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Appraisal of Relief Materials Distribution by Disaster Management Organisation at Internally Displaced Persons Camp in Gwada, Niger State, Nigeria

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Abstract

This study examines relief materials distribution and the challenges faced by the disaster management organisations (DMOs) at internally displaced persons camp in Gwada, Niger State, Nigeria. The study uses 120 questionnaires distributed to the staff of the Disaster Management Organisations (DMOs) such as the National Emergency Management Agency (NEMA), the Niger State Emergency Management Agency (NSEMA), non-government organisations (NGOs), and faith-based organisations based on purposive sampling while descriptive statistics such as frequencies, means, and ranking methods were adopted for data analysis. The study results revealed that mats, foods, and drugs were the most supplied items at the IDP camp. Also, the key challenges identified in the study include inadequate resources to manage disasters, issues of poor distributional approach, inadequate communication with relief, inadequate transport infrastructures, and difficulties in managing security. The study recommended that adequate resources, such as funds and personnel, should be provided by the government to their agencies, particularly NEMA and NSEMA to enhance the efficiency and reach of relief material distribution.

Keywords: Distribution; DMOs; Gwada IDP Camp; IDPs; NGOs; Relief Materials

JEL Classification: G21

1. Introduction

Millions of people have died and many more have become homeless as a result of disasters over the years. Natural and man-made disasters are the two categories of disasters (Ajiboye et al, 2019). Man-made disasters are intentionally caused by an individual or group of individuals to cause suffering to other people. This encompasses acts of banditry, civil war, terrorism, and more (Alobo and Al-Hussaini, 2020). Natural disasters, on the other hand, are events that happen naturally and cause property damage and fatalities which consists of rock and snow avalanches, earthquakes, landslides, flooding, and tsunamis according to Ajiboye, et al (2024b).

Ohida et al. (2023) state that natural disasters are the primary cause of disasters in the industrialised world, but banditry, terrorism, and wars are the primary causes of disasters in the underdeveloped

world. Disasters in Nigeria, however, are a result of both natural and human causes, which has led to widespread displacement of people and the growth of Internally Displaced Persons (IDP) camps around the nation. Whether a disaster is man-made or natural, it affects those impacted severely on all levels—physically, psychologically, and emotionally. It also causes property damage, depletes financial reserves, and can result in personal harm or disease (Chaudhary & Piracha, 2021).

Disasters have impacted over 2.5 million persons worldwide and caused an incredible loss of around $6 trillion in financial terms since 1980. From $52 billion annually in the 1980s to $212 billion annually in the last ten years and $228 billion during the first three years of the 2020s, the total damages more than quadrupled (World Bank, 2023). According to the National Bureau of Statistics, National Emergency Management Agency and United Nations Development Programme (NBS, NEMA & UNDP, 2023), the recent floods in Nigeria caused significant damage totalling $9 billion and sadly claimed hundreds of lives. Estimates of the destruction's cost, made in collaboration with the World Bank, range from $3.79 billion to $9.12 billion.

From the above statistics, it can be deduced that disasters have financial implications, cause complete disruptions, and prevent victims from accessing their daily activities when disasters strike. Hence the need for disaster management organisations to manage the disasters in order to cushion the effect of the disasters on the victims (Maghsoudi and Moshtari, 2021). Despite the laudable achievements of the aid organisations in supplies of relief materials and mitigation of disasters, they also experience challenges Ajiboye, et al (2024a). These challenges range from the social media control, funding issues, inadequate transport infrastructures, adequate security services, poor coordination, a lack of logisticians, and delivery challenges are some of the difficulties thwarting the efforts of disaster management organisations (Ajiboye, et al (2024a); Maghsoudi and Moshtari, 2021; Gustavsson, 2003 and Jahre, 2016).

Researchers like Ajiboye, et al (2024b), Rutaba (2022), Oke et al. (2020), Akuri (2019), Daud et al. (2016), and Imasuen, (2015) agreed that lack of physical infrastructure, inadequate resources, lack of public attention, security issues, transportation problems, poor coordination, issues of poor collaboration, and ineffective communication were the challenges preventing efficient distribution of relief materials. Also, the problem of inadequate information sharing, difficulties in managing media, a poor distributional approach, and difficulties in storing items are other challenges that have not been captured in the past literature, which is the gap this study seeks to fill. The present study, therefore, focused on examining the distribution of relief materials among disaster management organisations at an internally displaced persons camp in Gwada, Niger State. The Gwada IDP camp was purposefully chosen because of the significance of the location and the number of disaster victims that are housed there. The study uses survey research to capture disaster management organisations perceptions of the challenges they experienced during the distribution of relief items at the IDP camp.

2. Literature Review

Theoretical Review

Systems theory explains the obstacles to effective humanitarian aid distribution by viewing relief efforts as interconnected systems influenced by their environments. Originating from Ludwig von Bertalanffy's work in the 1950s, the theory emphasises that systems have structures, functions, and boundaries, and a failure in one part of the system can disrupt the whole. During disaster which is normally a disorderly environment, with poor coordination, and breakdown in structures can delay the delivery of relief materials and increase the suffering of affected populations.

Goldratt in 1984 introduced the theory of constraints (TOC) which add that only a few key limitations often hinder a system from meeting its goals. In humanitarian logistics, these constraints may include inadequate funds, shortages of trained logisticians, poor procurement practices, and weak transport infrastructure. Information theory further highlights that unequal or inaccurate information sharing among supply chain actors and relief agencies can undermine the timely delivery of life-saving essentials such as food, water, and medicine. Together, these theories explain how systemic failures, constraints, and communication gaps shape the effectiveness of humanitarian operations

Humanitarian Distribution Challenges

According to Balcik & Beamon (2008), the main aim of humanitarian logistics is to deliver the appropriate items in the right amounts to the right location at the right time in order to prevent or minimise human casualties. Big disasters like the tsunami that struck Thailand in 2004 and the Haiti earthquake of 2010 both of which resulted in severe damage to infrastructure and casualties have brought attention to how important it is to have effective and efficient humanitarian assistance operations. There are numerous challenges with the logistics administration of IDP camps. A few of these challenges have been documented in previous research. They believed that the main humanitarian logistics challenges can be attributed to inadequate cooperation and coordination among the stakeholders. Researchers such as Gustavsson (2003) and Jahre (2016) have found challenges related to humanitarian logistics, such as accountability, funding, inadequate resources, planning and sustainability.

The organisation's internal structure, strategies, and policies all have a big influence on what kinds of operational problems arise according to Tatham & Christopher (2018). These are inadequate departmental transparency inside the organisation, inadequate emergency response preparedness (ERP), inadequate infrastructure, ineffective information sharing, and poor coordination, security issues. In their evaluation of pre-positioned warehouse issues, Roh et al. (2016) discovered challenges such as inability to forecast stock levels, difficulties justifying funding, high cost of asset maintenance, high inventory costs, inadequate warehouse capacity, inferior commodities, information technology issues, and undertrained local workers.

The first phase of responding to a catastrophe is always a problem which mostly centre on inadequate cooperation and coordination; this often led to an inadequate relief effort according to Stefan (2015). In addition, it was observed that there are less infrastructure and resources available to address the needs of the disaster victims as more individuals become disaster-prone (Ajiboye, et al., 2014b). Furthermore, there is a great deal of uncertainty and urgency surrounding the response activities, and there are issues with various parties who have competing interests that impact relief efforts. In another study, Yildirim, et al. (2007) claimed that several millions of people suffered following the Hurricane Katrina in the USA as a result of a lack of physical infrastructure, including effective transportation systems and suitable housing, while the public believed that supplies of food, water, and medication were miraculous.

Empirical Review

Across the literature, most studies investigating humanitarian logistics challenges adopt qualitative methods, particularly literature reviews, interviews, and case studies. The studies carried out by Negi (2022), Oloruntoba & Banomyong (2018) Daud et al. (2016), and Oloruntoba (2005) respectively used secondary data for their analysis where they highlight the ongoing gaps in humanitarian logistics research. Akuri (2019) on the other hand employs semi-structured

interviews with humanitarian agency experts, and Balcik et al. (2010) used an analytical assessment of cooperation mechanisms in relief chains in their study.

Some studies focused on specific country contexts using empirical or survey designs. For instance, Ajiboye, et al (2024a) and Ajiboye, et al (2024b) used quantitative survey design to assess the main logistical challenges faced by aid organisations in two IDP camps and to assess how the type and condition of logistical infrastructure affect IDP camps across North-Central Nigeria. Oke et al. (2020) adopted a field investigation of IDP camp delivery networks in North Eastern part of Nigeria. Imasuen (2015) on the other hand uses empirical correlation analysis in his study on insurgency and humanitarian crises in Northern Nigeria: the case of Boko Haram while Ohida et al. (2023) conducted an assessment of logistics efficiency in IDP camps in Abuja, Nigeria.

Additionally, Baporikar & Shangheta (2018, 2019) in their studies in Namibia used contextual case analysis of nonprofit operations. Other notable methodological contributions by researchers include Rutaba (2022), who applied a stepwise analytical methodology for identifying factors influencing logistics effectiveness, and Maghsoudi (2015), who used a survey research design across six Southeast Asian countries. Studies by Shiyam et al. (2018) and Shafiq & Soratana (2018) applied mixed qualitative approaches and systematic literature reviews, respectively.

The results from the above studies revealed collectively some persistent barriers to effective humanitarian logistics across multiple contexts. For instance, Negi (2022) and Daud et al. (2016) identified the need for more investment and continuous research due to recurring operational and coordination challenges in humanitarian logistics and with humanitarian organisations and stakeholders. Akuri (2019) and Balcik et al. (2010) found that infrastructure, security, transportation, and political conditions significantly constrain relief delivery. Empirical findings from Oke et al. (2020), Gbadamosi & Oluwole (2019), and Baporikar & Shangheta (2018 & 2019) confirm inefficiencies in relief distribution, inadequate transport systems, weak management, and shortages of qualified logisticians. Imasuen (2015) demonstrated a strong statistical link between insurgency and humanitarian crises.

Studies focused on IDP camps, such as Ajiboye, et al. (2024a), Ajiboye, et al. (2024b) and Ohida et al. (2023), revealed inefficiencies in procurement, storage, and distribution, calling for improved transport infrastructure and better inventory management. On broader conceptual analyses, Kovacs & Spens, (2009) and Oloruntoba, (2005) emphasised on coordination failures, information management problems, and the unique challenges of transnational disasters. On regionally focused research, such as Rutaba (2022), Shafiq & Soratana (2018), Shiyam et al. (2018), and Maghsoudi (2015) highlighted the importance of skilled personnel, collaborative frameworks, standardisation, resource sharing, and supportive regulatory systems in improving humanitarian logistics outcomes.

3. Methodology

The present study utilised a survey research design to investigate the distribution of relief materials by disaster management organisations (i.e., NEMA, NSEMA, NGOs, and FBOs) at the IDP camp in Gwada. The study used a quantitative research design for the investigations, while purposeful sampling techniques were used to pick Gwada IDP camp among the camps in the state for the investigation. This is because the IDP camp houses a substantial number of internally displaced persons who were mostly displaced as a result of insurgency in their areas, and it is also a recognised rural IDP camp. One hundred and twenty (120) questionnaires were purposefully distributed among disaster management organisations workers who were present at the IDP camp during the two weeks fieldwork by the three field assistants. Out of the 120 questionnaires distributed, 115 were correctly filled and returned. The questionnaires were designed in such a way

that stakeholder's responses were rated on a five-point Likert scale where 1- represented strongly disagreed and 5- represented strongly agreed. The collected data was analysed using mean index scores and Chi-squared statistics to test the level of significance of the key challenges experienced by the stakeholders in the distribution of the items. The chi-square (χ^2) test was appropriate for this study because the data collected from stakeholders were categorical and measured on a five-point Likert scale, representing levels of agreement with identified challenges in the distribution of relief materials. Since chi-square is specifically designed to test whether the observed frequencies in response categories differ significantly from the expected frequencies, it is suitable for determining whether stakeholders' perceptions of key challenges occur by chance or reflect statistically meaningful patterns.

Furthermore, the study aimed to examine whether the challenges faced by disaster management organisations were significant from the perspective of respondents. The chi-square test effectively supports this purpose because it evaluates whether the distribution of responses across the Likert categories (e.g., strongly disagree to strongly agree) is non-random, thereby helping the researcher determine which challenges are genuinely prominent. Given the sample size of 115 valid questionnaires, the chi-square procedure also meets the requirement for adequate cell frequencies, enhancing the reliability of the statistical test. Thus, chi-square was justified as a suitable technique for assessing the significance of categorical stakeholder responses in the survey.

4. Results

Analysis of the Socioeconomic Features

The analysis of the gender of the respondents in Table 1 reveals that 60.9% were male and 39.1% of them were female. The dominancy of male in disaster relief organization maybe due to the risky, time consuming and field nature of their work. Table 1 recorded that 46.1% of the respondents were married, 35.7% of them were single and only 18.2% were divorced. Also, the Table 1 point that about 41.7% of the respondents were in the age of 29 and 39 years, 28.7% were in the age of 18 and 28 years, 16.5% were in the age of 40 and 50 years, 7.9% of them were above 51 years and only 5.2% of them were below 18 years. The analysis of the educational background of the respondents reveals that 37.4% of the respondents possess Higher National Diploma/Bachelor of science, 24.3% of the respondents hold National Certificate of Education/National Diploma, and 14.8% respondents possess postgraduate certificate. Again, Table 1 point that 11.3% of them had secondary school certificate and only 9.6% of them agreed that they do not possess formal education.

Table 1: Socioeconomic features

Socioeconomic Features	Frequency	Percentage
Gender		
Male	70	60.9
Female	45	39.1
Marital Status		
Married	53	46.1
Single	41	35.7
Divorce	21	18.2
Age		
Below 18 year	6	5.2
18-28 years	33	28.7
29-39 years	48	41.7
40-50 years	19	16.5
Above 51 years	9	7.9

Socioeconomic Features	Frequency	Percentage
Education		
No formal education	3	2.6
Primary school Cert	11	9.6
Secondary school cert	13	11.3
NCE/ND	28	24.3
HND/BSc	43	37.4
Postgraduate	17	14.8
Organisation you work with		
NEMA	8	6.9
NSEMA	21	18.3
Faith-base	37	32.2
NGOs	49	42.6
Monthly incomes earned		
Below N30,000	14	12.2
N31,000-60,000	31	26.9
N61,000-90,000	38	33.0
N91,000-121,000	13	11.3
N121,000-151,000	9	7.8
Above 151,000	10	8.8
Years engage in disaster Management		
less than 5	16	13.9
5-10 years	25	21.7
11-16 years	39	33.9
17-21 years	20	17.4
Above 22	15	13.1
Relief functions engage		
Reconstruction	18	15.7
Mitigation	35	30.4
Relief supplies	40	34.8
Response	14	12.2
All of the above	8	6.9
Total	115	100.0

Source: Authors' survey

The analysis in Table 1 recorded that larger proportion of the respondents were staff to the nongovernment organization, 32.2% of the respondents were staff of faith base organization, 18.3% of them were staff of Niger State Emergency Management Agency (NSEMA), and only 6.9% were staff of National Emergency Management Agency (NEMA). The analysis of the monthly income earned in Table 1 shows that 33.0% of the respondents earned between ₦61,000 and ₦90,000 on monthly basis, 26.9% of the respondents agreed that they earned between ₦31,000 and ₦60,000 and about 11.3% of them earned around ₦91,000 and ₦121,000 per month. Again, the Table point that 8.8% of the respondents earned above ₦151,000 per day and only 7.8% of them earned between ₦ 121,000 and ₦151,000 on monthly basis.

Moreover, Table 1 indicate that about 33.9% of the respondents had between 11 and 16 years of working experience in disaster management organization, 21.7% of them had about 5 to 10 years working experience, and only 17.4% of the respondents had 17 to 21 years of working experiences. Also, Table 1 indicate that about 13.9% of the staff had less than 5 years of working experience and only 13.1% of them had above 22 years of working experience.

Analysis of The Relief Items Supplied

The analysis in Table 2 reveals that about 25.2% of the respondents said they supplied food to the IDP camp, 18.3% supplied mats, and 13.9% supplied cloths. Also, Table 2 points out that 13.0% supplied drugs, 10.4% supplied food to the IDP camp, and only 9.6% of them provided shelter to disaster victims. Furthermore, Table 2 records that 6.1% of the respondents supply beds, and only 3.5% of them supply mattresses to the disaster victims. The high response for food, mat, cloth and dress indicates how important and vital these items are. This is an indication that basic items are the most needed and required relief distributed to and needed by IDPs. This also shows the level of devastation the disasters have caused depriving them of even their basic needs.

Table 2: Relief items supplied

Criterion	Frequency	Percent
Foods	29	25.2
Drugs	15	13.0
Bed	7	6.1
Mattress	4	3.5
Mat	21	18.3
Shelter	11	9.6
Cloth	16	13.9
Blanket	12	10.4
Total	115	100.0

Source: Authors' survey

Analysis of the Challenges Experience

The analysis in Table 3 reveals the challenges experienced by the disaster management organisations during the distribution of relief items at the IDP camp in Gwada. The challenges identified in the Gwada IDP camp closely mirror patterns reported in humanitarian logistics research globally. From the analysis, it was observed that inadequate resources to manage disasters were ranked first as the foremost challenge with mean value of 3.63 and standard deviation of 0.68. Thereby obstructing the distribution of relief items. The prominence of inadequate resources as the foremost challenge aligns with findings by Negi (2022), and Daud et al. (2016) who observed that insufficient funding, limited supplies, and resource constraints are recurring obstacles in disaster response operations.

Similarly, poor distributional approaches ranked second with mean value of 3.40 and standard deviation of 0.62 and and inadequate communication ranked third with mean value of 3.28 and standard deviation of 0.73 respectively. These reflect the concern raised by Maghsoudi (2015), and Balcik et al. (2010) who emphasised that weak coordination mechanisms, lack of standardisation, and ineffective communication systems significantly hinder relief delivery worldwide.

Inadequate transport infrastructure ranked 4th with mean score of 3.23 and standard deviation of 0.68 which corresponds with the results of Akuri (2019), Gbadamosi & Oluwole (2019), Oke et al. (2020) and Ajiboye, et al (2024b), all of whom identified transportation constraints as a major impediment to the timely movement of relief items in both conflict-affected and post-disaster settings. Likewise, difficulty in managing security was ranked 5th with mean score of 3.17 and standard deviation of 0.74 as reported in the Gwada camp, resonates with findings from Imasuen (2015) and Oloruntoba (2005), who documented how insecurity and unstable environments create substantial barriers to humanitarian supply chain activities, especially in regions affected by insurgency or large-scale transnational disasters.

Also, lower-ranked challenge such as inadequate information sharing was ranked 6th in the study with mean score of 3.15 and standard deviation of 0.56. For instance, Gaspar (2020) and Shafiq & Soratana (2018) highlighted the impact of poor information flow on the effectiveness of humanitarian operations. The storage difficulty was ranked 7th with mean score of 2.96 and standard deviation of 0.55 and conform the result of Ohida et al. (2023) which found inefficiencies in storage, inventory management, and warehousing systems in Nigerian IDP camps. Media management issue was ranked 8th with mean score of 2.85 and standard deviation of 0.25 and also run parallels in other international studies.

Finally, the relatively lower ranking of shortage of logisticians (ranked 9th) and weak coordination in the present study (ranked 10th) contrasts with the emphasis placed on coordination challenges in the work of Kovacs & Spens (2009) and Maghsoudi (2015), suggesting that while these issues are globally significant, they may be less pronounced in the specific operational context of Gwada camp.

The findings from the Gwada IDP camp are broadly consistent with global evidence, demonstrating that humanitarian logistics continues to face systemic challenges related to resources, communication, infrastructure, and operational coordination across diverse settings.

Table 3: Analysis of the challenges experienced

Criterions	Mean (M)	Std	Rank
Difficulties in managing media	2.8504	0.2516	8th
Inadequate information sharing	3.1472	0.5638	6th
Inadequate coordination	2.5112	0.4938	10th
Inadequate transport infrastructures	3.2325	0.6785	4th
Difficulties in storing of relief items	2.9592	0.5517	7th
Difficulties in managing security	3.1720	0.7381	5th
Issues of poor distributional approach	3.4024	0.6186	2nd
Inadequate resources to manage disaster	3.6281	0.6829	1st
Lack of knowledgeable personnel/logistician	2.7476	0.6634	9th
Inadequate communication with the relief Organisation	3.2811	0.7299	3rd

Source: Authors' survey

5. Conclusion and Recommendations

The present study on the appraisal of relief material distribution at an internally displaced person camp in Gwada focuses on examining the relief items supplied by the disaster management organisations and the challenges experienced by the aid organizations. From the findings of the study, it was concluded that aid organisations supply mainly foods, drugs, mats, and shelter to the disaster victims at the Gwada IDP camp. It was also concluded that identifying inadequate resources to manage disasters, issues of poor distributional approach, inadequate communication with relief organisation, inadequate transport infrastructures, and difficulties in managing security were the key challenges experienced by the disaster management organisations.

Based on the analysis, it is recommended that disaster management organisations prioritise strengthening the weaker but still important operational areas ranked 6th to 10th, as these factors though less prominent can significantly undermine overall efficiency if neglected. In particular, improving information sharing systems is essential to ensure timely decision-making and enhance coordination among agencies. Attention should also be given to enhancing storage and warehousing capacities, as inadequate storage can compromise the quality and availability of relief materials. Furthermore, challenges such as managing media relations, addressing shortages of

trained logisticians, and improving inter-agency coordination require strategic investment in staff training, clearer communication protocols, and coordinated operating procedures. Strengthening these lower-ranked challenges will complement improvements in higher-ranked issues and lead to a more robust and responsive humanitarian logistics system at the Gwada IDP camp.

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