

**LOGISTICS MANAGEMENT SYSTEM AND PERFORMANCE OF  
HUMANITARIAN FIRMS IN WAJIR COUNTY, KENYA**

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DECLARATION AND APPROVAL**

**Declaration by the Student**

This research project is my original work and has not been presented for a degree in any other university or institution.

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**Approval by the Supervisor**

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**DEDICATION**

I dedicate this project is to my family May the Almighty Lord provide them countless benefits for the prayers and support.

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First and foremost, I would want to thank the Almighty God, who has given me great health and is a continual source of inspiration and strength. I would like to thank my supervisor, Dr. Isaac Abuga, for all of his help in seeing this research project through to a successful completion. I would also want to thank Mount Kenya University for helping me with my research.



## ABSTRACT

Successful logistics management systems are essential for timely and successful project delivery or disaster response in the dynamic world of humanitarian activities. The purpose of this study, which will take place in Wajir County, Kenya, is to comprehend how logistical systems affect the operations of humanitarian organizations operating in the county. The overall goal of the study will serve as its guide. The Performance of Humanitarian Firms in Wajir County, Kenya, and Logistics Management Systems and Has four distinct goals: to find out how much transport management strategies affect the effectiveness of humanitarian groups in Wajir County, Kenya. In order to ascertain the extent to which inventory management strategies influence the functioning of the humanitarian organizations operating in Wajir County, Kenya, to determine how much information exchange affects the effectiveness of humanitarian organizations operating in Kenya's Wajir County and to determine the degree to which humanitarian companies operating in Kenya's Wajir County are impacted by sufficient financing. The theories that support this study are Resource Based Theory, Relief Coordination Social Network Theory and Theory. With logistic coordinators, operations managers, program managers, field coordinators, and procurement managers serving as the primary respondents, the study focuses on eight humanitarian organizations in Wajir County, Kenya; as a result, 140 respondents are the target population. 104 respondents make up the sample size, which was determined using Yamane's Taro (1967). The target demographic as a whole is represented by this. Given the limited population, a census will be conducted. There will be a descriptive research design. Cronbach alpha will also be used to assess the study tool, and a score of 0.7 will be considered suitable. The quantitative data for this study will be collected using the Statistical Package for Social Sciences (SPSS) version 27, and the response rate will be calculated using descriptive statistics such as mean, median, standard deviation, and proportions. The gathered data will be analyzed using both qualitative and quantitative methods. We'll use content analysis to assess qualitative data. Quantitative data will be evaluated using descriptive and inferential statistics. The following will be used in descriptive statistics: means, standard deviation, percentages, and frequencies. Pearson correlation and multiple regression analysis are examples of inferential statistics. The link between the variables will be determined using the Pearson Correlation coefficient.

## TABLE OF CONTENT

DECLARATION AND APPROVAL .....	ii
DEDICATION .....	iii
ACKNOWLEDGMENT .....	iv
ABSTRACT .....	v
TABLE OF CONTENT .....	vi
LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
CHAPTER ONE .....	
1	INTRODUCTION
.....	1
1.1 Background of the study .....	1
1.1.1 Global Perspective on the Performance of Humanitarian Firms .....	1
1.1.2 Regional Perspective on the Performance of Humanitarian Firms .....	4
1.1.3 Local Perspective on the Performance of Humanitarian Firms .....	6
1.2 Statement of the Problem .....	8
1.3. Purpose of the Study .....	9
1.3.1 Research Objectives .....	9
1.3.2 Research Questions .....	9
1.4 Significance of the Study .....	10
1.4.1 Humanitarian Firms .....	10
1.4.2 Academicians and Researchers .....	10
1.4.3 Shareholders .....	10
1.5 Scope of the Study .....	11
1.6 Limitations of the Study .....	11
1.6.1 The Scope .....	11
1.6.2 The Volume of Data .....	12
1.6.3 Confidentiality .....	12
1.7 Delimitation of the Study .....	12
1.8 Operational Definition of Terms .....	13
CHAPTER TWO .....	14
LITERATURE REVIEW .....	14
2.0 Introduction .....	14

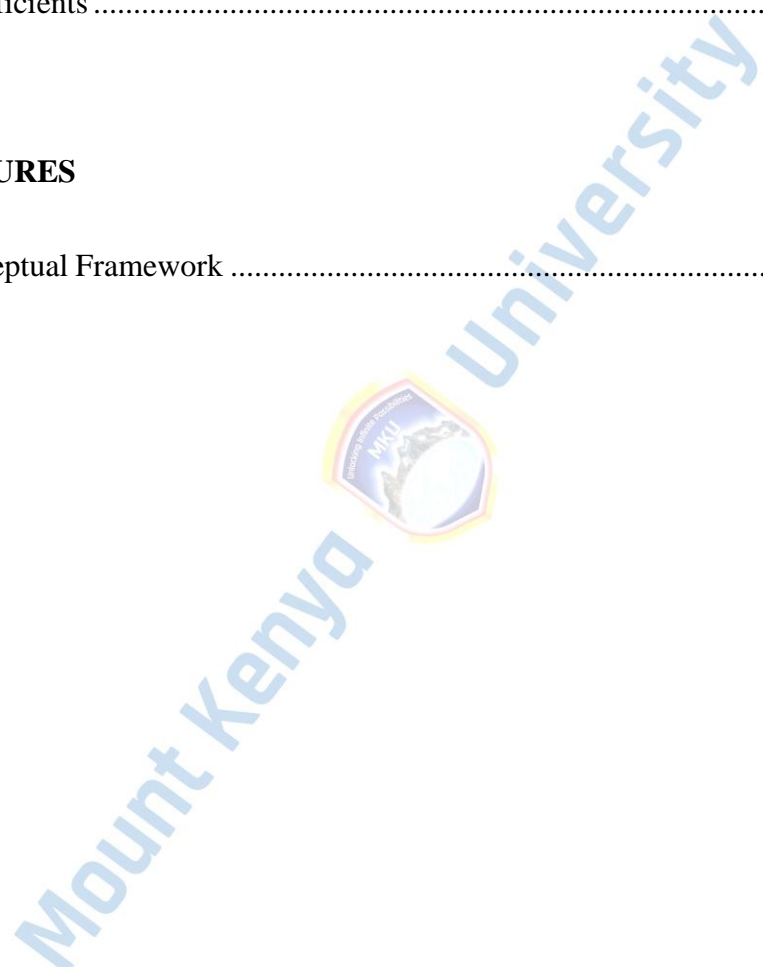
2.1 Empirical Literature Review .....	14
2.1.1 Transport Management Practices on the Performance of Humanitarian Firms ....	14
2.1.2 Inventory Management Practices on the Performance of Humanitarian Firms ....	20
2.1.3 Organizational Information sharing and the Performance of Humanitarian Firms.....	27
2.1.4 Adequate funding and the Performance of Humanitarian Firms .....	34
2.2 Theoretical Literature Review .....	41
2.2.1 Resource Based Theory .....	42
2.2.2 Relief Coordination Theory .....	43
2.2.3 Social Network Theory .....	43
2.3 Conceptual Framework .....	46
2.4 Recap of Literature Review .....	47
CHAPTER THREE .....	52
RESEARCH METHODOLOGY .....	52
3.1 Introduction .....	52
3.2 Research Design .....	52
3.3 Target Population .....	53
3.4 Sample and Sampling Technique .....	54
3.5 Sample Population .....	54
3.6 Construction of Research Instruments .....	55
3.7 Testing for Validity and Reliability .....	56
3.7.1 Pilot Test .....	56
3.7.2 Reliability of the Research Instruments .....	56
3.7.3 Validity of the Research Instruments .....	57
3.8 Data Collection Methods and Procedures .....	58
3.9 Data Analysis and Presentation .....	58
3.10 Proposed data analysis techniques and procedures .....	59
3.10 Ethical Consideration .....	60
CHAPTER FOUR .....	61
RESULTS AND DISCUSSIONS .....	61
4.0 Introduction .....	61
4.1 Response Rate .....	61
4.2 Socio-Demographic Characteristic's .....	62
4.5 Quantitative Data Analysis .....	63

4.5.1 Descriptive findings Transport management practices .....	63
4.5.2 Descriptive findings on Inventory management practices .....	65
4.5.3 Descriptive findings on Organizational Information Sharing .....	67
4.5.4: Descriptive findings on Performance of Humanitarian Firms .....	71
4.6: Inferential statistics .....	73
4.6.1 Correlation Analysis .....	73
4.6.2 Multiple regression model .....	75
4.7 Discussion of Findings .....	78
CHAPTER FIVE .....	81
SUMMARY, CONCLUSION AND RECOMMENDATIONS .....	81
5.0 Introduction .....	81
5.1 Summary of the results Findings .....	81
5.2 Conclusions .....	83
5.2.2 Establish the extent to which inventory management practices influence the performance of humanitarian firms in Wajir County, Kenya .....	83
5.2.3 Establish the extent to which organizational information sharing influence the performance of humanitarian firms in Wajir County, Kenya .....	83
5.2.4 To ascertain the extent to which adequate funding influence the performance of humanitarian firms in Wajir County, Kenya .....	84
REFERENCES .....	85
APPENDIXES .....	87
Appendix I: Questionnaire .....	87
Appendix II: ERC Certificate from MKU .....	90
Appendix III: Introduction Letter from MKU .....	92
Appendix IV: Research Permit from NACOSTI .....	93
Appendix V: Approval Letter from Wajir County .....	94
Appendix VI: Similarity Index .....	95
<b>LIST OF TABLES</b> .....	v
Table 1: Target Population Table.....	53
Table 2: Sampling Table .....	55
Table 3: Response Rate .....	61
Table 4: Socio-Demographic Characteristic' .....	61

Table 5: Descriptive findings Transport management practices .....	63
Table 6: Descriptive findings on Inventory management practices .....	65
Table 7: Descriptive findings on Organizational Information Sharing .....	67
Table 8: Descriptive findings on Adequate Funding .....	69
Table 9: Descriptive findings on Performance of Humanitarian Firms .....	71
Table 10: Correlation Matrix.....	73
Table 11: Coefficients .....	75

**LIST OF FIGURES**

Figure 1: Conceptual Framework .....	47
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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

In the dynamic landscape of humanitarian efforts, the effectiveness of logistics coordination plays a pivotal role in ensuring timely and efficient response to crises. The success of relief operations depends not only on the availability of resources but also on the seamless exchange of crucial information among stakeholders. Kenya, an East African nation known for its stunning landscapes and vibrant culture, also grapples with a harsh reality - a complex humanitarian landscape punctuated by frequent disasters, conflicts, and emergencies. Understanding this landscape and the crucial role of logistics coordination in delivering aid efficiently is vital for any informed discussion about supporting vulnerable communities Kmiecik (2022).

According Jensen & Hertz (2022) outline three crucial coordination roles for relief organizations: information management, emphasizing real-time data sharing; task allocation and specialization, encouraging organizations to leverage unique strengths; and joint decision-making and planning, promoting collaborative efforts for a unified response. This coordination "tango" envisions a scenario where a central hub provides real-time updates, organizations play specialized roles like actors in a play, and joint decision-making resembles a war room strategy for crafting comprehensive response plans.

#### 1.1.1 Global Perspective on the Performance of Humanitarian Firms

Logistics Management Systems (LMS) are pivotal in the operations of humanitarian firms, significantly impacting their efficiency, effectiveness, and overall performance.

Asia's terrain includes vast deserts, dense forests, high mountains, and numerous islands, making logistics operations complex and varied. Countries in Asia have varying levels

of infrastructure development. While countries like Japan and South Korea boast advanced logistics infrastructure, others, especially in South Asia and Southeast Asia, struggle with underdeveloped transport networks. Different countries have different customs regulations, import/export controls, and bureaucratic processes, complicating cross-border logistics. MS facilitate better coordination between international and local stakeholders, ensuring that resources are deployed where needed most efficiently. By using real-time data and predictive analytics, LMS help humanitarian organizations allocate resources more effectively, reducing waste and ensuring timely delivery. Asia is prone to natural disasters like earthquakes, tsunamis, and typhoons. Advanced LMS enable quick mobilization of resources, efficient routing, and real-time tracking of supplies, improving disaster response times and effectiveness (Digital Humanitarian Network, 2020).

The American continent faces frequent natural disasters, including hurricanes, earthquakes, and wildfires, requiring robust and responsive logistics systems. Significant disparities in infrastructure and accessibility between urban and rural areas can complicate logistics operations. Navigating the regulatory landscape in countries like the United States and Canada can be complex, with stringent customs and transportation regulations. LMS enhance disaster preparedness by enabling the pre-positioning of supplies in strategic locations and ensuring rapid deployment when disasters strike. Integration with government systems and compliance modules within LMS help humanitarian organizations navigate complex regulatory requirements efficiently. Big data analytics embedded in LMS provide insights that drive better decision-making, optimizing routes, inventory management, and resource allocation. (World Food Programme America Report, 2019)

The regulatory and logistical implications of Brexit have introduced new challenges for cross-border operations with the EU. High population density in urban areas like London requires precise and efficient logistics planning to avoid congestion and ensure timely deliveries. Humanitarian organizations often face budget constraints, necessitating cost-effective logistics solutions. LMS help humanitarian firms adapt to post-Brexit regulatory changes, ensuring compliance and minimizing delays. Advanced routing algorithms and real-time traffic data in LMS optimize delivery routes, reducing congestion and improving efficiency in densely populated areas (Brexit Impact on Humanitarian Logistics, 2020)

Europe's numerous countries, each with its own regulations, require effective coordination for cross-border logistics. The ongoing refugee and migrant crisis places additional demands on humanitarian logistics, requiring rapid and large-scale mobilization of resources. Increasing frequency and severity of climate-related disasters necessitate adaptable and resilient logistics systems. LMS facilitate seamless crossborder operations by automating customs documentation, tracking shipments across borders, and ensuring compliance with varying regulations. Advanced LMS enable quick mobilization of resources and real-time tracking, improving the response to refugee movements and natural disasters. MS promote sustainable practices by optimizing routes, reducing fuel consumption, and incorporating green logistics initiatives, aligning with Europe's environmental goals (Humanitarian Logistics Mediterranean, Report 2020).

Germany has stringent regulations and high standards for logistics operations, requiring compliance with various legal and environmental guidelines. Continuous innovation is necessary to maintain efficiency and competitiveness in logistics operations. The need to adapt logistics operations to mitigate and respond to climate change impacts is

increasingly important. Germany's focus on technological innovation is supported by advanced LMS that integrate the latest technologies, such as IoT, AI, and blockchain, enhancing efficiency and transparency in logistics operations. LMS support green logistics initiatives by optimizing supply chain processes, reducing carbon footprints, and promoting the use of sustainable transport options (Green Logistics Initiatives, 2021).

### **1.1.2 Regional Perspective on the Performance of Humanitarian Firms**

Logistics Management Systems (LMS) are essential tools that significantly impact the efficiency and effectiveness of humanitarian operations across different regions. South Africa's geography ranges from urban centers to rural and remote areas, posing challenges in logistics due to varying infrastructure and accessibility. The country faces ongoing health crises such as HIV/AIDS and periodic outbreaks like COVID-19, demanding efficient logistics for medical supplies and aid distribution. Socio-political issues occasionally disrupt logistics operations, requiring adaptive systems to navigate through challenges. LMS enable real-time tracking and monitoring of resources, optimizing their distribution across diverse geographic regions and ensuring timely delivery to areas in need. Advanced LMS facilitate rapid response capabilities during natural disasters such as floods or wildfires, enabling quick mobilization of resources and aid to affected areas. Integration with community networks and data-driven decisionmaking enhance the reach and effectiveness of humanitarian aid efforts, fostering better engagement and impact assessment (Mthunzi, N., & Nkomo, T. (2019)).

Nigeria has inadequate road networks, poor transportation infrastructure, and unreliable power supply pose significant challenges to logistics operations. Regions affected by insurgency and conflict require secure and robust logistics solutions to ensure safe

delivery of aid. Periodic outbreaks of diseases like cholera, meningitis, and Ebola necessitate swift deployment of medical supplies and personnel. LMS enhance security protocols and enable real-time tracking of aid shipments, mitigating risks associated with theft and ensuring safe delivery in volatile regions. Optimized Supply Chain: Automation and data analytics in LMS improve inventory management, reduce delays in delivering humanitarian aid, and optimize supply chain operations. Improved coordination among NGOs, government agencies, and international partners through LMS fosters efficient resource allocation and response coordination during crises (UN Reports, 2020).

Cameroon Civil unrest, particularly in regions affected by the Anglophone crisis, disrupts logistics and humanitarian aid distribution. Hosting refugees from neighboring countries like Central African Republic adds complexity to logistics operations. Limited development of transport and communication infrastructure affects the efficiency of humanitarian logistics. LMS aid in navigating security challenges and ensuring safe delivery of aid in conflict zones, enhancing operational efficiency and effectiveness. Efficient management of refugee camps and distribution of humanitarian aid are facilitated by LMS, improving living conditions and access to essential services. Training local personnel in the use of LMS enhances their skills and capacity to manage logistics independently, strengthening local response capabilities (UN Refugee Agency, 2018).

Israel Political complexities and security concerns, particularly in Gaza and West Bank, influence logistics operations and aid distribution. High-tech solutions are necessary to manage diverse types of aid and ensure compliance with international regulations. Quick response to conflicts, natural disasters, and humanitarian crises requires agile and responsive logistics systems. LMS integrating IoT, AI, and real-time monitoring systems improve decision-making capabilities and enhance the efficiency of aid distribution.

Efficient management of cross-border logistics ensures timely delivery of humanitarian aid to affected populations, despite geopolitical challenges. Robust LMS facilitate adherence to international humanitarian laws and standards, ensuring transparency and accountability in aid delivery operations (Israel Ministry of Foreign Affairs, 2020).

Egypt dense urban areas contrast with remote desert regions, posing logistical challenges in aid distribution and supply chain management. Efficient logistics are crucial for managing supplies related to water and food security, particularly in remote and arid regions. Ensuring access to healthcare services and medical supplies, especially in rural and underserved areas, is a priority. Enhanced logistics capabilities improve readiness to respond to emergencies and natural disasters, enabling swift deployment of resources and aid. Collaboration with international organizations, local NGOs, and community groups is facilitated by integrated LMS, fostering coordinated and effective humanitarian responses (World Health Organization 2018).

### **1.1.3 Local Perspective on the Performance of Humanitarian Firms**

Humanitarian logistics management systems are a pivotal aspect of responding effectively to crises and disasters. It involves the seamless orchestration of resources, information, and activities among various humanitarian organizations to ensure the timely and efficient delivery of aid to affected populations (Tosi, L., & Marty, J. (2023). Effective humanitarian logistics systems encompass tasks such as information sharing, resource allocation, and joint decision-making.

In times of crisis, a well-coordinated logistics system can streamline efforts, prevent duplication of services, and maximize the impact of humanitarian assistance (Jalali *et.al.*, 2022). Furthermore, Challenges often arise due to the unpredictable nature of disasters, varying capacities of involved organizations, and logistical hurdles in the affected areas.

Nevertheless, continuous improvement in coordination mechanisms remains crucial for enhancing the overall effectiveness.

According to Ugwu (2021), the key to effective disaster response lies in humanitarian logistics management, acting as the cornerstone for timely aid delivery. This intricate process involves diverse actors like NGOs, government agencies, UN bodies, and local communities synchronizing their resources and expertise. The essence of systems includes real-time information sharing, strategic task allocation, and collaborative decision-making. While challenges such as unclear leadership and communication barriers persist, the author suggests solutions like coordination platforms and technology. Ultimately, successful coordination integrates diverse efforts into a unified response, ensuring life-saving aid reaches vulnerable populations precisely when needed.

According to Kiswili, *et.al.* (2021) Humanitarian organizations in Kenya play a crucial role in addressing the complex and often challenging landscape of disasters, conflicts, and emergencies. Kenya, an East African nation marked by diverse landscapes and vibrant cultures, faces a reality where the need for humanitarian aid is frequent and diverse.

These organizations, including both local and international entities, are instrumental in providing timely and essential assistance to vulnerable communities. Their work involves a spectrum of activities, from immediate disaster response to long-term development initiatives. Challenges such as limited resources, logistical hurdles, and the dynamic nature of emergencies necessitate a high degree of coordination and collaboration among these organizations Mwangi, *et.al.* (2020).

During their assistance efforts, these organizations encounter diverse challenges, including insecurity in conflict zones, insufficient funding from donors, poor strategic

planning, conflicts of interest, governance issues in the northeastern region, operational hindrances due to harsh climatic conditions, and impediments like corruption and religious-cultural conflicts that obstruct the delivery of humanitarian aid (Asgary, R., & Lawrence, K. (2020).

## **1.2 Statement of the Problem**

In the humanitarian landscape of the Northern Eastern Region of Kenya, the efficient coordination of logistics among diverse organizations emerges as a substantial problem obstructing the successful delivery of aid. The region, characterized by recurrent crises, conflicts, and harsh environmental conditions, necessitates a well-organized and adaptable humanitarian network (Red Cross Annual Report 2022). Nonetheless, numerous hurdles hinder this coordination, encompassing deficient infrastructure, constrained access to affected areas, and potential conflicts of interest among humanitarian entities. Furthermore, challenges stemming from inadequate governance structures, cultural and religious conflicts, and instances of corruption compound the difficulties confronted by humanitarian organizations operating in this region (Schetter, *et al.*, 2022). Recognizing the intricate dynamics and determinants influencing logistics coordination in the Northern Eastern Region is imperative for formulating precise interventions and strategies that amplify the efficiency and impact of humanitarian endeavors.

Moreover, a significant challenge in the Northern Eastern Region of Kenya lies in the critical aspects of logistics coordination. This encompasses issues such as the limited availability and accessibility of transportation infrastructure, the efficacy of communication systems, and the extent of collaboration among diverse stakeholders. These factors collectively contribute to shaping the complex logistics landscape in the region, posing obstacles to the seamless coordination of humanitarian efforts (Wajir

County Report, 2021).

### **1.3. Purpose of the Study**

The study seeks to establish the effect Logistics Management Systems on the performance Humanitarian Firms in Wajir County, Kenya.

#### **1.3.1 Research Objectives**

i. To determine the extent to which transport management practices influence the performance of humanitarian firms in Wajir County, Kenya ii. To establish the extent to which inventory management practices influence the performance of humanitarian firms in Wajir County, Kenya iii. To establish the extent to which organizational information sharing influence the performance of humanitarian firms in Wajir County, Kenya iv. To ascertain the extent to which adequate funding influence the performance of humanitarian firms in Wajir County, Kenya

#### **1.3.2 Research Questions**

- i. How does transport management practices influence the performance of humanitarian firms in Wajir County, Kenya? ii. How does inventory management practices influence the performance of humanitarian firms in Wajir County, Kenya? iii. How do organizational Information sharing influence the performance of humanitarian firms in Wajir County, Kenya? iv. How does adequate funding influence the performance of humanitarian firms in Wajir County, Kenya?

### **1.4 Significance of the Study**

#### **1.4.1 Humanitarian Firms**

Procurement managers at humanitarian organizations would benefit from the study by being able to better coordinate the movement of information and items along supply chains in order to handle supply interruptions. Through a focus on important concerns,

this research will demonstrate the advantages of taking proactive measures to build resilience inside businesses or along their supply chains, enabling them to weather both major disruptions and everyday outages. The study will specifically show how proactive management must be in building resilience. Any kind of company must have mitigation procedures in place for its logistics management systems to be effective.

#### **1.4.2 Academicians and Researchers**

This study advances the field by analyzing organizational difficulties from a scientific standpoint, so contributing to the literature on supply chain risk management techniques. It also makes a significant contribution to the current studies on supply chain disruption management. The literature study indicates that although several academics have already highlighted the significance of this field, it is still understudied, particularly in poor nations. As a result, this study will serve as a resource for regional academics interested in pursuing research in supply chain risk management.

#### **1.4.3 Shareholders**

The study's conclusions will be helpful to shareholders in assessing management approaches and the degree to which humanitarian organizations may establish efficient logistical systems in order to respond more effectively.

#### **1.5 Scope of the Study**

The study will concentrate on the management of logistics in humanitarian organizations. Humanitarian companies will be able to withstand setbacks and adapt continuously to the shifting requirements and demands of the impacted citizens, shareholders, and other stakeholders thanks to logistics systems management. Transport management techniques, inventory management techniques, information exchange techniques, and distribution management techniques are a few examples of the logistics management

systems. The study solely looked at humanitarian businesses, which are limited to Wajir County locations and Kenyan registrations.

The target population of 140 respondents will be used comprising managing directors, ICT Managers, procurement managers and logistics managers as the key respondents from 13 registered humanitarian firms in Wajir County, Kenya. The study will take Seven months (January 2024 to July 2024 as attached work plan.

## **1.6 Limitations of the Study**

The study can have a number of issues.

### **1.6.1 The Scope**

Because of the length of the probe, the researcher may run into issues when completing this investigation. This is due to the area's high population density and the researcher's restricted access to some humanitarian organizations located in Wanjir County's insecure and restricted areas. This suggests that not every person in every chosen organization encountering the same hazards in their humanitarian supply chain will experience the same circumstances. Stricter definition of the limits will encourage participants in the research to give better answers.

### **1.6.2 The Volume of Data**

Another problem for the data analysis process is the sheer amount of data that has to be managed.

Due to the volume of data to be processed, the study's completion may take longer than expected. Processing the data collected from the great majority of responders can take considerably longer than anticipated.

### **1.6.3 Confidentiality**

Given that it would be too sensitive a subject to discuss in public, some responders would be hesitant to divulge the information. The researcher will reassure the participants that the study would only look at matters pertaining to academic responsibility in order to calm their concerns. Consequently, the investigator shall uphold the highest level of secrecy with respect to any information collected.

### **1.7 Delimitation of the Study**

The researcher intends to obtain the necessary support from managers involved in research by using the research permission (NACOSTI) and an introduction letter from the institution outlining the goal of the investigation. It could take more effort to collect primary data directly from respondents so that data analysis can be completed within the allotted academic time.

### **1.8 Operational Definition of Terms**

**Adequate Funding** - Adequate supply of funds is highly important for proper functioning of any firms' operations.

**Inventory Management Practices** - Refers to the process of storing, ordering, and selling of goods and services.

**Organization Information Sharing** - the process of exchanging relevant information between team members, departments government agencies, or even organizations.

**Supply Chain Velocity** - refers to the rate at which tasks are finished within the supply chain and the rate at which orders go through the chain from processing to the point of delivery to the client.

**Supply Chain Reactivity** - Refers to buying a product or service spontaneously when the need arises.

**Supply Chain Visibility** – This is the capacity to follow individual parts, subassemblies, and completed goods as they move from a supplier to a manufacturer and then a customer.

**Transport Management Practices** - This is the process of planning, executing, and optimizing the movement of goods and services from one point to another.



## **CHAPTER TWO LITERATURE REVIEW**

### **2.0 Introduction**

This study is grounded in the Resource Based Theory, Relief Coordination Theory, and Social Network Theory.

### **2.1 Empirical Literature Review**

#### **2.1.1 Transport Management Practices on the Performance of Humanitarian Firms**

A study by Muoki and Moronge (2021) assert that transport infrastructure is pivotal for streamlined logistics. Highlighting the importance of well-maintained roads, ports, and airports, they emphasize how accessibility ensures smooth goods movement, minimizing

delays. The interconnected nature of transportation infrastructure enhances overall coordination, facilitating efficient goods flow. This underscores the crucial role of transport infrastructure in achieving effective logistics coordination and a streamlined supply chain.

Transport infrastructure and logistics coordination are critically shaped by environmental considerations. Essential for reducing the carbon footprint and promoting eco-friendly practices, sustainable transportation modes play a pivotal role. Prioritizing environmental sustainability, Muhalia *et al.*, (2021) highlight the optimization of transportation methods and adoption of greener technologies. This aligns with global efforts addressing climate change and advancing responsible supply chain management.

In another study Wasike and Juma (2020) emphasize the critical role of transportation costs in logistics coordination. Well-managed costs directly impact profitability and business competitiveness. Efficient cost management involves optimizing routes, transportation modes, and fuel efficiency, ensuring affordability and accessibility of logistics services. Strategic evaluation and optimization of transportation costs are essential for maintaining a competitive edge and enhancing overall logistics efficiency in a given region.

Transport management plays a vital role in the logistics systems of humanitarian firms, particularly those operating in remote and infrastructure-challenged regions like Wajir County. Effective transport management practices can directly influence the performance of these firms by ensuring the efficient and timely delivery of humanitarian aid to beneficiaries. The relationship between transport management and organizational performance is well-documented, with studies highlighting how it impacts operational efficiency, cost management, and service delivery (Abidi *et al.*, 2020). For humanitarian

firms, transportation logistics involve not only the movement of goods but also the optimization of routes, vehicle maintenance, and resource allocation in response to dynamic field conditions.

Transport management involves the coordination and control of all activities related to the movement of goods and services. This includes route planning, vehicle scheduling, fuel management, fleet maintenance, and the tracking of shipments (Rodrigue & Notteboom, 2020). For humanitarian firms, particularly those operating in areas affected by conflict, natural disasters, or economic challenges, the effectiveness of these transport practices determines the timely delivery of essential supplies, including food, medicine, and shelter materials (Nguyen et al., 2021). Poor transport practices, such as inefficient route planning or inadequate fleet management, can lead to delays, increased costs, and missed delivery windows, all of which negatively affect the firm's overall performance (Gunasekaran & Ngai, 2020).

One critical aspect of transport management is route planning. Efficient route planning involves determining the most effective routes to minimize time, cost, and fuel usage. This is particularly important in regions like Wajir County, where poor road networks, unpredictable weather, and security concerns often disrupt transport operations. Research conducted by Nzuki and Chege (2019) emphasizes that route optimization can significantly reduce transportation time and operational costs, especially in humanitarian contexts where rapid response is critical. By leveraging technology such as Geographic Information Systems (GIS) and real-time tracking, humanitarian firms can improve their route planning and ensure that aid reaches the most vulnerable populations promptly.

Fleet management is another integral component of transport management that affects the performance of humanitarian firms. Fleet management encompasses the acquisition, maintenance, and disposal of vehicles, as well as ensuring compliance with safety

regulations and managing the drivers (Viegas et al., 2021). Humanitarian organizations often operate with limited budgets, so proper fleet management can reduce operational costs by minimizing vehicle downtime and repair costs. A study by Baraka and Makori (2020) found that organizations with robust fleet management systems experienced fewer breakdowns, reduced maintenance costs, and higher delivery success rates compared to those with poor fleet management. This directly enhances the overall performance of the humanitarian firm by improving delivery timelines and reducing the cost per delivery.

Fuel management is another key aspect of transport management. Given that transportation costs can account for up to 60% of total logistics costs in humanitarian organizations (Ali et al., 2018), managing fuel consumption is crucial to maintaining operational efficiency. In regions like Wajir, where fuel may be scarce or expensive, poor fuel management can lead to unsustainable transportation costs and limit the reach of humanitarian efforts. Efficient fuel management practices include regular vehicle maintenance, optimal driving routes, and monitoring fuel usage (Wang et al., 2021). By minimizing fuel consumption, humanitarian firms can lower operational costs, freeing up resources for other critical functions, thereby improving overall performance.

The efficiency of transport management directly influences the operational performance of humanitarian firms. Timely delivery of supplies is crucial, particularly in emergency situations where delays can result in loss of lives. Research by Lattimer et al. (2020) shows that the effectiveness of humanitarian aid delivery depends on the seamless coordination of transport resources. Firms that invest in integrated transport management systems that allow real-time monitoring of vehicles, better route planning, and efficient fleet utilization see improved service delivery rates and reduced operational disruptions. For instance, in disaster-prone areas like Wajir, where access to critical supplies may be

limited by poor infrastructure or insecurity, efficient transport management is crucial for ensuring aid reaches the intended beneficiaries on time (Behl & Dutta, 2020).

Humanitarian organizations operating in remote areas like Wajir face unique challenges in managing their transport operations. These challenges include poor infrastructure, difficult terrain, and political instability, all of which can severely disrupt transport activities. A study by Kasina and Njoroge (2021) highlights the logistical difficulties faced by humanitarian firms in northern Kenya, where road conditions, vehicle maintenance issues, and security concerns can lead to significant delays and increased costs. Furthermore, unpredictable weather conditions, such as flooding during the rainy season, can render certain routes impassable, complicating transport management even further. Humanitarian firms must therefore develop flexible and resilient transport strategies to cope with these challenges and maintain their operational performance.

Technological innovations, such as GPS tracking, automated route planning software, and real-time fleet management systems, are transforming how humanitarian firms manage their transport operations. The adoption of these technologies has been shown to enhance the efficiency and effectiveness of transport management. For example, humanitarian firms using GPS-enabled tracking systems can monitor vehicle locations in real time, which improves the coordination of deliveries and reduces the chances of vehicles getting lost or delayed (Rahman et al., 2022). Similarly, automated route optimization software can factor in real-time data on road conditions, weather, and security risks to plan the safest and most efficient routes for deliveries, thereby improving the performance of humanitarian firms in challenging environments like Wajir County (Thakur & Jain, 2021).

Effective transport management practices also lead to significant cost savings, which is critical for humanitarian organizations that often operate on tight budgets. Research by Awino and Maina (2020) indicates that transportation costs make up a large proportion of operational expenses for humanitarian firms, and reducing these costs through better transport management can have a substantial impact on overall performance. For example, implementing fuel-efficient driving practices, optimizing vehicle routes, and improving vehicle maintenance schedules can all help reduce fuel consumption and repair costs, leading to better financial performance and more resources being available for core humanitarian activities (Zohri et al., 2023).

Finally, the relationship between transport management and service delivery in humanitarian organizations is well-established. Timely and efficient transport ensures that aid reaches beneficiaries when they need it most, improving the impact of humanitarian interventions. A study by Mutuku et al. (2018) found that humanitarian firms that adopted structured transport management practices were able to reduce delivery times by up to 30%, improving their overall service delivery. This is particularly important in emergency contexts where delays in aid delivery can have life-threatening consequences.

The most effective and practical way to achieve transportation goals is through the use of transport practices, which include reduced costs, prompt transmission of information pertaining to transportation to consumers and other businesses, enhanced productivity, and the best possible use of corporate resources. Moving the cargo from point A to point B is the primary goal of transportation. Transportation, a crucial strategic link in the supply chain, needs to be efficiently handled to guarantee competitive prices, prompt delivery of goods to clients, and adherence to additional shipping regulations (Wasike, E. R., & Juma, D. 2020).

People, goods, and commodities are transported by logistics between producers, distributors, terminals, warehouses, and consumers. Transportation is the only industry that employs logistics to offer services both inbound and outbound. The ability of the transportation system to handle the three main issues of mode selection, route selection, and fleet size is essential to the business's ability to remain competitive. An ineffective transportation system could force the company to incur significant costs to deliver the product to the consumer, which would result in a loss for the company. (Wasike, E. R., & Juma, D. 2020). Transport is a crucial economic activity that serves as a connector both inside and between organizations. Internally, transportation connects many operations, enabling resourced items to be transformed in accordance with the expectations and preferences of customers.

### **2.1.2 Inventory Management Practices on the Performance of Humanitarian Firms**

According to Wasike, E. R., & Juma, D. (2020), inventory management is a framework that companies use to monitor their inventory targets. It requires registering and keeping an eye on stock rates, projecting future demand, and organizing the what, when, and how. Conversely, Deveshwar and Dhawal (2013) recommended that companies use inventory management to organize, store, and replenish inventory in order to lower the cost of ensuring that items are delivered on time and accurately. Upstream and downstream inventories as well as the supply chain system are visible thanks to inventory management techniques. The inventory serves the following purposes: it determines the present and future needs for all types of inventory, lowers expenses, and pays for the inventory. It also serves to deliver the right levels of service to both internal and external clients Wasike, E. R., & Juma, D. (2020). Based on operating costs and working capital requirements, all of the company's stock policies must be profitable during the driving

term. The effective and productive efficiency of the inventory is determined by the degree to which the firm has the correct amount of inventory in the right location at the right time, according to Wasike, E. R., & Juma, D. (2020). The inventory's measuring indications include lead time, service time (security inventory), stock turnover rate, inventory outcomes over a certain period of time, and inventory cover.

Inventory management is critical for ensuring the efficient operation of humanitarian firms, particularly in resource-constrained and remote areas like Wajir County, Kenya. Effective inventory management practices enable organizations to maintain optimal stock levels, reduce wastage, and ensure the timely delivery of goods and services. For humanitarian firms, where the stakes are often high and the environment unpredictable, maintaining appropriate inventory levels can significantly influence organizational performance (Paul et al., 2021). This section reviews the literature on inventory management practices and their impact on the performance of humanitarian organizations.

Inventory management refers to the processes and techniques used to oversee the storage, ordering, and use of materials and products (Wild, 2020). In the context of humanitarian organizations, inventory management involves the control of relief supplies such as food, medicine, shelter materials, and other essentials. Effective inventory management is crucial to ensuring that these supplies are available when needed and that there is no overstocking or understocking, which can lead to inefficiencies or delays in aid delivery (Balcik & Beamon, 2019).

For humanitarian firms operating in Wajir, where the demand for aid fluctuates due to unpredictable environmental conditions, efficient inventory management can help organizations meet these needs without incurring unnecessary costs. According to Zainal

et al. (2021), poor inventory management practices often lead to stockouts, which can hinder service delivery and tarnish the organization's reputation. By maintaining accurate and up-to-date inventory records, humanitarian firms can streamline their operations and improve their overall performance.

One of the primary benefits of effective inventory management is cost reduction. By closely monitoring inventory levels and aligning them with actual demand, humanitarian firms can avoid the costs associated with overstocking or understocking (Akhtar et al., 2019). Overstocking can lead to increased storage costs, spoilage, and wastage, particularly for perishable items such as food and medicine. On the other hand, understocking can cause delays in aid delivery, which can have life-threatening consequences in emergency situations.

Inventory management systems, including inventory tracking software and just-in-time (JIT) approaches, have been shown to reduce costs by improving stock accuracy and minimizing waste (Grigore et al., 2020). For humanitarian firms in Wajir, where logistical challenges such as poor infrastructure and limited storage facilities compound the difficulties of managing inventory, implementing these systems can help improve efficiency and reduce costs, ultimately improving organizational performance.

The use of technology in inventory management has transformed the way humanitarian organizations manage their stock. Advanced inventory management systems (IMS) allow firms to track inventory levels in real time, predict demand patterns, and automate replenishment orders (Qureshi & Akram, 2022). These systems reduce the risk of human error and improve the accuracy of inventory records, ensuring that humanitarian firms have the necessary supplies to respond to emergencies in a timely manner.

A study by Aitken et al. (2020) demonstrated that humanitarian organizations that adopted inventory management technologies experienced improved stock visibility, reduced lead times, and better coordination between supply chain partners. This, in turn, enhanced their capacity to respond to crises. In regions like Wajir, where access to certain supplies may be limited due to infrastructure and security challenges, real-time inventory tracking systems can provide valuable data to support decision-making and optimize resource allocation.

Inventory control involves maintaining the right balance between having enough stock on hand to meet demand and minimizing the costs associated with holding excess inventory (Wild, 2020). For humanitarian organizations, inventory control is essential to ensure that resources are available when needed while avoiding waste. Effective inventory control practices can enhance the performance of humanitarian firms by ensuring that they can respond to emergencies efficiently and without unnecessary delays (Paul et al., 2021).

In their study on humanitarian supply chains, Balcik and Beamon (2019) found that organizations with robust inventory control systems were better able to meet the needs of beneficiaries during crises. By establishing reorder points, monitoring stock levels, and using demand forecasting techniques, humanitarian firms can minimize the risk of stockouts and ensure that supplies are available when needed. This is particularly important in regions like Wajir, where unpredictable demand and supply chain disruptions make inventory control a complex challenge.

The accuracy of inventory records is critical to the performance of humanitarian firms. Inaccurate records can lead to either overstocking or stockouts, both of which negatively impact an organization's ability to deliver timely aid. According to Azuma and Zain

(2021), maintaining accurate inventory records helps humanitarian firms to avoid unnecessary costs, reduce lead times, and improve service delivery. By using automated systems to track inventory, organizations can ensure that their records are up to date and reflective of actual stock levels.

In humanitarian contexts, where delays in aid delivery can have severe consequences, accurate inventory management is essential. In a study conducted by Aitken et al. (2020), organizations that used inventory management software were able to reduce discrepancies in their stock records, leading to improved organizational performance. For firms operating in Wajir, where logistical challenges such as poor road networks and limited access to markets complicate supply chain operations, accurate inventory management is crucial to maintaining efficiency and reducing operational costs.

The Just-in-Time (JIT) inventory management approach, which involves keeping minimal stock on hand and ordering supplies only as they are needed, has been widely adopted in the commercial sector and is now being used by some humanitarian organizations. JIT can reduce the costs associated with storing excess inventory and minimize the risk of stock obsolescence (Akhtar et al., 2019). However, the success of JIT in humanitarian contexts depends on the reliability of supply chains, which can be challenging in regions like Wajir, where infrastructure and security issues may disrupt deliveries.

According to Ahmad and Waheed (2021), humanitarian firms that have adopted JIT have reported improvements in cost management and resource allocation. However, the authors caution that the effectiveness of JIT in humanitarian settings depends on the ability to accurately forecast demand and maintain reliable supply chains. In regions with

unstable supply chains, a hybrid approach that combines JIT with safety stock may be more appropriate to ensure that critical supplies are available when needed.

Humanitarian organizations face several challenges in managing their inventory, particularly in regions like Wajir where infrastructure, security, and environmental factors complicate logistics operations. A study by Kasina and Njoroge (2021) highlighted the difficulties of managing inventory in northern Kenya, where road conditions, limited storage facilities, and unpredictable demand make inventory management a complex task. In such contexts, poor inventory management can lead to delays in aid delivery, increased costs, and reduced organizational performance.

One of the key challenges is maintaining accurate inventory records in the face of supply chain disruptions. Humanitarian organizations often operate in volatile environments, where the demand for aid can fluctuate rapidly. This makes it difficult to maintain the optimal balance between stock levels and demand (Grigore et al., 2020). Additionally, limited storage facilities and the perishability of certain supplies, such as food and medicine, make inventory management even more challenging in regions like Wajir (Balcik & Beamon, 2019).

Effective inventory management practices can help humanitarian organizations mitigate risks associated with supply chain disruptions. By maintaining accurate inventory records and using demand forecasting techniques, humanitarian firms can ensure that they have sufficient stock on hand to meet unexpected spikes in demand (Rahman et al., 2022). This is particularly important in regions like Wajir, where environmental and political factors can disrupt supply chains and hinder aid delivery.

A study by Paul et al. (2021) found that organizations with robust inventory management systems were better able to anticipate demand fluctuations and respond to emergencies.

By maintaining safety stock and using inventory management software to track supplies in real-time, these organizations were able to mitigate the risks associated with supply chain disruptions and improve their overall performance.

In order to ascertain how inventory management affects the competitive advantages of industrial firms, Naliaka and Namusonge (2015) conducted study in Kenya. Further evidence from the same study suggests that the company might eventually compete on the basis of quality and delivery.

Competitive value comprises the qualities that enable a firm to stand out from the competition as well as a critical management choice Wasike, E. R., & Juma, D. (2020).

An essential component of any institution's performance, especially aid agencies, is effective inventory management flow along the value chain. Maintaining equilibrium between inventory supply and demand is a challenge in inventory management. Ideally, a corporation should have adequate stock in order to match the expectations of those who have not suffered losses from product inventory losses. However, the business does not want to keep an excessive amount of inventory on hand because of the cost of carrying stocks. Decisions on inventory carry a great deal of risk and have a big impact on how an organization manages its supply chain. Practices for inventory management are acknowledged as a crucial area of concern that has to be given top consideration (Wasike, E. R., & Juma, D. 2020).

To improve performance, manufacturing companies must make investments in better inventory stock-taking procedures. Focus should be placed on improving the stock chronicle rules and strategies, developing new increase registers for stocks, conducting spot checks, conducting consistent audits, entering records found in automated frameworks, taking stock comparisons, documenting all products in the store by

implementing scanner tag numbers and barcoding all new stocks, verifying issues before providing stocks, and storing supply reports in a secure location. (Collins, M. M., & Patrick, N. 2021).

Collins, M. M., & Patrick, N. (2021) showed how having merchandise on hand has a bigger positive relationship impact that, in a short amount of time, results in customer happiness and enhanced performance. Remember that completed items, incomplete goods, and necessary raw materials need safety stock. A vital role for inventories is played by the whole manufacturing chain. It is utterly unbelievable and financially unfeasible for every item's supply to arrive at the exact location and time needed. As a result, it is always necessary to store a certain amount of inventory. When businesses have inventory, a significant amount of investments can be avoided. A decrease in population might result in cheaper operating costs, particularly for stock storage costs kept in the stockroom.

### **2.1.3 Organizational Information sharing and the Performance of Humanitarian Firms**

In a study by Maskey et al. (2020) they emphasized that information sharing in supply chains, stressing critical factors influencing the process. They underscore the pivotal role of communication channels in determining the speed and accuracy of information flow among stakeholders. Knowledge shared, ranging from operational insights to strategic planning, enhances collective understanding. A strong feedback mechanism promotes continuous improvement and swift adaptation of logistics strategies. In humanitarian contexts, these elements foster collaboration, ultimately enhancing efficiency and contributing to more effective crisis responses.

Comes et al. (2020) underscore the crucial role of organizational information sharing in effective logistics coordination among humanitarian entities. Communication channels

facilitate the exchange of vital data and strategies, enhancing collective intelligence. Knowledge sharing spans logistical and strategic aspects, fostering a comprehensive understanding. A well-structured feedback mechanism, rooted in real-world experiences, promotes transparency and collaboration. This approach empowers humanitarian organizations to efficiently address logistics challenges, improving aid and service delivery during crises through continuous refinement of strategies.

Muga *et al.*, (2022) highlight the pivotal role of robust information sharing for effective logistics coordination in humanitarian efforts. Communication channels facilitate the exchange of critical data and insights, covering operational details to strategic planning. A feedback mechanism ensures continuous learning and adaptation to changing circumstances, enhancing the overall efficiency and resilience of humanitarian logistics. Information sharing stands as the cornerstone, optimizing resource utilization and ensuring prompt aid delivery in the humanitarian domain.

With the advancement of ICT, information flow gives a unique advantage to link one activity to another and make real-time business data available within the organization as well as with external suppliers, channels, and consumers. The organization's logistical operations must be reinforced via planning, monitoring, cooperation, and tracking in order to ensure an effective and successful flow of information. Hardware and technology transfer are necessary for the logistics information technology system to function well, according to Wasike, E. R., & Juma, D. (2020), and to enhance the contact line, the information system has to be set up to best facilitate a logistical system. Technology facilitates the integration of processes and offers information evidence to enhance supply chain performance. Complex communication, information, and decision support systems are used in the monitoring and administration of relief efforts. The preparation, handling, and reaction to crises, emergencies, and catastrophes are made possible by these

programs. Wasike, E. R., & Juma, D. (2020), stated that those involved in the humanitarian supply chain need to figure out how to engage the public and funders on how to increase the supply chain's efficacy.

Wasike, E. R., & Juma, D. (2020), argued that by implementing information management, technology, measurement, and positioning activities, the humanitarian supply chain has a chance to enhance its contribution to and for disaster relief. While the distribution of supplies for disaster relief plays a significant part in the humanitarian aid supply chain, it should also be strategically planned to convey information in a timely manner and analyze data to find out how operations may be improved.

In humanitarian organizations, information sharing plays a critical role in the effective management and coordination of logistics and operations. Organizational information sharing refers to the processes and practices through which data, knowledge, and insights are communicated across different departments, partners, and stakeholders.

Humanitarian firms, especially those operating in complex environments like Wajir County, rely heavily on timely and accurate information sharing to enhance decisionmaking and operational efficiency (Ali & Alwan, 2020). This review examines how organizational information sharing influences the performance of humanitarian firms, with a focus on recent literature from 2018 to 2024.

Effective information sharing is crucial to the success of humanitarian logistics. It allows organizations to make informed decisions regarding resource allocation, transport management, and inventory control, among other aspects of their operations. According to Khan et al. (2021), the lack of adequate information flow between various actors in humanitarian logistics can lead to inefficiencies, such as delays in aid delivery and poor coordination of relief efforts. In contrast, organizations that prioritize information sharing

are better able to coordinate their activities, reduce redundancies, and improve their overall performance.

Humanitarian firms operate in dynamic and uncertain environments, where information needs to be rapidly disseminated to ensure the timely delivery of aid. As Ali and Alwan (2020) point out, real-time information sharing between humanitarian agencies, government bodies, and other stakeholders is essential for optimizing supply chain processes and enhancing the firm's responsiveness to emergencies. In the context of Wajir County, where logistical challenges such as poor infrastructure and security concerns can complicate operations, the ability to share information effectively can significantly improve performance outcomes.

The performance of humanitarian organizations is often contingent on their ability to coordinate effectively with multiple stakeholders, including local governments, nongovernmental organizations (NGOs), and international donors. Effective information sharing is the backbone of this coordination. A study by Kraiselburd and Yadav (2020) highlighted that organizations that facilitated open and transparent communication with their partners experienced higher levels of trust and cooperation, which improved their ability to execute complex relief operations.

In humanitarian contexts, such as Wajir County, the timely dissemination of information regarding supply chain disruptions, security threats, or changing beneficiary needs is crucial for minimizing operational delays. According to Tan et al. (2022), organizations that invest in technology platforms to enhance information sharing with external partners see a measurable improvement in their logistical efficiency, as it enables better alignment between stakeholders and more coordinated decision-making processes. This, in turn,

enhances organizational performance by minimizing miscommunication and ensuring that resources are allocated where they are needed most.

Technology plays a pivotal role in enhancing information sharing within humanitarian organizations. The adoption of digital platforms, such as cloud-based data management systems, Enterprise Resource Planning (ERP) software, and mobile communication tools, has transformed how organizations share information internally and with external stakeholders (Xu & Yeh, 2019). These technologies allow for real-time data sharing, which is critical in humanitarian contexts where operational decisions often need to be made quickly in response to changing conditions.

In regions like Wajir County, where logistical challenges such as poor road networks and limited communication infrastructure can hinder operations, technology can bridge the gap by providing reliable and efficient means of sharing information. For instance, cloudbased platforms enable humanitarian firms to store and access vital information in real time, regardless of location, which improves the organization's ability to manage its supply chain effectively (Ali & Alwan, 2020). By utilizing these technologies, humanitarian firms can enhance their overall performance by improving the speed and accuracy of decision-making processes.

The ability to share information effectively within an organization directly influences decision-making processes, which in turn affects organizational performance. Research conducted by Yadav and Roberts (2020) found that organizations with robust information-sharing practices were better equipped to make data-driven decisions, which improved their operational efficiency. In humanitarian contexts, where decisions must often be made under time pressure, having access to accurate and up-to-date information is critical for ensuring that resources are deployed where they are most needed.

In Wajir County, where the humanitarian landscape is characterized by limited infrastructure and fluctuating demand for aid, the ability to make informed decisions quickly is essential for the success of humanitarian operations. Humanitarian firms that foster a culture of information sharing are better able to anticipate challenges and adjust their operations accordingly (Ahmed et al., 2019). This reduces the likelihood of delays or misallocation of resources, both of which can negatively impact the organization's performance.

Transparency is a key factor in humanitarian operations, as it builds trust among stakeholders and ensures accountability in the use of resources. Effective information sharing promotes transparency by allowing stakeholders to monitor the flow of goods and resources throughout the supply chain (Nguyen et al., 2021). In the context of humanitarian organizations, transparency is essential for maintaining donor confidence and ensuring that aid reaches the intended beneficiaries.

A study by Tatham and Spens (2020) found that organizations that prioritized transparency through open information-sharing practices saw improvements in donor relations and public trust. In Wajir County, where humanitarian organizations rely heavily on external funding, maintaining transparency through effective information sharing is essential for securing ongoing support from donors. Furthermore, transparency can enhance the organization's performance by reducing the risk of corruption or mismanagement of resources, which are common challenges in humanitarian contexts.

Despite the benefits of information sharing, many humanitarian organizations face barriers that hinder their ability to share information effectively. These barriers include technological limitations, organizational silos, and a lack of trust between stakeholders (Bui et al., 2020). In regions like Wajir County, where communication infrastructure may

be underdeveloped, these challenges can be exacerbated, making it difficult for humanitarian firms to coordinate their activities and share critical information.

Technological barriers, such as a lack of reliable internet access or inadequate information systems, can impede the flow of information within and between organizations. In addition, organizational silos—where different departments or teams operate in isolation from one another—can prevent the effective sharing of information, leading to inefficiencies and miscommunication (Xu & Yeh, 2019). Overcoming these barriers requires not only investment in technology but also fostering a culture of collaboration and open communication within the organization.

To overcome the barriers to effective information sharing, humanitarian organizations must adopt strategies that promote collaboration and the use of technology. One such strategy is the integration of information systems that enable real-time communication and data sharing across the organization. As Tatham and Spens (2020) argue, integrating supply chain management systems with information-sharing platforms allows organizations to improve their operational efficiency by enhancing communication between departments and ensuring that critical information is available when needed.

Another strategy is to foster a culture of collaboration within the organization. By encouraging open communication and breaking down organizational silos, humanitarian firms can improve the flow of information and enhance their decision-making processes (Yadav & Roberts, 2020). This is particularly important in regions like Wajir, where the ability to respond quickly to changing conditions is essential for successful humanitarian operations.

The relationship between information sharing and organizational performance is well-documented in the literature. Studies have shown that organizations that prioritize

information sharing tend to experience better coordination, more efficient resource allocation, and improved service delivery (Bui et al., 2020). In the context of humanitarian organizations, where operational efficiency is critical to achieving their mission, the ability to share information effectively can have a significant impact on performance outcomes.

A study by Khan et al. (2021) found that humanitarian organizations that invested in information-sharing technologies saw improvements in their logistical efficiency and overall performance. Similarly, Yadav and Roberts (2020) found that organizations with strong information-sharing practices were better able to manage their supply chains and respond to emergencies in a timely manner. For humanitarian firms operating in Wajir County, where logistical challenges are common, effective information sharing can enhance the organization's ability to deliver aid efficiently and improve its overall performance.

Organizational information sharing plays a critical role in the performance of humanitarian firms. By facilitating better coordination, improving decision-making, and enhancing transparency, effective information sharing can significantly improve the efficiency and effectiveness of humanitarian operations. In regions like Wajir County, where logistical challenges such as poor infrastructure and communication barriers complicate operations, the ability to share information in real time is essential for ensuring timely aid delivery and optimizing resource allocation. Humanitarian organizations that invest in technology and foster a culture of collaboration are better positioned to overcome these challenges and enhance their overall performance.

#### **2.1.4 Adequate funding and the Performance of Humanitarian Firms**

According to Paciarotti *et al.* (2021), adequate funding is crucial in humanitarian logistics, as it ensures the prompt delivery of life-saving aid to affected populations during crises. This financial support empowers humanitarian organizations to respond swiftly to emergencies by acquiring, transporting, and disseminating essential supplies such as food, water, shelter, and medical assistance. Particularly during the early stages of a crisis, timely funding becomes paramount, enabling organizations to assess immediate needs, mobilize resources efficiently, and offer urgent assistance to those most in need.

Government grants are pivotal for humanitarian organizations' disaster response capabilities, funding essential logistics operations like infrastructure, transportation, and technology (Dzigbede *et al.*, 2020). These grants enable the establishment of strategic logistical hubs in disaster-prone areas, crucial for swift and efficient relief distribution (Modgil *et al.*, 2020). Such funding is indispensable for developing and maintaining logistical frameworks, ensuring effective disaster response and alleviating human suffering.

Chakravarty (2021) highlights that donor, comprising individuals, corporations, foundations, and international organizations, significantly contribute funds to bolster disaster response efforts. These funds are channeled towards enhancing logistics systems, encompassing supply chain management, transportation, and coordination mechanisms. Hezam (2022) underscores that donor funding empowers humanitarian firms to acquire vital resources such as vehicles, communication equipment, and technology platforms for real-time tracking and monitoring of relief operations. Additionally, as noted by Frennesson *et al.* (2022), donors may offer flexible funding, enabling organizations to

tailor their logistics systems to the specific requirements of each disaster scenario, be it a natural calamity, conflict situation, or pandemic outbreak.

Adequate funding is a critical component of the operational success of humanitarian organizations. Humanitarian firms, especially those operating in challenging environments like Wajir County, rely on sufficient and timely financial resources to carry out their activities effectively. Without adequate funding, these organizations face difficulties in meeting their operational costs, procuring supplies, maintaining logistics, and delivering essential services to beneficiaries (Ramalingam et al., 2020). This review examines the relationship between adequate funding and organizational performance, focusing on recent studies that emphasize how access to financial resources impacts the operational capabilities of humanitarian firms.

Funding is essential for ensuring that humanitarian organizations can fulfill their mandates, particularly in regions where the need for aid is high, such as Wajir County. According to a study by Patel et al. (2019), organizations that receive adequate funding are better equipped to manage their logistics, procure the necessary supplies, and hire skilled personnel, all of which contribute to improved organizational performance.

Without sufficient financial resources, humanitarian firms are forced to scale back their operations, leading to delays in aid delivery, reduced quality of services, and negative outcomes for beneficiaries.

In humanitarian settings, where the demands for aid are unpredictable and often urgent, having access to flexible funding is particularly important. Flexible funding allows organizations to allocate resources where they are most needed without being constrained by earmarked or restricted funds (Cohen et al., 2021). This enhances the organization's ability to respond to emergencies and adjust their operations in response to changing

conditions. In Wajir, where humanitarian organizations often face logistical challenges, adequate funding ensures that these firms can adapt to the region's unique demands and continue providing essential services.

Adequate funding directly affects the operational efficiency of humanitarian organizations. Inadequate or delayed funding can lead to operational inefficiencies, such as delays in procurement, insufficient staffing, and poor maintenance of logistics systems (Rodriguez et al., 2020). When organizations have access to sufficient financial resources, they can streamline their supply chains, maintain vehicles and infrastructure, and ensure that staff are adequately trained and compensated. These factors contribute to improved service delivery and organizational performance.

In their study on funding in humanitarian logistics, Kumi and Nortey (2021) found that organizations that had access to reliable and adequate funding were able to maintain higher levels of operational efficiency. These organizations experienced fewer delays in aid delivery, had better access to supplies, and were able to retain skilled personnel, all of which contributed to improved performance. In contrast, organizations that struggled with funding shortfalls experienced frequent delays and disruptions, which negatively impacted their ability to deliver aid effectively.

Funding shortfalls are a common challenge faced by humanitarian organizations, particularly in regions like Wajir where the demand for aid is high, but financial resources are often limited. A study by Van Wassenhove et al. (2020) highlighted the negative impact of funding gaps on the performance of humanitarian firms, showing that organizations with insufficient funding were unable to procure necessary supplies or maintain logistical operations. This led to significant delays in aid delivery and reduced the overall effectiveness of their interventions.

In humanitarian contexts, where lives may depend on the timely delivery of aid, funding shortfalls can have severe consequences. According to Patel et al. (2019), organizations that do not receive adequate funding are forced to prioritize certain areas over others, often leaving vulnerable populations without the necessary support. This not only affects the performance of the organization but also undermines its reputation and ability to attract future funding.

Donor funding is a key source of financial resources for humanitarian organizations. Many humanitarian firms rely on donations from governments, international organizations, and private individuals to finance their operations. However, donor funding is often subject to fluctuations, with organizations facing uncertainties regarding the amount and timing of funds they will receive (Ramalingam et al., 2020). This unpredictability can complicate budgeting and planning processes, making it difficult for organizations to maintain consistent levels of service delivery.

Donor funding can also be restrictive, with many donations being earmarked for specific projects or activities. While this ensures that funds are used for their intended purpose, it limits the organization's flexibility to allocate resources where they are most needed (Cohen et al., 2021). In Wajir County, where the needs of the population may change rapidly due to environmental or security factors, the ability to access flexible funding is critical for maintaining organizational performance. A study by Rodriguez et al. (2020) found that organizations that received unrestricted donor funding were better able to adapt to changing conditions and sustain their operations over the long term.

Adequate funding enables humanitarian organizations to allocate resources more effectively. Resource allocation involves determining how financial resources will be distributed across various operational areas, such as procurement, transportation,

staffing, and infrastructure (Morris et al., 2021). Organizations with sufficient funding can allocate resources strategically, ensuring that all aspects of their operations are adequately supported. This improves the organization's overall efficiency and enhances its ability to achieve its mission.

In a study on resource allocation in humanitarian firms, Van Wassenhove et al. (2020) found that organizations that had access to adequate funding were able to maintain better control over their resources, leading to improved operational outcomes. These organizations were able to invest in long-term infrastructure, such as warehouses and transport systems, which enhanced their logistical capabilities and improved the speed and accuracy of aid delivery. In contrast, organizations that faced funding constraints were forced to make trade-offs, often prioritizing short-term needs over long-term investments, which reduced their overall performance.

Effective financial planning and budgeting are essential for ensuring that humanitarian organizations can maximize the use of their available funds. Financial planning involves forecasting future expenses and revenues, while budgeting ensures that resources are allocated according to the organization's strategic priorities (Cohen et al., 2021). For humanitarian organizations operating in regions like Wajir, where the demand for aid can fluctuate rapidly, effective financial planning is crucial for ensuring that the organization can maintain consistent levels of service delivery, even in the face of funding challenges.

A study by Morris et al. (2021) highlighted the importance of financial planning in humanitarian operations, showing that organizations that engaged in regular budgeting and forecasting were better able to manage their resources and avoid financial shortfalls. These organizations experienced fewer disruptions in their operations and were able to maintain higher levels of performance. In contrast, organizations that did not engage in

effective financial planning were more likely to face funding crises, which negatively impacted their ability to deliver aid.

Despite the importance of adequate funding, many humanitarian organizations face significant challenges in securing and managing financial resources. These challenges include competition for donor funding, fluctuations in the availability of financial resources, and the complexities of managing large-scale budgets (Ramalingam et al., 2020). In regions like Wajir, where the demand for humanitarian assistance is high but financial resources are often limited, these challenges can be particularly acute.

One of the key challenges facing humanitarian organizations is the reliance on short-term funding, which can lead to instability in operations. Short-term funding agreements often require organizations to focus on immediate needs, leaving little room for long-term planning and investment in infrastructure (Patel et al., 2019). This can hinder the organization's ability to build sustainable operations and maintain consistent levels of performance.

To address the challenges associated with funding, humanitarian organizations must adopt strategies for securing and managing financial resources more effectively. One such strategy is diversifying funding sources, which can reduce the organization's reliance on a single donor or funding stream and provide greater financial stability (Kumi & Nortey, 2021). By securing funding from a range of donors, including governments, international organizations, and private individuals, humanitarian firms can reduce the risk of financial shortfalls and improve their overall performance.

Another strategy is engaging in long-term financial planning and developing contingency plans for managing funding fluctuations. According to Cohen et al. (2021), organizations that engage in long-term financial planning are better able to weather periods of financial

uncertainty and maintain consistent levels of service delivery. This can enhance the organization's ability to respond to emergencies and improve its overall performance.

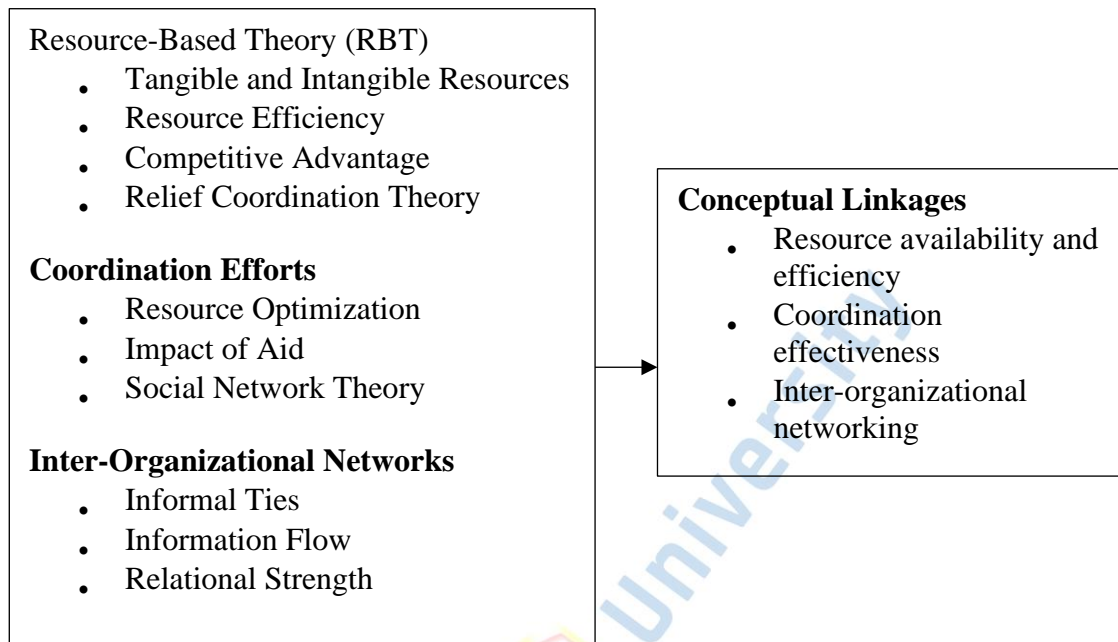
Adequate funding is critical to the success of humanitarian organizations, particularly those operating in resource-constrained regions like Wajir County, Kenya. Access to sufficient and flexible financial resources allows organizations to maintain operational efficiency, deliver aid in a timely manner, and adapt to changing conditions. However, many humanitarian firms face challenges in securing adequate funding, which can negatively impact their performance. To address these challenges, organizations must adopt strategies such as diversifying funding sources, engaging in long-term financial planning, and seeking unrestricted donor funding. By doing so, they can improve their financial stability and enhance their overall performance.

Frennesson *et al.* (2022) outline those operational costs in logistics cover daily expenses like salaries, fuel, maintenance, and facility rental. Effective logistics management enhances cost efficiency by reducing transportation, inventory holding, and warehousing expenses. Moreover, it ensures customer satisfaction through timely product delivery and managing order processing. Logistics management also fosters operational flexibility, enabling quick responses to market changes. Additionally, it plays a vital role in risk management by identifying bottlenecks and implementing strategies to mitigate risks such as supplier delays and natural disasters.

## **2.2 Theoretical Literature Review**

This study integrates three main theories—Resource-Based Theory (RBT), Relief Coordination Theory, and Social Network Theory—to explain the logistics management system and its influence on the performance of humanitarian organizations in Wajir

County. Each theory is linked to specific constructs within the logistics management system and their anticipated impact on organizational performance.



**Figure 1: Theoretical Framework**

### 2.2.1 Resource Based Theory

Resource-based theory, as stated by Eisenhardt and Martin (2000), maintains that the company may be viewed as a collection of resources that are heterogeneously dispersed within it—in this example, Humanitarian Organizations—with persistent distinctions among them. According to this idea, in order for a business to maintain relevance and improve performance, it has to ensure that the appropriate resources are available in an efficient bundle and flow from its operational environment (Rungtusanatham *et al.*,

2003). According to this approach, resources can be either intangible (knowledge, skills, and other organizational assets) or tangible (plants, equipment). Alternatively, shared ownership or access to special or costly assets such as transportation, technologies, and resource constraints might lead to a competitive advantage.

Research-based theory, or RBT, is crucial to many firms due to its expertise in logistics and the possibility of expense if a corporation decides to engage in it (Zacharia, Sanders, and Nix, 2011). This is because humanitarian organizations may gain a long-term, sustainable competitive advantage via expertise. Its realization is dependent on how feasible it is for a company to use the resources it already has in order to achieve efficiency and effectiveness, even when those resources are not its own. Because of this, humanitarian organizations have turned to outsourcing in order to obtain access to other companies' priceless resources in the cutthroat market. Humanitarian Organizations looking for and offering these services become increasingly value-dependent and reciprocally adaptable to one another as the demand for these resources grows. According to the hypothesis, coordination gives businesses access to complementary resources and makes resource bundles considerably more competitive, giving them a competitive edge (Zacharia, Sanders & Nix, 2011).

### **2.2.2 Relief Coordination Theory**

The structured coordination involves efforts from various organizations, agencies, and stakeholders, aiming to deliver aid and support to affected populations. Wankmüller (2020) highlights the significance of this cooperation to prevent effort duplication, guarantee effective resource use, and improve the overall impact of humanitarian aid.

Paciarotti (2021) further expands on this by noting that relief coordination encompasses logistics coordination, which specifically concentrates on the management and movement of goods, services, and information within the humanitarian supply chain.

Logistics coordination is critical for a timely and appropriate response to crises, playing a key role in ensuring that essential items reach the intended recipients promptly. In essence, the seamless flow of relief items is contingent upon both the broader relief coordination efforts and the specialized focus on logistics coordination within the humanitarian context.

### **2.2.3 Social Network Theory**

In social network theory, also referred to as network theory or network analysis, nodes and links are autonomous entities whereas node size, density, and link strength are dependent constructs (Scott, 2001). Mark Granovetter (the strength of weak links), Stanley Milgram (the six degrees of separation and the small worlds issue), and Barnes (the first person to explore social networks) are among the proponents of this idea. According to Scott (2000), this social network theory highlights the many ways that people engage and communicate on various social networking sites. Haythornthwaite (1996) asserts that social network theory explains social interactions in terms of nodes and links. Nodes are individual players inside the networks, while ties are the relationships between the actors. The nodes may be connected by a variety of relationships. One of the several elements that might influence social network theory is the fact that these links can differ in strength and significance. When analyzing a network, dots of various sizes and colors are frequently connected by lines of various thicknesses and lengths.

In order to find hidden correlations and patterns in the network, a social network analyst would experiment with different parameter adjustments and different techniques of examining the relationships. According to Layton (2006), nodes and connections are the fundamental components of every social network, whether it be online or off. Nodes, which might be people, small groups, or companies, are the components of the network

that are active, and ties are the connections between these nodes. This might be anything as casual as an email exchange or something more personal like a marriage. At its most basic level, a social network is a map of all relevant relationships between the nodes that are being studied. The network may also be used to determine each player's social capital. These concepts are often shown in a social network diagram as lines and points, with nodes denoting the relationships. The strength of social network theory lies in its distinction from conventional sociological research, which holds that an actor's qualities be they kind or hostile, intelligent or stupid, among other things are what really count. The importance that social network theory places on the connections between nodes rather than the characteristics of the nodes themselves sets it apart from other sociological disciplines. Additionally, social networks have been utilized to study the interactions between Humanitarian Organizations, describing the numerous unofficial ties that bind executives to one another as well as the affiliations and connections that exist between specific employees at various Humanitarian Organizations (Layton, 2006). According to Layton (2006), these networks give humanitarian organizations a means of information gathering, competition deterrence, and even coordination for the establishment of operational policies.



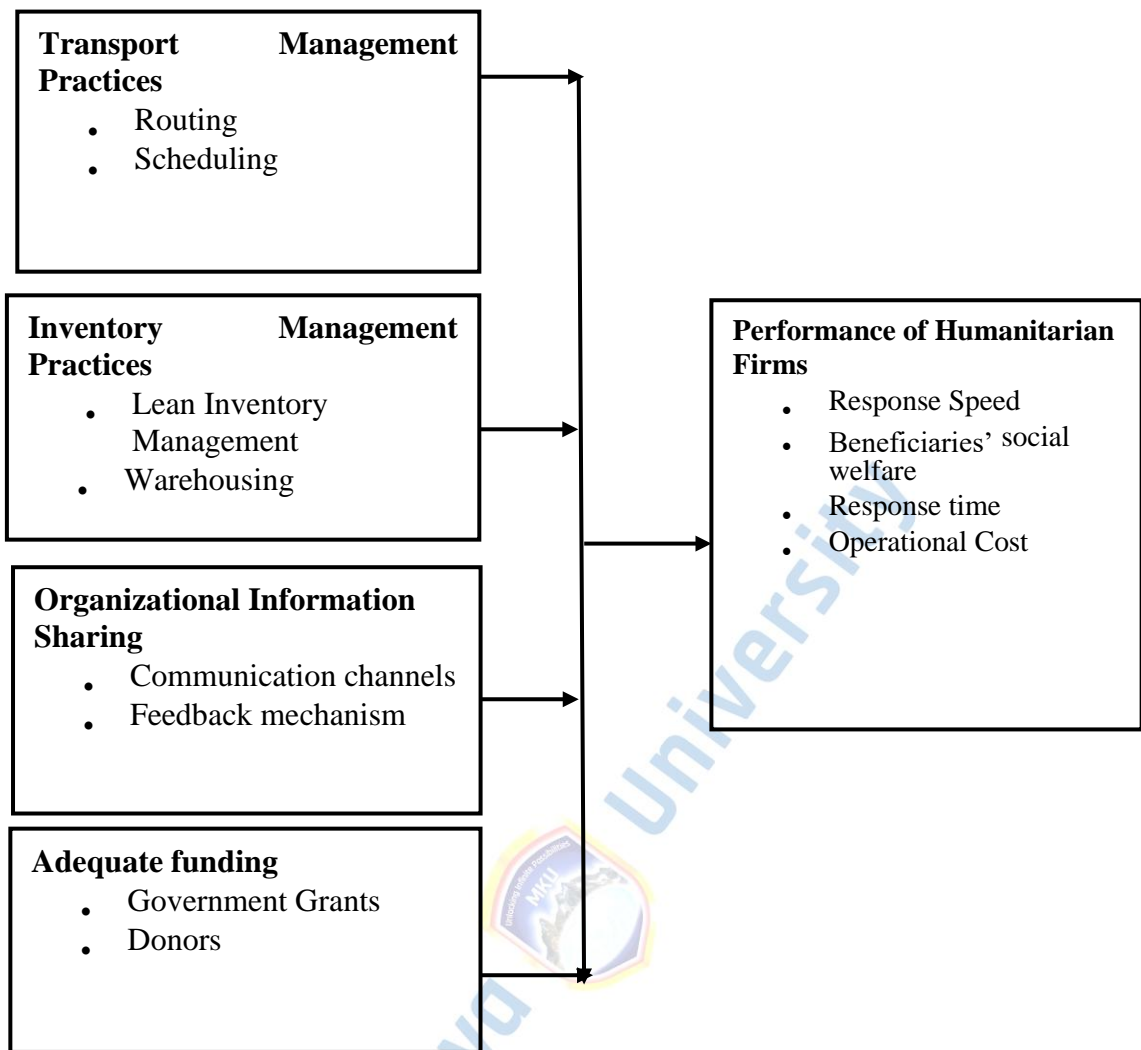
### **2.3 Conceptual Framework**

According to Ordho (2008), a conceptual framework is a presenting model in which a researcher conceptualizes or depicts the links between the study's variables and illustrates those relationships diagrammatically or visually. According to Orodho, a conceptual framework in this sense is a theoretical model that denotes the ideas or variables being studied and illustrates how they relate to one another. A variable, according to Kothari (2009), is an idea that may have a variety of quantitative values, such as height, weight, or wealth.

The study's four primary independent variables were distribution management practices, inventory management practices, transportation management practices, and organizational information sharing/flow, which measures how well the participating firms communicated with one another and with each other in terms of volume and effectiveness. Transportation infrastructure examines the quality and accessibility of transport facilities. Organizational competency evaluates the proficiency and effectiveness of internal processes and skills. The dependent variable, effective coordination, serves as the measure for the study's overarching goal — understanding how these factors collectively influence the efficiency and success of coordination within the context under examination.

**Independent Variable**

**Dependent Variable**



**Figure 2: Conceptual Framework**

**Source:** Researcher (2024)

## 2.4 Recap of Literature Review

Collins, M. M., & Patrick, N. (2021) The primary goal of the study was to determine how inventory management techniques affected the operation of milking companies in Kenya's County Kiambu. having being restricted to Kiambu County's milking companies. The Just-in-Time Model, perpetual stocktaking, lean inventory management and inventory management models as inventory management practices. The Transactional Cost Analysis and Systems theories served as the study's pillars. 78 milking enterprises were the target population of the descriptive survey design. Additionally, the study found that the Just in Time Model, perpetual stocktaking, lean inventory

management, and inventory management models could only account for 84.7% of the performance of dairy firms. Nevertheless, the purpose of this study is to investigate organizational information exchange, sufficient financing, inventory management techniques, and transport management methods. This study will employ a cross-sectional survey approach that combines quantitative and qualitative methodologies, with 104 respondents serving as the target population. The census sample approach will also be used in this investigation.

Nyile, E. K., Shale, I. N., & Osoro, A. (2022) conducted study on Supply Chain Responsiveness and Performance of Humanitarian Aid Organizations in Kenya. Three aspects of the supply chain were examined in the study: visibility, responsiveness, and velocity. The study's target audience comprised 330 humanitarian relief groups operating within Kenya, and it employed a survey research design. While 24.1% of respondents indicated a low degree of agreement, the majority of respondents (75.8%) agreed that humanitarian supply chains examine, take into account, and swiftly solve requirements by giving necessities to minimize the suffering of people who are vulnerable. 79.3% of respondents thought their supply chain had a visibility feature that let them see how things moved along the chain, including who is moving, where they are going, and how they are doing, as well as when the events are scheduled and when they actually happen (20.7% agreed somewhat). In alternative scenarios, 79.3% of respondents agreed that the flexibility of humanitarian supply networks adds to their dependability, while 20.7% partially agreed that the flexibility of supply chains adds to their dependability. 96.5% of respondents agreed, and 3.4% responded in a moderate way, suggesting that financial, resource, and informational constraints may make it challenging for humanitarian assistance organizations to act quickly in emergency circumstances.

While 13.8% of respondents somewhat agreed, the majority of respondents (86.2%) agreed that a guarantee of the humanitarian supply chains to deliver swiftly is a true selling factor provided that order arrives quickly, precisely, and complete; otherwise, it is considered waste. Nonetheless, the goal of this study is to examine organizational information exchange, sufficient financing, inventory management, and transportation management methods. With 104 respondents as the target group, this study will use a cross-sectional survey methodology that combines quantitative and qualitative methods. The census sample approach will also be used in this investigation.

Balcik, B., Bozkir, C. D. C., & Kundakcioglu, O. E. (2016) conducted study on Humanitarian Supply Chain Inventory Management. Millions of individuals are impacted by disasters each year, according to the study. According to the EM-DAT database, there were 6,873 natural disasters globally between 1994 and 2013, affecting 218 million people year on average and leaving 1.35 million people dead (CRED, 2015). In addition, the world has witnessed the deadliest natural disasters of the century in the last ten years: the 2010 Haiti earthquake, the 2008 Cyclone Nargis, and the 2004 Asian tsunami all took more than 500,000 lives. The frequency and intensity of climate-related disasters, such as heat waves, storms, droughts, and floods, are expected to increase in the coming years. Despite all the challenges, people affected by disasters rely on humanitarian organizations to provide life-saving relief (such as food, shelter, and water). Depending on the location, duration, kind, and intensity of disasters, victims' needs and the scope and magnitude of disaster responses might vary greatly. Humanitarian supply chains, like typical supply chains, need to be planned to give the final customer "the right supplies with the right quality at the right time in the right place, and effective logistics management is essential to achieve this objective."

The costliest aspect of disaster relief operations is humanitarian logistics, which includes distribution, inventory management, transportation, and warehousing. The study focused on Objectives, Ownership, Demand, Infrastructure, Financial resources and sourcing in humanitarian organizations. The study used the secondary data. The researchers provide an in-depth review and analysis of analytical approaches developed for humanitarian inventory management. However, this research seeks to look at transport management practices, inventory management practices, adequate funding and Organizational information sharing. This study will adopt cross-sectional survey design using both quantitative and qualitative approaches with a target population of 104 respondents. The study will also use census sampling technique.

## **2.5 Research Gap**

While existing literature underscores the importance of transport infrastructure, route planning, and fleet and fuel management in corporate logistics, there is limited research focusing on how these practices specifically affect humanitarian organizations, particularly in remote, infrastructure-challenged regions like Wajir County. The unique constraints faced by humanitarian firms in these areas, such as poor road networks and unpredictable environmental conditions, remain under-explored.

Despite the growing emphasis on environmentally sustainable practices, research lacks a detailed analysis of sustainable transport practices tailored to humanitarian logistics. There is a need for further investigation into how humanitarian organizations can adopt greener technologies and optimize transport methods to align with both environmental sustainability and operational efficiency, particularly in regions where resource availability is limited.

Studies on transport management often highlight the importance of cost management but lack specific guidance for humanitarian firms operating under tight budget constraints. Detailed frameworks for cost-effective transport strategies—such as route optimization and fuel management—that could improve performance in resource-scarce settings like Wajir County are needed to address these unique financial constraints.

Although literature discusses the potential of GPS, GIS, and real-time tracking for improving logistics coordination, there is limited exploration of the practical application and challenges of these technologies in humanitarian operations in remote areas. Research should address how technology can be effectively integrated into transport management to improve logistical responsiveness and aid delivery in infrastructure-deficient regions.

While some studies address logistical difficulties in humanitarian operations, there is a lack of research on adaptive transport management strategies that organizations in regions like Wajir County could use to overcome logistical barriers such as political instability, difficult terrain, and extreme weather conditions. Further studies could investigate how transport strategies can be modified to increase resilience and adaptability in response to these challenges.

### **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter offers a thorough description of the research methodology that will be used. Parts of the information are provided, including the population, sampling frame, sample and sampling technique, instruments, data collection procedure, pilot test, data processing, and measurement variables.

### **3.2 Research Design**

A research design is a detailed plan that describes how a study will be conducted based on the information required to effectively investigate the research questions. It also acts as a framework that guides the gathering and examination of data. It is an explanation of the structure, plan, and tactics of the inquiry with the goal of gathering data or responding to a range of inquiries (Mugenda & Mugenda, 2003). The research design is the structure used to gather, measure, and analyze data (Cooper & Schindler, 2011; Kothari, 2009). Cooper and Schindler (2011) claim that by outlining crucial methodological choices, study design assists the researcher in allocating limited resources.

A cross-sectional survey design utilizing both quantitative and qualitative methods will be used for this investigation. This is because the technique provides valuable information about the terrain's shape, dimensions, and features at specific locations. In a quantitative approach, measurement is prioritized, and data is numerically evaluated to provide accurate descriptions. The scientific method, also referred to as the qualitative approach, has historically been regarded as the conventional style of inquiry in both research and assessment, according to Mugenda & Mugenda (2003). Berg (2001) claims that qualitative research aids in the methodical analysis of data via the use of common terms or phrases in order to draw insightful conclusions and offer suggestions about the social contexts and the people who exhibit such traits. On the other hand, a cross-sectional survey design will facilitate the study's simultaneous data collection. As a result, this design is suitable for the research, in which the analysis of the correlations between variables will be thoroughly tested.

### 3.3 Target Population

The study target population will be 140 employees from 8 registered humanitarian firms in Wajir County, Kenya. Participants will be randomly selected to partake in the study, and the sampling frame is acquired from the Relief Board Kenya registry of 2020. The sampling units comprises logistic coordinators, Operations Managers, Program Managers, Field Coordinators, and Procurement Managers.

**Table 1: Target Population Table**

Humanitarian Firm	Logistic Coordinators	Operations Managers	Program Managers	Field Coordinators	Procurement Managers	Total
United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)	4	4	4	4	5	21
The World Food Programme (WFP)	4	3	4	4	4	19
The United Nations Children's Fund (UNICEF)	3	3	2	3	2	13
Save the Children	3	3	2	3	3	14
ActionAid Kenya	2	3	2	3	2	12
CARE International Kenya	3	3	3	3	4	16
Kenya Red Cross Society (KRCS)	5	5	7	6	9	32
AMREF Health Africa	2	2	2	4	3	13
<b>Total</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>30</b>	<b>32</b>	<b>140</b>

**Source:** Researcher (2024)

### 3.4 Sample and Sampling Technique

A sample is a portion or subset of the intended respondents. Sampling is used to get insight into certain features or elements of the total population by utilizing the characteristics of the sample.

The research will employ the census sampling method. Cooper and Schindler (2006) state that a non-zero probability of selection is required for each sample. The sample size will be determined to be 0.101.

### 3.5 Sample Population

104 Humanitarian Logistics and Management Personnel and humanitarian groups will be chosen at random from the whole community. The Yamane's Taro (1967) will be used to determine the sample size for this investigation.  $n = N/(1+N(e)^2)$ .

where;

$n$  = The study's sample size

$N$  = The total target population size

$E$  = The level of precision required or the acceptable margin of error 1

= A constant.

Subsequently, the study's sample size will be calculated by substituting the variables of target population (140) and acceptable margin of error of 5% or 0.05 in the Yamane

Taro's formula:  $n = N/(1+N(e)^2)$ , as follows:

$$n = 140 / (1 + 140 * (0.05^2))$$

$$= 140 / (1 + 140 * 0.0025)$$

$$n = 140 / (1 + 0.35) n$$

$$= 140 / 1.35$$

Sample size  $\approx$  104

Considering the size of the target population, this study will employ stratified random sampling to choose the 104 Humanitarian Logistics and Management Personnel. The determination of the sample size will be based on proportional stratification sampling, where the sample size for each subgroup will be calculated using the formula: (Subgroup Count / Total Population) x Total Sample Size.

**Table 2: Sampling Table**

<b>Humanitarian Logistics and Management Personnel from 5 sampled humanitarian</b>	<b>Target Population</b>	<b>Proportional to Sample Size</b>	<b>Rounded Sample</b>
logistic coordinators	26	$26 / 140 \times 104 = 19.31$	19
Operations Managers	26	$26 / 140 \times 104 = 19.31$	19
Program Managers	26	$26 / 140 \times 104 = 19.31$	19
Field Coordinators	30	$30 / 140 \times 104 = 22.28$	22
Procurement Managers	32	$32 / 140 \times 104 = 23.77$	24
<b>Total</b>	<b>140</b>		<b>104</b>

**Source:** Researcher (2024)

### 3.6 Construction of Research Instruments

To collect data on the independent variables and the different variables under investigation, a standardized questionnaire will be created. According to Mugenda & Mugenda (2003), One study instrument for gathering information from a big sample is a questionnaire. Its mission is to convert the research objectives into specific questions, and the answers to these questions provide the information required to test hypotheses.

A questionnaire has several benefits over other tools, such as the ability to gather data from large samples, the protection of anonymity, and the lack of bias because the data is given on paper. There will be two sections to the questionnaire.

Data on the organization will be in Part A. In Part B, participants will be asked to share details on the main topics of this investigation. There will be both closed-ended and openended questions on the survey.

### **3.7 Testing for Validity and Reliability**

#### **3.7.1 Pilot Test**

Cooper and Schindler (2011) state that the goal of a pilot test is to find defects in the equipment and design and to provide stand-ins for the data required to choose a probability sample. The same techniques used for the study or data collection will also be used for the pre-testing of the questionnaire. Pre-test participation should range from 1% to 10% of the target group (Mugenda & Mugenda, 2003). In order to verify the validity and dependability of the measurement tools, the researcher can therefore carry out a pilot study including six humanitarian organizations in Garissa County. Cronbach alpha will also be used to assess the study tool, and a score of 0.7 will be considered suitable.

#### **3.7.2 Reliability of the Research Instruments**

The internal consistency approach will be used in this investigation. According to Bollen (1989), reliability is the capacity to measure consistently or steadily in a range of circumstances and provide essentially the same outcomes. Since it may be more stable than the other approaches, the internal consistency technique will be used (Bryman, 2012; The internal consistency will be evaluated using the Cronbach's alpha statistic.

According to Drost (2011), estimations of reliability for a test should be based on the average intercorrelations between each individual item in the test in order for it to be

considered internally consistent. When using Cronbach's Alpha coefficient for a reliability test, Pallant (2010) recommends that the result be more than 0.7. To compute Cronbach's alpha ( $\alpha$ ), follow these steps:  $\alpha$  is equal to  $K / (K - 1) [1 - (\sigma_{total}^2) / \sum \sigma_k^2]$  ----- Formula (1) where K is the number of items,  $\sigma_{total}^2$  is the variation of scores on the entire measurement, and  $\sum \sigma_k^2$  is the sum of the k item score variances (Cronbach, 2004). In order to verify the accuracy and consistency of the measurement tools, the researcher will carry out a pilot study involving six nonprofit organizations in Wanjir County.

### 3.7.3 Validity of the Research Instruments

This study will make advantage of construct validity. Validity, as defined by Mugenda & Mugenda (2003), is the degree to which conclusions drawn from the analysis of the data truly represent the phenomena under study.

The degree to which you were able to operationalize a notion, idea, or behavior (a construct) into a reality that functions and functions is known as construct validity (Trochim, 2006). Content validity will also be used in this investigation. Bollen (1989) defined content validity as a qualitative type of validity where the analyst assesses whether the measurements clearly define the concept's domain and appropriately represent it. According to Drost (2012), content validity may be evaluated in two main ways: either by asking a series of questions concerning the test or instrument, or by seeking the advice of judges who are experts in the topic. To evaluate the accuracy and consistency of the measurement tools, the researcher will carry out a pilot study involving six nonprofit organizations in Wanjir County. By creating a questionnaire and operationalizing it according to the research factors, the validity will be examined. This made sure that each variable's items were adequate and indicative of the study's goals and

purposes. The veracity of the information will also be confirmed by the professional judgment of department heads and supply chain professionals.

### **3.8 Data Collection Methods and Procedures**

The process of acquiring information to support or validate a claim is known as data collection (Kombo & Tromp, 2009). The respondents will self-administer the questionnaire, and two research assistants will be hired and trained to ensure high-quality data are obtained. The intended respondents for the questions will be supply chain managers. These target participants, who play a critical role in disaster response and assistance engagement in Wajir County, possess sufficient understanding about the processes humanitarian enterprises are implementing to establish efficient logistics management systems.

The respondents (procurement managers, field coordinators, program managers, logistics coordinators, and operations managers) will get the questionnaires, and the researcher will wait for them to be completed. Since 104 questionnaires will be utilized to gather data for this study, 104 respondents will make up the sample size.

### **3.9 Data Analysis and Presentation**

According to Zikmund et al. (2012), data analysis is the process of using logic to comprehend collected data in order to identify recurring themes and provide an overview of the pertinent information that the study has uncovered. To make acquired data readable for analysis, data processing involves editing, categorizing, and tabulating the information (Kothari, 2009). The quantitative data for this study will be collected using the Statistical Package for Social Sciences (SPSS) version 27, and the response rate will be calculated using descriptive statistics such as mean, median, standard deviation, and proportions. Both qualitative and quantitative approaches will be used to analyze the data that has been collected.

### 3.10 Proposed data analysis techniques and procedures

The researcher will evaluate qualitative data using content analysis. Descriptive and inferential statistics will be used to assess quantitative data. Descriptive statistics will make use of means, standard deviation, percentages, and frequencies. Inferential statistics include multiple regression analysis and Pearson correlation. To determine the link between variables, the Pearson Correlation coefficient will be employed. The influence of the independent factors on the dependent variable will be determined using the multiple regression model.

The study employed the multiple regression model shown below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 \text{ Where:}$$

$Y$  = Dependent variable; Performance of the humanitarian firms

$\beta_0$  = a constant indicating performance level in absence of any independent variables.

Then:

$\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  are the regression coefficients.

$X_1$  = Transport Management Practices

$X_2$  = Inventory Management Practices

$X_3$  = Organizational Information Sharing

$X_4$  = Adequate Funding

$\varepsilon$  = Error term of the regression

### **3.10 Ethical Consideration**

A letter from Mount Kenya University will be given to the researcher to assist him in continuing the research. Moreover, NACOSTI permission would be required for the research. When conducting this study, the researcher will adhere to human rights, scientific integrity, refrain from misrepresenting information, protect respondent confidentiality, and work with all parties she encounters.



## **CHAPTER FOUR**

### **RESULTS AND DISCUSSIONS**

## 4.0 Introduction

This chapter presents the results of quantitative analysis, their interrelation and discussions of the study's findings to establish the effect Logistics Management Systems on the performance Humanitarian Firms in Wajir County, Kenya.

### 4.1 Response Rate

**Table 3: Response Rate**

Response	Frequency	Percentage
Returned	101	97.12%
Not returned	3	2.88%
Total	104	100%

**Source:** Field Data (2024)

The results in table 3 indicates that the response rate for the study, illustrating the number and percentage of questionnaires that were returned and not returned. Out of 104 distributed questionnaires, 101 were returned, representing a high response rate of 97.12%. Only 3 questionnaires, accounting for 2.88%, were not returned. This high response rate of nearly 100% enhances the reliability and validity of the study's findings, as it suggests that a majority of participants provided their input, minimizing the potential for non-response bias.

### 4.2 Socio-Demographic Characteristic's

**Table 4: Socio-Demographic Characteristic'**

Variable	Frequency	Percentage (%)
----------	-----------	----------------

<b>Gender</b>		
Male	60	57.69
Female	44	42.31
<b>Total</b>	<b>104</b>	<b>100</b>
<b>Age 20-29</b>		
	13	12.5
30-39	35	33.65
40-49	43	41.35
50-59	13	12.5
<b>Total</b>	<b>104</b>	<b>100</b>
<b>Length of Service Below</b>		
20 Years	13	12.5
21-29 Years	35	33.65
30-39 Years	43	41.35
Above 40 Years	13	12.5
<b>Total</b>	<b>104</b>	<b>100</b>
<b>Designation</b>		
Logistic Coordinators	19	18.27
Operations Managers	19	18.27
Program Managers	19	18.27
Field Coordinators	22	21.15
Procurement Managers	24	23.08
<b>Total</b>	<b>104</b>	<b>100</b>

**Source:** Field Data (2024)

The results show that the participant's gender was fairly balanced with a majority of the respondents are male 57.69%, while females account for 42.31%. The age distribution mirrors the length of service, with the highest percentage (41.35%) falling between 40-49 years, and a similar spread across the younger and older age brackets. Regarding length of service, the largest group (41.35%) has served for 30-39 years, followed by 33.65% with 21-29 years of service, while both below 20 years and above 40 years represent 12.5% each. In terms of designation, respondents are fairly evenly distributed, with the largest proportion in procurement management (23.08%), followed closely by field coordinators (21.15%), and an equal number (18.27%) in logistic coordination, operations management, and program management roles. This diverse representation

provides a balanced overview of the workforce across different roles, ages, and experience levels.

## 4.5 Quantitative Data Analysis

### 4.5.1 Descriptive findings Transport management practices

**Table 5: Descriptive findings Transport management practices**

Statement	S D (1)	D (2)	N (3)	A (4)	S A (5)	M	Std. D
Optimized routing significantly enhances the efficiency and costeffectiveness of humanitarian aid delivery.	5	7 (6.93%)	2(1.98%)	61(60.40%)	26 (25.74%)	3.95	0.999
Real-time data integration improves the adaptability and responsiveness of routing and scheduling in dynamic environments.	4 (3.96%)	8 (7.92%)	1 (0.99%)	26 (25.74%)	53 (52.48%)	4.26	1.122
Coordinated scheduling with local authorities boosts resource utilization and reduces delivery redundancies.	3 (2.97%)	9 (8.91%)	0(0.00%)	65 (64.36%)	24 (23.76%)	3.97	0.928
Predictive analytics in scheduling enhances demand forecasting and operational performance in humanitarian logistics.	2 (1.98%)	10 (9.90%)	0(0.00%)	64 (63.36%)	25 (24.75%)	3.99	0.906
Regular, wellplanned scheduling increases aid recipient satisfaction and ensures consistent resource access in disaster areas.	0(0.00%)	1(0.99%)	1(0.99%)	87(86.14%)	12(11.88 %)	4.09	0.400

**Source:** Field Data (2024)

The results presented in Table 4.6 reveal that a significant majority of respondents, specifically 60.40% (Mean: 3.95, Standard Deviation: 0.999), strongly agreed that optimizing routing substantially enhances the efficiency and cost-effectiveness of humanitarian aid delivery. This outcome suggests that the implementation of optimized routing strategies could yield considerable improvements in the delivery of humanitarian assistance, allowing organizations to allocate resources more effectively and respond more rapidly to the needs of affected populations.

Additionally, a majority of respondents, 52.48% (Mean: 4.26, Standard Deviation: 1.122), strongly agreed that the integration of real-time data enhances the adaptability and responsiveness of routing and scheduling in dynamic environments. This finding indicates that the adoption of real-time data integration strategies could significantly augment organizations' abilities to adjust their operations in response to fluctuating circumstances, thus improving overall efficiency and effectiveness.

Regarding coordinated scheduling with local authorities, 64.36% of respondents (Mean: 3.97, Standard Deviation: 0.928) affirmed their involvement in such scheduling efforts. This response underscores the potential for enhanced service delivery through effective planning and resource allocation, while also emphasizing the necessity of fostering relationships with local authorities to improve coordination and responsiveness to community needs.

In terms of predictive analytics in scheduling, 63.36% of respondents (Mean: 3.99, Standard Deviation: 0.906) agreed that predictive analytics enhances demand forecasting and operational performance in humanitarian logistics. This implies that the incorporation of predictive analytics can facilitate more informed decision-making and better resource allocation.

Lastly, concerning the significance of regular and well-planned scheduling, an overwhelming majority of respondents, 86.14% (Mean: 4.09, Standard Deviation: 0.400), agreed that such scheduling increases aid recipient satisfaction and ensures consistent access to resources in disaster-affected areas. This finding accentuates the importance of structured scheduling in achieving positive outcomes in humanitarian aid delivery.

#### 4.5.2 Descriptive findings on Inventory management practices

**Table 6: Descriptive findings on Inventory management practices**

Statement	S D	D	N	A	S A	M	Std. D
	(1)	(2)	(3)	(4)	(5)		
Lean inventory management minimizes waste and optimizes resource utilization in humanitarian logistics.	2 (1.98 %)	5 (4.95%)	3 (2.97%)	55 (54.46%)	36 (35.64%)	4.17	0.86
Effective inventory management ensures rapid and accurate fulfillment of aid demands, improving operational efficiency.	1 (0.99 %)	4 (3.96%)	2 (1.98%)	61 (60.40%)	33 (32.67%)	4.20	0.74
Warehouse locations adequately serve the affected areas	3 (2.97 %)	6 (5.94%)	4 (3.96%)	49 (48.51%)	39 (38.61%)	4.14	0.95
Organization engage in prepackaging of relief items in warehouses prior to disaster events?	1 (0.99 %)	2 (1.98%)	2 (1.98%)	48 (47.52%)	48 (47.52%)	4.39	0.72
Pre-stocking of warehouses to be helpful in expediting response efforts during disasters	0 (0.00 %)	3 (2.97%)	1 (0.99%)	61 (60.40%)	36 (35.64%)	4.29	0.63

**Source:** Field Data (2024)

The results presented in Table 4.4 reveal that a majority of respondents, specifically

54.46% (Mean: 4.17, Standard Deviation: 0.86), agreed that lean inventory management minimizes waste and optimizes resource utilization in humanitarian logistics. This finding highlights the significance of lean practices in enhancing resource efficiency and reducing waste in disaster response logistics.

Furthermore, 60.40% of respondents (Mean: 4.20, Standard Deviation: 0.74) agreed that effective inventory management ensures rapid and accurate fulfillment of aid demands, improving operational efficiency, with 32.67% strongly agreeing. This suggests that robust inventory management systems are crucial for ensuring timely and efficient delivery of aid to affected populations. On whether warehouse locations adequately serve the affected areas, 48.51% of respondents agreed (Mean: 4.14, Standard Deviation: 0.95), and 38.61% strongly agreed. This indicates a general satisfaction with the geographical positioning of warehouses in relation to their ability to serve disaster-affected regions.

In terms of pre-packaging of relief items in warehouses prior to disaster events, 47.52% of respondents agreed (Mean: 4.39, Standard Deviation: 0.72) and another 47.52% strongly agreed. This underscores the importance of pre-disaster preparations to ensure swift distribution of aid during emergencies.

Finally, 60.40% of respondents (Mean: 4.29, Standard Deviation: 0.63) agreed that prestocking of warehouses helps expedite response efforts during disasters, while 35.64% strongly agreed. This suggests that pre-stocking plays a pivotal role in accelerating the response to disasters and ensuring that aid reaches affected areas without delays.

### 4.5.3 Descriptive findings on Organizational Information Sharing

**Table 7: Descriptive findings on Organizational Information Sharing**

Statement	S D (1)	D (2)	N (3)	A (4)	S A (5)	M	Std. D
Organizations do have communication channels to respond with speed when disasters occur.	55 (54.46%)	36 (35.64%)	3 (2.97%)	2 (1.98%)	0 (0.00%)	1.50	0.66
Humanitarian firms contribute to the overall effectiveness and coordination of logistics management systems.	1 (0.99%)	4 (3.96%)	2 (1.98%)	61 (60.40%)	33 (32.67%)	4.20	0.74
Organization effectively utilize media briefings to communicate critical information during disasters	3 (2.97%)	6 (5.94%)	4 (3.96%)	49 (48.51%)	39 (38.61%)	4.14	0.95
Effective feedback mechanisms enhance operational efficiency by allowing humanitarian firms to promptly address and adapt to beneficiary needs and logistical challenges.	1 (0.99%)	2 (1.98%)	50 (49.51%)	0 (0.00%)	48 (47.52%)	3.91	1.06
Robust feedback systems improve service quality and stakeholder satisfaction, fostering trust and collaboration in humanitarian operations.	0 (0.00%)	3 (2.97%)	1 (0.99%)	61 (60.40%)	36 (35.64%)	4.29	0.63

**Source:** Field Data (2024)

The results presented in Table 4.5 reveal that the majority of respondents, specifically

54.46% (Mean: 1.50, Standard Deviation: 0.66), strongly disagreed that organizations have communication channels to respond with speed when disasters occur, while 35.64% disagreed. This indicates a significant gap in the perception of the effectiveness of communication channels during disaster response.\

On the other hand, 60.40% of respondents (Mean: 4.20, Standard Deviation: 0.74) agreed that humanitarian firms contribute to the overall effectiveness and coordination of logistics management systems, with 32.67% strongly agreeing. This result underscores the vital role that humanitarian firms play in the logistics management during disasters, highlighting their contributions to efficient coordination.

Regarding the use of media briefings to communicate critical information during disasters, 48.51% of respondents agreed (Mean: 4.14, Standard Deviation: 0.95), while 38.61% strongly agreed. This suggests that media briefings are a widely recognized and effective tool for information dissemination in times of crisis.

For the statement that effective feedback mechanisms enhance operational efficiency by allowing humanitarian firms to promptly address and adapt to beneficiary needs and logistical challenges, 49.51% agreed (Mean: 3.91, Standard Deviation: 1.06), while 47.52% strongly agreed. This finding indicates that robust feedback systems are seen as crucial in optimizing responses to challenges faced during disaster relief operations.

Finally, 60.40% of respondents (Mean: 4.29, Standard Deviation: 0.63) agreed that robust feedback systems improve service quality and stakeholder satisfaction, fostering trust and collaboration in humanitarian operations, with 35.64% strongly agreeing. This highlights the importance of feedback in maintaining high service standards and strengthening partnerships in the humanitarian sector.

#### 4.2.4: Descriptive findings on Adequate Funding

**Table 8: Descriptive findings on Adequate Funding**

Statement	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Std.
Adequate funding is crucial for maintaining sufficient stockpiles of emergency supplies and resources for disaster response	2 (1.98%)	4 (3.96%)	3 (2.97%)	12 (11.88%)	80 (79.21%)	4.62	0.88
Timely and predictable funding enables humanitarian firms to plan and execute logistics operations effectively during disasters	1 (0.99%)	5 (4.95%)	2 (1.98%)	91 (90.09%)	2 (1.98%)	3.87	0.56
Government and donors funds are sufficient to cover the operational costs associated with logistics systems for disaster response.	4 (3.96%)	10 (9.90%)	5 (4.95%)	45 (44.55%)	37 (36.63%)	4.00	1.17

Government grants and donor funding significantly enhance the financial stability and operational capacity of humanitarian firms, enabling more comprehensive aid delivery.	1 (0.99%)	3 (2.97%)	4 (3.96%)	1 (0.99%)	92 (91.09%)	4.78	0.68
Support from government grants and donors fosters innovation and expansion in humanitarian projects, improving the reach and effectiveness of aid interventions.	0 (0.00%)	2 (1.98%)	1 (0.99%)	58 (57.43%)	40 (39.60%)	4.36	0.76

**Source:** Field Data (2024)

The results presented in Table 4.3 reveal that a significant majority of respondents, specifically 79.21% (Mean: 4.62, Standard Deviation: 0.88), strongly agreed that adequate funding is crucial for maintaining sufficient stockpiles of emergency supplies and resources for disaster response. This finding underscores the importance of securing adequate financial resources to ensure that emergency supplies are readily available for effective disaster response.

Additionally, 90.09% of respondents (Mean: 3.87, Standard Deviation: 0.56) agreed that timely and predictable funding enables humanitarian firms to plan and execute logistics operations effectively during **disasters**. This suggests that predictable funding plays a critical role in facilitating efficient logistical operations during crises.

Regarding the sufficiency of government and donor funds, 44.55% of respondents (Mean: 4.00, Standard Deviation: 1.17) agreed that these funds are sufficient to cover operational costs associated with logistics systems for disaster response. This result

highlights a perceived adequacy of current funding but also indicates room for improvement in financial support.

For the statement that government grants and donor funding significantly enhance the financial stability and operational capacity of humanitarian firms, an overwhelming majority of 91.09% (Mean: 4.78, Standard Deviation: 0.68) strongly agreed. This reflects the vital contribution of external funding in boosting the capacity and stability of humanitarian organizations.

Finally, 57.43% of respondents (Mean: 4.36, Standard Deviation: 0.76) agreed that support from government grants and donors fosters innovation and expansion in humanitarian projects, improving the reach and effectiveness of aid interventions. This suggests that external support not only sustains ongoing operations but also promotes innovation in aid delivery

#### 4.5.4: Descriptive findings on Performance of Humanitarian Firms

**Table 9: Descriptive findings on Performance of Humanitarian Firms**

<b>Statement</b>	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)	Mean	Std. Deviation
Increased operational speed is enhanced.	1 (0.99%)	3 (2.97%)	2 (1.98%)	7 (6.93%)	88 (87.13%)	4.38	0.75
Faster response rate is experienced.	0 (0.00%)	2 (1.98%)	3 (2.97%)	76 (75.24%)	20 (19.80%)	4.34	0.72
There is Efficient operations and reduced response times.	1 (0.99%)	4 (3.96%)	2 (1.98%)	50 (49.50%)	44 (43.56%)	4.3	0.8

There is Costeffective management practices in placed.	2 (1.98%)	5 (4.95%)	4 (3.96%)	53 (52.48%)	37 (36.63%)	4.18	0.88
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There is Streamlined (5.94%) processes and rapid mobilization of resources improve overall performance.	1 (0.99%)	3 (2.97%)	1 (0.99%)	90 (89.11%)	6	4.4	0.73
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**Source:** Field Data (2024)

The results presented in Table 4.7 reveal that the majority of respondents, 87.13% (Mean: 4.38, Standard Deviation: 0.75), strongly agreed that increased operational speed is enhanced\*\*. This indicates that operational speed is a significant performance indicator for humanitarian firms, contributing to their overall efficiency.

Moreover, 75.24% of respondents (Mean: 4.34, Standard Deviation: 0.72) agreed that faster response rates are experienced. These findings suggest that humanitarian firms are successfully improving their response times, which is crucial for timely disaster interventions.

In terms of efficient operations and reduced response times, 49.50% of respondents agreed (Mean: 4.30, Standard Deviation: 0.80). This emphasizes the operational efficiency of humanitarian firms in minimizing response delays during disaster relief efforts.

Regarding cost-effective management practices, 52.48% of respondents agreed (Mean: 4.18, Standard Deviation: 0.88) and 36.63% strongly agreed. This reflects the efforts of humanitarian firms to implement management practices that optimize cost efficiency, ensuring better resource allocation.

Finally, 89.11% of respondents (Mean: 4.40, Standard Deviation: 0.73) agreed that streamlined processes and rapid mobilization of resources improve overall performance, while 5.94% strongly agreed. This underscores the significance of well-structured processes in enhancing the performance of humanitarian organizations during disaster response.

#### 4.6: Inferential statistics

This section centers on the statistical inference of the study, highlighting the utilization of Pearson Correlation and multiple regression analysis as inferential statistical techniques.

##### 4.6.1 Correlation Analysis

This will determine the strength and direction of the linear relationship between two continuous variables. We will calculate the Pearson Correlation Coefficient ( $r$ ) for each pair of statements to assess the relationships between different aspects of humanitarian firm performance.

**Table 10: Correlation Matrix**

Variables	Transport Management	Inventory Management	Organizational Info Sharing	Adequate Funding	Performance of Humanitarian Firms
Transport Management	Pearson Correlation Sig. (2-tailed)	1	0.512** 0.002	0.364** 0.007	0.274* 0.049
Inventory Management	Pearson Correlation Sig. (2-tailed)	0.512** 0.002	1	0.428** 0.003	0.367** 0.007
Organizational Information Sharing	Pearson Correlation Sig. (2-tailed)	0.364** 0.007	0.428** 0.003	1	0.492** 0.002
Adequate Funding	Pearson Correlation	0.274*	0.367**	0.492**	1

		Sig. (2-tailed)	0.049	0.007	0.002	
Performance of Humanitarian Firms	Pearson Correlation		0.623**	0.482**	0.508**	0.431**
		Sig. (2-tailed)	0.001	0.001	0.001	0.003

		Performance of Humanitarian Firms	Transport Management	Inventory Management	Organizational Information Sharing	Adequate Funding
<b>Performance of Humanitarian Firms</b>	Pearson Correlation	1				
	Sig. (2-tailed)					
<b>Transport Management</b>	Pearson Correlation	0.411*	1			
	Sig. (2-tailed)	0.016				
<b>Inventory Management</b>	Pearson Correlation	0.155**	0.033	1		
	Sig. (2-tailed)	0.005	0.358			
<b>Organizational Information Sharing</b>	Pearson Correlation	0.323**	0.227	-0.191	1	
	Sig. (2-tailed)	0.002	0.399	0.262		
<b>Adequate Funding</b>	Pearson Correlation	0.05	0.285	0.253		1
	Sig. (2-tailed)	0.019	0.582	0.313	0.381	

\* Correlation is significant at the 0.05 level (2tailed).

\*\* Correlation is significant at the 0.01 level (2tailed).

Source: Field Data (2024)

The correlation analysis reveals significant relationships between the performance of humanitarian firms and various management aspects. Specifically, a strong positive correlation ( $r = 0.411$ ,  $p = 0.016$ ) exists between performance and transport management, indicating that improved transport management is associated with enhanced performance. Organizational information sharing also shows a moderate positive correlation with performance ( $r = 0.323$ ,  $p = 0.002$ ), suggesting that better information exchange within organizations can positively influence performance. Conversely, inventory management demonstrates a weak positive correlation with performance ( $r = 0.155$ ,  $p = 0.005$ ), indicating a less impactful relationship. Adequate funding has a weak correlation with performance ( $r = 0.05$ ,  $p = 0.019$ ), indicating that while it may play a role, its influence is not as pronounced as that of transport management or organizational information sharing. Overall, these results highlight the importance of transport management and information sharing in enhancing the performance of humanitarian firms.

#### 4.6.2 Multiple regression model

**Table 11: Coefficients**

Variable	Unstandardized Coefficients (B)	Standardized Coefficients (Beta)	t	Sig.
Constant	1.159		2.135	0.009
Transport Management	0.411	0.351	3.42	0.001
Inventory Management	0.155	0.05	0.495	0.003
Organizational Information Sharing	0.323	0.205	2.364	0.019
Adequate Funding	0.05	0.017	0.182	0.055

**Source:** Field Data (2024)

The regression analysis provides valuable insights into the factors influencing the performance of humanitarian firms. The constant term is statistically significant (Coeff/Beta = 0.159, P-value = 0.009), indicating a baseline level of performance when all independent variables are held constant. The model revealed a statistically significant association between transport management and the performance of humanitarian firms, with a (Coeff/Beta = 0.411, P-value = 0.001). This implies that for each unit increase in transport management practices, the performance of humanitarian organizations is expected to improve by approximately 0.411 units. The significant p-value underscores the critical importance of effective transport logistics such as timely deliveries, route optimization, and efficient vehicle utilization in enhancing operational outcomes. Humanitarian organizations should prioritize improvements in transport management to maximize their performance.

The analysis indicated a positive and statistically significant association between inventory management and performance, with a (Coeff/Beta = 0.155, P-value = 0.001). This suggests that each unit increase in inventory management practices results in a 0.155-unit increase in performance. This positive relationship highlights the importance of effective inventory management in contributing to better performance outcomes. Humanitarian organizations should focus on enhancing their inventory management practices to achieve more substantial improvements in their overall operational effectiveness.

The model demonstrated a statistically significant association between organizational information sharing and the performance of humanitarian firms, with a (Coeff/Beta = 0.323, P-value = 0.019). This means that for each unit increase in organizational information sharing, performance is expected to increase by approximately 0.323 units.

The significant p-value highlights the crucial role that effective communication and collaboration play in enhancing decision-making and resource utilization. Humanitarian organizations should invest in systems and practices that promote robust information sharing to improve their operational effectiveness.

The analysis revealed a statistically significant association between adequate funding and performance, with a (Coeff/Beta = 0.050, P-value = 0.055). This indicates that each unit increase in funding results in only a 0.050-unit increase in performance, suggesting that while adequate funding is necessary, its direct impact on performance outcomes is minimal. The relatively small coefficient indicates that simply increasing funding levels may not lead to substantial improvements in performance. Therefore, humanitarian organizations should focus not only on securing adequate funding but also on optimizing the allocation and utilization of these resources to enhance their overall effectiveness and achieve better operational results.

The results were presented in the models of multiple regression equation as follow.

$$Y=0.159+0.411X_1 +0.155X_2 +0.323X_3 +0.050X_4 +\epsilon$$

The regression equation quantifies the expected performance of humanitarian firms ( Y ) based on several independent variables. Specifically, it indicates that an increase in Transport Management Practices ( X1 ) correlates with a performance improvement of 0.411 units, highlighting its significant impact on operational efficiency. Inventory Management Practices ( X2 ) contribute 0.155 units to performance for each unit increase, underscoring their role in optimizing resource use. Organizational Information Sharing ( X3 ) adds 0.323 units per unit increase, emphasizing the importance of effective communication and collaboration. In contrast, Adequate Funding ( X4 ) demonstrates a limited impact of 0.050 units per unit increase, suggesting that while necessary, funding

alone is insufficient to drive substantial performance improvements. Overall, the findings indicate that enhancing transport management and information sharing should be prioritized to maximize the operational effectiveness of humanitarian organizations.

#### **4.7 Discussion of Findings**

The study findings indicated a statistically significant association between transport management practices and the performance of humanitarian organizations, particularly regarding routing and scheduling. This aligns with previous research by Muoki and Moronge (2021) which emphasized that efficient logistics and transport management are critical for enhancing the responsiveness and effectiveness of humanitarian operations. The focus on timely deliveries and route optimization highlights the logistical challenges these organizations encounter, reinforcing the idea that improved transport logistics can yield substantial operational benefits.

The study found a positive association between inventory management practices, particularly Lean Inventory Management and warehousing, and the performance of humanitarian organizations. This aligns with research by Wasike, E. R., & Juma, D. (2020). which emphasizes that effective inventory management is crucial for enhancing service levels and cost efficiency in humanitarian logistics. The focus on Lean practices minimizes waste while maximizing value, ensuring optimal stock levels and timely resource availability. Additionally, strategic warehousing improves inventory handling and distribution efficiency, enabling organizations to respond effectively to crises. Overall, adopting best practices in inventory control is essential for enhancing operational effectiveness in humanitarian efforts.

The model revealed a statistically significant association between organizational information sharing and the performance of humanitarian firms, particularly through

effective communication channels. This supports the findings of Muga *et al.*, (2022) who emphasized that effective communication and collaboration are essential for improving decision-making and resource utilization in humanitarian operations. This finding highlights the importance of cultivating a culture of information sharing, which can enhance coordination and overall performance—especially crucial in the dynamic environment of humanitarian work.

The analysis revealed a statistically significant association between adequate funding specifically from government grants and donors and the performance of humanitarian organizations. However, this finding suggests that while funding is crucial, its direct impact on performance may be limited. This aligns with the insights of Dzigbede *et al.*, (2020) who noted that the effectiveness of funding in humanitarian operations hinges more on the strategic allocation and utilization of resources than on merely increasing funding levels. Consequently, humanitarian organizations must prioritize optimizing resource allocation and management to enhance their operational outcomes effectively. By focusing on how funds are used, these organizations can achieve better performance and responsiveness in their missions.

The study findings indicate that several key factors significantly influence the performance of humanitarian organizations. Effective transport management, particularly in routing and scheduling, enhances responsiveness and operational efficiency. Lean Inventory Management practices improve performance by minimizing waste and ensuring timely resource availability. Furthermore, fostering organizational information sharing is crucial for enhancing coordination and overall effectiveness. While adequate funding from government grants and donors is essential, its direct impact on performance is limited without strategic allocation and utilization. Overall, optimizing transport management, inventory practices, communication, and funding allocation can

significantly enhance the performance of humanitarian organizations, improving response speed, beneficiary welfare, response time, and operational cost efficiency.



## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Introduction**

In accordance with the study's goals, this chapter aims to thoroughly analyze the summary data. Following this, it draws conclusions and offers recommendations based

on the results and a synthesis of the findings. Finally, it explores potential avenues for future research endeavors

### **5.1 Summary of the results Findings**

The study aimed to determine the extent to which transport management practices influence the performance of humanitarian organizations. The results revealed a significant relationship between transport management practices and organizational performance, particularly regarding routing and scheduling. Respondents strongly endorsed the use of optimized routing as a means to enhance the efficiency and costeffectiveness of aid delivery. Additionally, the integration of real-time data was emphasized as vital for ensuring adaptability in dynamic environments. The findings also acknowledged the importance of coordinated scheduling with local authorities and the application of predictive analytics for demand forecasting. Overall, these insights suggest that strategic planning and the integration of technology are essential for optimizing humanitarian logistics.

The study aimed to establish the extent to which inventory management practices influence the performance of humanitarian firms in Wajir County, Kenya. The findings indicated a positive association between inventory management practices, particularly Lean Inventory Management and warehousing, and the performance of humanitarian organizations. Respondents highlighted the significance of lean practices in minimizing waste and optimizing resource utilization, asserting that effective inventory management is crucial for the rapid fulfillment of aid demands. Additionally, satisfaction with warehouse locations and the need for pre-packaging and pre-stocking were emphasized. However, it was noted that the relationship between inventory management practices and performance was weaker compared to other influencing factors.

The study aimed to establish the extent to which organizational information sharing influences the performance of humanitarian firms in Wajir County, Kenya. The results revealed a significant association between organizational information sharing and the performance of humanitarian organizations, highlighting the importance of effective communication channels. However, a notable gap in communication effectiveness during disaster response was identified, with many respondents expressing concerns about the adequacy of existing channels. Media briefings were recognized as effective tools for disseminating critical information, while robust feedback mechanisms were deemed essential for addressing beneficiary needs. These findings suggest that enhancing communication and feedback systems is crucial for optimizing disaster response efforts.

The study aimed to ascertain the extent to which adequate funding influences the performance of humanitarian firms in Wajir County, Kenya. The analysis demonstrated a significant relationship between adequate funding from government grants and donors and the performance of humanitarian organizations. Respondents underscored the necessity of sufficient funding for maintaining emergency stockpiles and facilitating effective logistics planning. Although many perceived current funding levels as adequate, there was a consensus on the need for improvement in financial support. While the influence of funding on performance was acknowledged, it exhibited a weaker correlation compared to transport management practices and organizational information sharing.

## **5.2 Conclusions**

### **5.2.1 Determine the extent to which transport management practices influence**

### **the performance of humanitarian firms in Wajir County, Kenya**

The study concludes that transport management practices significantly influence the performance of humanitarian firms in Wajir County, Kenya. Effective routing, scheduling, and real-time data integration are vital components that enhance operational efficiency and cost-effectiveness in aid delivery. The findings emphasize the need for strategic planning and technological integration to optimize humanitarian logistics.

#### **5.2.2 Establish the extent to which inventory management practices influence the performance of humanitarian firms in Wajir County, Kenya**

It can be concluded that inventory management practices, particularly Lean Inventory Management and effective warehousing, positively influence the performance of humanitarian organizations in Wajir County. The findings highlight the critical role of minimizing waste and ensuring rapid fulfillment of aid demands. However, the weaker correlation between inventory management and performance suggests that while important, these practices may not be as impactful as other factors

#### **5.2.3 Establish the extent to which organizational information sharing influence the performance of humanitarian firms in Wajir County, Kenya**

The analysis concludes that organizational information sharing plays a significant role in enhancing the performance of humanitarian firms in Wajir County. Effective communication channels and robust feedback mechanisms are essential for addressing beneficiary needs and optimizing disaster response efforts. The identified gaps in communication underscore the necessity for improvements in information sharing to bolster operational efficiency.

#### **5.2.4 To ascertain the extent to which adequate funding influence the performance of humanitarian firms in Wajir County, Kenya**

The study concludes that adequate funding from government grants and donors is crucial for the performance of humanitarian organizations in Wajir County. While sufficient funding is necessary for maintaining emergency stockpiles and planning logistics, the findings indicate a need for enhanced financial support. Although funding does influence performance, its weaker correlation compared to transport management and organizational information sharing suggests that it should be considered alongside other critical factors for comprehensive improvement in humanitarian operations.

### **5.3 Recommendations**

To enhance the performance of humanitarian firms in Wajir County, Kenya, several strategic recommendations are proposed across key operational areas. In transport management practices, organizations should implement advanced routing technologies and integrate real-time data systems to optimize logistics efficiency and adaptability. Strengthening coordination with local authorities and enhancing predictive analytics capabilities are also crucial. For inventory management, adopting lean inventory practices, optimizing warehousing locations, pre-packaging supplies, and providing regular staff training are recommended to minimize waste and improve resource utilization. Regarding organizational information sharing, establishing clear communication channels, utilizing media briefings effectively, creating robust feedback mechanisms, and encouraging collaborative information sharing among agencies are essential for optimizing disaster response. Lastly, to secure adequate funding, organizations should diversify funding sources, advocate for timely funding, increase transparency in fund allocation, and invest in capacity building for effective financial management, thus ensuring a stable financial foundation for humanitarian operations.

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## APPENDIXES

### Appendix I: Questionnaire

**SECTION: A Socio-Demographic Characteristic's Please tick the correct answer and/or enter the response in the space provided**

1. Gender:

Male [ ]

Female [ ]

2. Age:

Below 20 Years [ ]      21-29Years [ ]      30-39Years [ ]      Above 40 Years [ ]

3. What is your work experience?

Below 10 years [ ]      10-20 years [ ]      20-30 years [ ]      Above 30 years [ ]

**Section A: Transport Management Practices**

Please indicate your views on Transport Management Practices on Performance of Humanitarian Firms: Use the scale below, where "1" indicates strong disagreement, "2" Disagree, "3" represents neutrality, "4" Agree and "5" signifies strong agreement.

S / N	Statement	Strongly disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
	Optimized routing significantly enhances the efficiency and cost-effectiveness of humanitarian aid delivery.					
	Real-time data integration improves the adaptability and responsiveness of routing and scheduling in dynamic environments.					
	Coordinated scheduling with local authorities boosts resource utilization and reduces delivery redundancies.					
	Predictive analytics in scheduling enhances demand forecasting and operational performance in humanitarian logistics.					
	Regular, well-planned scheduling increases aid recipient satisfaction and ensures consistent resource access in disaster areas.					

**Section C: Inventory Management Practices**

Please indicate your views on Inventory Management Practices on Performance of Humanitarian Firms: Use the scale below, where "1" indicates strong disagreement, "2" Disagree, "3" represents neutrality, "4" Agree and "5" signifies strong agreement.

S / N	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
1.	Lean inventory management minimizes waste and optimizes resource utilization in humanitarian logistics.					
2.	Effective inventory management ensures rapid and accurate fulfillment of aid demands, improving operational efficiency.					
3.	Warehouse locations adequately serve the affected areas					
4.	Organization engage in pre-packaging of relief items in warehouses prior to disaster events?					
5.	Pre-stocking of warehouses to be helpful in expediting response efforts during disasters					

#### Section D: Organizational Information Sharing

Please indicate your level of agreement with the following statements regarding Organizational information flow during disaster response: Use the scale below, where "1" indicates strong disagreement, "2" Disagree, "3" represents neutrality, "4" Agree and "5" signifies strong agreement.

S / N	Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
1.	Organizations do have communication channels to respond with speed when disasters occur.					
2.	Humanitarian firms contribute to the overall effectiveness and coordination of logistics management systems.					
3.	Organization effectively utilize media briefings to communicate critical information during disasters					

4.	Effective feedback mechanisms enhance operational efficiency by allowing humanitarian firms to promptly address and adapt to beneficiary needs and logistical challenges.					
5.	Robust feedback systems improve service quality and stakeholder satisfaction, fostering trust and collaboration in humanitarian operations.					

### Section E: Adequate Funding

Please indicate your level of agreement with the following statements regarding funding

S Y N Statement	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
	1	2	3	4	5
Adequate funding is crucial for maintaining sufficient stockpiles of emergency supplies and resources for disaster response					
Timely and predictable funding enables humanitarian firms to plan and execute logistics operations effectively during disasters					
Government and donors funds are sufficient to cover the operational costs associated with logistics systems for disaster response.					
Government grants and donor funding significantly enhance the financial stability and operational capacity of humanitarian firms, enabling more comprehensive aid delivery.					
Support from government grants and donors fosters innovation and expansion in humanitarian projects, improving the reach and effectiveness of aid interventions.					

for disaster response: Use the scale below, where "1" indicates strong disagreement, "2" Disagree, "3" represents neutrality, "4" Agree and "5" signifies strong agreement.

### Section E: Performance of Humanitarian Firms


Please indicate your level of agreement with the following statements regarding Performance of Humanitarian Firms: Use the scale below, where "1" indicates strong

disagreement, “2” Disagree, "3" represents neutrality, “4” Agree and "5" signifies strong agreement.

Statement	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
Increased operational speed is enhanced.					
Faster response rate is experienced.					
There is Efficient operations and reduced response times.					
There is Cost-effective management practices in placed.					
There is Streamlined processes and rapid mobilization of resources improve overall performance.					



## Appendix II: ERC Certificate from MKU



# Mount Kenya University

REF: MKU/ISERC/4390 Date: 12 September 2024  
TO: HUSSEIN BILLOW ALI  
REG: MPSM/2023/47591

Dear Sir/Madam,

**RE: LOGISTICS MANAGEMENT SYSTEM AND THE PERFORMANCE OF HUMANITARIAN FIRMS IN WAJIR COUNTY, KENYA**

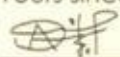
This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **3110**. The approval period is **12/09/2024 - 11/09/2025**.

This approval is subject to compliance with the following requirements;

- i. Only approved documents including informed consents, study instruments, MTA will be used
- ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
- vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**


Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke> and also obtain other clearances needed.

Yours sincerely,



---

**Dr. Alfred Owino, PhD**  
Chairman, Mount Kenya University ISERC




**MCOUNT KENYA UNIVERSITY**  
**ETHICS REVIEW COMMITTEE**  
P. O. Box 342-01000,  
THIKA

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Main Campus, General Kago Road, P.O. Box 342-01000 Thika.  
Cell: +254 709 153 000 / +254 709 153 200

## Appendix III: Introduction Letter from MKU



# Mount Kenya University

### DIRECTORATE OF GRADUATE STUDIES

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MPSM/2023/47591

18<sup>th</sup> September, 2024

*National Commission for Science Technology & Innovation (NACOSTI)  
Off Waiyaki Way, Upper Kabete,  
P.O Box 30623- 00100  
NAIROBI, KENYA*

Dear Sir/Madam,


**RE: HUSSEIN BILLOW ALI- REGISTRATION NO. MPSM/2023/47591**

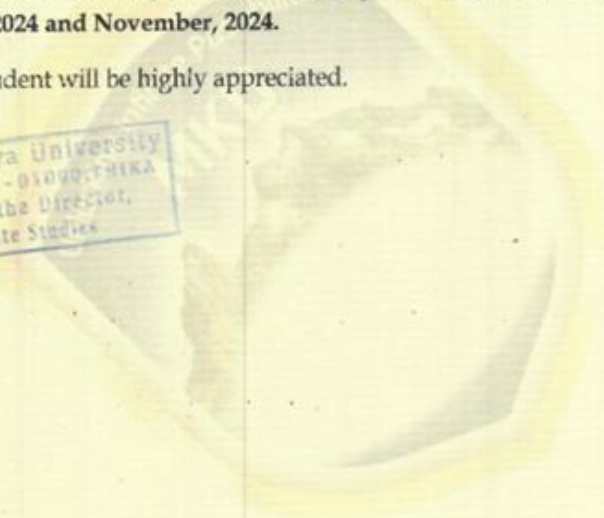

The purpose of this letter is to introduce the above named student who is pursuing **Master of Science in Procurement and Supplies Management** in the **Department of Management** in the school of **Business and Economics**

The title of the research is **“Logistics Management System and the Performance of Humanitarian Firms in Wajir County, Kenya.”**. It has been cleared by the University’s Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **September, 2024 and November, 2024**.

Any assistance accorded to the student will be highly appreciated.

Thank you.

  
Dr. Samuel M. Karanga, Ph.D  
**Director, Graduate Studies**  
Enc.



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Main Campus, General Kago Road, P.O. Box 342-01000 Thika.  
Cell: +254 709 153 000 | +254 709 153 200



**Appendix V: Approval Letter from Wajir County**

**OFFICE OF THE PRESIDENT**



**MINISTRY OF INTERIOR AND NATIONAL ADMINISTRATION**

Telegraphic Address: "County"  
Email: [ccwajircounty@yahoo.com](mailto:ccwajircounty@yahoo.com)  
When replying please quote

The County Commissioner  
Wajir County  
Private Bag  
**WAJIR**

**Ref No: F50/VOL.1/239**

**30<sup>th</sup> September 2024**

All Deputy County Commissioners  
**WAJIR COUNTY**

**RE: RESEARCH AUTHORIZATION**

Reference is made to a research license from National Commission for Science, Technology & Innovation license no. NACOSTI/P/24/40469 dated 28<sup>th</sup> September, 2024 on the above subject matter.

Mr. Hussein Billow Ali is hereby authorized to conduct research on the topic "**Logistics Management System and the Performance of Humanitarian Firms in Wajir County, Kenya**" for the period ending **28<sup>th</sup> September 2025**.

This is therefore to request you to give him the necessary assistance to enable him conduct the research within your Sub-Counties.



K. J. Ngumo  
County Commissioner  
**WAJIR COUNTY**

**cc**

Hussein Billow Ali

## Appendix VI: Similarity Index

**HUSSEIN BILLOW ALI**

### **LOGISTICS MANAGEMENT SYSTEM AND PERFORMANCE OF HUMANITARIAN FIRMS IN WAJIR COUNTY, KENYA**

 PROJECT

 MASTERS

 Mount Kenya University

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#### Document Details

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Mount Kenya





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Mount K

**Appendix VII: Study Area Map**



