition from being "necessary but distrusted" to a trusted, dependable, and culture-grounded lifeline for all Ghanaians. This does not only entail capital investment in

infrastructure and efficiency gains, but also cultural orientation campaigns, grassroots mobilization, and trust-building measures that resonate with the diverse realities of Ghana's urban and rural settings.

4.5 CHAPTER SUMMARY

The chapter outlined the findings of the study through interrogating community-based perceptions of the Ghana National Ambulance Service (NAS) in six locations that were selected, Bongo, Salaga, Kete Krachi, Takoradi, Madina, and Bantama. Through thematic analysis of interview and focus group data, the study illuminated five widespread themes: ambulance as required but not trusted, perceived inefficacy and distrust as barriers to use, ineffective communication and low awareness, cultural stigmas and traditional norms, and urban–rural inequities in access. The findings were not simply descriptive but interpretive in that they applied theoretical understanding to explain why perceptions differ and with what implication for emergency medical services in Ghana. Theme one showed that while citizens at large recognized the ambulance as central to survival in case of emergencies, that recognition was constantly sabotaged by skepticism regarding its availability or workability. Urban residents in Madina and Bantama cheered ambulances as "lifesaving," whereas rural respondents in Bongo and Salaga described ambulances as "services we hear of but never see." This irony resonates with Slovic's (1987) risk perception, where importance recognition does not necessarily translate into trust or use.

The second theme revealed that perceived inefficiency, in particular, the sense of unreliability and slowness, is a central barrier to usage. Respondents were impressed with the professionalism of NAS staff and the equipment available, but delays, ignored calls, and inconsistent response times eroded trust. While infrequent successes, such as ambulances responding swiftly in emergencies in Takoradi, enhanced credibility in remote pockets of the population, ongoing failure elsewhere eroded it. This finding is consistent with Luhmann's (1979) Trust and Confidence Theory, under which it is realized that trust may be difficult to build but tends to collapse when expectations are violated.

The third theme captured differences in communication. Urban populations were more aware of the toll-free number (112) of NAS from radio and television advertisements. Conversely, rural

towns such as Kete Krachi and Salaga had very little knowledge of the hotline, corroborating the argument that "ambulance is for Accra people." The Health Belief Model of Rosenstock (1974) yields explanatory power, as the absence of "cues to action" in rural areas translates into fewer opportunities of making a call to NAS in the event of emergencies. This testifies to imbalanced and urban-based communications strategies that exclude marginalized groups.

The fourth theme underscored cultural stigmas and cultural norms' influence on the use of ambulances. In rural regions like Bongo and Salaga, ambulances were literally equated with death, referred to as "hearses" rather than as hope-bringing vehicles. Moreover, cultural decision-making norms like waiting for advice from elders, pastors, or family heads prior to making calls only delayed the response further. Urban respondents, however, acted more independently, perceiving ambulances as life-saving equipment. This binary depicts the Social Construction of Technology (Bijker et al., 1987), where technologies acquire context-dependent meanings based on culture and shared practices.

The fifth theme addressed urban–rural differences in access. Urban participants were mostly concerned about issues of effectiveness, delays due to traffic jams or communication breakdowns, while rural participants articulated structural constraints, including lack of stationed ambulances, road conditions, and informal requests for fuel contributions. This indicates more widespread systemic imbalances within the healthcare system in Ghana and is consistent with Systems Theory (Bertalanffy, 1968), the argument being that defects in one subsystem, e.g., transport infrastructure, tarnish the effectiveness of the entire emergency response system.

The combination of these data revealed fragmented and often contradictory impressions: NAS is both needed and distrusted, recognized in some communities but invisible in others, and symbolically linked both with life and death. Modes of communication resonate in cities but fail to transfer to rural citizens. The result is a tapestry of experience that acts against the possibility of NAS as a universally trusted service. Significantly, such contradictions point out that the issue is not just operational but also systemic and cultural in nature, necessitating multifaceted solutions.

By surfacing these contrasts, the chapter aided both in mitigating an empirical deficit, limited research on community-based perceptions of NAS, and a conceptual deficit, theoretical

articulation's absence in capturing public trust in emergency services. The combination of Trust Theory, Risk Perception, the Health Belief Model, SCOT, and Systems Theory provided frameworks for addressing perception, culture, and structure intersection in shaping public opinion regarding NAS.

Overall, this chapter explained that despite the expansion in coverage and advance made by Ghana's ambulance service, it continues to have issues of sheer depth regarding trust, awareness, cultural acceptance, and systemic inequalities. These findings lay the groundwork for the next chapter, which will draw conclusions from the study, highlight policy and practice implications, and provide actionable advice to strengthen NAS as an accessible, trusted, and culturally accepted emergency care lifeline for all Ghanaians.

5.0 CONCLUSION

5.1 CHAPTER INTRODUCTION

Chapter Five is the last step of the research and sums up the findings of the lessons learnt from the research to a general discussion of the Ghana National Ambulance Service (NAS). While Chapter Four presented the results thematically and contrasted community perceptions in diverse environments, Chapter Five moves one step further in synthesizing such findings, highlighting their broad applicability, and suggesting actionable directions. The chapter begins with an overview of the most significant findings and directly relates these to the study's research questions and objectives. The findings confirmed that despite the NAS being widely recognized as a key agency for the provision of emergency healthcare, it is simultaneously constrained by dimensions of mistrust, poor communication, cultural stigma, and access disparities between urban and rural settings. All these contradictions not only decrease the service's effectiveness but also lead to loss of public confidence, hence decreasing its overall effectiveness (Agyeman, Osei, & Tetteh, 2022; Boateng & Kusi, 2020).

Upon summarizing, the chapter presents the study conclusion, situating the findings within both theoretical and applicative contexts. Theoretically, the findings lend support to theories such as the Trust and Confidence Theory (Luhmann, 1979), explaining why disparate service experiences produce variable levels of public trust, and the Health Belief Model (Rosenstock, 1974), explaining why perceived barriers (e.g., hidden costs, delays) act as a deterrent even for life-threatening emergencies. In reality, the study demonstrates that effective ambulance systems cannot be solely realized through infrastructure alone; they require constant public education, culturally responsive mobilization, and systemic reform to attain equal usage (Slovic, 1987; Rogers, 2003).

The chapter further addresses the policy, practice, and future research implications of the study. For policymakers, the results necessitate interventions that correct disparities in service delivery between rural and urban residents, and for practitioners, they call for communication strategies to reverse loss of trust and counteract negative cultural connotations of ambulances. For researchers,

the study fills a critical gap by ethnographically documenting community-based understandings of NAS, an underresearched issue in Ghana's emergency healthcare literature.

Finally, the chapter acknowledges the study's limitations, such as its qualitative orientation and geographical scope, which, while yielding richness, likely constrain generalizability. These limitations, however, offer doorways for additional studies that may potentially widen the study's scale, incorporate quantitative analysis, or test comparative contexts across African countries with similar emergency service challenges.

In summary, the chapter concludes the research by linking the established research problem in Chapter One to empirical findings in Chapter Four and providing a concrete set of findings and recommendations. The ultimate goal is to rebrand NAS not only as an institution of technical services but as a trustworthy, recognized cultural, and equitable emergency response agency that can represent the interests of all Ghanaian citizens.

5.2 SUMMARY OF FINDINGS.

The objective of this study was to identify what people think of the Ghana National Ambulance Service (NAS) in six communities that are representative of urban and rural Ghana: Madina, Bantama, Takoradi, Bongo, Salaga, and Kete Krachi. Based on the qualitative data gathered from interviews in communities, the research explored how citizens perceive the role and significance of NAS, what encourages or deters them to call ambulances, the impacts of communication and trust building, the impacts of socio-cultural values, and the variations between cities and rural areas. The findings presented a multi-dimensional profile of public opinion, characterized by recognition of the importance of NAS but disqualified by deep-seated distrust, cultural stigmas, and uneven service delivery. The main findings are presented below regarding the study's Theme.

Theme: 1. Ambulance as Necessary but Distrusted

The findings indicate that among all six communities examined, the respondents all consistently recognized the ambulance as a critical service during emergencies. In highway accidents, public

fainting in public areas, or obstetric emergencies during delivery, respondents in urban settlements such as Madina and Bantama described the ambulance as "the difference between life and death." Such respondents considered the ambulance an indispensable tool to bridge life-threatening emergencies and hospital attendance.

But this widespread sense of importance was perversely matched by profound distrust of the ability of the system to deliver. Particularly in rural communities such as Bongo and Salaga, interviewees doubted the accessibility and reliability of ambulances. They doubted based on lived experiences and hearsay: some recalled experiences where ambulances either were not available when urgently needed, took exceedingly long times to come after the patient had already been transported away through other means, or even asked for unofficial donations such as petrol money before leaving. In such settings, residents admitted that although they were aware of the ambulance service, they never considered it in their decision-making during emergencies because they believed it would not serve them.

Even in the city where there was more visibility of the service, there was distrust. Citizens complained of persistent delay due to traffic, perceived unprofessionalism among some staff, and fear that their call would not be given priority. Such a perception suggests that distrust goes beyond issues with physical availability to perceptions of institutional efficiency and fairness.

This reluctance, where the ambulance is required and simultaneously distrusted, is what Slovic (1987) refers to as the risk perception paradox. The public generally appreciates the usefulness of a public intervention but hesitates to depend on it when previous experience, cultural legends, or structural weaknesses reduce faith in its reliability. In the case of the National Ambulance Service, individuals' awareness of its life-saving features fails to translate into day-to-day use, as issues around promptness, fairness, and hidden charges erode trust.

Ultimately, this is a theme that speaks to an indigent separation between recognition and real dependency. For NAS to make the change from mere recognition to being truly trusted, it needs to correct both the operational inefficiencies that undermine confidence and the community stories that foster suspicion.

Theme: 2 Ambulance as Symbol of Death vs. Lifeline of Hope

The second overriding theme that emerged from the findings was cultural ambivalence toward the ambulance. The vehicle possessed symbolic meaning beyond its functional role in medical emergencies for the majority of the participants. In Kete Krachi and Bongo, rural towns, the ambulance was often described as a "death car." Participants argued that if one entered the ambulance, the perception was that the individual would never return alive. This was furthered by recurring community experiences where ambulances were most visible during end-of-life care scenarios, where they either transported very ill patients who subsequently died or carried corpses from hospitals to the villages. A Kete Krachi respondent noted, "When you see an ambulance enter a house, you know someone is gone, not saved." This stigma caused ambulances to be called hesitantly, with families preferring taxis, motorbikes, or private cars that were less symbolically implicated in death.

In sharp contrast, city dwellers from Takoradi, Bantama, and Madina depicted the ambulance as a lifeline of hope. Takoradi traders narrated how ambulances saved lives during a market fire, while a Bantama respondent highlighted how paramedics stabilized a relative's blood pressure during the journey to the hospital. For these respondents, the ambulance was not just a transport service but a moving medical center that offered treatment that could not be obtained from private cars. It was valued for its gear, oxygen, stretchers, simple medicines, and the professional behavior of Emergency Medical Technicians (EMTs), which signaled an organized, lifesaving intervention.

This difference reveals the powerful role of cultural interpretation in shaping public opinion. Drawing on Douglas and Wildavsky's (1982) Cultural Theory of Risk and the Social Construction of Technology (Bijker et al., 1987), the ambulance is a socially constructed artifact: in one context, it signifies death and despair, in the other, hope and survival. These collective cultural meanings significantly influence willingness to access formal healthcare systems. Where the ambulance is stigmatized, even life-threatening emergencies might not elicit a call, as families also fear social labeling and emotional despair. In contrast, where the ambulance is viewed as hopeful, communities welcome it as their first line of response.

This theme poses a central challenge for the National Ambulance Service: overcoming the cultural stigma that frames the ambulance as a hearse, rather than a life-saving intervention. Without active efforts to rescript its symbolic meaning, through education, positive stories, and visibility of rescue successes, negative cultural meanings are likely to continue to restrict uptake in rural and traditional communities, even where ambulances are available.

Theme: 3 Communication Barriers and Mistrust in the 112 Hotline

One common and very worrisome observation across urban and rural areas alike was the general dissatisfaction with the National Ambulance Service's toll-free emergency hotline (112). Urban residents from Madina, Bantama, and Takoradi routinely complained about ringing for long periods without answering, sudden call drops, or situations where operators took a long time to dispatch ambulances due to busy lines. To most, these delays equaled institutional inefficiency, reinforcing an already fragile trust relationship with the service. To one of our respondents in Bantama, "You call, it just rings and rings, sometimes nobody picks up. At that moment, you feel helpless, like you are talking to yourself."

In rural settings like Salaga, Bongo, and Kete Krachi, these impediments were manifest. Others lamented the sheer non-availability of the hotline due to poor or erratic mobile network coverage, making the 112 number practically useless in times of emergency. Others lamented that initially, they had never been subjected to any campaign about the hotline, and hence, awareness was extremely low. For example, one Salaga farmer explained, "Here, only town managers might know the number.". In rural regions, people do not even know of 112. They claim the ambulance only arrives in the city." This represents an absence of communication where rural populations are excluded from the same system they are intended to draw from.

To these systemic problems was added the feeling of suspicion on the part of operators against callers. One of the respondents complained that sometimes hotline calls were dismissed as a prank call when the caller was a kid or called from an unknown number. According to a young man in Takoradi, "Sometimes they think you are joking, especially if you sound young.". Therefore, they do not have the call in mind seriously until it is too late." Such a belief also discouraged the public

from utilizing the official hotline, opting to employ other sources such as calling relatives, planning taxis, or visiting neighborhood health centers.

Theoretically, this dynamic captures Luhmann's (1979) Theory of Trust and Confidence and Ajzen's (1991) Theory of Planned Behaviour. The hotline, which has been a lifeline of sorts, is now one of doubt and uncertainty, draining the confidence necessary for recurrences. Trust, having been broken once through ignored calls or presumed neglect, becomes a psychological deterrent to future use. Similarly, the absence of good "cues to action" (Rosenstock, 1974, Health Belief Model) erodes people's incentive to use the system, as there appears to be little to be gained from phoning if the likelihood of a successful response is distant.

This suspicion of the 112 hotline not only undermines public confidence but also compounds deeper structural inequalities. Urban populations, even if more visible, still endure inefficiency, and rural populations remain in the dark and cut off. The overall effect is a fragmentary system of emergency response where the very tool meant to bring citizens together with NAS ends up becoming a bottleneck of despair and abandonment.

Last, the perceived unreliability of the hotline indicates an intrinsic barrier to NAS's successful functioning. Communication systems need to be rendered reliable, accessible, and trustworthy for the service to reach its mandate. These will require not only their infrastructure improvements, such as better network access and call de-congestion, but also collective public education to dissipate misperceptions and disenchantment, and institutional reforms that ensure every call is addressed with seriousness and gravity.

Theme: 4 Cost and Accessibility Limitations

A second significant theme that arose from the study was that of cost and logistical limitations on access to ambulance provision. While theoretically, the National Ambulance Service (NAS) should be accessed free at the point of use, in practice, the experience of most participants was quite different. In rural settings such as Bongo and Salaga, respondents described situations in which they were asked to pay for fuel before an ambulance could be dispatched or drive to the site

of an emergency. One respondent in Bongo explained, "The ambulance is there, but they will say there is no fuel.". And if you don't give them money, they won't move." This supposition of unofficial or hidden fees ran opposite to the government policy of open emergency treatment and created a climate of mistrust.

Even when fees were not explicitly asked for, apprehension of such unofficial fees was enough to discourage some from phoning NAS. They reported using a taxi, motorbike, or private car, citing that these were more readily available and safer at the cost of lesser security. As a participant at Salaga described, "Taxi costs money, but at least you are sure you will travel fast. With an ambulance, you do not know if it is free or not, or if they will stall with excuses about fuel."

In urban communities such as Madina, Bantama, and Takoradi, economic hardship was less apparent but encountered obstacles in different forms. Traffic jams, poorly planned road networks, and a lack of steady priority passage for ambulances were regularly mentioned as disincentives against effective utilization of services. For example, one vendor at Takoradi reported, "Even when the ambulance arrives, traffic does not yield.". Sometimes you see the siren, but cars do not move. When they reach the hospital, things have worsened. The perception of inefficiency, driven by environmental and infrastructural constraints, eroded confidence in the ambulance as the most appropriate vehicle for emergencies.

The above results illustrate a systemic lack of policy and practice. Technically, utilization of the ambulance is free and intended to provide equal emergency services nationwide. Practically, infrastructural bottlenecks, logistical vulnerability, and resource scarcity make access unequal. From the Systems Theory perspective (Bertalanffy, 1968), this is a reflection of the frailty of interdependent subsystems: if supply chains for fuel are vulnerable, traffic management is problematic, and infrastructure is poor, the aggregate performance of the ambulance service is impacted. Similarly, the SERVQUAL model (Parasuraman et al., 1985) provides a model of how perceived quality of service is diminished by disparities between free, prompt, and efficient service expectations and actual prompt, costly, and inconsistent delivery of service.

These cost and availability restrictions apply to more than short-term emergencies. They undermine long-term faith in NAS, fostering community reliance on less secure but more

predictable alternatives. As Slovic's (1987) Risk Perception Theory is keen to stress, people are more inclined to prefer outcomes that feel more in their control, despite being riskier, than formal systems perceived as secretive or untrustworthy. That is why taxis and motorbikes are still the norm in most rural and urban communities, even with the life-saving interventions ambulances can provide.

Finally, they suggest that until both the financial dispositions and infrastructural constraints of the use of ambulances are addressed, the possibility of universal, nationwide emergency healthcare will be unrealized. Policy reform must therefore address not only the upkeep of free ambulance services but the delivery of operational routine, fuel supply, and infrastructural provision such as ambulance lanes or compulsory priority passage through congested, heavy traffic urban centers. Then only NAS can approach closer to its conceived role as a universally trusted and accessible emergency service.

Theme: 5 Urban–Rural Disparities in Access

The most striking result of this study was the wide difference between the urban and rural communities in terms of the perceived and actual availability of ambulances. In the urban communities such as Madina, Bantama, and Takoradi, the ambulances were more visible due to the presence of NAS stations within or near the communities. Therefore, residents in these areas were more likely to believe that ambulances existed and could be called upon as needed. Yet their disgruntlement was largely about issues of effectiveness, delays in response, congested traffic, and unproductive communication systems. For instance, a Bantama resident said: "They are there, we see them, but they come late and sometimes you lose hope." These kinds of feelings illustrate how apparent visibility fails to necessarily translate into belief in efficacy, especially when delivery of the service is handicapped by infrastructural constraints in urban spaces. In rural areas such as Bongo, Kete Krachi, and Salaga, frustration exceeded inefficiency to more deep-seated structural barriers. Residents in the regions described the virtual absence of ambulances that are stationed, i.e., vehicles traversing significant distances before responding to patients. In addition, poor road networks, extended distances to the referral centers, and, in some instances, demands

for fuel payment compounded the perception of marginalization. The following was said by a Salaga farmer: "Ambulance is for city people." Here, when one is in need, one must look after oneself." This perception contributed to verifying that NAS is not yet accessible to major portions of rural Ghana, effectively creating a two-level emergency response.

Some rural respondents even intimated that their locations were "off the NAS map," a marker that national coverage is claimed but functional realities are otherwise. This mirrors broader health inequities in Ghana, whereby rural areas normally suffer from shortages of healthcare workers, facilities, and medical commodities (Stewart et al., 2014; Agyepong et al., 2018). Such structural deficiencies align with Systems Theory (Bertalanffy, 1968), wherein faults in one subsystem, such as infrastructure, road networks, or fuel supply, are more than subsystem faults because they disable the overall functioning of the healthcare delivery system. Also, from the Risk Perception Theory perspective (Slovic, 1987), rural citizens perceive calling the ambulance as a "gamble," taking into account the possibility of delays, breakdowns, or even service non-availability.

This difference in urban and rural access also impacts health equity and social justice. While urban residents complain about response time, rural residents struggle with the sheer invisibility of services. This creates a cycle where rural people turn to informal or unsafe alternatives such as motorbikes or taxis, worsening health inequities and diluting national emergency preparedness. The study, therefore, illustrates how geospatial disparities meet infrastructural as well as cultural limits in making unequal access to healthcare easier.

Synthesis of Themes

Collectively, the results show that whereas the National Ambulance Service is known across all settings as an important component of Ghana's health system, it is also distrusted, stigmatized, and variably accessible. Across communities, the ambulance is a dependable but disappointing resource, a lifeline when it works, but a cause of annoyance when it fails. Cultural stigmas, namely the perception of ambulances as being associated with death, still linger to thwart embracement, most especially in rural settings. Miscommunication and limited access to the 112 hotline exacerbate such problems, leaving many citizens doubtful about how to access care in emergencies. The integration highlights five interrelated contradictions:

Ambulance as Indispensable yet Distrusted – The citizen possesses the ambulance on paper but avoids its use in practice.

1. Ambulance as Harbinger of Death vs. Life Line of Hope – Cultural associations differ greatly, determining whether communities adopt or reject NAS.
2. Communication Barriers and Mistrust in the Hotline – Inadequate communications infrastructure drains trust and discourages utilization.
3. Economic Restrictions of Cost and Accessibility – Intangible or perceived costs, along with logistics complications, erode the guarantee of equality of service.
4. Urban–Rural Differences in Access – Spatial inequalities summon a double system in which urban inefficiency is contrasted with rural invisibility.

These inconsistencies suggest that NAS has progressed far in expanding coverage nationwide but remains short of uniform trust, fair access, or cultural acceptance. From the theoretical perspective, these findings close some gaps in the literature. They highlight how Diffusion of Innovations Theory (Rogers, 2003) explains differential utilization of ambulance services by various populations; how the Health Belief Model (Rosenstock, 1974) sheds light on weak cues to action in rural environments; and how Trust and Confidence Theory (Luhmann, 1979) explains the precarious nature of believability in emergency services.

Lastly, unless these systemic, cultural, and communicational barriers are addressed, NAS will increasingly be seen not as a unifying lifeline but as a bifurcated service that exists solely for some communities in limited situations. To address these contradictions, more substantial infrastructure, culturally sensitive outreach, and trust-building reforms will be necessary in moving NAS from needed but untrusted to becoming a trusted and accepted foundation of emergency care in Ghana.

5.3 CONCLUSIONS

This study set out to explore how the National Ambulance Service (NAS) is perceived by the people of Ghana, focusing on how ordinary people experience, make sense of, and evaluate the Service on a day-to-day basis. The study points out that perception of NAS is not only complex and contradictory but also shaped, beyond the formal mandate and operational capacity of the Service, by culture, past experiences, and broader systemic realities of the Ghanaian healthcare system. On the other hand, NAS is well accepted as an important institution in emergency care. For both urban and rural respondents, they attested that ambulances are often a case of life or death, especially in cases of road traffic accidents, obstetric emergencies, and sudden collapse. Such recognition is a testimony to an inherent understanding of the professional role of the Service in applying pre-hospital intervention and bridging patients to higher levels of care. From a Diffusion of Innovations Theory perspective (Rogers, 2003), what this suggests is that the idea of emergency medical services has already diffused into the minds of the people as a valuable and desirable innovation.

But research revealed that with this recognition comes deep distrust and skepticism. The majority of the respondents raised concerns regarding the reliability of NAS due to constant delays, non-availability of ambulances at the point of need, or experiences of intrinsic cost-bearing charges such as fuel contributions. These are not speculative results; they were obtained from experience-based repeats that undermined public confidence. In effect, the Service is perceived as required but unreliable, a paradox that works against its ability to be fully accepted as the first choice in emergencies.

Cultural perceptions add to the problem. In many communities, ambulances were called "death cars", vehicles more with death than with survival. Families would at times not call NAS for fear that once a patient was in an ambulance, the journey was almost to mortality. Simultaneously, elsewhere in society, particularly in cities, the ambulance was culturally linked to professionalism, hope, and life-saving care. This ambivalence is in line with Cultural Construction Theory (Douglas & Wildavsky, 1982), emphasizing how social meanings influence health-related intervention acceptance or rejection. Public perception of NAS is hence mediated not only through experience but also through cultural frames stigmatizing or augmenting the Service.

Communication issues with the 112 hotline were also a key factor in public distrust. Issues such as calls not being answered, incomplete access to mobile networks in rural areas, and the perception that genuine calls might be hung up as pranks significantly decreased public's trust to employ the official emergency vehicle. The hotline, intended to be the nucleus of citizen-NAS interaction, has in some instances become a frustration vehicle. From a Relationship Management Theory perspective (Ledingham, 2003), this reflects a breakdown of mutual responsiveness and trust, where citizens feel unheard and lesser valued than they should be in their interactions with the Service.

Further, perceptions are shaped by socio-spatial inequalities. City dwellers complained of congestion and unavailability of priority clearance for ambulances, while rural dwellers felt directly excluded because of poor infrastructure, few stationed ambulances, and far-away health facilities. This urban–rural divide mirrors broader inequalities in Ghanaian healthcare provision (Stewart et al., 2014). In terms of Systems Theory (Bertalanffy, 1968), these findings demonstrate how the breakdown of an element of the system (rural coverage) undermines confidence in the entire network, maintaining the perception that NAS lets down all citizens equally.

Cumulatively, the findings reveal that the public perception of NAS in Ghana was characterized by tension between recognition and rejection. People recognized and admired the potential of NAS, but most of it was rejected because of stigma, lack of trust, or structural obstacles. This twofold image is significant in the sense that it reveals that public acceptance is not necessarily guaranteed by availability or service coverage. Instead, cultural beliefs, practices, and structural disparities play a strong role in determining whether people choose to utilize NAS during times of crisis.

Lastly, research verifies that the National Ambulance Service is at a critical juncture. Its visibility across the country has increased exposure, but exposure has not been followed by consistent trust or cultural acceptance. For NAS to be an integral and accepted part of the Ghanaian healthcare system, concerted action needs to be taken in order to rectify both the structural inefficiencies underlying negative attitudes as well as cultural narratives that stigmatize its use. Improved response times, transparency regarding cost, strengthening the 112 hotline, and engaging

communities in conversation can begin to restore trust. Likewise, culturally sensitive public education campaigns can try to reposition the ambulance from a sign of death to a lifeline of hope.

Finally, public perception of NAS is dynamic and not static; it is malleable and responsive to the performance, communication, and relationship of the Service with people. By acknowledging and acting upon these perceptions, policymakers and NAS leadership can transform the Service from a last line of response service into a first line of response that citizens have confidence in, trust, respect, and rely on when they need it.

5.4 LIMITATIONS

All research activities operate within frames that affect its process, outcome, and interpretations. This research, one whose purpose was to assess the public perception of the National Ambulance Service (NAS) in Ghana, is no exception. Insofar as it has significant contributions, several limitations must be brought to notice to put the findings into their appropriate context.

1. Geographical Scope and Representation

Data collection was conducted in six purposively selected communities: Madina, Bantama, Takoradi, Bongo, Salaga, and Kete Krachi. Selection of these sites was intended to capture diversity in urban and rural settings. However, Ghana has several cultural, linguistic, and socio-economic diversities. NAS services may be perceived and enjoyed differently in communities found within the Northern, Western, or Eastern coastal belts or in peri-urban settings. Thus, while the sample produces richness, it is not an entirely representative picture of national public opinion. As Creswell and Creswell (2018) argue, qualitative research aims at transferability over generalizability, so that findings are to be understood as context-specific findings instead of broad conclusions.

2. Subjectivity of Self-Reported Perceptions

The study was founded on interviews and focus group interviews where the participants reported their attitudes and experiences with NAS. These are subjective accounts, subject to the

conditioning of memory, personal bias, and mood. Thus, positive-experience respondents would over-report satisfaction, and those whose loved ones were lost to delays might react in all-out-of-proportion negativity. These accounts, although informatively rich, can always be seen as objective measures of the general effectiveness of NAS. Lincoln and Guba (1985) caution us that subjectivity in qualitative research is a double-edged sword; it provides good insight into human meaning-making but is open to bias.

3. Issues of Translation and Language

In local settings such as Bongo and Salaga, interviews were conducted in local languages and later translated into English. Despite the desire to remain true to voices, metaphors, idioms of culture, and subtleties of participants, some may have been lost or remixed in translation. In such instances, when the participants referred to ambulances as "death cars," the symbolic meaning may have cultural layers too complex for literal translation. This constraint reflects the richness of cross-linguistic studies and the risk of gaps in interpretation.

4. Time-Bound Nature of the Study

The research was carried out in 2025, and it froze opinion at a specific point in time. Public opinion on NAS is continually evolving and can shift rapidly following significant incidents such as a major rescue mission, media investigation into inefficiency, or changes in government policy. The results should thus be considered a snapshot of views during the study period and not as fixed or eternally entrenched attitudes. This time limitation suggests the use of longitudinal studies to follow-forming attitudes over time.

5. Limited Demographic Coverage

Whereas the study had men and women of various ages, it did not break down perceptions by educational level, income bracket, or disability status systematically. Marginalized groups, i.e., the disabled, the elderly single-dwelling occupants, or migrant groups, may have unique perceptions of NAS that are not exhaustively captured here. The comparatively low sample size to that of Ghana's population further restricts the breadth of demographic coverage.

6. Resource and Logistical Constraints

The study was conducted under lean resources, limiting prolonged field immersion. Longer immersion with communities would have yielded higher trust and more vivid descriptions. Further, logistical impediments, such as decrepit rural roads, easily rendered some of the potential participants inaccessible, potentially disenfranchising the voices from the most remote environments. These are problems associated with qualitative fieldwork literature, where researchers must compromise on depth for feasibility (Marshall & Rossman, 2016).

7. Sensitivity of Topic and Social Desirability

Health and emergency services are normally sensitive issues, particularly to participants who have lost their relatives or experienced poor incidents. The respondents may have suppressed criticism through fear of being considered ungrateful towards public servants, while others may have exaggerated bad perceptions as a means of expressing anger. This creates a social desirability bias that can affect the balance of reported outcomes.

8. Qualitative Design Methodological Limitation

Finally, the qualitative design, although ideal for exploring perceptions, does not allow quantification of the extent of occurrence of some of them. No matter how much the study identifies themes in vogue, such as mistrust, cultural stigma, and inequities, it cannot statistically know how prevalent these perceptions are within Ghana. Subsequent research employing mixed methods is able to combine qualitative data with quantitative surveys to address this drawback. Conclusion on Limitations

Despite such limitations, the study presents rich context-specific data on Ghanaians' perceptions of NAS. Acknowledging such limitations does not discredit the findings but puts them within their rightful interpretive framework. In acknowledging issues of scope, subjectivity, translation, and design, this study sets the stage for further, more comprehensive studies able to refine knowledge and inform pragmatic reforms to Ghana's emergency medical services.

5.5 RECOMMENDATIONS

A. POLICY AND PRACTICE RECOMMENDATIONS

1. Increase Geographical Coverage and Equity in Access

The research found that ambulance coverage is unevenly focused in urban areas, with rural districts like Bongo, Salaga, and Kete Krachi being underserved. This generates a feeling of exclusion and deepens mistrust in NAS's capacity to serve all Ghanaians equitably. To counter this, the Ministry of Health and NAS must undertake a strategic redistribution plan in which the distribution of ambulances is guided by vulnerability indicators such as accident prevalence, maternal mortality hotspots, and proximity to referral facilities, and not solely by population. By doing this, rural communities would feel included in the national emergency care system by ensuring equitable distribution of resources. This strategy is in accordance with Systems Theory (Bertalanffy, 1968), which emphasizes that weaknesses in one subsystem (here, rural emergency response) compromise the efficiency of the overall healthcare system.

2. Strengthen Communication Infrastructure and Hotline Credibility

Public distrust in the 112 hotline, attributable to successive network failures, calls not being answered, or perceptions of prank dismissal, was among the most persuasive findings. NAS should therefore engage closely with the telecom operators and the National Communications Authority to provide priority network access for emergency calls, even under conditions of low signal strength. Beyond voice calls, additional channels of communication should be introduced, including SMS-based alerts, WhatsApp integration, or minimalistic mobile apps tailored to the Ghanaian digital context. Frequent public awareness campaigns on radio, television, and community media would be necessary to make citizens aware that 112 is free and reliable, while simultaneously discouraging prank calls through civic responsibility messaging.

3. Increase Transparency and Do Away with Perceived Hidden Costs

Although ambulance services are nominally free, the persistence of "fuel money" solicitations and whispers of hidden costs erodes public confidence. NAS should therefore put in place stringent

oversight and accountability mechanisms, including surprise audits, protection for whistleblowers, and community watchdog committees. At the same time, prompt public communication should reiterate that ambulance services remain free at the point of use, thereby demystifying myths. To complement this, an open grievance redress system, such as a toll-free complaints line or local liaison officers, should embolden citizens to report extortion or misconduct without fear of retaliation.

4. Reposition Cultural Perceptions and Stigmas

The biggest perception challenge is probably the association of ambulances with death, and as such, citizens are reluctant to call when there are emergencies. NAS must adopt a culturally rooted communication approach through interactions with traditional leaders, religious figures, and opinion leaders in communities to change ambulance stories. Storytelling methods, Community Theater, radio dramas, and survivor testimonies that received interventions through ambulances can be used to recast ambulances as vehicles of hope and life instead of death. This strategy aligns with the Social Construction of Technology (Bijker et al., 1987), which emphasizes that technologies become meaningful through cultural negotiation and collective social interpretation.

5. Enhance Staffing, Training, and Professional Visibility

Public perception of NAS is also created by interaction with EMTs, in a way that visibility and professionalism are determinants of trust. In this respect, NAS should make recruitment and retention of EMTs for deployment to underserved locations a priority, with rural posting allowance and career progression as incentives. Continuing professional development should be emphasized, with training in trauma care, obstetric emergencies, and patient–family communication. In addition, NAS should launch media campaigns focusing on success stories, case studies, and EMT heroism, thereby raising public opinion about the professionalism and credibility of the Service.

6. Break Infrastructure and Accessibility Barriers

Accessibility barriers, particularly in rural areas where road networks are poorly developed, were recognized as major deterrents. Emergency access planning needs to be integrated into national and district-level infrastructure development by the government, with ambulance mobility taken

into consideration in rural road development. Where the access is not possible with regular ambulances, new models such as motorbike ambulances, tricycles, or boat ambulances can be experimented with, drawing from African success case studies. Further, the District Assemblies can be encouraged to offer logistic and infrastructural support (fuel depots, maintenance workshops, etc.) to NAS teams stationed in their jurisdictions, promoting local ownership of the emergency response system.

B. FUTURE RESEARCH RECOMMENDATIONS

1. Mixed-Methods Studies

While this study provided rich qualitative results, future studies would benefit from the application of mixed-methods approaches that link large-scale surveys with in-depth interviews and focus groups. Surveys could assign a figure to the number of people with certain beliefs, say, distrust of the 112 hotline or fears of hiding charges, while interviews could gain insight into the lived realities behind the numbers. Such integration would enhance validity and generalizability, giving policymakers evidence-based guidance on the intensity and extent of public perceptions of NAS.

2. Longitudinal Research

Public opinions concerning emergency services are not fixed and respond to policy reform, crises, and public campaigns. Thus, longitudinal studies are necessary to measure shifts in public trust and usage patterns across time. For example, monitoring communities before and after the implementation of new ambulances, hotline reforms, or the inception of community outreach programs would determine whether interventions contribute to long-term sustained trust or only temporary gains. Such analysis would be extremely valuable in NAS reform sustainability assessment and adaptive strategy development.

3. Prioritize Vulnerable Groups

This study found universal barriers to access of NAS, but further research must pay more careful attention to the experiences of vulnerable groups. Groups such as older adults, those with disabilities, migrants, and rural women may each have their own individualized challenges with

emergency access, ranging from physical mobility and language problems to gendered cultural practices. A focused analysis of these groups would uncover unresolved disparities in the current system and make interventions inclusive, equitable, and faithful to the principle of "leaving no one behind" in health access.

4. Comparative Studies Across Regions

The challenges of EMS access in Ghana, hotline suspicion all the way to rural disparities, are synonymous with trends in other Sub-Saharan countries but perhaps with varying levels and forms. Comparative studies among such environments as Nigeria, Kenya, South Africa, or Uganda can help to situate Ghana's experience in a broader regional picture. The researchers could then identify best practices, policy innovations, and culturally appropriate solutions that can be made locally relevant. Cross-country investigations would also make regional cooperation in EMS reform a possibility.

5. Evaluation of Communication Strategies

Given that public attitudes towards NAS are deeply shaped by narratives, public awareness campaigns, and community outreach, there is a need for rigorous assessment of NAS communication approaches in future research. Assessments can test whether messages are culturally tailored, whether they are reaching rural and digitally excluded communities, and how citizens are decoding these campaigns. For example, researchers can evaluate how much more impactful community theater, radio dramas, or survivor testimonies are on reducing stigma compared to conventional advertisements. Such evaluations would offer evidence-based recommendations for improving health communication in crisis management.

6. Technology and Innovation in EMS Delivery

Finally, emerging studies should examine how digital health technologies and technology innovation are reshaping public trust in NAS. New technologies such as GPS location for ambulances, telemedicine connection to rural pre-hospital care, or real-time emergency calling via mobile apps could transform availability and openness. In whatever studies are conducted on the topic, hence, feasibility and cost need to be investigated, alongside user acceptance, cultural

acceptability, and facilitation of trust building. In so doing, researchers would be contributing to both academic literature on e-health and empirical reform of Ghana's EMS.

In summary, the proposals above are focused on the reality that the upgrade of the Ghana National Ambulance Service requires both short-term policy shifts and long-term research investments. On the policy and practice front, expansion of geographical coverage, improvement of communication networks, ensuring covered costs, cultural transformation stigmas, investment in training and infrastructure are priorities essential in building public confidence and ensuring fairness of access. At the same time, building scholarship from mixed-methods research, longitudinal follow-up, comparative analysis, and analysis of technology and communication strategies will provide the evidence base needed for enduring improvement. Collectively, these recommendations summarize the main thesis of the study: while the NAS has become a pillar of support that Ghana's health system cannot do without, success in the future depends on filling gaps in trust, equity, and acceptance. By wedding policy response with constant research, Ghana can move closer to an emergency care system that is reliable, inclusive, and valued across all communities, and end up transforming the ambulance service into an internationally recognized lifeline.

5.6 CHAPTER SUMMARY

The chapter provided the concluding elements of the study, reiterating the main findings, study limitations, and recommendations of the research on public attitudes towards the National Ambulance Service, Ghana (NAS). The research established that despite NAS being a well-known component of Ghana's health sector globally, its effectiveness is hampered by deep-seated problems of trust, access, cultural misunderstanding, and communication breakdown. The chapter began by consolidating the primary findings into five overarching themes. Firstly, ambulances were across the board considered to be desired yet distrusted, a contradiction that is consistent with Slovic's (1987) theory of risk perception, where interventions in theory that are highly valued are avoided in practice because they are not perceived as being reliable. Second, cultural ambivalence followed with ambulances being perceived either as a "symbol of death" in rural areas like Kete Krachi or as an urban lifeline of hope like Takoradi, as Douglas and Wildavsky's (1982)

cultural construction of risk would lead one to expect. Third, the study discovered persistent communication barriers, namely suspicion of the national hotline number (112), which was described by participants as unreliable or inaccessible, in alignment with concerns raised in earlier studies into emergency communication in Africa (Agyeman et al., 2022). Fourth, cost and accessibility concerns constrained uptake, with rural populations often reporting requests for money for fuel or hidden charges despite the policy of free service (NAS, 2021). Finally, the research indicated sharp urban–rural inequalities, where urban dwellers witnessed NAS but doubted efficiency, and rural dwellers were likely to be left out entirely due to the absence of stationed ambulances, bad roads, and geographic isolation (Stewart et al., 2014). Collectively, these findings confirm the central finding that despite the importance of NAS, it still hasn't attained consistent public confidence or equitable utilization across Ghana.

The chapter went on to set out the limitations of the study as having a narrow geographical focus, being based on qualitative accounts that are open to subjectivity, and having no longitudinal follow-up to record how perceptions change over time (Creswell & Poth, 2018). These may not be criticisms that challenge the credibility of the study, but they do indicate that future studies must use broader, mixed-methods designs to support and cross-validate the findings presented here.

Grounded on such facts, the chapter made policy and research recommendations in a proposed framework. Policy suggestions included raising rural ambulance coverage and staff, boosting communication infrastructure and hotline presence, addressing the illusion of concealed charges by implementing transparency mechanisms, reorganizing cultural stigmas through reforms with traditional leaders, and investment in EMT training and infrastructural accessibility (Boateng & Kusi, 2020). Priorities for future research emphasized mixed-methods studies, longitudinal surveillance, consideration of marginalized groups, comparative cross-regional studies, evaluation of communications strategies, and integration of digital health innovations into emergency systems (WHO, 2020). These recommendations are underpinned by theoretical knowledge from Systems Theory (Bertalanffy, 1968), in terms of subsystem interconnectedness, and Social Construction of Technology (Bijker et al., 1987), emphasizing the mechanism by which technologies become meaningful through social interpretation.

Overall, this chapter syncretized the study's contribution towards theory and practice. It established that the ambulance service, being an integral health intervention, is faced with problems of trust, equity, and cultural acceptability to be addressed by an integrated response combining policy reforms, infrastructural investment, community engagement, and innovative research. By voicing these observations, the study provides a platform for policymakers, health personnel, and scholars to take concrete steps towards creating a National Ambulance Service that is not just seen but trusted, not just needed but accessible, and not just sophisticated but culturally relevant to each Ghanaians' life.

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APPENDICES

Appendix I: Interview Guide (Semi-Structured Questions for Community Members)

1.This guide was designed to explore community members' perceptions, experiences, and challenges in relation to the National Ambulance Service (NAS). Questions were open-ended to allow participants to provide detailed narratives.

Section A: General Awareness

1. What do you know about the National Ambulance Service (NAS)?
2. How did you first hear about the service?

Section B: Personal and Community Experience

3. Have you or anyone in your community ever used an ambulance? Please describe the experience.

4. Were you satisfied with the response time and the assistance provided? Why or why not?

Section C: Accessibility and Challenges

5. Are you aware of the toll-free number (112)? If yes, how did you get to know about it?

6. What challenges have you or your community faced when calling for an ambulance?

7. Have you ever felt discouraged from calling NAS during an emergency? Why?

Section D: Cultural and Social Factors

8. In your community, how do people perceive ambulances?

9. Do cultural or religious beliefs influence whether people call the ambulance? If yes, in what ways?

Section E: Improvement Suggestions

10. In your opinion, what changes would make ambulance services more effective and accessible in your community?

Appendix II: Focus Group Discussion (FGD) Guide

The FGD guide was developed to capture collective perceptions and shared meanings regarding NAS. Discussions were facilitated in the local language (where necessary) and later translated into English.

Themes Explored in FGDs:

1. General perceptions of NAS (positive and negative).
2. Firsthand or observed experiences with ambulance services.
3. Awareness of the 112 emergency hotline.
4. Barriers to accessing ambulance services.
5. Cultural interpretations of ambulances (life-saving vs. symbol of death).
6. Recommendations from the community for improving ambulance services.

Note: Each discussion lasted between 45–60 minutes and included 6–8 participants per group.

Appendix III: Participant Consent Form

Research Title: To Access Public Perception of the Ghana National Ambulance Service

Researcher: Peace Norgbedzi

Supervisor: Professor Godwin Etse Sikanku

Institution: University of Media, Art and Communication (UNIMAC)

You are invited to participate in this research, which seeks to understand how citizens perceive and experience the National Ambulance Service (NAS) in Ghana.

- Purpose of the Study: To explore community perceptions, challenges, and cultural interpretations of NAS services.
- Voluntary Participation: You may withdraw at any time without penalty.
- Confidentiality: Your identity will remain anonymous. Pseudonyms will be used in transcripts and reports.
- Risks and Benefits: There are no direct risks. Your responses may, however, contribute to improved emergency healthcare services in Ghana.

Consent Declaration: I have read (or had read to me) the above information. I voluntarily agree to participate in this study.

Signature/Thumbprint: _____

Date: 30TH November, 2025

Appendix IV: Sample Transcript (Excerpt)

Interview Location: Madina, Accra

Date: 20th August, 2025

Pseudonym: Participant A (Male, 45 years old)

Interviewer: Can you tell me what you think about the ambulance service in your community?

Participant: "The ambulance is very important. I have seen it save lives, like when my neighbor collapsed. But sometimes when you call, they delay, and you lose hope."

Interviewer: Do you know about the 112 hotline?

Participant: "Yes, we know it because they announced it on the radio. But sometimes when you call, it rings without an answer. That's why some people just go for taxis."

Appendix V: Coding Framework Thematic analysis was conducted using open, axial, and selective coding. Below is a summary table:

Open Codes	Axial Codes (Categories)	Selective Themes
"Delays in response"	Service inefficiency	Perceived inefficiency and distrust as barriers to use
"Ambulance as hearse," "Symbol of death"	Cultural stigma	Ambulance as necessary but distrusted
"Don't know 112," "Hotline not working"	Awareness/communication gaps	Poor communication and low awareness
"Asked for fuel money"	Perceived corruption	Barriers of cost and accessibility
"Ambulance not in our town," "Bad roads"	Structural inequities	Urban–rural inequities in access

Appendix VI: Ethical Clearance Letter

(Attach or reproduce the official Institutional Review Board (IRB) or Ethics Committee approval letter here, showing compliance with ethical standards in research.)

Appendix VII: Plagiarism Report

A similarity check was conducted using [Turnitin/other tool]. The final report showed a similarity index of 2%, meeting the university's requirements for originality.

Appendix VIII: List of Study Communities

The study was conducted across six diverse communities in Ghana, representing both urban and rural contexts:

Bongo – Rural, Upper East Region

Salaga – Rural, Savannah Region

Kete Krachi – Rural, Oti Region

Takoradi – Urban, Western Region

Madina – Urban, Greater Accra Region

Bantama – Urban, Ashanti Region

INTERVIEW GUIDE (Qualitative – Semi-Structured)

Opening Script

"Thank you for taking part in this discussion. I am researching how people perceive the Ghana National Ambulance Service (NAS). Your views and experiences will help improve emergency medical services in the country. Let's begin."

Section 1: Awareness of NAS (RQ1)

1. Can you tell me what you know about the National Ambulance Service?
2. How and when did you first hear about NAS?
3. Do people in your community know how to contact NAS during emergencies?
4. In your opinion, do Ghanaians understand the role of NAS?

Section 2: Perception of Service Quality and Timeliness (RQ2)

5. Have you or someone you know ever used an ambulance in an emergency? What happened?
6. How would you describe the speed of NAS's response to emergencies?
7. Do you think NAS personnel act professionally and respectfully?
8. How would you rate the service you observed or experienced—were you satisfied?

Section 3: Factors Influencing Public Perception (RQ3)

9. What are some common beliefs about ambulances in your community?
10. Are there religious or cultural beliefs that discourage people from calling NAS?
11. Do you think trust is a barrier to using NAS services? Why or why not?
12. How does income level or education affect someone's perception of NAS?

Section 4: Improving Public Engagement (RQ4)

13. What should NAS do to increase public trust?
14. How can NAS better inform the public about its services?
15. What kind of outreach would work best in your area—radio, social media, community leaders, or schools?
16. If you could advise NAS leadership, what would you recommend to improve service?