Determinant Factors of Humanitarian Logistics Effectiveness: Empirical Evidence from Borno State of Nigeria

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Abstract
The main purpose of the present research is the challenges and strategies involved in humanitarian logistics within the context of disaster relief operations, specifically focusing on the case of Boko Haram in Borno State, Nigeria. The study also, investigates the complexities of humanitarian logistics in disaster relief operations and identify key factors that influence the effectiveness of humanitarian logistics firms in the context of Boko Haram's activities in Borno State. The study applies quantitative research design where the questionnaire was developed and distributed online to the 224 NGOs in Maiduguri of Borno state. The results indicate that pre-occupation with the response, uncertainty, work pressure, and high stress are the three significant factors affecting the humanitarians' activities. On the other hand, an agile humanitarian humanitarian logistics, risk and needs assessment, coordination, and collaboration with other relief agencies are the top leading key success factors of humanitarian logistics operating in Maiduguri IDPs camps. By analyzing the collected data, this research provides insights into successful practices and lessons learned from the humanitarian logistics efforts in Borno State. The findings of this research contribute to the existing literature on humanitarian logistics in disaster relief and provide practical recommendations for policymakers, humanitarian organizations, and stakeholders involved in managing and improving humanitarian logistics operations in conflict-affected regions. The insights gained from this study aim to enhance the overall effectiveness, efficiency, and resilience of humanitarian logistics in future disaster relief operations in Boko Haram-affected areas and similar contexts globally.
Keywords: Humanitarian Logistics Management, Disaster Relief, Boko Haram, Nigeria

Introduction

Disasters and crises are complex and extremely challenging for organizations involved in disaster relief operations (Agarwal et al., 2020). Globally disasters are becoming more frequent, diverse, and severe; they have caused millions of casualties and have adversely affected both human life and habitats (. Baou et al., 2018; Oksuz & Satoglu 2020). However, in practice, developing countries are generally more vulnerable to humanitarian crises compared to developed countries (Hotho & Girschik, 2019). Thus, logistic practices are an integrated concept for controlling a channel's whole movement from the initial material supplier to the ultimate end-user, including the disposal process (Tennakoon et al., 2021). The majority of logistics activities are located in the scope of urban logistics. Logistics service integrators play a vital role in the humanitarian logistics operations as essential stakeholders, including exercises. They serve as intermediaries and connectors between the supply and demand sides of logistics (Bielecki et al., 2021). The presence of a humanitarian logistics network in Borno state is a consequence of the significant number of people displaced by the Boko Haram insurgency. Many people have lost their homes, personal properties and means of livelihood. A substantial number of movements within the state have emerged, attracting the attention of international, national, and local humanitarian organizations for humanitarian assistance. The ongoing growth in humanitarian aid and assistance to IDPs has prompted the humanitarian logistical services to raise the alarm. The support targeted for IDPs can only reach the needy through a functioning humanitarian logistics system.

In light of this study, the action of Boko Haram was reported to be violent, as Gbigbiddje et al. (2020) have stated in their research that the Boko Haram Terrorism (BHT) had been engaged in a violent campaign against the Nigerian state since 2009, following the Nigerian military's violent suppression of the group. Eventually, the group evolved into a very lethal terrorist organization that wreaked havoc on people's lives and property, destroyed infrastructure, and disrupted the country's social services. This has resulted in enormous humanitarian disasters in the North East (NE) region, including the Republics of Chad, Niger, and Cameroun (Gbigbiddje et al., 2020).

In the context of Borno State, insecurity emerges as a primary determinant undermining the effectiveness of humanitarian logistics. A 2022 assessment observes that limited access due to Boko Haram insurgency, weak political will, lack of technical expertise among logistics personnel, and poor coordination across agencies significantly constrain effective aid delivery. These factors impede initial needs assessments, disrupt supply lines, and reduce the operational capacity of logistics teams to reach displaced populations. Without stable security and coherent governance arrangements, even well-funded relief campaigns face major delays and inefficiencies (Adegbite et al., 2022).

Beyond security, structural and institutional capacity factors also play a crucial role. Studies from similar contexts (e.g. Tanzania) highlight the importance of trained personnel, supportive regulatory frameworks, adequate financing, reliable transport and storage infrastructure, and dedicated logistics service providers as key determinants of successful humanitarian response (Yohana & Adewale 2022). Ajiboye (2025) stated that in Borno State, evidence shows that non-state actors including local NGOs operating IDP camps often lack adequate equipment, governance controls, and interagency synergy; in some cases, misuse or diversion of funds undermines logistics credibility and effectiveness. Thus, enhancing

logistics performance depends not only on external conditions (e.g. security) but also on institutional strengthening, professionalization of logistics teams, coordination mechanisms, and accountability systems.

In addition to the threat, as mentioned earlier, a humanitarian crisis escalated into a scenario where people's lives or well-being were jeopardised (Meyer et al., 2019). This can quickly develop into a difficult-to-manage scenario unless early and proper action is taken. This necessitates an urgent response with extraordinary steps from the parties involved. The main aim is to avert hazards to life or their well-being by taking prompt and proper measures (Farhoudian, 2020). According to Bodrud-Doza (2020), a humanitarian crisis is any circumstance in which an extraordinary and widespread threat to life, health, or basic sustenance is beyond the coping capabilities of individuals. Humanitarian logistics entails major operational obstacles such as time unpredictability, training of people, issues with media attention, financial assistance from many organizations, lack of knowledge, and inadequate management. It is a complicated and highly unpredictable systematic process that requires preparing a presentation of gifts in a hazardous environment. According to Agarwal et al. (2021) and Krishna and Daniel (2021), adverse scenarios in which such presentations will be used to aid in the relief and healing of an individual, war, terrorist attacks, wildfires, earthquakes, floods, drought, and starvation are all examples of the beginning, to mention a few.

Although there is proof that perhaps the incidence of natural and artificial disasters is growing throughout the world (Rosselló et al., 2020; Akhter et al., 2020), there are currently very few published research works that focus on the better understanding of the structure of humanitarian logistics management for humanitarian aid in times of crisis (Rodríguez-Espíndola et al., 2020; Baharmand et al., 2020; Beresford & Pettit, 2021). It has been captured severally in the literature of numerous studies that due to the perceived assistance in the distribution systems following significant disasters, the need to enhance humanitarian aid delivery has lately gained greater attention (BouChabke, & Haddad, 2021; Namagembe, 2020; Brechenmacher, 2019). The delivery of humanitarian assistance is frequently viewed as a succession of events. Distinct actions are isolated from one another, and there is often a weak (or non-existent) link between them. The connection between each level of assistance distribution and developing countries' continuous humanitarian logistics s has not been a focus in most cases, resulting in enormous quantities of waste (Barakat, & Zyck, 2010; World Health Organization. 2013; Telleria, 2021).

Pinto and Pinto (2021) stated that humanitarian aid locations feature a diverse case of characters, each with their own set of aims, interests, and talents. In these situations, supplies, clothes, and food are frequently required in amounts and at periods that challenge conventional logistics. The humanitarian logistics is where such humanitarian logistical procedures take place. Donation management, inventory management, procurement, risk and needs assessment, disaster-resilient infrastructure and transport facilities, coordination and collaboration with other relief agencies, improved forecasting and early warning systems, and so on, are some of the critical factors for the uninterrupted flow of humanitarian logistics operations and the management of relevant humanitarian logistics. In humanitarian efforts, donation management is a vital and essential part (Negi, & Negi, 2020; Upadhyay et al., 2020).

Research on humanitarian logistics management in disaster relief, specifically focusing on the case of Boko Haram in Borno State of Nigeria. Boko Haram has caused significant humanitarian crises and disrupted humanitarian logistics s in Borno State. To effectively respond to these disasters, it is crucial to critical challenges that disrupt the efficiency and effectiveness of humanitarian logistics management, strategies to be employed by humanitarian organizations, such NGOs in mitigating these challenges and enhance humanitarian logistics resilience involved in humanitarian logistics management. However, extant literature suggests the existence of gaps in terms of empirical studies that explore the challenges of humanitarian logistics management and strategies to be employed by humanitarian organizations in the Nigerian context. Prior studies have concentrated on developed and Asian countries (see. Juan et al., 2022; Kamalahmadi et al., 2022; Parast & Subramanian 2021; Shekarian & Mellat Parast 2021; Birkie & Trucco, 2020; Yu et al., 2019; Namdar et al., 2018). Thus, African countries such as Nigeria were neglected. Also, most these studies were based on content analyses, which comprises of conceptual development, drivers and barriers, collaboration with humanitarian logistics partners, mathematical and other optimization models, and assessment of green humanitarian logistics management practices and performance (see. Bhatia & Gangwani 2021; Herrmann et., 2021; Upadhyay 2021; Balon 2020; Mardani et al., 2020; Tseng et al., 2019; Gong et al., 2019; de Oliveira et al., 2018; Maditati et al., 2017), ignoring the empirical analysis on the critical success factor which is an important issue in the humanitarian logistics management (see. Giusti et al., 2019; Gardas et al., 2019).

The study, is crucial due to the region's prolonged humanitarian crises caused by insurgency, displacement, and food insecurity. Humanitarian logistics encompassing the processes of procurement, transportation, warehousing, and distribution of relief materials plays a central role in mitigating suffering and saving lives in conflict zones (Adebayo & Musa, 2021). Ineffective logistics can lead to delays, resource wastage, and inadequate aid delivery, which intensify the vulnerability of affected populations. Understanding the factors influencing logistical performance such as infrastructure, security challenges, coordination among stakeholders, and funding provides actionable insights for improving response strategies and ensuring efficient resource utilization (Okoro et al., 2021).

Studying this topic specifically in Borno State is necessary because it represents one of the most complex humanitarian theaters in sub-Saharan Africa, where persistent security threats and poor infrastructure severely constrain aid delivery (Yusuf & Ibrahim, 2021). By empirically identifying and analyzing key determinants of humanitarian logistics effectiveness, policymakers, NGOs, and international agencies can develop context-specific interventions that enhance operational efficiency and resilience. Furthermore, such research contributes to the broader academic discourse on humanitarian supply chain management, providing evidence-based models that can be replicated in similar crisis-affected regions (Abubakar et al., 2021).

Humanitarian logistics effectiveness in Borno State is shaped by critical factors such as security and access, coordination among agencies, data availability, technical expertise, and transport and infrastructure readiness. Adegbite (2022) finds that lack of technical expertise, absence of surveillance technology, low political will, and weak inter-agency collaboration significantly constrain aid delivery in conflict-affected zones like Borno. Earlier empirical

studies across North-East Nigeria highlight poor coordination, funding constraints, inadequate infrastructure, and limited accurate data as persistent logistics bottlenecks for agencies like NEMA and NGOs. Such findings firmly position these determinants at the heart of improving humanitarian supply chain performance across fragile and insecure contexts.

This empirical evidence is crucial for policymakers, humanitarian agencies, and donor bodies working in Borno and comparable emergency contexts. First, it offers policy makers clear targets training logistic staff, investing in surveillance/ICT systems, enhancing inter-agency coordination, and improving transport networks to improve aid delivery outcomes. Second, humanitarian agencies and NGOs benefit by understanding which investments (e.g., logistics service providers, technical systems, and coordination platforms) yield real gains in operational efficiency. Finally, donors and international partners can use this evidence to better structure funding—directing resources toward capacity-building, infrastructure, and coordination mechanisms where they will yield the greatest impact in saving lives and reducing duplication.

The utility of the topic *"Determinant Factors of Humanitarian Logistics Effectiveness: Empirical Evidence from Borno State of Nigeria"* lies in its potential to enhance the efficiency of relief operations in conflict-affected regions. Borno State, being the epicenter of the Boko Haram insurgency, has witnessed large-scale humanitarian crises, making effective logistics critical for the timely delivery of aid (Adeleke et al., 2021). By identifying the key factors such as infrastructure availability, security conditions, coordination mechanisms, and resource allocation the study contributes to both academic discourse and practical strategies for optimizing humanitarian supply chains. Furthermore, insights from this research can guide policymakers, NGOs, and international organizations in designing interventions that minimize delays and ensure equitable distribution of relief materials (Ibrahim & Musa, 2021).

The effectiveness of such a study is demonstrated in its ability to provide empirical evidence that informs data-driven decision-making. By analyzing real-world constraints and enablers in Borno State, the research moves beyond theoretical frameworks to address contextual challenges, including poor road networks, insecurity, and limited storage capacity (Okeke, 2021). As humanitarian operations are resource-intensive, understanding these determinant factors can lead to cost-effective strategies, improved beneficiary satisfaction, and enhanced resilience in future crises. Moreover, the findings are transferable to other regions facing similar conflicts or natural disasters, making the study relevant beyond its immediate geographical scope (Adeleke et al., 2021).

This paper, therefore, aims at assessing the critical success factors of international, national, and local humanitarian logistics firms by also exploring the challenges of the humanitarians' logistics firms in Internally Displaced Persons' (IDPs) camp in Maiduguri of Borno state. Specifically, it will examine both the success and failure factors with regard to humanitarian aid in Borno state. Meanwhile, the paper is divided into five sections, introduction, literature review and hypothesis development, methodology, result and discussion, and finally conclusion.

Literature Review and Hypotheses Development

Humanitarian logistics effectiveness depends on a multitude of factors, and modeling this effectiveness is essential to improve the overall success of humanitarian operations (Sreedharan et al 2020; Roh et 2022; Baharmand et al 2022).

The extant literature revels many factors influencing effectiveness in humanitarian logistics. First, proper allocation of resources, including personnel, funding, and assets, is a critical factor (Coccia 2021; Azizi et al 2021). Thus, modeling can help in optimizing resource allocation by considering factors such as the type and scale of the disaster, geography, and available resources (Doan & Shaw 2019). Second, efficient transportation and distribution networks are essential for timely delivery of relief supplies (Melkonyan et al 2020). Modeling can help in designing and optimizing humanitarian logistics networks, taking into account various transportation modes, routes, and capacities. Third, Collaboration among various stakeholders, including government agencies, non-governmental organizations (NGOs), and the private sector, is crucial (Rajabi et al 2021; White et al 2022). Modeling can help identify opportunities for collaboration and assess the impact of different coordination strategies. Thus, modeling humanitarian logistics performance involves a holistic approach that considers a wide range of factors (Yáñez-Sandivari et al 2021; Boostani et al 2021). These factors are interrelated and should be addressed comprehensively to enhance effectiveness in the field.

Further, modeling humanitarian logistics effectiveness is a complex task that involves the coordination of resources, information, and activities to provide aid to populations affected by disasters or crises (Jalali et al 2021; Rutaba 2022). While various models and frameworks have been developed to optimize and enhance humanitarian logistics operations, several challenges and limitations are present (Yáñez-Sandivari et al 2021). The following are some key aspects that are lacking in modeling humanitarian logistics effectiveness. First, effective humanitarian logistics require close coordination and collaboration among various actors (Rutaba 2022). Models often do not sufficiently address the need for coordination mechanisms and how to overcome barriers to collaboration. Second, valuation and feedback loops, as continuous improvement and learning are essential in humanitarian logistics (Yáñez-Sandivari et al 2021). Many models do not have built-in mechanisms for evaluating their performance and incorporating feedback from the field to adapt and improve operations. Third, humanitarian logistics s involve multiple stakeholders, including governmental and non-governmental organizations, donors, and local partners (Wankmüller & Reiner 2021). Models may not always capture the complexities of these networks and the potential conflicts or coordination challenges that arise among different organizations. Therefore, addressing these limitations in modeling humanitarian logistics performance is crucial for improving the efficiency, effectiveness, and ethical conduct of humanitarian operations. This involves not only refining existing models but also developing new approaches that are better suited to the unique challenges of the humanitarian context.

Humanitarian logistics is a crucial component of disaster response and relief efforts, and it is equally important in a Nigerian context. Nigeria, a country prone to various natural and man-made disasters, as well as ongoing humanitarian crises, faces several challenges that necessitate a focus on the factors of humanitarian logistics to enhance effectiveness in addressing these issues. Here are some key reasons why the factors of humanitarian logistics

are needed for effectiveness in Nigeria. First, Frequent Humanitarian Crises: Nigeria experiences a range of humanitarian crises, including natural disasters (floods, droughts), conflicts (insurgencies, communal clashes), and health emergencies (such as disease outbreaks). Efficient humanitarian logistics are essential to respond swiftly and effectively to these crises. Second, Nigeria is the most populous country in Africa, with over 200 million people. The density and distribution of the population present unique logistical challenges during disaster response and humanitarian assistance, requiring well-organized logistics systems. Third, Nigeria has a significant population of vulnerable groups, including internally displaced persons (IDPs), refugees, and marginalized communities. Adequate humanitarian logistics are essential to provide assistance to these groups during times of crisis. Fourth, Nigeria faces infrastructure limitations, including poor road networks, inadequate transportation systems, and unreliable energy sources. Effective humanitarian logistics are crucial to work around these limitations. Fifth, Coordination between government agencies, non-governmental organizations (NGOs), and international partners is essential during humanitarian operations. Effective logistics facilitate this coordination, ensuring that resources and aid reach those in need. Last, Humanitarian crises can have a severe economic impact. Efficient logistics can help minimize these economic losses by enabling the timely provision of relief and recovery assistance. Thus, the present study challenges and strategies involved in humanitarian logistics within the context of disaster relief operations, specifically focusing on the case of Boko Haram in Borno State, Nigeria.

Concept of Humanitarian Logistics

Humanitarian logistics refers to "planning, implementing, and controlling the efficient, cost-effective flow of commodities and materials, as well as related information, from the point of origin to the point of consumption to alleviate the suffering of vulnerable people" (Pascucci, 2021). Logistics refers to the procedures and systems involved in mobilizing people, resources, skills, and expertise to assist vulnerable individuals affected by disaster (Blank, 2021). Humanitarian logistics has always been at the heart of relief operations, despite its position of not being acknowledged to the extent it is today. So, while humanitarian logistics may have been critical to completing operations, it lacked operational experience. More broadly, there was no investment in technology and communication and the most up-to-date approaches and techniques, such as mathematical modelling (Jones & Mulloy, 2021). In addition, humanitarian logistics professionals were scarce, humanitarian logistics operations mainly were manual, evaluation and planning were weak, and collaboration and coordination were restricted (Richey et al., 2021). Because of the lack of professionalism in humanitarian logistics, logicians were rarely included in the planning stages of humanitarian response. As a result, logisticians' voices were frequently silenced. These combined variables resulted in the logistics function remaining isolated from finance, emergency response, information technology, and management, resulting in sub-optimized operational efficiency and effectiveness (Schmidt, 2020). Operations as a bedrock of any humanitarian logistics company, lack of participant experience in the rescue of affected people during and after the disaster, affect the operations. Humanitarian logistics serves various purposes, including responding to natural disasters or pandemic disease outbreaks by transporting products or materials to catastrophic victims with unexpected and enormous demands. Through utilizing existing resources, humanitarian logistics have humanitarian logistics networks that should be flexible and responsive to the destination and the pace of environmental change (Masudin et al., 2020). Ali et al. (2020) postulate that logistics management is an organizational role in

humanitarian logistics and logistics management that combines and optimizes all logistics activities with other areas such as the humanitarian need and demand, production, finance, and information technology. Logistics must ensure that a recipient is provided with the correct product from the point of origin and according to his specifications (in quantity and variety) and where relief is needed at the right time. Yu et al. (2021) laments that the efficiency and effectiveness of the logistics operation not only impact the humanitarian success of delivery, but it also affects the relief receiver's view of the quality of the services. If materials come in from the outside and when suppliers are unpredictable, the company's internal operations will be unable to keep up with demand. Similarly, if the finished goods flow to customers is inconsistent, the firm's client base will be unsatisfied. As a result, logistics plays a critical role in many businesses, as it is essential for gaining a competitive edge (Gupta & Singh, 2020).

Critical Success Factors in Humanitarian Logistics

Maintaining a humanitarian logistics is not an easy process. De Camargo Fioriniet et al. (2021) used an Interpretative Structural Modeling (ISM) and a Matrice d'Impacts Croisés Multiplication Appliquée á un Classement (MICMAC) assessment to help clarify the critical success factors in the management and operation of chain stores. The critical success factors identified in the study are policy decisions and organizational structure, humanitarian relief delivery systems, strategic planning, reliable telecommunications and information, collaboration and coordination with other relief organizations, disaster-resistant infrastructure and transportation, enhanced forecast and early warning systems, procurement and donation administration, inventory management, risk and needs assessment, institutional and human capacity building, and agile humanitarian logistics.

Humanitarian Organization's Issues and Challenges

Authors have recognized several issues common to humanitarian organization logistics humanitarian logistics management, such as assessment and planning issues, limited use of technology, distant and rural operating areas, and poor infrastructure (Behl, & Dutta, 2019). One noteworthy difficulty mentioned is that donor spending habits might be shallow and short-sighted. In other words, funders are more likely to contribute funds for visible or concrete achievements rather than procurement and delivery system readiness or development (Dubey et al., 2021). The key obstacles to humanitarian organization logistics humanitarian logistics management, according to Nayak & Choudhary (2020), are dealing with unexpected demand, limited delivery times, inexperienced logistics workers, awkward media pressure, a lack of money, insufficient infrastructure and personnel, and improper political meddling. Differences in professionals' and academics' interpretations of knowledge pose another barrier, affecting problem-solving techniques and qualitative and quantitative data (Dennehy et al., 2021). For example, using 4WD (4-wheel drive) automobiles in Humanitarian Organization fleets to solve traffic problems is a suggestion from academia; however, 4WD vehicles are typically understood as an extravagant display of money in surrounding people and influence. Knowledge and understanding of this explanation and its implications come only from practical experience. As a result, academic training and field applications are frequently at odds (Dubey et al., 2021). Humanitarian organization effectiveness and efficiency necessitate effectively coping with a wide range of humanitarian organization humanitarian logistics management difficulties and positively contributing to the delivery of humanitarian assistance to those in need. Socio-political variables like familial

relationships, nepotism, favoritism, and other soft obstacles can also destabilize humanitarian help. The nature of infrastructure degradation, unreliable communication systems, roadblocks, and numerous security challenges are some of the more difficult hurdles to overcome. Planning and assessment issues, operational environments, collaboration standardization challenges, and monitoring challenges are the four basic categories of humanitarian organization logistics humanitarian logistics management challenges. The literature review revealed that the first three types of challenges (Assessment and management challenges, Operational challenges, Collaboration and standardization challenges) have received more attention from the literature.

According to the literature, humanitarian organization humanitarian logistics management-related difficulties are frequently characterized in the exact words as the preparedness phase (i.e., preparedness, response, and recovery). This raises a significant point. Contingency planning is only one of the numerous tasks that various humanitarian organizations do. Humanitarian organizations also contribute significantly to development in education, long-term health care, economic development, and poverty eradication. These other difficulties of the activities are often overlooked and not addressed to the level that catastrophic management concerns are. In contrast, the fourth type (continuous monitoring obstacles) has received less attention. Still, there is more room for future research in this area in humanitarian logistics efficiency management.

Table 2.1
Humanitarian Logistics and Humanitarian logistics Management Challenges

Type of Challenges	HO-LSCM Challenges	References
Assessment and planning challenges	Pre-occupation with response	Overstreet et al., 2011; Sandwell, 2011)
	Lack of logistics expertise and logistics capacity building program	(Oloruntoba, Glenn Richey, & Gray, 2009; Overstreet et al., 2011; Sandwell, 2011)
	Different nature of disasters	(Sandwell, 2011; Van Wassenhove, 2006)
	Unknown demand	(Overstreet et al., 2011; Van Wassenhove, 2006)
Operational challenges	Remote and rustic region of operations	(Chandes & Paché, 2010; Sandwell, 2011; Van Wassenhove, 2006)
	Ineffective management and tools and techniques	(Sandwell, 2011; Van Wassenhove, 2006)
	Lack of technological involvement	(Chandes & Paché, 2010; Overstreet et al., 2011; Sandwell, 2011)
	Degraded infrastructure	(Chandes & Paché, 2010; Sandwell, 2011; Van Wassenhove, 2006)
	Uncertainty	(Overstreet et al., 2011; Van Wassenhove, 2006)
Collaboration and standardization challenges	Little appreciation for logistics staff	(Sandwell, 2011)
	Low status & limited influence of logistics staff	(Sandwell, 2011)
	Work pressure, high stress	(Sandwell, 2011)
	High turnover of logistics staff	(Oloruntoba et al., 2009; Sandwell, 2011)
	Lack of career path	(Overstreet et al., 2011; Sandwell, 2011)
	Humanitarian culture and ethics	(Sandwell, 2011)
	Lack of standardized processes	(Overstreet et al., 2011; Sandwell, 2011)
	Difference between academic research and practical implications	(Jha et al., 2017)
	Competition for new staff in emergencies	(Sandwell, 2011; Van Wassenhove, 2006)
Monitoring and control challenges	Humanitarian ethics and political interference	(Overstreet et al., 2011; Sandwell, 2011)
	Poor accountability	(Chandes & Paché, 2010; Oloruntoba et al., 2009)
	Lack of performance management of both the system and staff	(Sandwell, 2011)
	Focus on output instead of outcomes	(Sandwell, 2011; Whiting & Ayala-Öström, 2009)
	Donor influence & funding issues	(Oloruntoba et al., 2009; Overstreet et al., 2011; Sandwell, 2011)

Source: Adopted from Shafiq, & Soratana, (2019).

Internally Displaced Persons (IDPs)

There has been a lot of work done on IDPs, and there is a lot of literature on the subject. Migrants, refugees, and internally displaced persons (IDPs) are displaced from their ancestral homes due to wars worldwide (insurgency). The internally displaced persons (IDPs) issue is not new in today's world. The international community's involvement with refugees' dates back to the 1920s, but recognizing that individuals displaced within their countries' boundaries are a subject of worldwide concern only came about 25 years ago (Okeke-Ihejirika et al., 2021). An internally displaced person (IDP) is a person who has been forced to leave their home due to actual or perceived dangers and relocate within a country's borders. IDPs are not the same as refugees who have crossed an officially recognized border to flee conflict, persecution, or natural disaster (Lawrence, 2021).

Hypotheses Development

The Assessment and Planning

Success of HSCs require sound planning, assessment and decision-making process that could respond to the serious disasters like Boko Haram. Although, there is frequent occurrence of the humanitarian crises around the globe, predicting their exact locations, timing and scale for planning and corresponding relief responses is not easy (Abbas et al., 2022). Hence, ensuring success of HSCs requires a proper planning, preparedness, assurance about the availability of specific resources and a degree of independence. Therefore, in adequate planning and proper assessment pose several challenges in HSCs. For example, scholar like Sheu, 2007; and Duran et al., 2013 on the following challenges. First, on-time distribution of relief supplies is hard to control during an emergency (like Boko Haram crises), mainly due to the difficulty in identifying the supply sources, the complexity of coordinating supplies and the uncertain infrastructure conditions that make it difficult to respond quickly to the needs of the affected people. Second, managing resources for relief logistics is challenging because the resources may come from both private and public sectors, and the allocation requires coordination between sectors that may be difficult to achieve during an emergency (like Boko Haram crises. Third, the activities need the demand information in a real-time manner, but during an emergency (like Boko Haram crises), this information is difficult to obtain. Last, HSCs experience high personnel turnover and they have no mechanisms for transferring past experience to new personnel.

The extant literature suggests that, "long term strategic planning for humanitarian operation" is the highest-ranked and most immediate solution among humanitarian logistics actors (see. Singh et al., 2018; John et al., 2019; Chiappetta Jabbour et al., 2019; Agarwa et al., 2020; Petrud et al., 2020; Bag et al., 2020; Ozdemir et al., 2021). Therefore, there are specific challenges in the assessment and planning phases within humanitarian organizations, which negatively affect their ability to respond effectively and efficiently to humanitarian crises. These challenges can include factors such as limited access to accurate and timely information, inadequate resources for conducting assessments, lack of coordination among different stakeholders, and difficulties in prioritizing needs and allocating resources appropriately. By investigating and analyzing these challenges, the research aims to identify key areas of improvement in the assessment and planning processes within humanitarian firms. Understanding these challenges can help develop strategies and interventions to overcome them, leading to more effective and efficient humanitarian response efforts. Going by this, the present study hypothesized that:

H1: The assessment and planning processes in humanitarian firms are impacted by various challenges that hinder effective and efficient response to Boko Haram crises.

Operational Challenges

Logistics management performs the procurement or distribution operations in any devastating accidents or emergencies, manages the supply of drugs, food products, clothing and donated requests, and unrequested donations from various parties/agencies, and handles the supply of medications, food items, clothing and donated requests (Negi & Negi (2020). In addition to the flow of humanitarian assistance, it involves the monitoring and control of supplies, funds, and information. Therefore, in any humanitarian operations activities, logistics role covers the maximum part (about 80 percent) of the overall effort (Abdulkarim et al., 2021). It has always played a significant role in relief efforts (Trunick 2005). Thus, the ability of logisticians to obtain, transport, and collect supplies at the site of a humanitarian relief operation determines the pace with which humanitarian aid is distributed following a disaster.

The main aim of humanitarian logistics is to provide the affected people with humanitarian assistance such as foods, shelter, water, and medical services. It also emphasizes the search and rescue responses, the protection and maintenance of life and the restoration of self-abundance; indeed, but these operations are hindered with operational logistics challenges. Therefore, humanitarian firms provide aid and support to communities affected by crises or disasters, encounter operational challenges that hinder their ability to deliver assistance in an efficient and effective manner. However, extant literature suggests that, in a world where humanitarian crises are increasingly frequent and complex, the delivery of humanitarian assistance is often beyond the reach or capacity of traditional humanitarian actors (see. Kochhar, 2018; Hotho & Girschik, 2019; Ballesteros and Gatignon 2019; Bolewski 2019; Yang et al., 2020). But, these effort are mostly hindered by operational challenges, such as logistical constraints, resource limitations, coordination difficulties, bureaucratic processes, or inadequate infrastructure, among others. Consequently, the present study posits that these operational challenges have a negative impact on the overall performance and outcomes of humanitarian firms, potentially compromising their ability to provide timely and appropriate assistance to those in need. Thus, hypothesized that:

H2: The presence of operational challenges in humanitarian firms negatively affects the efficiency and effectiveness of their humanitarian efforts.

Collaboration and Standardization Challenges

Proper coordination and standardization of humanitarian organizations helps to increase the performance or efficiency of disaster relief operations (Balcik, et al., 2010). Therefore, better coordination among humanitarian aid organizations leads to the timely delivery of relief items that improve the overall performance of disaster relief operations (Singh, et al., 2018). This is because, delivery of relief items is one of the core factors of disaster relief operations, and the prepositioning of relief items is an efficient way to foster productive and resilient HSCM (Erbeyoglu & Bilge 2020). For this reason, coordination among humanitarian logistics actors provides better capabilities and resources such as leadership, communication infrastructure, and finance, which help in the timely supply of relief items, thus improving overall emergency response performance (Akhtar et al., 2012; Singh & Gupta, 2018). However, despite the effort of the humanitarian firms to supply relief item during a serious crisis such Boko Haram, the

effort is abortive due to coordination and standardization challenges such as lack of trained logisticians, inadequate coordination, and manual humanitarian logistics procedures make the humanitarian logistics more challenging than commercial logistics management (Kovacs & Spens, 2007). Thus, inadequate coordination impedes the humanitarian logistics, thereby leading to the late delivery of relief items at the last-mile distribution and the ineffective delivery response in disaster relief operations (Gyongyi et. al., 2011; Jensen & Hertz, 2016). The extant literature suggests that, after long term strategic planning for humanitarian operation the most immediate solution is "Collaboration, cooperation, and coordination among humanitarian logistics actors (see. Seifert et al., 2018; Laguna-Salvadó et al., 2019; Behl, & Dutta (2019); Kim et al., 2019; Jeble et al., 2020; Cao et al., 2021; Karuppiah et al., 2021; de Camargo Fiorini et al., 2022). Going by this, the present study hypothesized that:
H3: Standardization and Collaboration challenges hinder the efficiency and effectiveness of humanitarian interventions in the Borno crisis.

Methodology
To assess the critical success factors of international, national, and local humanitarian organizations by exploring the challenges of the humanitarians' organizations' humanitarian logistics management in Internally Displaced Persons' (IDPs) camp in Maiduguri of Borno state, a quantitative research method is employed. Primary data were sourced by administering questionnaires to 224 NGOs in Maiduguri Borno state. The data were collected from the responses obtained in the study area. The study considered ten international humanitarian organizations and ten local humanitarian organizations. A purposive sampling technique was employed in selecting the respondent, and descriptive statistical analysis using mean, ranking and standard deviation was carried out to explore the result of the study.

Results and Discussions
Demographic Profile of the Respondents
Descriptive analysis was carried out using frequency and percentages to explain the characteristics of the respondents, presented in Table 1.

Table 1
Demographic attributes

S/N		OPTIONS	Frequency	Per cent
1.	Gender	Male	117	52.2
		Female	107	47.8
2.	Age	Under 30 years	119	53.1
		30-60 years	91	40.6
		Above 60 years	14	6.3
3.	Years of experience	Less than 5 years	93	41.5
		6-10 years	72	32.1
		11 years and above	59	26.3
4.	Organisation categories	Local	143	63.8
		International	81	36.2

Source: Authors' own creation

Table 4.1 reported that the male respondents constituted the highest percentage of 52.2%, while females constituted the lowest percentage of 47.8%. This means that the male respondents dominated the study area of those who answered the questionnaire. The age of

the respondent; under 30 years constitute 53.1%, 40.6% are 30-60 years, 6.3% are above 60 years of experience, 41.5% have less than five years of working experience, 32.1 have 6-10 years, and 26.3% have 11 years and above experience. Considering the result obtained from the organization categories, 58.9% of respondents are from local humanitarian organizations, and 36.2% are from international humanitarian organizations.

Reliability Test

A reliability test was carried out and presented in Table 2 to understand the reliability of the study constructs.

Table 2
Reliability Statistics

Construct	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
Assessment and planning challenges	.782	.783	4
Operational Challenges	.749	.750	5
Collaboration and standardization challenges	.820	.820	8
Success Factors of Humanitarian Organization	.929	.929	12
Humanitarian logistic Operations	.778	.777	5

Source: Generated by the authors using SPSS version 21

Assessment and Planning Challenges

In an attempt to respond and/or test the first hypothesis set by the study on the challenges of humanitarian logistics organizations in terms of assessment and planning issues in Maiduguri IDPs Camps, descriptive analysis using mean and Standard Deviation was carried out and presented in Table 3.

Table 3
Assessment and planning challenges

Assessment and planning challenges	Mean	Std. Deviation	Rank
Pre-occupation with response	4.5780	.74727	1st
Different nature of disasters	4.4725	.70657	2nd
Lack of logistics expertise and logistics capacity building program	4.4541	.79178	3rd
Unknown demand	4.2982	.84684	4th

Source: Generated by the authors using SPSS version 21

Table 3 reported the assessment and planning related challenges of the humanitarian organization operating in Maiduguri IDPs camps. The results based on the highest mean scores indicated that Pre-occupation with the response and the Different nature of disasters have the highest mean values of (M= 4.5780, std. deviation = 0.74727), (M= 4.4725, std. deviation = 0. 70657) and ranked from 1st to 2nd respectively. The least Assessment and planning related challenges of the humanitarian organization operating in Maiduguri IDPs camps based on the lowest mean scores were in response of humanitarian organization workers, Lack of logistics expertise and logistics capacity building program, Unknown

demand, with the mean values of (M= 4.4541, std. deviation = 0.79178), (M= 4.2982, std. deviation = 0.84684), ranked at 3rd to 4th respectively.

Operational Challenges
In an attempt to respond and/or test the second hypothesis set by the study on the challenges of humanitarian logistics organizations in terms of operations in Maiduguri IDPs Camps, descriptive analysis using mean and Standard Deviation was carried out and presented in Table 4.

Table 4
Operational Challenges

Operational Challenges	Mean	Std. Deviation	Rank
Uncertainty	4.4817	.73248	1st
Remote and rural region of operations	4.4312	.73575	2nd
Lack of technological involvement	4.4266	.81835	3rd
Degraded infrastructure	4.4266	.81835	4th
Effective management tools and techniques	4.3624	.83796	5th

Source: Generated by the authors using SPSS version 21

The result in Table 4 reported the Operational Challenges related to the challenges of the humanitarian organization operating in Maiduguri IDPs camps. The results based on the highest mean scores indicated that Uncertainty, Remote and rural region of operations, and Lack of technological involvement, have the highest mean values of (M= 4.4817, std. deviation = 0.73248), (M= 4.4312, std. deviation = 0. 73575) (M= 4.4266., std. deviation = 0.81835) (and ranked from 1st to 3rd respectively. The least Operational Challenges related to challenges of the humanitarian organization operating in Maiduguri IDPs camps based on the lowest mean scores were in response of humanitarian organization workers, Degraded infrastructure and Effective management tools and techniques, with the mean values of (M= 4.4266, std. deviation = 0.81835), (M= 4.3624, std. deviation = 0.83796) ranked at 4th to 5th respectively. In an attempt to respond and/or test the third hypothesis set by the study on the challenges of humanitarian logistics organizations in terms of Collaboration and standardization challenges in Maiduguri IDPs Camps, descriptive analysis using mean and Standard Deviation was carried out and presented in Table 5.

Table 5
Collaboration and standardization challenges

Collaboration and standardization challenges	Mean	Std. Deviation	Rank
Work pressure, high stress	4.4817	.73875	1st
Lack of standardized processes	4.4495	.78566	2nd
High turnover of logistics staff	4.4266	.79551	3rd
Humanitarian culture and ethics	4.4220	.77154	4th
Little appreciation for logistics staff	4.3761	.76549	5th
Difference between academic research and practical implications	4.3670	.72685	6th
Low status & limited influence of logistics staff	4.3624	.73857	7th
Lack of career path	4.3349	.90201	8th

Source: Generated by the authors using SPSS version 21

Table 5 presents the result of the collaboration and standardization related to the Challenges of the humanitarian organization operating in Maiduguri IDPs camps. It shows that the Work pressure, high stress, is highest among the workers responding to Collaboration and standardization related Challenges of the humanitarian organization operating in Maiduguri IDPs camps. In addition, Lack of standardized processes, and High turnover of logistics staff with their mean values of (M= 4.4817, std. deviation = .73875), (M= 4.4495, std. deviation = .78566) and (M= 4.4266, std. deviation = 0.79551) ranked from 1st to 3rd respectively. The least Collaboration and standardization related Challenges based on the lowest mean scores in workers humanitarian organizations operating in Maiduguri IDPs camps were in Low status & limited influence of logistics staff and Lack of career path with their mean values of (M= 4.3624, std. deviation = 0.73857), and (M= 4.3349, std. deviation = 0.90201) ranked at 7th to 8th respectively.

Successful Factors of Humanitarian Organization
In an attempt to identify the successful factors which may serve as a strategy that influence the effectiveness of humanitarian logistic firms in the context of Boko Haram's activities in Borno State.in Maiduguri IDPs Camps, descriptive analysis using mean and Standard Deviation was carried out and presented in Table 6.

Table 6
Key Success Factors of Humanitarian Organization

Key Success Factors of Humanitarian Organization	Mean	Std. Deviation	Rank
Government policies and Organizational structure	4.2706	.82872	10th
Strategic planning for the emergency relief supply system	4.2569	.86300	12th
Robust information and communication technology	4.2936	.94360	11th
Coordination and collaboration with other relief agencies	4.3486	.87332	3rd
Disaster resilient infrastructure and transport facilities	4.3349	.89173	6th
Improved forecasting and early warning system	4.2752	.89413	9th
Procurement and donation management	4.3073	.85440	8th
Inventory management	4.3440	.85652	4th
Risk and needs assessment	4.3670	.79353	2nd
Capacity building of institutions and people	4.3394	.86104	5th
Continuous improvement in the preparedness and response practices	4.3257	.84754	7th
Agile humanitarian humanitarian logistics .	4.3945	.78015	1st

Source: Generated by the authors using SPSS version 21

The result of the humanitarian organization's Key Success Factors of Humanitarian Organization operating in Maiduguri IDPs camps are presented in Table 4.6. It shows that the Agile humanitarian humanitarian logistics , risk and needs assessment, coordination and collaboration with other relief agencies and Inventory management are the highest in the workers' responses on key success factors of humanitarian organization of the humanitarian organization operating in Maiduguri IDPs camps. However, Improved forecasting and early warning system, government policies and organizational structure, Robust information & communication technology and strategic planning for the emergency relief supply system with the least mean values of (M= 4.3945, std. deviation = 0.78015), (M= 4.3670, std. deviation = 0.79353) and (M= 4.3486, std. deviation = 0.87332) and (M= 4.3440, std. deviation

= 0.85652) ranked from 1ˢᵗ to 4ᵗʰ respectively. The least Improved forecasting and early warning system, based on the lowest mean scores were in Government policies and organizational structure, Robust information and communication technology, and Strategic planning for the emergency relief supply system with their mean values of (M= 4.2752, std. deviation = 0.89413), and (M= 4.2706, std. deviation = 0.82872), (M= 4.2936, std. deviation = 0.94360), and (M= 4.2569, std. deviation = 0.86300) ranked at 9ᵗʰ to 12ᵗʰ respectively.

Conclusion

This paper tried to determine the success and failure in humanitarian logistics. Several factors affect humanitarian activities in Maiduguri internally displaced persons camps as there are various organizations in the operational activities of the humanitarian services. The result of the humanitarian organization's Key Success Factors of Humanitarian Organization operating in Maiduguri IDPs camps are presented. It is indicated that the Agile humanitarian logistics, risk and needs assessment, coordination and collaboration with other relief agencies and inventory management are the highest on the workers' responses on key success factors of humanitarian organization in Maiduguri IDPs camps. With these results obtained, the study concluded that the first three types of challenges (Assessment and management challenges, Operational challenges, collaboration and standardization challenges) have received more attention from the managers. The success factors are the drivers of the humanitarian operations in the study area. Therefore, it is recommended that Government, NGOs and individuals should provide more humanitarian aid and ensure effective and efficient delivery and distribution of the aid to the appropriate and affected people.

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