**LOGISTICS MANAGEMENT AND OPERATIONAL PERFORMANCE OF NON-GOVERNMENTAL ORGANISATIONS IN SOUTH SUDAN:**

**A CASE STUDY OF THE RESCUE INITIATIVE – KAJO KEJI**

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## DECLARATION

I hereby declare that the work contained in this dissertation is my original work and therefore, has not been published or submitted for any award to any other institutional of higher learning before. Due acknowledgement has made in respect to other people’s work integrated herein.

Signature: ……………………………………. Date: ……………………

**Ayan Alexander Modi**

APPROVAL

I hereby confirm that this research work by **Ayan Alexander Modi** has been done under my supervision and is hereby approved for consideration by the School of Business Administration and Information Technology.



Signature: ……………………………. Date: ……………………

**Mr. Bukenya Peter**

**DEDICATION**

I dedicate this research work to my wife: Mrs. Pita Jane Modi; my parents; Mr. Francis Modi and Mrs. Jeslina Modi; my children; Jeanny, Claire, Success, and Sophia for their tireless encouragement, support and sacrifices. It is also dedicated to my late grandmother Wirika Modong for the love and motivation, and the entire family and friends for their support and prayers.

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## ACRONYMS

ANOVA - Analysis of variance

CILT - Chartered Institute of Logistics and Transport

CIPS - Chartered Institute of Procurement and Supply

HCLPs - Health Care Logistics Practices

LMPs - Logistics Management Practices

MHPs - Materials Handling Practices

OSHA - Occupational Safety and Health Administration

PATH - Program for Appropriate Technology in Health

PPA - Pandemic plans and preparedness activities

PPs - Procurement Processes

RBV - Resource – Based View

RIKK - Rescue Initiative – Kajo Keji

SPSS - Statistical Package for Social Scientists

TRI - The Rescue Initiative

UNMISS - United Nations Mission in South Sudan

WHO - World Health Organisation

DEFINITION OF KEY TERMS

**Logistics Management** is that part of supply chain management that plans, implements, and controls the efficient and effective forward and reverse flow as well as storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers’ requirements (Sadjady, 2011).

**Operational performance** as achieving the most optimal utilization of resources that yields quality products or services in the most efficient way. The ultimate sought outcome is achieving improved returns, resource savings, and excellence of operations. It is about achieving improvement in all operational aspects of the organisation (Quazi, 2017).

**Procurement processes** cover all aspects of the acquisition and delivery of goods or services, spanning the whole contract life cycle from the identification of needs to the end of a service contract, or the end of the useful life and subsequent disposal of an asset. It is the cyclical process of key steps when procuring goods or services (Chartered Institute of Purchasing and Supply, 2013; and Government Procurement Solutions, 2011).

**Material handling** is the art and science involving the movement, handling and storage of materials or supplies during different stages of the supply and distribution chain (Haynes, 2017).

**Healthcare logistics practices** are practices involved in all operations of providing healthcare supplies and services including medical consumables, pharmaceuticals, catering, laundry cleaning, waste management, home-care products, information technology, vehicle fleet management and general supply (Kritchanchai *et al,* 2019).

## ABSTRACT

Logistics management plays a vital role in the promotion of operational performance of organizations since it optimizes service and supplies quality, quantity, cost, place, and time to recipients (Kabale *et al,* 2019). In the nongovernmental organisations spectrum, the ability of logistics management to deliver improvements in cycle-times, inventory turnover, and reliability of operations which affect stakeholder satisfaction (Azim *et al*, 2015), cannot be underestimated. The study set out to examine the influence of logistics management and operational performance of nongovernmental organisations in South Sudan with a case study of The Rescue Initiative, Kajo Keji. It sought to examine the influence of procurement processes, material handling practices, and healthcare logistics practices on the operational performance of The Rescue Initiative, Kajo Keji. The study was grounded on the stakeholder theory propounded by Freeman (1984) and the resource – based view theory (RBV) by Peteraf (1993), the study adopted a post-positivist and phenomenological approach, a cross sectional survey and case study strategy using both quantitative and qualitative methods. The study population was 167, out of which a sample of 127 was used with the response rate at 77.9% that is, 99 respondents. The survey, interview, and document review methods were used to collect data involving the use of self-administered questionnaires, interview guides, and document review checklists as data collection instruments respectively. The study concluded that there is a strong positive relationship between logistics management and operational performance of The Rescue Initiative. With a low percentage variance of 18.10% based on the F value of 18.105, the 0.633 regression coefficient for procurement processes, materials handling practices, and health care logistics practices and operational performance of Rescue Initiative and a Sig. value of 0.000 less than 0.01 (p < 0.01), produced accurate results of predicting the degree of influence existing between them led to the rejection of the null hypothesis **Ho**: Logistics management has no significant influence on operational performance of The Rescue Initiative – Kajo Keji was rejected and the alternative **H1**: Logistics management has a significant influence on operational performance of The Rescue Initiative – Kajo Keji was adopted. The study recommends the adaption of more transparent negotiations such that the objectives by negotiating including; on-time performance, quality, reduced cost, and compliance in the operations of The Initiative are not compromised. Also, there is dire need to significant comply with the requirement to train staff in standards and practices applicable to the operation of equipment.

## CHAPTER ONE

## INTRODUCTION

## 1.1 Background to the study

The study set out to examine the influence of logistics management and operational performance of nongovernmental organisations in South Sudan with a case study of The Rescue Initiative, Kajo Keji. Operational performance excellence yields reduction in waste, improved quality, and reduced inventory holding in an organization (Shrouty and Tiwari, 2017). Logistics management plays a vital role in the promotion of operational performance of organizations since it optimizes service and supplies quality, quantity, cost, place, and time to recipients (Kabale *et al,* 2019). In the nongovernmental organisations spectrum, the ability of logistics management to deliver improvements in cycle-times, inventory turnover, and reliability of operations which affect stakeholder satisfaction (Azim *et al*, 2015), cannot be underestimated.

Logistics management is a major challenge in dealing with disasters and situations that need humanitarian response. Therefore, to achieve set operational performance targets in such situations there is a need for a comprehensive management of logistics. Studies by Nillson *et al,* (2010); and Akhtar *et al,* (2012) have advocated the need for a well coordinated logistics effort in dealing with disasters and humanitarian response needs. It is therefore imperative that the roles of various stakeholders and functions are defined properly and their responsibilities chalked out in advance. Similarly, Donoghue *et al.* (2020) observe that logistics management plays a vital role in processes and activities that will form an organisation’s effective and efficient reach and service to its clients or project beneficiaries as applied to the nongovernmental organizations’ sector.

The Rescue Initiative Kajo Keji is significant in the study of logistics management and operational performance of nongovernmental organisations in South Sudan because of its programmes that relate to healthcare. The Initiative runs healthcare services and immunization programmes in Kajo Keji, Yei, and Mundri West Counties (Geri, 2014). The successful implementation of its planned operations, The Rescue Initiative depends on the effective coordination of it logistics operations. Ineffectiveness of procurement processes, material handling practices, healthcare logistics practices and other logistics elements hampers operational performance outcomes.

Logistics management is that part of supply chain management that plans, implements, and controls the efficient and effective forward and reverse flow as well as storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers’ requirements (Sadjady, 2011). Logistics is the management of all activities which facilitate movement and the co-ordination of supply and demand in the creation of time and place utility. Logistics is the positioning of a resource at the right time, in the right place, at the right cost, at the right quality (Chartered Institute of Logistics and Transport (CILT), 2005). An ideal logistics management that cuts down time and space integrates several organizational functions that include: procurement, storage or warehousing, transportation, materials planning and handling, and related information systems and information systems (Gentle, 2013).

Components attributing to the best logistics management practices include warehousing, transportation and information systems which lead to cost minimization, capital minimization and service efficiency (Mukolwe and Wanyoike 2015). The major components of a logistics system are categorized into five functional areas, including; network design, information, transportation, inventory, warehousing, material handling, and packaging (Sadjady, 2011). However, the current study, adapts to the integrated approach of the Chartered Institute of Logistics and Transport (CILT), the Fritz Institute, and Rashton and Croucher (2011), which in addition to the components advanced by Mukolwe and Wanyoike (2015), and Sadjady (2011) incorporates procurement, physical distribution management, and specific sector practices like health care and vaccine logistics.

Operational performanceis the measure of the output of organisational processes such as production cycle-time, inventory turnover, and reliability. Thus, its effect on stakeholder satisfaction and organisation’s service to the target beneficiaries or market is the cardinal measure of performance (Azim *et al.,* 2015). It is about achieving the most optimal utilization of resources that yields quality products or services in the most efficient way (Slack et al., 2011 as cited in Quazi, 2017). The ultimate sought outcome is achieving improved returns, resource savings, and excellence of operations. Dean and Bowen (1994) as cited in Quazi (2017) note that, it is about achieving improvement in all operational aspects of the organisation and reduced resource cost through the efficient utilization of materials, labour and time to leverage sought outcomes.

From the theoretical lens, the study adopted the stakeholder theory propounded by Freeman (1984) and the resource – based view theory (RBV) by Peteraf (1993). The focus of these theories on group or individual who can affect or is affected by the achievement of the organization’s objectives, and an integrative resource based framework for organisations to gain strategic competitive advantage respectively grounded the influence an integrated and coordinated logistics management function has on operational performance in The Rescue Initiative. They explain operational performance as a function of stakeholder involvement and integrated approach to logistics management in nongovernmental organisations. Therefore, low stakeholder involvement and commitment of resources to procurement management, materials handling, and healthcare logistics is was thus envisaged to fail operational performance of nongovernmental organisations like TRI.

World over, operational performance of firms and national income have been found to be significantly dependent on logistics management. Understanding and decomposing the components of logistics management is fundamental to improving the efficiency of transport systems and the quality of regulation of trade and transport (Organisation for Economic Cooperation and Development, 2016). For instance, examining the potential of logistics management in Mexico, it was established that efficiency, consistency, and effectiveness of operations were found to be largely dependent on logistics management policy and practices (Martner and Garcia, 2016). In particular, operations planning and decision making in transport and other logistics function have been found essential to achieving improved performance of national institutions and businesses in Mexico.

In countries across Africa, logistics management systems and processes are still weak and a major problem in key sectors like health care and humanitarian operations (Hatefi *et al,* 2020). However, some countries like Nigeria that whose economy is regarded as one of the most rapidly developing in the history of sub-Saharan Africa, achieving operational performance targets in key sectors like oil and gas is imminently dependent on the pace of logistics development (Odunayo and Odage, 2021). They add that, though fast developing, humanitarian response needs in the northern states signal equal importance of logistics management to achieving effective operational performance in relief supplies distribution.

In East Africa, humanitarian organizations operating in countries like Rwanda still experience logistics management challenges such as delayed deliveries due to poor transportation, stock outs due to poor inventory management practices, and missing goods due to poor warehouse management practices. The above challenges have compromised operational performance results in terms of high cost, poor quality supplies, and late supplies deliveries (Kabale, 2019). In Kenya, Maria, et al. (2018), observe that humanitarian relief efforts generally operate on limited funds, and therefore, demonstrating cost effectiveness by adopting low cost inventory management practices is essential to achieving cost effective operations. Key logistics processes like procurement are key drivers in improving operational performance while their absence or inappropriate application can act as an obstruction to change and may lead to decline in operational performance.

The Rescue Initiative (TRI) South Sudan is a National Non-Governmental Organization that works to alleviate suffering among vulnerable communities in South Sudan, in the areas of Health & Nutrition, Education, Water, Hygiene & Sanitation, Food Security & Livelihoods and Conflict Resolution & Peace Building. It was established in 2012 and is legally registered with the Ministry of Justice and the Ministry of Humanitarian Affairs of the Republic of South Sudan. With the vision of being a community oriented service delivery organization and commitment to serving all vulnerable communities in South Sudan, logistics management plays a vital role in achieving operations excellence in such initiatives (Geri, 2014).

**The core goal** of TRI is to help bring forth a peaceful and self-sustaining society in social-economic development. To achieve this goal, TRI pursues the o**bjectives**of: encouraging and building up potentials and strengths of young people to cope with issues on a self-help and self-reliance basis; reducing poverty and improving the quality of living in a sustainable manner by implementing integrated conservation and community development programs; enabling communities identify problems they face; formulating and implementing activities aimed at solving those problems and better manage their resource base; and enabling communities mobilize human resources and financial capital from local and external sources to support local development initiatives (Geri, 2014). TRI also seeks to raise awareness about community needs, rights, existing development status and social (gender and children) structure and highlighting the significance of organized efforts; and training for planning, implementation and management of community-based activities and projects.

For operations to achieve the effective implementation of its projects of: providing essential primary health care services in Kajo Keji and Yei Counties, increasing immunization coverage in Mundri West County, scaling up Family Planning services in Western Bahr-el-Gazal state, and reducing the HIV/AIDS burden through behavioral change communication in Kajo-Keji County (Waakhe, 2016), TRI set out a logistics management policy. The policy seeks to; i) have effective and efficient procurement and supply of resources needed in its operations; ii) build relationships with donors and suppliers to have uninterrupted flow of support relief services to communities; iii) operate a health care and vaccine logistics programme that will improve the health of communities; iv) maintain an organized warehousing and storage function that services operational orders effectively; v) maintain an efficient and effective materials handling system that will minimize defects and damages in operations, and vi) operate an integrated and coordinated logistics function that that effectively support TRI operations.

However, the objectives that provided the link of the current study to the implementation framework of TRI included;

1. Having effective and efficient procurement and supply of resources needed in its operations;
2. Maintaining an efficient and effective materials handling system that will minimize defects and damages in operations, and
3. Operating a health care and vaccine logistics programme that will improve the health of communities.

These objectives provided the base for examining the influence of procurement processes, materials handling practices, and health care logistics practices on operational performance of The Rescue Initiative – Kajo Keji, Central Equatoria State, South Sudan,

## 1.2 Statement of the problem

In order to improve their operational performance, non-governmental organisations are driven by the ardent need to maximize the value of logistics through reduced lead-times and operational costs, improved service flexibility, reliability and responsiveness (Song and Lee, 2015). However, constrained operational performance in non-governmental organisations especially in the humanitarian and relief supplies sector is common phenomenon due to imperfections of their logistics management functions. Non-governmental organisations have experience disrupted operations and attainment of objectives due to their failure to apply best-practice logistics management (Kabale et al, 2019).

For instance, disruptions to some key logistics processes like procurement, inventory management, transport and materials handling in the Rescue Initiative has hampered operational dependability, flexibility, reliability, quality, efficiency, and stakeholder satisfaction among others in its ongoing health care and immunization projects in Kajo Keji, Yei, and Mundri respectively (TRI Logistics Performance Evaluation Report, 2019). This was compounded by the general logistics disruption in the region due to conflict in the Central Equatorial State (United Nations Mission in South Sudan, 2017). Poor quality and unplanned supplies procurement, material defects and damages were reported, and vaccine expiry and impotency were noted in the audit of project operations (TRI Project Audit Report, 2018). These imply imperfections in the procurement processes, materials handling, and health care and vaccine logistics processes of Rescue Initiative whose influence on operational performance of Rescue Initiative was the motivation of this study.

## 1.3 Purpose of the study

The purpose of the study was to examine the influence of logistics management on operational performance of non-governmental organisations in South Sudan with a case study of The Rescue Initiative – Kajo Keji.

## 1.4 Objectives of the study

The study was focused on the following objectives;

1. To examine the influence of procurement processes on operational performance of The Rescue Initiative – Kajo Keji.
2. To assess the influence of material handling practices on operational performance of The Rescue Initiative – Kajo Keji.
3. To examine the influence of health care logistics practices on operational performance of The Rescue Initiative – Kajo Keji.

## 1.5 Research questions

The study was guided by the following research questions;

1. What is the influence of procurement processes on operational performance of The Rescue Initiative – Kajo Keji?
2. What is the influence of material handling practices on operational performance of The Rescue Initiative – Kajo Keji?
3. How do health care logistics practices influence operational performance of The Rescue Initiative – Kajo Keji?

## 1.6 Research hypotheses

The hypotheses of this study were;

**Ho**: Logistics management has no significant influence on operational performance of The Rescue Initiative – Kajo Keji.

**H1**: Logistics management has a significant influence on operational performance of The Rescue Initiative – Kajo Keji.

## 1.7 The scope of the study

The scope sets the limits within which the study operated. It caters for the content scope, geographical scope, and time scope.

## 1.7.1 Content Scope

The study was limited in content logistics management as the independent variable and operational performance of Rescue Initiative – Kajo Keji as the dependent variable. The constructs of cold chain logistics upon which the study centered include: procurement processes, material handling practices, and health care logistics practices. Operational performance in non-governmental organisations was limited to the metrics of: dependability of service; cost effectiveness, quality of service or output, operations flexibility, on-time delivery, operations safety and health, availability and standardization.

## 1.7.2 Geographical scope

The study was conducted at the main operation and location of The Rescue Initiative in Kajo Keji County, Central Equatoria State, South Sudan. It is approximately 150 kilometers (93 mi), by road, south of [Juba](https://en.wikipedia.org/wiki/Juba,_South_Sudan), the [capital](https://en.wikipedia.org/wiki/Capital_city) of and largest city in South Sudan. It lies near the state border with [Eastern Equatoria State](https://en.wikipedia.org/wiki/Eastern_Equatoria) and close to the international border with [Uganda](https://en.wikipedia.org/wiki/Uganda), to the south. The coordinates of Kajo Keji are: 3°50'57.0"N, 31°39'28.0"E (Latitude: 3.849167; Longitude: 31.657778).

## 1.7.3 Time scope

The study covered the period from 2016 to 2021 in assessing the influence of logistics management on the operational performance of The Rescue Initiative - Kajo Keji, South Sudan. This is the period in which, TRI experience major operational performance failures and fracturing of its logistics processes.

## 1.8 Significance of the study

The study is of significance in several ways ranging between The Rescue Initiative – Kajo Keji, South Sudan, the NGO and humanitarian sector, national healthcare programmes in South Sudan, the donor community, researchers and academicians among others.

**The Rescue Initiative – Kajo Keji:** Being the unit studied, this could be the main beneficiary from the findings of the study. The study informs TRI on areas of improvement in logistics management practices that can help deliver improved operational performance results in its community projects and programmes.

**The NGO and humanitarian sector**: To the NGO and humanitarian sector, the study reinforces the broader approach to logistics management by nongovernmental organisations and humanitarian agencies to deliver a more effective response to needs of their target and affected communities.

**National healthcare and Vaccination programmes:** The study provides a base for improvement and streamlining of National Healthcare and Vaccination Programmes in South Sudan like the South Sudan Vaccine Cold Chain Hubs of various States. It informs them of the needed bottom-line practices in healthcare logistics, procurement management, and materials handling that will deliver set operational targets in the various states.

**Academics and other researchers:** The research contributes to the existing body of knowledge on logistics management practices and how they impact on operational performance in organisations. It also sets a foundation for future research by covering gaps in previous studies and identifying possible areas of future research.

**The researcher: T**he study is a milestone reached in fulfilling the requirements for the award of the degree of Master of Procurement and Logistics Management of Nkumba University.

## CHAPTER TWO

## STUDY LITERATURE

## 2.1 Introduction

In this chapter, a survey, theoretical review and literature review as well as the conceptual framework on logistics management and operational performance of nongovernmental organisations was done. It aimed providing a conceptual and theoretical understanding of logistics management and operational performance literature so as to establish gaps that the study sought to fill.

## 2.2 Literature Survey

A survey of possible studies on logistics management and operations management in Rescue Initiative yielded no specific results. However, closely related studies were found to have been conducted by Kabale et al., (2019), Sebit (2020), and Odunayo and Odage (2021).

Kabale et al., (2019) set out to establish the effect of logistics management on operational performance of World Food Programme using qualitative and quantitative research designs. The target population was the entire 60 employees who are directly responsible for logistics management in WFP. Primary source of data was collected using questionnaire. The collected data was processed using SPSS and analyzed using descriptive, correlation and Regression analysis to determine the significant relationship between logistics management practices and operational performance of World Food Programme. The results showed a correlation coefficient of 0.917 depicting a positive and significant relationship between logistics management practices and operational performance in WFP.

Their study recommended that World Food Programme should continue to improve logistics management practices and specifically pay more attention on warehouse management to ensure high operational efficiency in terms of quality service and products, short lead times and low cost of services and products. Though linked to the same sector and adopting the same study variables of logistics management and operational performance, their study focused on inventory management, warehousing practices, and transport management. It did not cover the logistics management constructs of: procurement processes, materials handling, and health care logistics that the current study centered on.

Sebit (2020) conducted a study on cold chain logistics and performance of Public Vaccine Management Programmes in South Sudan with a case study of Central Upper Nile State Vaccine Cold Chain Hub (CUNS-CCH). The study was guided by the objectives of: examining the role of inventory control practices; quality management systems, and safety management practices on the performance of CUNS-CCH. It adopted the legitimacy theory; the principal-agent theory, the stakeholder theory, and the integrated logistics model explain the effect of cold chain logistics systems on performance in public vaccine management programmes. Results indicated a strong positive relationship between inventory control practices, quality management systems, and safety management practices and the performance of CUNS-CCH.

His study yielded several recommendations including; improvement in its liaison with stakeholders in planning and customizing distribution operations, intensify the check for in-transit defects and conformance with standards at the point of delivery, improving its quality management structures and standard operating procedures, among others. Although closely related in theoretical grounding and vaccine management, his study left gaps on specific use of operational performance as the dependent variable. It also focused on public/government vaccine management programmes while current study sought to examine non-governmental organisations in South Sudan.

Specific to similarity in variables, Odunayo and Odage (2021) in their review study focused on logistics management and operations performance of oil and gas supply chain. The study relied on literature review as method and basis for balance of reasoning on the theoretical relationship between the study variables. Logistics management was discussed in terms of warehousing, inventory management, transportation and logistics information system while operational performance was seen through the lenses of cost reduction and lead time. From literature it is evidential that logistics management has significant relationship with operational performance. Based on this, the study concluded that logistics management has significant impact on operational performance of oil and gas supply chain.

Their study encourages organizations to seek in-depth knowledge of logistics management in the quest for improved performance in operations and also gain knowledge of the pivot role of distribution oil and gas firms to deliver cost effective and timely production. Their study centered on the oil and gas sector and left gaps on the need to focus on the humanitarian sector. In adapting to the measures of operational performance, their focused on cost reduction and lead time leaving gaps on measures adopted by the current study including: dependability of service; quality of service or output, operations flexibility, operations safety and health, availability, and standardization.

## 2.3 Theoretical review

The study adopted the stakeholder theory propounded by Freeman (1984) and the resource – based view theory (RBV) by Peteraf (1993). Their focus is on group or individual who can affect or is affected by the achievement of the organization’s objectives, and an integrative resource based framework for organisations to gain strategic competitive advantage respectively. These explain operational performance as a function of stakeholder involvement and integrated approach to logistics management in nongovernmental organisations.

## 2.3.1 The Stakeholder Theory

Stakeholder theory propounded by Freeman (1984) focuses on group or individual who can affect or is affected by the achievement of the organization’s objectives”. The integrated logistics approach adopted by this study, draws its base on the view of stakeholder theorists that managers in organizations have a network of relationships to serve that include the suppliers, employees and business partners. In the context of this study, the integrated logistics system that addresses defines operations in non-governmental organisations, should involve several elements and individuals functioning together to achieve operational performance targets (Andrea, 2014). They form a chain of stakeholders and processes that deliver project sought out outcomes. To achieve reliable, dependable, efficient, and effective operations, logistics should have an integrated management of procurement, materials handling, storage, transport, and health care logistics practices of Rescue Initiative.

According to Freeman (2002), the stakeholder theory advocates for the importance of organisations paying special attention to the various stakeholder groups that are deemed to have a stake in the operations of a firm. The representation of all stakeholder groups in key logistics decisions is therefore necessary for effectiveness of operations (Gibson, 2000). The stakeholder theory thus recognizes the need for stakeholder representation in the management of key logistics processes of procurement, materials handling, and special focus to health care logistics of Rescue Initiative – Kajo Keji. There should be mechanisms to manage and coordinate them in order to operate as a system or network of relationships in they can execute their tasks efficiently and effectively. Hence, evaluating the influence of logistics management practices of Rescue Initiative on its operational performance was central to this study.

## 2.3.2 The Resource – Based View Theory

Whereas the stakeholder theory emphasizes organisational employees as stakeholders in organisation’s efforts to improve operational performance, it does not emphasize the resource view of such employees and capabilities. Cited in Madhani (2010), the resource – based view theory (RBV) by Peteraf (1993) that assumes an integrative resource based framework for organisations to gain strategic competitive advantage, applies to the current study envisaging an integrated logistics function as a resource to achievement of operations excellence. Mweru and Muya (2015) observe that cooperation and coordination of teams of resources is required in any productive function or operation in any firm. The firm’s resources are the source of its capabilities to leverage operations.

RBV recognizes the unique organisational resources and capabilities which differentiate one organization with other organizations in the same sector (Ahmed A. *et al.*, 2018). To the current study, logistics management was viewed as an organisational capability and competence that nongovernmental organisations can exploit to achieve operational excellence especially in responding to humanitarian needs of the communities they seek to serve. In addition, Ahmed A. *et al.* (2018) argue that, the RBV theory attempts to provide answers to how organisations can operate more competitively than over others sector organisations to enhance their organisational performance. Thus, it was envisaged by this study that leveraging logistics processes like procurement, materials handling, and health care logistics could deliver improvements in operational performance of non-governmental organisations in South Sudan

## 2.4 Literature review

Literature review is a systematic identification, location, and analysis of documents containing information related to the research problem. The term is also used to describe the written component of a research plan or report that discusses the reviewed documents (Gay *et al,* 2006). It prevented the unintentional duplication of other people’s research, and gave the understanding and insight needed to place logistics management and operational performance within a logical framework**.**

## 2.4.1 Logistics Management

Logistics is the management of all activities which facilitate movement and the co-ordination of supply and demand in the creation of time and place utility (Hesket *et al,* 1973). It is the positioning of resource at the right time, in the right place, at the right cost, at the right quality (Chartered Institute of Logistics and Transport, 2005). Logistics management is the planning, implementation and control of the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customer requirements (CSCMP, 2006).

According to Rashton and Croucher, (2011), for most organizations it is possible to draw up a familiar list of key areas representing the major components of distribution and logistics. These will include; transport, warehousing, inventory, packaging and information. The current study subscribed to the integrative approach to logistics that includes procurement as a key input function to the whole logistics chain (Chartered Institute of Logistics and Transport, 2013). This list can be ‘exploded’ once again to reveal the detailed aspects within the different components. Some typical examples are given in figure 1.2. How these components are integrated in the logistics chains of nongovernmental organisations to achieve desired operational performance of The Rescue Initiative was of critical importance to this study.

**Figure 2.1**: The key components of logistics, showing some of the associated detailed elements

* Location of warehouses
* Number and size of distribution depots
* Type of storage
* Materials handling equipment

Storage, warehousing and materials handling

Information and control

Transport

Packaging and unitization

Inventory

* Unit load
* Protective packaging
* Handling systems
* Design of systems
* Control procedures
* Forecasting
* Mode of transport
* Type of delivery operation
* Load planning
* Route schedule
* What to stock
* Where to stock
* How much to stock

*Source: Rashton Allan and Croucher Phil, (2011)*

Rashton and Croucher, (2011) further advance that, logistics really looks at three types of movement: i*) Movement of raw materials:* where materials are moved from supplies *into* the organization. Here logistics is concerned with purchasing, inward transport, receiving, storage and retrieval of goods; ii) *Movement of work-in-process:*where materials are used *within* the organization. Here logistics looks at handling, movements and storage of goods during operations; and iii) *Movement of finished goods:* where materials are moved from the organization out to their customers. Here logistics looks at packaging, storage and retrieval from warehouses, shipping and distribution to customers.

Rashton and Croucher, (2011), add that sometimes it is convenient to break the logistics function into parts. Then *materials management* is responsible for the first two of these-movement of materials into and within the organization. *Physical distribution*is responsible for the third–the movement of finished goods out to customers. Unfortunately, there is some confusion in these terms as many people use the terms ‘logistics’, ‘physical distribution’ and ‘materials management’ to mean the same general function. Logistics controls the flow of materials through an organization on their journey from suppliers, through operations, and on to customers. But the final product of one organization is the raw material of another. How this integrated logistics management function influences operational performance of The Rescue Initiative formed the gist of this study.

## 2.4.2 Operational performance

Operational performance in the perspective of Azim *et al* (2015) is the measure of the output of organisational processes such as production cycle-time, inventory turnover, and reliability. Thus, its effect on stakeholder satisfaction and organisation’s service to the target beneficiaries or market is the cardinal measure of operational performance. On the other hand, Slack et al. (2011) as cited in Quazi (2017) view operational performance as achieving the most optimal utilization of resources that yields quality products or services in the most efficient way. The ultimate sought outcome is achieving improved returns, resource savings, and excellence of operations. Dean and Bowen (1994) as cited in Quazi (2017) note that, it is about achieving improvement in all operational aspects of the organisation and reduced resource cost through the efficient utilization of materials, labour and time to leverage sought outcomes.

Operational performance is diversely conceived in the different sectors. However, the current study being hinged on the humanitarian or non-governmental organisations’ sector, focus is on the service excellence component. According to Quazi (2017), the multidisciplinary approach to operations management entails several activities aiming at smoothness of operations to meet stakeholder expectations in diverse ways. Madapusi and D’Souza (2012), note that measuring operational performance centres on the dimensions of availability, quality, standardization, inventory management, and meeting on-time performance requirements. Slack et al., (2010) cited in Quazi (2017), advance variables that form the metrics of operational performance applicable to all forms of operations to include; dependability, cost, quality, flexibility, and speed.

## 2.4.3 Procurement processes and operational performance

Procurement is strictly a wider concept of acquisition than purchasing. It technically means obtaining goods and services by various means such as loans, transfer or hire as well as straight forward purchasing. It starts with need identification and focuses on customer satisfaction (Lysons and Farrington, 2016). Procurement’ covers all aspects of the acquisition and delivery of goods or services, spanning the whole contract life cycle from the identification of needs to the end of a service contract, or the end of the useful life and subsequent disposal of an asset (Government Procurement Solutions, 2011). The Act also defines the “procurement process” as the successive stages in the procurement cycle including planning, choice of procedure, measures to solicit offers from bidders, examination and evaluation of those offers, award of contract, and contract management. Since procedures constitutes a series of logical actions or events of executing a particular function to achieve a planned outcome, the activities that form the procurement process set out the procedures that guide acquisition of supplies, services and works by nongovernmental organisations.

**Figure 2.1: The generic procurement process**

# Defining the need-*specifications*

# Identifying the need *Requisition or Bill of materials*

# Award contract

# Negotiate best value

# Analysing quotations and selecting the most promising supplier

Developing contract terms

# Source the market-*identifying potential suppliers*

# Inviting quotations or tenders *Request for quotations or invitation to tender*

# Appraising suppliers

Contract/supplier management- *monitor, review and maintain* performance

## Source: Chartered Institute of Procurement and Supply (2013)

According to the Chartered Institute of Purchasing and Supply (2013), the Procurement cycle is the cyclical process of key steps when procuring goods or services. CIPS provides a generic procurement process (Figure 2.1) to involve the following steps: a) identifying the need-Requisition or Bill of materials; b) defining the need-specifications; c) developing contract terms-preparation of tender; d) source the market-identifying potential suppliers; e) appraising suppliers; f) inviting quotations or tenders-Request for quotations or invitation to tender; g) analysing quotations and selecting the most promising supplier; h) negotiate best value; i) award contract; and j) contract/supplier management-monitor, review and maintain performance. Hence, the CIPS generic model sets out the basic procedures nongovernmental organisations should follow in the acquisition of supplies, services and works.

In every function, planning is the activity that begins the process, the same holds for procurement (Willy and Njeru, 2014). Given the enormous amounts of money involved and the belief that funds must be utilized efficiently for the betterment of targeted communities, gives the reason for which every stage of the procurement cycle must be taken seriously (Adam *et al.*, 2012). Procurement planning is a major issue in the practice of procurement yet little emphasis is placed on planning in most nongovernmental projects. Procurement planning is very relevant for the attainment of operational performance outcomes of efficiency, effectiveness, and economy- which are critical measures. However, the World Bank (2004) observes that much attention has not been given to it in most developing countries.

Fitzgerald *et al,* (2006) note that procurement planning is a dynamic process that requires input from many different categories of professionals. It is therefore recommended that procurement planning be carried out by a multidisciplinary team established specifically for the purpose, with the participation of different technical and administrative professionals who have experience in procurement and supply management, and knowledge and experience of humanitarian and nongovernmental organisations community development programs. The procurement planning team may draw on expertise from specific advisors when necessary. Thai (2009) adds that the procurement planning phase is characterized by research and strategic planning for the procurement; both long- and short-term costs are considered and calculated. Procurement officials engage in price analysis and cost analysis. This is critical to ensuring cost effective and affordable operations performance by TRI.

Proper planning and implementation contributes immensely to effective operational performance (Kibet and Njeru, 2014). Good procurement planning contributes to achievement of primary organisational and operational objectives (Interagency Procurement Working Group, 2006). On the other hand, poor procurement planning results in failure to align procurement with operational and budgetary allocations (Agaba and Shipman, 2007). Compliance with procedures set out in the procurement policy of an organisation should help realize their objectives and drive towards effective operational performance. Kibet and Njeru (2014) note that procurement activities, aim at anticipating requirements, sourcing and obtaining supplies, moving supplies into the organization, and monitoring the status of supplies as a current asset. The contribution of procurement planning to operational performance is perceived in terms of quality, delivery, cost and flexibility, which has an impact on an organisation’s capability to meet customer expectations.

According to the PEC (2009) the purpose of the preliminary examination is to identify and reject bids that are incomplete, invalid, or substantially non-responsive to the bidding documents and therefore are not to be considered further. It involves the application of checks: such as verification, eligibility, bid security, and completeness of the bid and substantial responsiveness. Thus, Kibet and Njeru (2014) note that a bid is likely not to be considered if it submitted by a bidder who has participated in more than one bid, received after the time and date fixed for its receipt. Developing an evaluation methodology that will ensure selection of the best supplier, for the right reasons and at a price that represents value-for-money over whole-of-life, is vital to achievement of operational performance targets (Government Procurement Solutions, 2011). How this formed an integral part of the procurement processes of The Rescue Initiative was sought to be established by the study.

Contract management plays a vital in operational performance of nongovernmental organisations because it is a requirement for all formal and open tendering processes for contracts that exceeds certain thresholds (Office of Government Commerce, 2012). It is very important when a contracting authority has awarded a contract that such contracts are properly managed. The Aberdeen Group (2006) asserted that contract management has been placed at the centre of business strategy due to the pressure extracted from contracted relationships to avoid unnecessary costs and risks on the taxpayers. Organisations seeking to reduce operational costs in order to satisfy the community requirements quickly by having more standards and centralized contract processes to comply with policies to better manage risk. Hence, contract management is imminent in any efforts to achieve operational performance through compliance with policy and mitigating any risk in the procurement process.

In the CIPS Guide (2007) it is noted that successful contract management is most effective if upstream or pre-award activities are properly carried out. The Office of Government Commerce (2002) also recognizes that good contract management practice is essential to realization of expected operational performance to the beneficiaries and community. But such service should be sustainable. At center of such practice should embrace service delivery management, relationship management, and contract administration. So, how the former elements are integrated into contract management within The Rescue Initiative to achieve operational performance targets was sought to be established by the study.

Cost effective operations should be a focal item of contract management activities in nongovernmental organisations. Elsey (2007) further recognizes that organizations in both the public and private sectors are facing increasing pressure to reduce costs and improve financial and operational performance. New regulatory requirements, globalization, increases in contract volumes and complexity have resulted in an increasing recognition of the importance and benefits of sustainable contract management. Conceptually, Kibet and Njeru (2014) note that contract management has become a megatrend in many nongovernmental organisations especially as result of social accountability and increased demand of operational performance.

## 2.4.4 Materials handling practices and operational performance

Materials handling is non-value-adding but a cost-adding activity which will obviously impact on operational cost of the organisation. Hence, materials handling should be kept to a minimum. In nongovernmental organisations operating in humanitarian relief environments where supplies’ handling is inevitable, cost reduction efforts should be intensified to have more cost-effective operational performance (Haynes, 2017). In addition, over 80% of humanitarian supplies shipment time is spent in moving from one place to another, poor materials handling may result in delays and defect to supplies integrity which compromises reliability, and dependability of operations.

Materials handling is an activity concerned with moving raw materials, work-in-progress, and finished goods into the plant, with in the plant and out of the plant to the warehouse, distribution networks or directly to target recipients (Rosenatt, 2016). It is ‘the function dealing with the preparation, placing and positioning of materials to facilitate their movement or storage’. Materials handling is the art and science involving the movement, handling and storage of materials or supplies during different stages of the supply and distribution chain (Haynes, 2017). It involves the movement of materials, manually or mechanically in batches or one item at a time with in the plant. The movement may be vertical, horizontal or the combination of both; it can be fixed or variable path.

The current study of materials handling in nongovernmental organisations was centered on issues such as health and safety, equipment repair and maintenance, and training of operations staff as seen to account for the declining operational performance levels of The Rescue Initiative. Health and safety in materials handling requires that employees receive training prior to operating and demonstrate they are competent to operate material handling equipment (Occupational Safety and Health Administration (OSHA) Standards, 2007). Proper maintenance of material handling equipment is extremely essential for preventing the occurrence of bottlenecks or points of congestion (Sinduhja, 2016). Operator training refers to the specialized education of the organization’s employee in the general knowledge and specific skills required to do their jobs effectively (Odion, 2016). As science advances and technology becomes more complex, competent and continuous training increases in importance.

Dovan (2017) adds that, no one must operate a machine or clean or maintain it, unless they are trained and authorized to do so. Supervision is a means of checking that the work equipment is safe and that operators are following the safe working procedures. Any rules must be made clear, such as not wearing loose clothing, ties and jewelry, and that long hair is tied back; not allowing the consumption of alcohol and non-prescription drugs and certain prescription drugs. According to OSHA Standards (2007), employees must follow instructions and not tamper with any guard or other safety device. Any defects or faults need to be reported. In moving load, checking on whether the load is done first to decide how best to move it either to forklift, hand truck, hoist, conveyor, manually, etc. Then checking the route to be taken and removing obstacles, or finding another route if the obstacle cannot be moved should be done.

Dovan (2017) notes that, in safe systems of work, work equipment must be used for its proper purpose and only as intended by the manufacturer. Safe working procedures must be established for all work equipment. Any risk assessment should help to identify these: the environment around the work equipment must be safe e.g., no spillages or obstacles; and provision, instruction, training and authorization – everyone who uses work equipment must be made aware of the potential hazards by a combination of information, instruction and training. Tadesse and Admassu (2006), occupational health and safety is one of the most important aspects of human concern. It aims an adaptation of working environment to workers for the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.

Under the OSHA Standards (2018), documentation of all maintenance actions is a requirement in the proper maintenance of materials handling equipment: Materials handling processes should include documenting all maintenance actions taken, along with equipment performance data. Keeping track of how often machine servicing is done, how long it takes fixing the problem and potential causes. This tracking will help the organisation stay on schedule with its maintenance and provide the useful information needed for the improvement of operations. Similarly, Kizim (2013) notes that preventing the emergence of failures and increasing equipment reliability, discovering them rather than waiting until they become major failures is critical to achieving effective operations.

Sinduhja (2016) asserts that preventive maintenance is by far one of the best maintenance techniques suggested for material handling equipment. By preventive maintenance, the equipment can be kept running thereby minimizing costly interruptions in the materials flow in operations. A little periodic inspection and minor adjustments may be enough to prevent equipment breakdown. According to the OSHA Standards (2018), preventive maintenance involves regularly inspecting equipment, systematically conducting maintenance tasks and correcting issues as soon as they are identified. Sinduhja (2016) further notes that preventive maintenance consists of frequent inspections and examination of the material handling equipment, with special attention to the components requiring it. It also includes lubrication, adjustment, or repair while the equipment is still in a minor stage of defect. The aim is to uncover conditions leading to breakdown during operations.

The proper maintenance of material handling equipment is extremely essential for preventing the occurrence of bottlenecks or points of congestions (Sinduhja, 2016). Operations flow can be maintained only if the material handling equipment is in the proper working order. However, according to the OSHA Standards (2018), reactive maintenance is one strategy for taking care of your equipment, but it's not the most cost-effective method and can cause reliability and safety issues. Instead, the use of preventive maintenance to ensure that organistional operations always run smoothly is recommended. To achieve consistency, cost effectiveness, and reliability of operations to beneficiaries of their initiatives, organisations find repair and maintenance undoubtedly a very important element of their operations.

Operational performance depends on equipment efficiency. Mechanical departments of organisations perform the function of facilitating smooth running of the equipment. Availability of the equipment is provided by high-quality, timely and safe maintenance and repair (SMR) in a case of rational use of resources. According to Lawson in Kizim (2013) such effects as reducing the number of equipment failures, downtime, maintenance costs, and increasing lifetime, reliability and performance can be achieved by application of science-based MRO systems. Therefore, proper maintenance of materials handling equipment is essential to ensuring efficiency of operations in humanitarian initiatives.

The International Labour Organisation (2013) defines maintenance as workplace activities such as the construction, installation, setting up, testing, adjusting, inspection, modification, and maintaining equipment on a preventive, periodic and predictive basis. These activities include lubrication, cleaning or unjamming of equipment and making adjustments or tool changes where a worker may be exposed to the unexpected energization or startup of the equipment or release of hazardous stored energy. Donavan (2017) adds that, maintenance, inspection and testing is an essential element of logistics operations. Work equipment must be maintained in an efficient state, in good working order and repair. Inspection and testing are appropriate where risk assessment has identified a significant risk to the operator of the equipment.

Alli (2008) observes that the continuous integration of improvements into the work process is vital, but it is possible only if everyone involved is properly trained. Training is an essential element in maintaining a healthy and safe workplace and has been an integral component of occupational safety and health management for many years. The National Institute for Occupational Safety and Health (2007) notes that, training alone is not an ergonomic improvement, instead, it should be used together with any workplace changes made. Workers need training and hands-on practice with new tools, equipment, or work practices to make sure they have the skills necessary to work safely. Training is most effective when it is interactive and fully involves workers.

Alli (2008) advances that the primary role of training in occupational safety and health is to promote action. It must therefore stimulate awareness, impart knowledge and help recipients to adapt to their own roles. Health and Safety Executive (2011) notes that operator training increases on output of organization operations. The training equips employees with ready skills that enable them to control machinery and monitor machine operations so that available machines perform their expected functions well. In addition, Kathurima, (2016) asserts that, operators that receive ongoing training are more efficient at operating materials handling equipment. This efficiency translates into more productive employees. Improved morale and efficiency gained from training will improve how much each of the equipment operators can get done in a day and that improves the organisation’s operations.

## 2.4.5 Health care logistics practices and operational performance

Healthcare supply chains are unique and different from other supply chains due to their network complexity consisting of many different parties at various stages of the value chain (Kritchanchai *et al,* 2019). The stakeholders from the supply side and the demand side have different interest in operating healthcare supplies logistics systems. The suppliers are driven by profit maximization while the healthcare providers focus more on cost and safety of recipients or beneficiaries [Vikram et al. 2012; Krichanchai 2015]. Consequently, implementing healthcare supply chain and logistics management to achieve target operational performance is so challenging especially in fragile environments like conflict zones. The WHO (2014) observes that, widening healthcare logistics networks, diversity of operational performance strategies, expanding target populations, increase in logistics infrastructure requirements and funding challenges, are just a few of the new realities that face organisations seeking to optimize operational performance.

Healthcare logistics practices are practices involved in all operations of providing healthcare supplies and services including medical consumables, pharmaceuticals, catering, laundry cleaning, waste management, home-care products, information technology, vehicle fleet management and general supply (Kritchanchai *et al,* 2019). Healthcare inventory management is influenced by the suppliers and other stakeholders involved in the value chains of these supplies and services who have different perception and interests in setting inventory policies (de Vries, 2011). Inventory control is a key component of healthcare supply chains in ensuring that whenever and wherever items like vaccines need to be safeguarded and moved in the supply chain network, they are transported in such a way that the quality of the item is maintained (Fritz and CILT, 2015).

Healthcare services and Immunization Supply Chain and Logistics systems support the achievement of acceptable healthcare service provision and coverage, using coping mechanisms to overcome enduring challenges in healthcare supplies storage, distribution and management (WHO, 2014). The nature of healthcare supply chains means that there are a number of occasions when the items need to be issued, packaged and transported before they are delivered /administered to patients or beneficiaries (Fritz and CILT, 2015). To meet operational performance targets raises decisions on valuation, stock documentation, preparing the shipment, choice of transport mode, standards and practices to apply across the chain, last mile management, and assuring quality at final delivery. This was critical to analysis of logistics operations and their impact on attainment of operational performance of nongovernmental organisations involved in healthcare services and immunization programmes.

Improper storage and transportation can put healthcare supplies at risk of degradation. Therefore, an effective healthcare supply chain and logistics system is essential to ensure supplies quality. Conventional healthcare supply chain and logistics systems are inefficient, they therefore result in wastage and expiry of healthcare supplies, inventory control issues, and high costs (Program for Appropriate Technology in Health (PATH), 2011). Existing systems cannot keep pace with the changing landscape of micro and macro healthcare programmes, resulting in stock-outs, potential distribution of ineffective healthcare supplies and vaccines, avoidable wastage and inadequate logistics capacity, all of which have considerable coverage, performance and cost implications. The World Health Organisation (2014) notes that, these inefficiencies not only hinder the ability to provide much-needed healthcare services, they also yield a lower return in health outcomes for those investing in the research, production, procurement and delivery of healthcare supplies, thus threatening the dependability of investment sources and operations.

According to WHO (2014), the growth in complexity of healthcare programmes is occurring at the same time as the development and application of innovative supply chain strategies. Organisations have an opportunity to improve their performance and a mandate to provide the right healthcare supplies in the right quantities, in the right condition, at the right time, in the right place and at the right supply chain cost. From PATH (2011), using vendor managed inventory aligns organisational objectives and streamlines supply chain operations. The business value is a direct result of increased information flow.

According to WHO (2005), the storage, trade and distribution of medical supplies are activities that are carried out by various companies, institutions and individuals. The nature of the risks involved may generally, however, be the same as those in the manufacturing environment, e.g. mix-ups, contamination and cross-contamination. There are thus aspects in distribution to which the principles of good manufacturing practice (GMP) should be applied. These include, but are not limited to, storage, distribution, transportation, packaging, labeling, documentation and recordkeeping practices. Kopp, (2005) also points out that, there should be written procedures and records to ensure traceability of the products distributed. Inspection and certification of compliance with a quality system by external bodies is recommended.

Such certification should not, however, be seen as a substitute for compliance with these guidelines and the applicable principles of GMP relating to pharmaceutical products. Managing the "Last Mile" is key to achievement optimal operational performance in the healthcare logistics programmes (CILT-UK, 2006). The last stage is the actual delivery of the shipment to its destination, which in logistics is often known as the "last mile". Key considerations when arranging a final delivery concern not only the destination, but the timing of the delivery so the critical labor and warehousing space is available. Trucks and vans, the primary modes of transportation for this stage, must meet the specifications necessary to transfer the healthcare logistics shipment.

Supplies potency and quality assurance in the inventory control and distribution system is important in the healthcare supply chain (Kopp, 2005). The setting and operation of healthcare logistics chains is dependent on the concerned supply chains since each supplies unit to be carried has different requirements in terms of demand, load integrity and transport integrity. According to The World Health Organisation (2005), a quality management system (QMS) is a collection of [business processes](https://en.wikipedia.org/wiki/Business_process) focused on consistently meeting customer requirements and enhancing their satisfaction. It encompasses elements such as the organizational structure, quality objectives, quality manual, quality policies, procedures, processes and resources needed to implement [quality management](https://en.wikipedia.org/wiki/Quality_management). It also includes quality data management, control documents, continuous improvement including corrective and preventive action.

According to Bergmans, (2002), healthcare logistics operations should have clear safety and health policies in place, which emphasize the paramount importance of safety and the protection of employees and beneficiaries or target communities. The policies should outline the organisation, arrangements and responsibilities for achieving the required results and should be known and understood by all employees. Yahia (2010) notes that, the prime responsibility should lie with line management who should be required to demonstrate a high level of commitment to safety and health not only in terms of logistics operations but also in terms of personal behavior. Logistics service providers need to have safety management systems in place to ensure that the risks arising from the transport of healthcare supplies that are potentially hazardous have been fully identified and are being properly controlled and managed.

A system should be in place to enable a rapid and effective response to any accidents occurring during healthcare logistics operations (PATH, 2011). The logistics operations should have an emergency plan for responding to any accident or any other incident (Yahia, 2010). This emergency plan should contain: action to be taken in case of different types of emergencies; individual responsibilities; arrangements for handling incoming emergency calls; arrangements for 24 hours coverage; training requirements of the responsible personnel; the specific arrangements required by individual customers; and a list of the different parties to be informed with their contact details.

Healthcare logistics systems should provide for identifying and satisfying the training needs of staff in an appropriate and adequate manner so that all operations are carried out safely. Systems should ensure that such training needs are regularly reviewed so that all employees are competent at all times to carry out the duties for which they are responsible (Kritchanchai *et al,* 2019). In particular, it should be reviewed whenever there are significant changes in the work carried out or in the equipment to be used. Bergmans (2002) adds that, training must take account of any statutory regulations but should also reflect sector specific codes or standards relevant to the work. A system should be in place requiring a written specification for purchase or lease of any healthcare supplies item. Effective maintenance programmes should be in place, which require that all equipment (owned, leased or subcontracted) is adequately maintained to prevent and detect defects before they cause accidents or breakdowns.

## 2.6 The conceptual framework

The conceptual framework of the study highlights logistics management and operational performance of non-governmental organisations as the independent and dependent variables respectively.

**Figure 2.2.a: Conceptual framework**

* Dependability of service
* Cost effectiveness
* Quality of service or output
* Operations flexibility
* On-time delivery
* Operations safety and health
* Availability
* Standardization

**Materials Handling Practices**

* Handling Safety and Health
* Equipment maintenance
* Training in Materials Handling

***Independent variable***

***Dependent variable***

**Procurement Processes**

* Procurement Planning
* Bid/tender evaluation
* Contract management

**Health Care Logistics Practices**

* Inventory Control
* Quality Mangement
* Health and safety practice

**Logistics Management**

**Operational Performance**

***Source****:* *Adopted from* *Kizim (2013), OSHA Standards (2018), and CIPS (2013)*

The independent variable of the study was logistics management adopting the constructs of: procurement processes, inventory management practices, and materials handling practices. These constituted the logistics components that were observed to have suffered major setbacks in the period studied. The dependent variable was operational performance in non-governmental organisations for whose measurement the study adapted the metrics of: dependability of service; cost effectiveness, quality of service or output, operations flexibility, on-time delivery, operations safety and health, availability and standardization.

## CHAPTER THREE

## METHODOLOGY

## 

## 3.1 Introduction

Research methodology involves intellectual activities of investigating particular with a specific aim of collecting, analysing, and interpreting related data (Vargas-Hernández *et al.*, 2011). This chapter therefore, gives a detail of the general design and methods of research that were adopted by the study of the influence of logistics management on operational performance of non-governmental organisations in South Sudan with a case study of Rescue Initiative – Kajo Keji. It specifies the study population, sample size, sampling methods and techniques, data collection methods and instruments, validity and reliability tests, data processing, analysis and limitations of the study.

## 3.2 Research design

A research design is a strategic framework for action that serves as a bridge between research questions and the execution, or implementation of the research strategy (Abutabenjeh and Jaradat, 2018). This study adopted a post-positivist phenomenological approach and a cross-sectional duration and a case study survey strategy to research. It used both qualitative and quantitative methods that integrated the use of both descriptive and inferential statistics in investigating the influence of logistics management on operational performance of Rescue Initiative – Kajo Keji.

## 3.2.1 Research approach

As the basic approach to the research study (Kabir, 2016), a post-positivist phenomenological approach was adopted because it aimed at using quantitative data, testing hypotheses, and drawing generalizations from a sample in the analysis of the influence of logistics management on operational performance of Rescue Initiative – Kajo Keji. It gave an in-depth understanding of phenomena that made it ideal for the cause-effect relationship sought by the study on logistics management and operational performance of Rescue Initiative – Kajo Keji.

## 3.2.2 Research strategy

The study adopted a case study survey strategy. A case study research strategy was used because it allows engagement of specific respondents with common characteristics enough to represent the rest other than studying the entire population. Thus, the study was able to focus on collecting data from Rescue Initiative – Kajo Keji for drawing conclusions and generalizations on logistics management on operational performance of Rescue Initiative – Kajo Keji.

## 3.2.3 Research duration

The study adopted a cross sectional duration. A cross-sectional duration was adopted because a cross-section of the population made the research feasible involving only one study population which was contacted once for the required data. The use of alternative duration would rather have made it difficult and aided the loss of research interest.

## 3.2.4 Research methods

Both qualitative and quantitative methods were adopted by this study. The use of mixed methods according to Creswell (2014) is based on the assumption that a combination of qualitative and quantitative methods provides a more complete insight into phenomenon being studied than relying on a single approach. Thus, in the analysis, interpretation and drawing of conclusions, the study used frequencies, testing of hypotheses, analysis of variance (ANOVA), correlation and regression analysis of findings on the influence of logistics management on operational performance of Rescue Initiative – Kajo Keji

## 3.3 Target population

The study population was 167 in total including: the 5 Heads of Department, 76 staff of Field Operations, 16 staff of Procurement and Stores Department, 7 Quality Standards and Assurance staff, 3 Internal Audit and Risk Management, 41 Transport and Logistics staff, 15 Supervisors, and 4 Finance and Accounting staff. These were targeted because they were presumed to have knowledge on logistics management practices and operational performance dynamics of The Rescue Initiative – Kajo Keji, South Sudan.

## 3.4 Sample Size

A sample of 127 was adopted by the study determined using the table of Krejcie and Morgan (1970) for sample size determination. Kabir (2016) defines a sample as a collection of some of subset elements of the population. Dealing with the whole population would be costly, time consuming, faces limited cooperation, less accurate, among other limitations and therefore, dealing with a smaller group of population elements yields better research convenience and reliability upon generalizations that apply to the whole population would apply. According to Krejcie and Morgan’s table for any given population, they suggest a suitable sample to be considered for the study as appended in Appendix I. Basing on the table, a sample size of 127 was adequate for a target population 167 in evaluating the logistics management and operational performance of The Rescue Initiative – Kajo Keji, South Sudan.

## 3.5 Sampling methods and techniques

Determining the sample elements for the study to constitute the sample size of 127, both the *probability* and *non-probability* sampling methods were used in this study. There was need for non-probability sampling method in which the elements of the population have no known probability of being selected (Ellen, 2020). Though biased, it offered a faster, cheap and less complicated approach to sampling besides not offering any chance to leaving out key informants in the study population. Under the non-probability sampling method*, census* and *purposive* sampling techniques were used for key informants especially heads of department representing departments that are charged with logistics management operations, Finance and Accounting, and Quality Standards and Assurance staff who were directly charged with the community’s interest and expectations of TRI’s project and programme commitments. These techniques were used because according to Ellen (2020), they enabled the selection of only those members of the population with sufficient technical knowledge of the subject matter so as to access technically required information.

The *probability sampling* method in which all the elements of the population have known probability of being selected (Kabir, 2016) was also applied to this study. In this, a *simple random sampling* technique was used in the selection of the respondents from each category where non probability sampling has not been applied. All names in a particular category were put in a box and randomly selected. This technique is selected because it is advantageous in creating equal chances for all respondents to be selected and avoid bias (Kabir, 2016). The application of these yielded a sampling frame as shown in table 3.1.

## Table 3.1: Sampling frame

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Population No.** | **Sample No.** | **Sampling Technique** |
| Head of department | 5 | 5 | Purposive Census |
| Field Operations | 76 | 52 | Simple random |
| Procurement and Stores | 16 | 12 | Simple random |
| Audit and Risk Management | 3 | 3 | Census |
| Quality Standards and Assurance | 7 | 7 | Census |
| Supervisors | 15 | 10 | Simple random |
| Transport and Logistics | 41 | 34 | Simple random |
| Finance and Accounting | 4 | 4 | Census |
| **Total** | **167** | **127** |  |

## Source: The Rescue Initiative HR records, 2021

## 3.5.1 Response rate

Out of the 127 respondents sampled and reached, 99 were able to respond to questionnaires provided by the researcher. 28 respondents did not return questionnaires indicating a 77.9% response rate and a 22.1% non-response rate as shown in table 3.2. This implies that the information obtained gives a significant representation of the population studied and therefore reliance could be placed on the statistics to draw a conclusion on the relationship between the logistics management and operational performance of The Rescue Initiative – Kajo Keji, South Sudan.

## Table 3.2: Response rate

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Response  Non response  **Total** | 99  28  **127** | 77.9  22.1  **100.0** | 77.9  100.0 |

*Source: Primary data, 2022*

## 3.6 Background information of respondents

The study sought to establish background information of the respondents regarding age, sex, level of education, department/occupation, marital status, and period of work or operations in The Rescue Initiative – Kajo Keji, South Sudan.

## 3.6.1 Age of respondents

The study went ahead to find out the age of respondents as this was seen to influence their response and judgment and findings were as indicated in table 3.3. The result in table 3.3 shows that 5.1% of the respondents involved in the study were between 25 years and below, 32.3% were 26-35 years, 51.5% were between 36-45 years old, 9.1% were 46-55 years old and 2.0% were above 55 years.

## Table 3.3: Age of respondents

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid 25 and below  26 - 35  36 – 45  46 - 55  Above 55  **Total** | 5  32  51  9  2  **99** | 5.1  32.3  51.5  9.1  2.0  **100.0** | 5.1  37.4  88.9  98.0  100.0 |

*Source: Primary data, 2022*

Majority of the respondents involved in the study were over 25 years of age implying that respondents’ judgment of the variables under study gave reliable data to give a proper prediction of the relationship between logistics management and operational performance of The Rescue Initiative – Kajo Keji, South Sudan.

## 3.6.2 Sex of respondents

The study sought to find out the sex of respondents from The Rescue Initiative – Kajo Kejiand findings were as indicated in table 3.4.

## Table 3.4: Sex of respondents

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Male  Female  **Total** | 70  29  **99** | 70.7  29.3  **100.0** | 70.7  100.0 |

*Source: Primary data, 2022*

The findings of the study indicate that 70.7% of the respondents involved in the study were male, 29.3% of the respondents were female. It is noted that, the ratio of male respondents exceeded that of female respondents. The results represent a biased representation of sex. However, given the nature of the target population and operations studied, it was imminent to have a greater male representation.

## 3.6.3 Level of education

The study sought to ascertain the level of education of respondents and draw inferences from their judgment of logistics management and operational performance of The Rescue Initiative – Kajo Keji and findings were as indicated in table 3.5. The results from table 3.5 show that the total number of respondents involved in the study, 8.1% had masters’ degrees, 48.5% had bachelors’ degree, 32.3% held diplomas, and 11.1% held certificates. Majority that is 88.9% of the respondents involved in the study at least held a Diploma. This therefore increased the level of accuracy of the responses obtained from the field and implied a sound judgment of the various issues investigated on logistics management and operational performance of The Rescue Initiative – Kajo Keji.

## Table 3.5: Level of education

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Masters  Bachelors Degree  Diploma  Certificate  **Total** | 8  48  32  11  **99** | 8.1  48.5  32.3  11.1  **100.0** | 8.1  56.6  88.9  100.0 |

*Source: Primary data, 2022*

## 3.6.4 Department/relationship with TRI

Department/relationship of respondents with The Rescue Initiative – Kajo Keji was worth ascertaining as this would provide a link between logistics management and operational performance. Findings were as shown in table 3.6.

## Table 3.6: Occupation of respondents

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Head of department  Field Operations  Procurement and Stores  Audit and Risk Management  Quality standards and Assurance  Supervisors  Transport and Logistics  Finance and Accounting  **Total** | 5  40  9  3  5  6  28  3  **99** | 5.1  40.4  9.1  3.0  5.1  6.1  28.2  3.0  **100.0** | 5.1  45.5  54.6  57.6  62.7  68.8  97.0  100.0 |

*Source: Primary data, 2022*

Results in table 3.6 show that 5.1% of the respondents involved in the study were Heads of Department, 40.4% Field Operations, 9.1% were Procurement and Stores staff, 3.0% Audit and Risk Management, 5.1% Quality standards and Assurance staff, 6.1% Supervisors, 28.2% Transport and Logistics, and 3.0% Finance and Accounting.

## 3.6.5 Marital status of respondents

Stability of employees at the place of work is profoundly affected by their marital status. The study thus, sought to establish the marital status of respondents in evaluating their stability and thereby guarantee reliability of their responses and findings were as indicated in table 3.7.

## Table 3.7: Marital status of respondents

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Single  Married  Separated  Divorced  **Total** | 26  65  2  6  **99** | 26.2  65.7  2.0  6.1  **100.0** | 26.2  91.9  93.9  100.0 |

*Source: Primary data, 2022*

The results in table 3.7 show that the biggest number of respondents was the married category with 65.7% followed by the number of singles at 26.2%, then the divorced were 6.1%, and separated were 2.0%. This implies that most respondents were stable in their work they do. This is due to the fact that in the society, the married people are always considered to be responsible and stably resident in the local communities of region of Kajo Keji studied. Their stability of residence makes the information provided by them reliable in analyzing logistics management and operational performance of The Rescue Initiative.

## 3.6.6 Period of work/relating with TRI

Establishing the respondents’ period of work with The Rescue Initiativewas essential to the study as this provides a basis for assessing reliability of responses given by them in terms of their knowledge of logistics management and operational performance of The Rescue Initiative. Study findings were as shown in table 3.8.

## Table 3.8: Period of work/relationship with TRI

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid 0 - 5  6 - 10  **Total** | 57  42  **99** | 57.6  42.4  **100.0** | 57.6  100.0 |

*Source: Primary data, 2022*

From table 3.8, it is indicated that 57.6% of the respondents involved in the study were 0-5 years of service, and 42.4% were between 6-10 years of service. Majority of the respondents involved in the study were in 0 - 5 years of service implying a majority respondent’s may have had little exposure to logistics management and operational performance aspects of The Rescue Initiative. This was attributed to its recent start up in 2012 and therefore could not have a significant impact on study findings.

## 3.7 Data Collection Methods

Two kinds of data were collected for this study that is, primary data and secondary data. Primary data was collected through survey, and interviews. Review of documents including; procurement reports and policies, logistics management policies, and performance reports was done to collect secondary data. Multiple methods of data collection were used because triangulation of findings of various methods gives a more complete and dissected view of the logistics management and operational performance situation in The Rescue Initiative.

## 3.7.1 Interviewing

An interview is a research strategy of gathering information about participants’ experience, views, and beliefs concerning a specific research question or phenomenon (Kabir, 2016). Interviews are to be conducted to obtain data on logistics management and operational performance of The Rescue Initiative. Interviews were conducted with key informants like the Heads of department, and audit and risk management staff. These gave vital and in-depth data on logistics management and operational performance of The Rescue Initiative.

## 3.7.2 Survey/questionnaire method

Survey is a self reporting method of data collection involving the use of a questionnaire to gather data about the variables of interest in an investigation (Ryan et al, 2009). It gathers data in accordance with the specifications of the research objectives, questions and hypotheses. It was necessary for this study to give an in-depth and wider coverage of both the unit of investigation and the study variables, and also provide savings in time. Questions were coded following a likert scale of 1 to 5 as the translated progression from levels of disagreement to high levels of agreement on logistics management and operational performance of The Rescue Initiative.

## 3.7.3 Document review

Document review is method that involves review of “any written material other than a record that was not prepared specifically in response to some requests from the investigator” (Ellen, 2020). It is necessary to collect secondary data required by the study. The study involved a review of documents including those relating to logistics management and operational performance of The Rescue Initiative. These documents included but not limited to: logistics reports, Operational Performance Reports, and Journals. The data obtained provided a backup and supportive role to the raw data that was obtained using primary data sources and methods.

## 3.8 Data Collection Instruments

Data collection started with determining the kind of data required and thus determine instruments the researcher needed to collect the data from the selected sample. The study needed both primary and secondary data and hence adopted several data collection instruments including self administered questionnaires, interview guides, and document review checklists.

## 3.8.1 Self-Administered Questionnaires

The study used self-administered questionnaires to collect primary data. These questionnaires were delivered physically by the researcher to respondents in the sample who filled them and later collected by the researcher from the point designated for their return. These tools contained questions on logistics management and operational performance of The Rescue Initiative. The questions required the respondents to tick their favored options supplied on a five point Likert scale to which levels of agreement; Strongly Disagree, Disagree, Not Sure, Agree and Strongly Agree were weighed as *1, 2, 3, 4* and *5* in score. This instrument was chosen because it was easy to administer and responses could be easily analyzed.

## 3.8.2 Interview Guide

Interview guides were used to gather consistent general information about logistics management and operational performance of The Rescue Initiative. In addition to answering questionnaires, the interviews targeted key respondents in The Rescue Initiative like Transport and Logistics staff, Procurement and Stores staff, and Heads of Department. This method was appropriate because it ensured proper understanding and capturing detailed facts about the issues associated with logistics management and operational performance of The Rescue Initiative. There was a planned face-to-face interaction before the actual interview of respondents. Appointments with respondents were made, and time of the interview also agreed upon in advance. At analysis, the data obtained from the interviews was triangulated with the data from other methods before conclusions were made.

## 3.8.3 Document review checklists

Document review checklists are informational job aids that spell out what documents to be reviewed (Jashim, 2010). They were necessary because they ensured consistence and completeness of what was reviewed to gather data intended to be collected by them. The checklists involved mainly logistics reports, Operational Performance Reports, and Journals..

## 3.9 Administration of the instruments

A pre-test was carried out on the intended respondents before administering the questionnaires. Pre-testing allowed adjustments to the questionnaire by incorporating comments from the pre-test respondents in addition to assessing the language simplicity, ability to get information needed, acceptability and privacy of the respondents. This gives clues to the unforeseen in the study since a thorough check of planned procedures is appraised (Mitchell, 1996). Hence, content validity tests, reliability tests and guarantee of respondents’ privacy by data collection instruments were put into consideration. In addition, all the respondents that were issued with questionnaires and all participating in the study were expected to be informed and knowledgeable about logistics management and operational performance of The Rescue Initiative.

## 3.9.1 Content Validity tests

Validity refers to the extent to which the quality of a research procedure or instrument is accurate, correct, meaningful and right. Content Validity focuses on the extent to which the content of an instrument corresponds to the content of the theoretical concept it is designed to measure (Bell, 1999). Content validity testing of the self administered questionnaire, interview guide and checklists for this study was carried out following computation of the Content Validity Index (CVI) with acceptance at CVI ≥ 0.7 and where it would fall below, then revisions would be made following the advice of the experts and rerun of test done to reach an acceptable index. The content validity formula below was used:

CVI

Number of valid items

Total number of test items

=

Samples of instruments were distributed to 5 people with expert knowledge on logistics management and operational performance metrics and practices. Those that judged the content of Self Administered Questionnaires and interview guides as valid were 4 and 4 out of 5 judgments. This gave Content Validity Indices (VDIs) of 0.8 all through which all implied acceptance of the instruments since they surpass the minimum bar of acceptance of the CVI ≥ 0.7. Therefore, the content of the instruments used in the study adequately measured the relationships between logistics management and operational performance of The Rescue Initiative.

## 3.9.2 Reliability tests

Reliability is the measure of the internal consistency of the research instruments (Amin, 2005). The reliability of questionnaires as the major data collection instrument is concerned with the consistency of responses to the questions. To measure the consistency of responses across all the scaled questions or group of the questions from the questionnaire was done by establishing the Cronbach’s alpha (**α**) coefficient using SPSS. For the questionnaire and any instrument to be considered reliable, it would have to yield a Cronbach’s alpha (**α**) coefficient **α** ≥ 0.7 (Nunnaly, 1978). Any value less, would require a revision of the questions and scaling until the acceptable alpha coefficient is realized. On performing the test, a Cronbach’s Alpha coefficient of **α** = 0.810was obtainedas indicated in matrix 3.1.

## Matrix 3.1: Cronbach’s alpha reliability test results

|  |  |  |
| --- | --- | --- |
| Cronbach’s Alpha | Cronbach’s  Alpha Based  on  Standardized Items | N of items |
| .810 | .786 | 36 |

*Source: Primary data, 2022*

From matrix 3.1, the alpha index **α** = 0.810indicates reliability to be placed on research instruments since the alpha coefficient obtained is greater than 0.7. This therefore yielded data that reliably tested the study variables and the relationships existent between them.

## 3.9.3 Ethics and data collection procedures

Confidentiality and privacy of respondents was respected in this study. This was done by inserting confidentiality clauses into research instruments and adhering to research ethics that suit Nkumba University and The Rescue Initiative. The researcher followed all the professional guidelines of researchers including acquisition of an introductory letter from the School of Business Administration and Information Technology, Nkumba University and permission from the Human Resources Office of The Rescue Initiative to conduct research at the organisation’s main operations center at Kajo Keji. At the same time the researcher before engaging particular respondents, the researcher sought the consent of respondents.

## 3.9.4 Measurement of variables

The variables of the study in the questionnaire were measured on a five point Likert scale ranging from 1, 2, 3, 4, and 5 as ranking/weights to Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree respectively. The choice of this measurement is that each point on the scale carried a numerical score which was used to measure the opinion of respondents and it is the most frequently used scale in the study of business and social attitude.

## 3.10 Data processing, analysis and presentation

Data collected was processed and analyzed using the SPSS data analysis program by running descriptive analyses to establish frequencies and percentages as well as hypothesis testing, analysis of variance, and correlation/regression analysis. This yielded frequency tables, ANOVA matrices, correlation matrices, and model summaries that are the mode of presenting and basis of interpreting findings. Qualitative data from the field was analyzed using critical judgment by considering those elements which tally with the study elements in the conceptual framework. Presentation also considers triangulation of findings obtained using various methods and instruments of data collection that were used in the study.

## Limitations of the study

Operating in a conflict zone, reaching out to field operations staff and other staff of the Initiative operating off the headquarter sites was constrained. This was worsened by the travel restrictions and standard operating procedures based on the prevalence of covid19 pandemic. Alternatively, interview schedules containing structured questions were designed to have respondents fill them without the physical presence of the interviewer. Though faced with such limitations and low levels of cooperation, qualitative data needed to support quantitative findings of other data collection methods was obtained using interview schedules.

## CHAPTER FOUR

## PROCUREMENT PROCESSES AND OPERATIOAL PERFORMANCE OF THE RESCUE INITIATIVE – KAJO KEJI

## 4.1 Introduction

The study sought to examine the relationship between procedures and performance of The Rescue Initiative – Kajo Keji. This chapter provides presentations, analyses and interpretation of findings on this objective. It details both descriptive and inferential statistics including: frequencies and percentages; and correlations and regression results respectively presented in tables 4.1 to 4.10.

## 4.2 Departmental procurement plans prepared in line with the work plan

The study sought to establish whether departmental procurement plans are prepared in line with the approved work plan by user departments of The Rescue Initiative. The study yielded findings as indicated in table 4.1.

## Table 4.1: Departmental procurement plans prepared in line with the work plan

|  |  |  |
| --- | --- | --- |
|  | Frequency | Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 8  19  14  39  19  **99** | 8.1  19.2  14.1  39.1  19.2  **100.0** |

*Source: Primary data, 2022*

From the results 8.1% strongly disagreed, 19.2% disagreed, 14.1% were not sure, 39.1% agreed and 19.2% strongly agreed to departmental procurement plans are prepared in line with the approved work plan by user departments of The Rescue Initiative. The results indicate that the majority that is 58.3% of the respondents generally agreed. This therefore implies that The Rescue Initiative prepares departmental procurement plans in line with the approved work plan by user departments so as to achieve effectiveness of operations. However, 41.7% in disagreement indicates significant gaps in aligning procurement plans with the work plan of the organisation. This may render the contribution of procurement processes to operational ineffective and hence, the need for more alignment of procurement activities with the strategic intent of the initiative.

## 4.3 Consolidation of procurements

The study investigated the consolidation of procurements by the Procurement Unit of The Rescue Initiative to ensure cost effective procurement and operational performance. The findings of the study were as indicated in table 4.2.

## Table 4.2: Consolidation of procurements

|  |  |  |
| --- | --- | --- |
|  | Frequency | Percent |
| Valid Strongly Disagree  Disagree  Agree  Strongly Agree  **Total** | 14  16  42  27  **99** | 14.1  16.2  42.4  27.2  **100.0** |

*Source: Primary data, 2022*

The results show that 27.2% strongly agreed, 16.2% disagreed, 42.4% agreed, and 27.2% strongly agreed. This implies that majority of the respondents i.e. 69.6% agreed with the view that there is consolidation of procurements by the Procurement Unit of the Rescue Initiative to ensure cost effective procurement and operational performance. Interviews similar results in which one Unit Manager noted that*,*

*“….Project sponsors and cluster members want see value for money in procurement. So, as required under the policy of the Initiative, the Procurement Unit consolidates procurements to ensure economy, efficiency and effectiveness.” This helps earlier aggregation of procurements so that a single service provider is engaged”*

This gives the implication that procurements consolidation and other areas of supply chain synergy should be improved further to achieve significant improvements in the operational performance of Rescue Initiative-Kajo Keji.

## 4.4 Compliance with the approved procurement plan

Whether there is compliance with the requirement to undertake only procurements provided under the approved procurement plan of the Rescue Initiative was sought to be established by the study. Findings to this were as indicated in table 4.3.

## Table 4.3: Compliance with the approved procurement plan

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 3  12  9  70  5  **99** | 3.0  12.1  9.1  70.7  5.1  **100.0** | 3.0  15.1  24.2  94.9  100.0 |

*Source: Primary data, 2022*

The results from table 4.3 show that 3.0 strongly disagreed, 12.1% disagreed, 9.1% were not sure, 70.7% agreed and 5.1% strongly agreed. A majority number of the respondents agreed to compliance with the requirement to undertake only procurements provided under the approved procurement plan of The Rescue Initiative. This implies commitment to the procurement which it is essential in achieving operations consistency, reliability, effectiveness and efficiency. So, strengthening the commitment to procurement plans will deliver more operations excellence in The Rescue Initiative.

## 4.5 Compliance with bid evaluation procedures

The study investigated whether indicate moderate levels of compliance with bid evaluation procedures set out in the procurement policy of The Rescue Initiative so as to ensure reliable of supply. Findings to this were as indicated in table 4.4.

## Table 4.4: Compliance with bid evaluation procedures

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 9  11  4  60  15  **99** | 9.1  11.1  4.0  60.6  15.2  **100.0** | 9.1  20.2  24.2  84.8  100.0 |

*Source: Primary data, 2022*

From table 4.4, 9.1% strongly disagreed, 11.1% disagreed, 4.0% were not sure, 60.6% agreed, and 15.2% strongly agreed. The majority of the respondents that is 75.8% agreed with compliance with bid evaluation procedures set out in the procurement policy of the Rescue Initiative. This implies consistence, dependability, and reliability of operations. However, 24.2% of respondents were in disagreement which were in line with interview results which indicated low levels of compliance with procedural requirements in the evaluation of bids when one Head of Unit expressed that,

*“Sometimes, the bid evaluation process is faulted as users are not included. Users should be represented in all evaluations of suppliers but what happens here, you only find yourself receiving deliveries not knowing who the suppliers are. It really compromises the objects of the project”.*

This implies gaps in compliance with bid evaluation procedures that have led to selection of service providers who fail to deliver to the expectations of users and beneficiaries hence denting operational performance of The Rescue Initiative.

## 4.6 Transparency of negotiations with suppliers

Transparency of negotiations with suppliers is essential to achieving satisfactory performance in terms of quality and delivery times in the Rescue initiative. Findings to this were as indicated in table 4.5.

## Table 4.5: Transparency of negotiations with suppliers

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 8  45  10  23  13  **99** | 8.1  45.4  10.1  23.2  13.1  **100.0** | 8.1  53.5  63.6  86.9  100.0 |

*Source: Primary data, 2022*

On investigation, findings in table 4.5 indicate that, 8.1% strongly disagreed, 45.4% disagreed, 10.1% not sure, 23.2% agreed and 13.1% strongly agreed. The majority respondents that is, 63.6% disagreed to transparency of negotiations with suppliers prevailing in the procurement processes of The Rescue Initiative. Hence, the Initiative has not been able to optimize performance in terms of quality and delivery times of supplies and services needs in its operations. However, a reasonable minority of 46.4% that did not agree imply insufficiency of transparency in negotiations which compromises the objectives by negotiating including; on-time performance, quality, reduced cost, and compliance in the operations of The Initiative.

## 4.7 Communication and record keeping in contract management

Whether there is clear communication and record keeping in the contract management processes of the Rescue Initiative was sought to be established by the study. This led to results as indicated in table 4.6.

## Table 4.6: Communication and record keeping in contract management

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Disagree  Agree  Strongly Agree  **Total** | 5  71  23  **99** | 5.1  71.7  23.2  **100.0** | 5.1  76.8  100.0 |

*Source: Primary data, 2022*

From table 4.6, 5.1% disagreed, 71.7% agreed, and 23.2% strongly agreed indicating that majority respondents that is, 94.9% overwhelmingly agreed to clear communication and record keeping in the contract management processes of the Rescue Initiative ensure clarity and improved responsiveness to operational performance expectations. Interviews yielded similar results when the Monitoring and Evaluation Manager noted that,

*“Proper maintenance of records is an essential tool for effective monitoring and evaluation….procurement has made a significant improvement their record keeping practices especially progress reports which have been found so helpful in our monitoring exercises’*

This implies that procurement processes of the Rescue Initiative are demonstrating compliance with procedural requirements sound contract management practice to have clear communication and record keeping. This is essential to ensuring proper accountability in operations of a humanitarian relief based non-governmental organisation like the Rescue Initiative. However, 5.1% minority respondents were in disagreement. This very low level of disagreement implied the effective communication and record keeping practices that aid efficiency and effectiveness of operations in The Rescue Initiative.

## 4.8 Quality assurance checks and progress reports

The study sought to establish whether quality assurance checks on contracts of supply are undertaken and progress reports are submitted in The Rescue Initiative to ensure quality in the operations. Findings to this were as indicated in table 4.7.

## Table 4.7: Quality assurance checks and progress reports

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 11  21  16  40  11  **99** | 11.1  21.2  16.2  40.4  11.1  **100.0** | 11.1  32.3  48.5  88.9  100.0 |

*Source: Primary data, 2022*

From table 4.7, majority of the respondents that is 51.5% agreed to quality assurance checks on contracts of supply are undertaken and progress reports are submitted in the Rescue Initiative to ensure quality in the operations of The Rescue Initiative. This implies the moderate compliance with the requirement quality assurance checks and progress reporting during the management of contracts of supply on projects and programmes of the Initiative. However, with 48.5% of respondents in disagreement it is indicative that there are still significant gaps in quality assurance checks and progress reporting which limit the assurance of quality to recipients by the operations of TRI.

## 4.9 Procedure for drawing contract implementation plans

Examining whether indicate moderately low levels of compliance with the procedure for drawing contract implementation plans to guide contract management activities in was critical to this study. Findings to the investigation of this item were as indicated in table 4.8.

## Table 4.8: Procedure for drawing contract implementation plans

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 2  33  8  36  20  **99** | 2.0  33.3  8.1  36.4  20.2  **100.0** | 2.0  35.3  43.4  79.8  100.0 |

*Source: Primary data, 2022*

From table 4.8, results indicate moderately levels of compliance with the procedures for drawing contract implementation plans to guide contract management activities in The Rescue Initiative since 56.6% of the respondents were in agreement. This implies a moderate improvement in operational performance of The Rescue Initiative. However, the 43.4% in disagreement indicate significant gaps in compliance with the requirement to comply with drawing of contract implementation plans for the Initiative.

## 4.10 Correlation of procurement processes and operational performance of TRI

Drawing a conclusion on the relationship between procurement processes and operational performance of The Rescue Initiative, performing a correlation analysis was necessary. So, analysis based on Pearson’s moment correlation to establish the relationship yielded results as indicated in table 4.9.

## Table 4.9: Correlation of procurement processes and operational performance of TRI

**Correlations**

|  |  |  |
| --- | --- | --- |
|  | **Procurement Processes** | **Operational Performance** |
| **Procurement** Pearson Correlation  **Processes** Sig. (2-tailed)  N | 1  99 | .646  .001  99 |
| **Operational** Pearson Correlation  **Performance** Sig. (2-tailed)  N | .646  .001  99 | 1  99 |

**a.** Predictors: (Constant), Procurement Processes

From table 4.9, correlation results indicated a moderately strong positive relationship between procurement processes and organisational performance of The Rescue Initiative, given **r** = .646 with a Sig. value of **p** = 0.001 less than 0.05. These results imply that an improvement in the procurement processes of Rescue Initiative, there will be a significant positive improvement in its operational performance by 64.6%. Achieving improved operational performance of The Rescue Initiative requires improved compliance with recommended procedures of good practice procurement.

## 4.11 Regression analysis

A bivariate regression analysis was performed to support the results of correlation analysis in establishing the relationship between procurement processes and operational performance of The Rescue Initiative with results in table 4.10.

Table 4.10: Model Summary of procurement processes of The Rescue Initiative

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .646a | .417 | .403 | .03951 |

**a.** Predictors: (Constant), Procurement Processes

With ***r*** = 0.646 in the table 4.10, it can be concluded that procurement processes have a moderately strong positive relationship with the operational performance of The Rescue Initiative. This means a positive change procurement processes will lead to a positive improvement in operational performance of The Rescue Initiative by 64.6% determined with 40.3% accuracy of predictions based on change in procurement processes given a coefficient of determination i.e. the Adjusted ***R*** Square value of 0.403.

## CHAPTER FIVE

## MATERIAL HANDLING PRACTICES AND OPERATIONAL PERFORMANCE OF THE RESCUE INITIATIVE – KAJO KEJI

## 5.1 Introduction

The study set out to examine the influence of material handling practices on operational performance of The Rescue Initiative – Kajo Keji. This focused mainly on evaluating health and safety practices, staff training, handling equipment and systems, and maintenance practices. Results of this investigation expressed in frequencies, percentages, correlation and regression of variables were as indicated in tables 5.1 to 5.9.

## **5.2 Setting** weight standards for carriage

The study sought to examine whether weight standards are set for manual carriage and other means in the operations of The Rescue Initiative and this yielded findings as indicated in table 5.1.

## Table 5.1: **Setting** weight standards for carriage

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  **Total** | 17  32  14  36  **99** | 17.2  32.3  14.1  36.4  **100.0** | 17.2  49.5  63.6  100.0 |

*Source: Primary data, 2022*

From table 5.1, 17.2% strongly disagreed, 32.3% disagreed, 14.1% were not sure, and 36.4% agreed to weight standards being set for manual carriage and other means in the operations of The Rescue Initiative. With 63.6% majority respondents in disagreement, it is indicative of very poor practice on setting weight standards for manual carriage and other means at TRI. This implies low levels of safety for material handling staffs at The Rescue Initiative and thus, they are unable to consistently and reliably be involved in its operations. However, 36.4 % in agreement, though low, there is a degree of compliance with the practice of setting weight standards for manual carriage and other means in the operations of The Rescue Initiative.

## 5.3 Inspection of materials handling equipment before use

The study sought to establish whether material handling staff undertook inspection of materials handling equipment before use. Findings on this were as indicated in table 5.2.

## Table 5.2: Inspection of materials handling equipment before use

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 9  9  11  57  13  **99** | 9.1  9.1  11.1  57.6  13.1  **100.0** | 9.1  18.2  29.3  86.9  100.0 |

*Source: Primary data, 2022*

From table 5.2, the study found 9.1% to strongly disagree, 9.1% disagreed, 11.1% not sure, 57.6% agreed, and 13.1% strongly disagreed. With the majority respondents, that is, 70.7% in agreement, it indicates that inspection of equipment before use is being undertaken in the operations of The Rescue Initiative –Kajo Keji. It implies that the safety equipment, employees and clients is guaranteed and therefore ensuring reliability of operations. In support, a document review results found commitment to inspection and safety when it was observed in the standard operating procedures that, *‘Handling equipment should be inspected to guarantee safety operations, personnel, and equipment’* (TRI Materials Handling Guide, 2016). This implies efficiency and effectiveness in the handling of supplies and other materials at TRI that translates into cost effective and reliability of operations. However, the 29.3% minority respondents in disagreement implies the need to have improved equipment inspection by staff before use such that, dependability and reliability of operations is guaranteed.

## 5.4 Equipment inspection practice to detect tensions, wear and tear

As provided under the 2007 Occupational Safety and Health Administration (OSHA) standards and the World Health Organization (1995), inspection of materials handling equipment for tensions, wear and tear is requirement for safe and reliable operations. The study results were as indicated in Table 5.3.

## Table 5.3: Equipment inspection practice to detect tensions, wear and tear

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Disagree  Not Sure  Agree  Strongly Agree  **Total** | 17  19  49  14  **99** | 17.2  19.2  49.5  14.1  **100.0** | 17.2  36.4  85.9  100.0 |

*Source: Primary data, 2022*

The study established that equipment inspection practice to detect tensions, wear and tear was highly complied with at The Rescue Initiative given that, 17.2% of the respondents disagreed, 19.2% not sure, 49.5% agreed, and 14.1% strongly agreed as indicated in table 5.3. With the majority respondents that is, 63.6% in agreement, it is clear that there very high level of compliance with requirement to inspect equipment for tensions, wear, and tear. In addition, interviews of key respondents like managers gave similar results. One manager was noted saying,

*“To proactively guarantee health and safety of staff, equipment and machinery, we have adapted to preventive maintenance programs to detect possible tensions and wear that may potentially result in injuries and major operations breakdown.”*

With the TRI Health and Safety policy also emphasizing this requirement, it implies that equipment inspection is adequate at TRI which has helped realize improved consistence, dependability, and reliability of operations.

## 5.5 Periodic repair and overhaul of handling equipment at TRI

Like the inspection for tensions, wear and tear, the study sought to evaluate the practice of periodic repair and overhaul of handling equipment at TRI. Findings were as indicated in table 5.4.

## Table 5.4: Periodic repair and overhaul of handling equipment at TRI

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 3  21  9  43  23  **99** | 3.0  21.2  9.1  43.4  23.2  **100.0** | 3.0  24.2  33.3  76.8  100.0 |

*Source: Primary data, 2022*

From table 5.4, 3.0% strongly disagreed, 21.2% disagreed, 9.1% not sure, 43.4% agreed, and 23.2% strongly agreed. The 66.5% majority respondents were in agreement as to equipment repair and overhaul of materials handling equipment being done periodically at The Rescue Initiative – Kajo Keji, South Sudan. Periodic reviews are associated with consistence of operations and service. Hence, intensifying practice of periodic repair and overhaul of equipment will significantly improve operational performance of TRI. However, the minority respondents that is, 34.5% disagreed implying potential of potential of equipment breakdown in TRI that puts operations consistency at risk.

## 5.6 Load checking at TRI

As required under good materials handling practices and logistics health and safety standards, load checking should be done to establish the best way of moving it. Investigating this, the study yielded results as indicated in table 5.5.

## Table 5.5: Load checking at TRI

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 4  12  15  53  15  **99** | 4.0  12.1  15.2  53.5  15.2  **100.0** | 4.0  16.1  31.3  84.8  100.0 |

*Source: Primary data, 2022*

From table 5.5, 4.0% strongly disagreed, 12.1% disagreed, 15.2% not sure, 53.5% agreed, and 15.2% strongly agreed. There was a very strong agreement by the majority respondents that is 68.7% to load checking being done in the operations of The Rescue Initiative – Kajo Keji to establish the best way of moving it. Interviews also gave similar results in which one respondent noted that,

*“…. For proper shipment, handling, safety, location and selection of appropriate equipment, load checks are mandatory.”*

This implies high levels of safety in operations of TRI – Kajo Keji, South Sudan. So, ensuring that check of load is done improves the health and safety of staff and supplies thereby deliver defect-free service to recipients and communities. However, the 31.3% minority respondents that disagreed imply load-check gaps in the operations of TRI. This may hinder the quality of supplies and effectiveness of operations at TRI.

## 5.7 Equipment is lubricated, adjusted and repaired at minor defects stage

The study investigated whether handling equipment is lubricated, adjusted and repaired at minor defects stage at TRI. Findings to this were as indicated in table 5.6.

## Table 5.6: Equipment is lubricated, adjusted and repaired at minor defects stage

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Disagree  Not Sure  Agree  Strongly Agree  **Total** | 7  11  48  33  **99** | 7.1  11.1  48.5  33.3  **100.0** | 7.1  18.2  66.7  100.0 |

*Source: Primary data, 2022*

Findings in table 5.6 show that, 7.1% disagreed, 11.1% were not sure, 48.5% agreed, and 33.3% strongly agreed to lubrication, adjustment and repair of equipment being done at the minor defects stage at The Rescue Initiative – Kajo Keji. With the 81.8% majority respondents in agreement, it implies that The Rescue Initiative has been able to operate an effective material handling system that has facilitated effectiveness of operations. Though is highly adopted practice, it is reactive and therefore poses the potential of disrupting service as was observed by one-unit supervisor that,

*“…we need to move towards preventive methods of repair and maintenance, though it’s costly. The current systems have severally delayed operations due ongoing repair of identified defects.”*

However, the 18.2% minority respondents in disagreement imply slight gaps in lubrication, adjustment and repair of equipment being done at the minor defects stage which is a limitation to more effective operational performance at The Rescue Initiative – Kajo Keji.

## 5.8 Training staff in handling practices and standards

The study set out to examine whether TRI staff are trained in handling practices and standards. This yielded findings as indicated in table 5.7.

## Table 5.7: Training staff in handling practices and standards

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 13  21  11  42  12  **99** | 13.1  21.2  11.1  42.4  12.1  **100.0** | 13.1  34.3  45.4  87.9  100.0 |

*Source: Primary data, 2022*

Findings in table 5.7 indicate that, 13.1% strongly disagreed, 21.2% disagreed, 11.1% not sure, 42.4% agreed, and 12.1% strongly agreed. This implies moderate agreement by majority respondents i.e. 54.5% that staffs are trained in standards and practices applicable to the operation of equipment. This is likely to lead to reduced supplies defects and also increase operational efficiency and effectiveness. In addition, it was noted that staff are trained in preventive maintenance practice that is essential to realization of reliable and consistent operations at TRI. However, significant noncompliance with the requirement to train staff in standards and practices applicable to the operation of equipment was noted given a 45.5% respondents in disagreement. This implies the need for improved training of staff to ensure good practice material handling that will lead to improved operational performance.

## 5.9 Correlation of material handling practices and operational performance

To determine the degree of influence material handling practices have on operational performance of The Rescue Initiative – Kajo Keji, a correlation analysis was performed using Pearson’s moment correlation and results were results as shown in table 5.8.

## Table 5.8: Correlation of material handling practices and operational performance

**Correlations**

|  |  |  |
| --- | --- | --- |
|  | **Material Handling Practices** | **Operational Performance** |
| **Material**  Pearson Correlation  **Handling** Sig. (2-tailed)  **Practices** N | 1  99 | .387  .002  99 |
| **Operational** Pearson Correlation  **Performance** Sig. (2-tailed)  N | .387  .002  99 | 1  99 |

**a.** Predictors: (Constant), Material Handling Practices

From table 5.8, correlation results indicated that material handling practices have a weak positive influence on operational performance of The Rescue Initiative, given **r** = 0.387 with significance levels **p** = 0.002 less than 0.05. With confidence levels greater than 95%, the results accurately guarantee that, a 38.7% improvement in material handling practices of The Rescue Initiative-Kajo Keji will bring about a proportionate improvement in its operational performance. Though weak, it is observed that material handling practices have a significant influence on the operational performance of non-governmental organisations in South Sudan.

## 5.10 Regression analysis

Regression analysis was performed to augment other results on examining the influence of material handling practices on operational performance of The Rescue Initiative – Kajo Keji. Results to this were as shown in table 5.9

Table 5.9: Model Summary of Material Handling Practices of TRI

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .387a | .149 | .135 | .14278 |

**a.** Predictors: (Constant), Material Handling Practices

With **r** = 0.387 in the table 5.9, it can be concluded that material handling practices have a weak positive relationship with the operational performance of The Rescue Initiative – Kajo Keji. This means a positive improvement in material handling practices will lead to a positive improvement in the operational performance of The Rescue Initiative – Kajo Keji by 38.7%. The coefficient of determination i.e. the Adjusted ***R*** Square value suggests that this improvement in the operational performance of The Rescue Initiative – Kajo Keji can be 13.5% accurately predicted by a positive change in material handling practices.

## CHAPTER SIX

## HEALTHCARE LOGISTICS PRACTICES AND OPERATIONAL PERFORMANCE OF RESCUE INITIATIVE – KAJO KEJI

## 6.1 Introduction

The study set out to examine the influence of healthcare logistics practices on operational performance of The Rescue Initiative – Kajo Keji. This mainly centered on evaluating health care inventory control practices, quality management practices, vaccine management practices, among others. Results of this investigation expressed in frequencies, percentages, correlation and regression of variables were as indicated in tables 6.1 to 6.10.

## Harmonizing shipment preparation with transport and distribution

The study sought to establish whether healthcare supplies shipment preparation in The Rescue Initiative was harmonized with inventory control systems. The study yielded findings as indicated in table 6.1.

## Table 6.1: Harmonizing shipment preparation with transport and distribution

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 13  16  10  42  18  **99** | 13.1  16.2  10.1  42.4  18.2  **100.0** | 13.1  29.3  39.4  81.8  100.0 |

*Source: Primary data, 2022*

From table 6.1, 13.1% strongly disagreed, 16.2% disagreed, 10.1% were not sure, 42.4% agreed and 18.2% strongly agreed. The results indicate that majority of the respondents that is 60.6% agreed to healthcare supplies shipment preparation in The Rescue Initiative was harmonized with inventory control systems. This therefore necessitates The Rescue Initiative to harmonize shipment preparation with inventory control systems in order to improve safety and potency of healthcare supplies load while transit. This was in the same view with the Transport and Logistics Assistant in response to interview questions where he noted that*,*

*“…. Before the consignment/delivery is loaded onto the trucks, it is checked whether the package meets loading, temperature control requirements”.*

This implies satisfactory healthcare supplies safety and potency which guarantees quality in the operations of TRI. However, the 39.4% in disagreement implies the need to improve load, transport, and distribution harmonization practices within its inventory control systems in order to improve its general operational performance.

## Ability and experience of staff to properly control inventory

Effective and efficient inventory control requires that staffs of TRI are able and experienced. Therefore, this was sought to be established by the study and findings were as indicated in table 6.2. From table 6.2, 14.1% strongly disagreed, 25.3% disagreed, 54.5% agreed and 6.1% strongly agreed. This implies that majority of the respondents that is 60.6% agreed with the view that the staff of The Rescue Initiative have the ability and experience to effectively control health care inventory in order to increase order fill rates, reduce healthcare supplies expiries and hence improve its operational performance.

## Table 6.2: Ability and experience of staff to properly control inventory

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Agree  Strongly Agree  **Total** | 14  25  54  6  **99** | 14.1  25.3  54.5  6.1  **100.0** | 14.1  39.4  93.9  100.0 |

*Source: Primary data, 2022*

In a similar view, interviews with one of the managers had him note that*,*

*“…we have always considered the skills, abilities and experience of staff in deploying them and attaching them to particular functions of the vaccine management programme of The Initiative.”*

This gives the implication that inventory control practices should consider staff ability and experience if effective healthcare inventory control, transportation and distribution is to be attained in meeting performance targets of The Rescue Initiative. The 39.4% in disagreement justify the need to fill the gap.

## 6.3 Maintaining a inventory control and distribution policy at TRI

Whether The Rescue Initiative maintained a transport and distribution policy to ensure integrity and improved responsiveness was sought to be established by the study yielding results as indicated in table 6.3. From the table, 13.1% strongly disagreed, 25.3% disagreed, 23.2% were not sure, and 38.4% agreed. The majority respondents that is, 61.6% of the respondents clearly disagreed to The Rescue Initiative – Kajo Keji maintaining a transport and distribution policy to ensure integrity and responsiveness to community needs.

## Table 6.3: Maintaining a inventory control and distribution policy at TRI

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  **Total** | 13  25  23  38  **99** | 13.1  25.3  23.2  38.4  **100.0** | 13.1  38.4  61.6  100.0 |

*Source: Primary data, 2022*

However, 38.4% minority respondents were in agreement evidently supported by interview results where the Transport and Logistics Manager noted that,

*“We have a clear policy that guides the transport operations of The Rescue Initiative. It sets the standards that we follow and operating centrally to this policy, exposes our operations to more risk especially in situation where emergencies arise.”*

This implied that, though The Rescue Initiative – Kajo Keji may have a policy on transport and distribution there are still policy, knowledge, and training gaps that create inefficiencies in its healthcare logistics practices.

## 6.4 Documentation of the quality management policy

The study sought to establish whether The Rescue Initiative had a well-documented quality management policy for its healthcare logistics systems. This is necessary to have a clear guide to standards of practice and operating procedures. Findings were as indicated in table 6.4. From the table, 26.3% disagreed, 39.4% were not sure, 23.2% agreed, and 11.1% strongly agreed to The Rescue Initiative having a well-documented quality management policy for its health care logistics systems.

## Table 6.4: Documentation of the quality management policy

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Disagree  Not Sure  Agree  Strongly Agree  **Total** | 26  39  23  11  **99** | 26.3  39.4  23.2  11.1  **100.0** | 26.3  65.7  88.9  100.0 |

*Source: Primary data, 2022*

The results indicate that majority of the respondents that is 65.7% disagreed to The Rescue Initiative – Kajo Keji having a well-documented quality management policy for its vaccine logistics operations.

This is supported by the quality assurance manager’s view that,

“…..*our practices are guided by the quality management policy. Checks on quality to identify quality defects is done following standard procedures”.*

However, 34.3% respondents agreed. Hence, this implies that though The Initiative maintains a documented quality management policy, there is need for stakeholder awareness and training to ensure improved adherence to standard operating procedures if operational performance of The Rescue Initiative – Kajo Keji in terms of improved healthcare supplies quality is to be realized.

## 6.5 Specifications and standards set for healthcare supplies requirements

Establishing whether The Rescue Initiative has set specifications and standards for its health care supplies requirements was sought to be established. Results as indicated in table 6.5. Findings in table 6.5 indicate that, 2.0% strongly disagreed, 20.2% disagreed, 17.2% were not sure, 41.4% agreed, and 19.2% strongly agreed indicating a majority that is 60.6% of respondents in agreement to The Rescue Initiative having set specifications and standards for its healthcare supplies requirements.

## Table 6.5: Specifications and standards set for healthcare supplies requirements

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 2  20  17  41  19  **99** | 2.0  20.2  17.2  41.4  19.2  **100.0** | 2.0  22.2  39.4  80.8  100.0 |

*Source: Primary data, 2022*

However, 39.4% disagreed with the view. This lack of set specifications was in agreement interview results with one staff from the Procurement Department, who noted that,

*“…..harmonizing our specifications with supplier standards is a key requirement. We cannot set our own standard specifications other than going by the standards of manufacturers and the healthcare supplies quality standards”.*

This implies that The Rescue Initiative should harmonize its standards of quality with those of manufacturers and adjust its logistics processes towards embracing such standards for improved performance.

## 6.6 Testing and analytical clearance of health care supplies

It was sought to be established whether quality management at The Rescue Initiative – Kajo Keji involved testing and analytical clearance of healthcare supplies and results were as indicated in table 6.6.

## Table 6.6: Testing and analytical clearance of health care supplies

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  Strongly Agree  **Total** | 3  53  21  17  5  **99** | 3.0  53.5  21.2  17.2  5.1  **100.0** | 3.0  56.5  77.7  94.9  100.0 |

*Source: Primary data, 2022*

From table 6.6, it is indicated that 3.0% strongly disagreed, 53.5% disagreed, 21.2% were not sure, 17.2% agreed, and 5.1% strongly disagreed. The majority respondents that is, 77.7% in disagreement indicates a commitment by The Rescue Initiative – Kajo Keji to undertaking testing and analytical clearance of vaccines and other healthcare supplies in its quality management practices. This compromises quality and safety targets of The Rescue Initiative and the community recipients of such healthcare supplies under its healthcare services and immunization programmes. However, 22.3% in agreement indicates traces of compliance to the testing and analytical clearance requirements in The Rescue Initiative.

## 6.7 Commitment to health and safety policies

The study sought to establish whether there is commitment to health and safety policies at The Rescue Initiative and this yielded findings as indicated in table 6.7. Findings in table 6.7 indicate that, 4.0% strongly disagreed, 10.1% disagreed, 54.5% agreed, and 31.3% strongly agreed to healthcare logistics practices of The Rescue Initiative committing to health and safety policies.

## Table 6.7: Commitment to health and safety policies

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Agree  Strongly Agree  **Total** | 4  10  54  31  **99** | 4.0  10.1  54.5  31.3  **100.0** | 4.0  14.1  68.7  100.0 |

*Source: Primary data, 2022*

With the majority respondents that is, 85.5% in agreement it is implied that The Rescue Initiative complied with health and safety policies thereby safeguarding the health of those using the medical supplies procured, transported and distributed by it. However, 14.5% in disagreement, there are implied gaps the implementation of the health and safety policies. This may deter the optimization of safety of both supplies and human resources involved.

## 6.8 An emergency response and crisis management programme

The study sought to examine whether The Rescue Initiative maintains an emergency response and crisis management programme to ensure improved safety and reduced delays in delivery of healthcare supplies and findings were as indicated in table 6.8.

## Table 6.8: An emergency response and crisis management programme

|  |  |  |  |
| --- | --- | --- | --- |
|  | Frequency | Percent | Cumulative Percent |
| Valid Strongly Disagree  Disagree  Not Sure  Agree  **Total** | 10  49  9  31  **99** | 10.1  49.5  9.1  31.3  **100.0** | 10.1  59.6  68.7  100.0 |

*Source: Primary data, 2022*

Findings in table 6.8 indicate that, 10.1% strongly disagreed, 49.5% disagreed, 9.1% were not sure, and 31.3% agreed to The Rescue Initiative maintains an emergency response and crisis management programme to ensure improved safety and reduced delays in delivery of healthcare supplies. With the majority respondents, that is 59.6% in agreement it implies a moderate view on maintenance of an emergency response and crisis management programme. However, the 40.4% minority respondents are so significant that it implies inefficiencies in the emergency response and crisis management programme of The Rescue Initiative. This was further supported by interview results where one respondent of the Audit and Risk Management section noted that,

*“……whereas there is a policy on safety and health, the policy issues on crisis management have several inefficiencies that have rendered response to crisis at times less effective especially where time is a major constraint.”*

This implies the need to have agile or more flexible healthcare logistics systems in order to have a community driven and responsive logistics system in The Rescue Initiative.

## 6.9 Correlation of health care logistics practices and operational performance

In order to have a conclusion on the influence of health care logistics practices on operational performance of The Rescue Initiative – Kajo Keji, a correlation analysis was necessary. So, the analysis of the relationship using Pearson’s moment correlation yielded results as indicated in table 6.9. From table 6.9, it is observed that health care logistics practices have a strong positive influence on operational performance of The Rescue Initiative – Kajo Keji, given **r** = .764 at significance levels **p** = 0.000 less than 0.05.

## Table 6.9: Correlation of health care logistics and operational performance

**Correlations**

|  |  |  |
| --- | --- | --- |
|  | **Health Care Logistics Practices** | **Operational Performance** |
| **Health Care**  Pearson Correlation  **Logistics** Sig. (2-tailed)  **Practices**  N | 1  99 | .764  .000  99 |
| **Operational**  Pearson Correlation  **Performance** Sig. (2-tailed)  N | .764  .000  99 | 1  99 |

**a.** Predictors: (Constant), Health Care Logistics Practices

This implies that an improvement in health care logistics practices there will have a significant positive improvement in the operational performance of The Rescue Initiative – Kajo Keji in its major projects of health care services and immunization by 76.4%. Therefore, health care logistics practices significantly influence operational performance of The Rescue Initiative – Kajo Keji and South Sudan as whole.

## 6.10 Regression analysis

Regression analysis was performed to support the correlation results in establishing the influence of health care logistics practices on operational performance of The Rescue Initiative – Kajo Keji. Results were as indicated in table 6.10

Table 6.10: Model Summary of health care logistics practices in TRI

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .764a | .583 | .569 | .17131 |

**a.** Predictors: (Constant), Health Care Logistics Practices

Basing on the coefficient **r** = 0.764 in the table 6.10, it can be concluded that health care logistics practices have a strong positive influence on operational performance of The Rescue Initiative – Kajo Keji. This means positive improvement in health care logistics practices will lead to a significant positive improvement in the operational performance of Rescue Initiative – Kajo Keji by 76.4% with accuracy of predictions at 56.9% given a coefficient of determination of 0.569.

## CHAPTER SEVEN

## HARMONISATION OF LOGISTICS MANAGEMENT AND OPERATIONAL PERFORMANCE OF THE RESCUE INITIATIVE – KAJO KEJI

## 7.1 Introduction

The study sought to examine the influence of logistics management on operational performance of Rescue Initiative – Kajo Keji. The harmonization of literature, theory and findings on logistics management and operational performance of Rescue Initiative – Kajo Keji is given in this chapter. This mainly centers on a comparative and contrasting review of both literature and findings on procurement processes, materials handling practices, health care logistics practices, and operational performance of Rescue Initiative – Kajo Keji.

## 7.2 Hypothesis testing

Multiple regression analysis and analysis of variance were necessary to set a base for rejecting or maintaining the null hypothesis. Results to this are as indicated in sections 7.2.1 and 7.2.2 respectively.

## 7.2.1 Multiple regression analysis results

A regression analysis was run to examine the influence of procurement processes, materials handling practices, health care logistics practices, and operational performance of Rescue Initiative – Kajo Keji. Results obtained were as summarized in table 7.1. From table 7.1, it is observed that the multiple regression coefficient (R) using all three predictors of logistics management adopted by the study i.e. procurement processes, materials handling practices, and health care logistics practices is 0.633. With adjusted R square is 0.386, it is implied that a 63.3% improvement in operational performance of Rescue Initiative is predicted by a 38.6% change in its procurement processes, materials handling practices, and health care logistics practices. The remaining 61.4% variance in predicting the potential influence of logistics management on operational performance in nongovernmental organisations is accounted for by other predictors which were not part of the scope of the current study.

## Table 7.1: Model Summary

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .633a | .400 | .386 | 0.72885 |

**a**. **Predictors:** (Constant), PPs, MHPs, HCLPs

## 7.2.2 Analysis of variance (ANOVA) results

The ANOVA table 7.2 shows that F = 18.105 and the value of sig is 0.000 i.e. p = 0.000 < 0.01. This means that an integrated logistics management function inclusive of procurement processes, materials handling practices, and health care logistics practices leads to a positive accurate statistical prediction of the improvement in the operational performance of nongovernmental organisations in South Sudan especially with Rescue Initiative – Kajo Keji.

## Table 7.2: ANOVA for logistics management and operational performance

**ANOVAb**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Model | Sum of squares | df | Mean square | F | Sig. |
| 1 Regression  Residual  Total | 419.272  741.081  1160.353 | 3  96  99 | 139.757  7.719 | 18.105 | .000a |

**a.** Predictors: (Constant), Logistics Management: PPs, MHPs, HCLPs

**b.** Dependent Variables: Operational Performance of The Rescue Initiative

With a low percentage variance of 18.10%, the 0.633 regression coefficient for procurement processes, materials handling practices, and health care logistics practices and operational performance of Rescue Initiative and a Sig. value of 0.000 less than 0.01 (p < 0.01), produced accurate results of predicting the degree of influence existing between them led to the rejection of the null hypothesis **H0** that, **l**ogistics management has no significant influence on operational performance of Rescue Initiative – Kajo Keji. The alternative hypothesis **H1** that, logistics management has a significant influence on operational performance of Rescue Initiative – Kajo Keji was adopted.

## 7.3 Harmonization of procurement processes and Operational Performance

The study sought to examine the influence of procurement processes on operational performance of The Rescue Initiative – Kajo Keji. According to the Chartered Institute of Purchasing and Supply (2013), the Procurement cycle is the cyclical process of key steps when procuring goods or services. CIPS provides a generic procurement; drafting specifications; and negotiating best value; among others. Though significantly compliant, the study established majority respondents that is, 63.6% disagreeing with transparency of negotiations with suppliers prevailing in the procurement processes of The Rescue Initiative. Hence, the Initiative has not been able to optimize performance in terms of quality and delivery times of supplies and services needs in its operations. Since negotiations offer the opportune moment to improve terms of: quality, time, cost, payment, among others, their failure will lead to significantly failure in operational performance.

In every function, planning is the activity that begins the process, the same holds for procurement (Willy and Njeru, 2014). Given the enormous amounts of money involved and the belief that funds must be utilized efficiently for the betterment of targeted communities, gives the reason for which every stage of the procurement cycle must be taken seriously (Adam *et al.*, 2012). The study established that The Rescue Initiative prepares departmental procurement plans in line with the approved work plan by user departments so as to achieve effectiveness of operations. However, 41.7% in disagreement indicates significant gaps in aligning procurement plans with the work plan of the organisation. This may render the contribution of procurement processes to operational ineffective and hence, the need for more alignment of procurement activities with the strategic intent of the initiative.

Proper planning and implementation contributes immensely to effective operational performance (Kibet and Njeru, 2014). Good procurement planning contributes to achievement of primary organisational and operational objectives (Interagency Procurement Working Group, 2006). On the other hand, poor procurement planning results in failure to align procurement with operational and budgetary allocations (Agaba and Shipman, 2007). Compliance with procedures set out in the procurement policy of an organisation should help realize their objectives and drive towards effective operational performance. The study had a majority number of the respondents agree to compliance with the requirement to undertake only procurements provided under the approved procurement plan of The Rescue Initiative. This implies commitment to the procurement which it is essential in achieving operations consistency, reliability, effectiveness and efficiency. So, strengthening the commitment to procurement plans will deliver more operations excellence in The Rescue Initiative.

Thus, Kibet and Njeru (2014) note that a bid is likely not to be considered if it submitted by a bidder who has participated in more than one bid, received after the time and date fixed for its receipt. Developing an evaluation methodology that will ensure selection of the best supplier, for the right reasons and at a price that represents value-for-money over whole-of-life, is vital to achievement of operational performance targets (Government Procurement Solutions, 2011). The study had the majority of the respondents that is 75.8% agree with compliance with bid evaluation procedures set out in the procurement policy of the Rescue Initiative. This implies consistence, dependability, and reliability of operations. However, 24.2% of respondents were in disagreement, which were in line with interview results which indicated low levels of compliance with procedural requirements in the evaluation of bids.

Contract management plays a vital in operational performance of nongovernmental organisations because it is a requirement for all formal and open tendering processes for contracts that exceeds certain thresholds (Office of Government Commerce, 2012). The study found majority respondents that is, 94.9% overwhelmingly agreeing to clear communication and record keeping in the contract management processes of the Rescue Initiative ensure clarity and improved responsiveness to operational performance expectations. In addition, results further indicate moderate levels of compliance with the procedures for drawing contract implementation plans to guide contract management activities in The Rescue Initiative since 56.6% of the respondents were in agreement. This implies a moderate improvement in operational performance of The Rescue Initiative. However, the 43.4% in disagreement indicate significant gaps in compliance with the requirement to comply with drawing of contract implementation plans for the Initiative.

## 7.4 Harmonization of material handling practices and operational performance

Tadesse and Admassu (2006), occupational health and safety is one of the most important aspects of human concern. It aims an adaptation of working environment to workers for the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations. With the study establishing very poor practice on setting weight standards for manual carriage and other means at TRI, implies low levels of safety for material handling staffs at The Rescue Initiative and thus, they are unable to consistently and reliably be involved in its operations. However, 36.4 % in agreement, though low, there is a degree of compliance with the practice of setting weight standards for manual carriage and other means in the operations of The Rescue Initiative.

The National Institute for Occupational Safety and Health (2007) notes that, training alone is not an ergonomic improvement, instead, it should be used together with any workplace changes made. Workers need training and hands-on practice with new tools, equipment, or work practices to make sure they have the skills necessary to work safely. Training is most effective when it is interactive and fully involves workers. The study established a majority agreement i.e. 54.5% that staffs are trained in standards and practices applicable to the operation of equipment. This is likely to lead to reduced supplies defects and also increase operational efficiency and effectiveness. However, significant noncompliance with the requirement to train staff in standards and practices applicable to the operation of equipment was noted given a 45.5% respondents in disagreement. This implies the need for improved training of staff to ensure good practice material handling that will lead to improved operational performance.

Health and safety in materials handling requires that employees receive training prior to operating and demonstrate they are competent to operate material handling equipment (Occupational Safety and Health Administration (OSHA) Standards, 2007). Proper maintenance of material handling equipment is extremely essential for preventing the occurrence of bottlenecks or points of congestion (Sinduhja, 2016). Similarly, Kizim (2013) notes that preventing the emergence of failures and increasing equipment reliability, discovering them rather than waiting until they become major failures is critical to achieving effective operations. The study established that staffs are trained in preventive maintenance practice that is essential to realization of reliable and consistent operations at TRI.

Sinduhja (2016) asserts that preventive maintenance is by far one of the best maintenance techniques suggested for material handling equipment. By preventive maintenance, the equipment can be kept running thereby minimizing costly interruptions in the materials flow in operations. A little periodic inspection and minor adjustments may be enough to prevent equipment breakdown. The study established 66.5% majority respondents in agreement as to equipment repair and overhaul of materials handling equipment being done periodically at The Rescue Initiative – Kajo Keji, South Sudan. Periodic reviews are associated with consistence of operations and service. Hence, intensifying practice of periodic repair and overhaul of equipment will significantly improve operational performance of TRI. However, the minority respondents that is, 34.5% disagreed implying potential of potential of equipment breakdown in TRI that puts operations consistency at risk.

According to the OSHA Standards (2018), preventive maintenance involves regularly inspecting equipment, systematically conducting maintenance tasks and correcting issues as soon as they are identified. The study established that lubrication, adjustment and repair of equipment are done at the minor defects stage at The Rescue Initiative – Kajo Keji. With the 81.8% majority respondents in agreement, it implies that The Rescue Initiative has been able to operate an effective material handling system that has facilitated effectiveness of operations. Though is highly adopted practice, it is reactive and therefore poses the potential of disrupting operations.

Sinduhja (2016) further notes that preventive maintenance consists of frequent inspections and examination of the material handling equipment, with special attention to the components requiring it. It also includes lubrication, adjustment, or repair while the equipment is still in a minor stage of defect. The aim is to uncover conditions leading to breakdown during operations. The study found the majority respondents, that is, 70.7% in agreement with inspection of equipment before use being undertaken in the operations of The Rescue Initiative –Kajo Keji. It implies that the safety equipment, employees and clients is guaranteed and therefore ensuring reliability of operations.

## 7.5 Harmonization of healthcare logistics practices and operational performance

Improper storage and transportation can put healthcare supplies at risk of degradation. Therefore, an effective healthcare supply chain and logistics system is essential to ensure supplies quality. Conventional healthcare supply chain and logistics systems are inefficient, they therefore result in wastage and expiry of healthcare supplies, inventory control issues, and high costs (PATH, 2011). The study found out that majority of the respondents that is 60.6% agreed to healthcare supplies shipment preparation in The Rescue Initiative was harmonized with inventory control systems. This therefore necessitates The Rescue Initiative to harmonize shipment preparation with inventory control systems in order to improve safety and potency of healthcare supplies load while transit.

Kopp, (2005) also points out that, there should be written procedures and records to ensure traceability of the products distributed. Inspection and certification of compliance with a quality system by external bodies is recommended. The study established majority respondents that is, 77.7% in disagreement indicates a commitment by The Rescue Initiative – Kajo Keji to undertaking testing and analytical clearance of vaccines and other healthcare supplies in its quality management practices. This compromises quality and safety targets of The Rescue Initiative and the community recipients of such healthcare supplies under its healthcare services and immunization programmes.

Supplies potency and quality assurance in the inventory control and distribution system is important in the healthcare supply chain (Kopp, 2005). The setting and operation of healthcare logistics chains is dependent on the concerned supply chains since each supplies unit to be carried has different requirements in terms of demand, load integrity and transport integrity. The study established the majority that is 60.6% of respondents in agreement to The Rescue Initiative having set specifications and standards for its healthcare supplies requirements.

According to The World Health Organisation (2005), a quality management system (QMS) is a collection of [business processes](https://en.wikipedia.org/wiki/Business_process) focused on consistently meeting customer requirements and enhancing their satisfaction. It encompasses elements such as the organizational structure, quality objectives, quality manual, quality policies, procedures, processes and resources needed to implement [quality management](https://en.wikipedia.org/wiki/Quality_management). It also includes quality data management, control documents, continuous improvement including corrective and preventive action. The study established that majority of the respondents that is 65.7% disagreed to The Rescue Initiative – Kajo Keji having a well-documented quality management policy for its vaccine logistics operations. This raises concern over the needed improvement in quality management to have improved quality in operations of The Initiative.

According to Bergmans, (2002), healthcare logistics operations should have clear safety and health policies in place, which emphasize the paramount importance of safety and the protection of employees and beneficiaries or target communities. The policies should outline the organisation, arrangements and responsibilities for achieving the required results and should be known and understood by all employees. With the majority respondents that is, 85.5% in agreement, the study established that The Rescue Initiative complies with health and safety policies thereby safeguarding the health of those using the medical supplies procured, transported and distributed by it.

A system should be in place to enable a rapid and effective response to any accidents occurring during healthcare logistics operations (PATH, 2011). The logistics operations should have an emergency plan for responding to any accident or any other incident (Yahia, 2010). The study established that The Rescue Initiative maintains an emergency response and crisis management programme to ensure improved safety and reduced delays in delivery of healthcare supplies. With the majority respondents, that is 59.6% in agreement it implies a moderate view on maintenance of an emergency response and crisis management programme. However, the 40.4% minority respondents are so significant that it implies inefficiencies in the emergency response and crisis management programme of The Rescue Initiative.

## CHAPTER EIGHT

## SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 8.1 Introduction

The study sought to examine the influence of logistics management on operational performance of non-governmental organisations in South Sudan with a case study of The Rescue Initiative – Kajo Keji. This chapter presents the summary of findings based on the objectives of the study, conclusion and the recommendations for improvement of logistics management practices in The Rescue Initiative – Kajo Keji and other nongovernmental organisations necessary to achieve improvements in their operational performance.

## 8.2 Summary of findings

In specific terms, the summary centers on the findings on how procurement processes, material handling practices, and healthcare logistics practices influence operational performance of The Rescue Initiative – Kajo Keji.

## 8.2.1 Procurement processes and operational performance of TRI

The study sought to examine the influence of procurement processes operational performance of The Rescue Initiative – Kajo Keji. The study established that The Rescue Initiative prepares departmental procurement plans in line with the approved work plan by user departments so as to achieve effectiveness of operations, there is consolidation of procurements by the Procurement Unit of the Rescue Initiative to ensure cost effective procurement and operational performance, and there is compliance with the requirement to undertake only procurements provided under the approved procurement plan of The Rescue Initiative. There was overwhelmingly agreement to clear communication and record keeping in the contract management processes of the Rescue Initiative to ensure clarity and improved responsiveness to operational performance expectations, compliance with bid evaluation procedures set out in the procurement policy of the Rescue Initiative.

However, there was moderate agreement to quality assurance checks on contracts of supply being undertaken, submission of progress reports, and compliance with the procedures for drawing contract implementation plans to guide contract management activities. Disagreement was significant relating to transparency of negotiations with suppliers prevailing in the procurement processes, and significant gaps in aligning procurement plans with the work plan of the organisation. Correlation results indicated a moderately strong positive relationship between procurement processes and organisational performance of The Rescue Initiative, given **r** = .646 with a Sig. value of **p** = 0.001 less than 0.05. These results imply that an improvement in the procurement processes of Rescue Initiative, there will be a significant positive improvement in its operational performance by 64.6%.

## 8.2.2 Material handling practices and operational performance of TRI

The study sought to evaluate the influence of material handling practices on operational performance of The Rescue Initiative – Kajo Keji. The study found very poor practice on setting weight standards for manual carriage and other means at TRI, inspection of equipment before use is being undertaken in the operations of The Rescue Initiative –Kajo Keji, and there is a very high level of compliance with requirement to inspect equipment for tensions, wear, and tear. 66.5% majority respondents were in agreement as to equipment repair and overhaul of materials handling equipment being done periodically at The Rescue Initiative – Kajo Keji, and load checking being done in the operations of TRI.

The Rescue Initiative has been able to operate an effective material handling system that has facilitated effectiveness of operations, and moderate agreement by majority respondents i.e. 54.5% that staffs are trained in standards and practices applicable to the operation of equipment. Correlation results indicated that material handling practices have a weak positive influence on operational performance of The Rescue Initiative, given **r** = 0.387 with significance levels **p** = 0.002 less than 0.05. With confidence levels greater than 95%, the results accurately guarantee that, a 38.7% improvement in material handling practices of The Rescue Initiative - Kajo Keji will bring about a proportionate improvement in its operational performance.

## Safety management practices and response to covid19 in WDLG

The study set out to examine the influence of healthcare logistics practices on operational performance of The Rescue Initiative – Kajo Keji. The results indicate that majority of the respondents that is 60.6% agreed to healthcare supplies shipment preparation in The Rescue Initiative was harmonized with inventory control systems, and staff of The Rescue Initiative have the ability and experience to effectively control health care inventory in order to increase order fill rates, reduce healthcare supplies expiries and hence improve its operational performance. In addition, majority that is 60.6% of respondents in agreement to The Rescue Initiative having set specifications and standards for its healthcare supplies requirements, The Rescue Initiative complies with health and safety policies thereby safeguarding the health of those using the medical supplies procured, transported and distributed by it, and a moderate view on maintenance of an emergency response and crisis management programme.

However, majority respondents that is, 61.6% clearly disagreed to The Rescue Initiative – Kajo Keji maintaining a transport and distribution policy to ensure integrity and responsiveness to community needs, 65.7% disagreed to The Rescue Initiative – Kajo Keji having a well-documented quality management policy for its vaccine logistics operations, and 77.7% disagreed to a commitment by The Rescue Initiative – Kajo Keji to undertake testing and analytical clearance of vaccines and other healthcare supplies in its quality management practices. Correlation results indicate that health care logistics practices have a strong positive influence on operational performance of The Rescue Initiative – Kajo Keji, given **r** = .764 at significance levels **p** = 0.000 less than 0.05. Thus, an improvement in health care logistics practices will have a significant positive improvement in the operational performance of The Rescue Initiative – Kajo Keji in its major projects of health care services and immunization by 76.4%.

## 8.3 Conclusion

The study sought to examine the relationship between logistics management and operational performance of The Rescue Initiative. The study concluded that there is a strong positive relationship between logistics management and operational performance of The Rescue Initiative. With a low percentage variance of 18.10% based on the F value of 18.105, the 0.633 regression coefficient for procurement processes, materials handling practices, and health care logistics practices and operational performance of Rescue Initiative and a Sig. value of 0.000 less than 0.01 (p < 0.01), produced accurate results of predicting the degree of influence existing between them led to the rejection of the null hypothesis **Ho**: Logistics management has no significant influence on operational performance of The Rescue Initiative – Kajo Keji was rejected and the alternative **H1**: Logistics management has a significant influence on operational performance of The Rescue Initiative – Kajo Keji was adopted.

## Recommendations

The study findings yielded several recommendations for in improving the state of logistics management practices in nongovernmental organisations so that they are able to achieve improvements in their operational performance. These include:

Adapting more transparent negotiations such that the objectives by negotiating including; on-time performance, quality, reduced cost, and compliance in the operations of The Initiative are not compromised. There should be improvement in aligning procurement plans with the work plan of the organisation. This may render the contribution of procurement processes to operational more effective, and compliance with the requirement to draw contract implementation plans for the Initiative should be essentially taken on.

Contract management should have greater emphasis on contract implementation plans, progress reports and contract management files. This is central to the effective management of procurement contracts and deriving more value for money service from such contracts of supply of The Initiative. There should be use of appropriate bid evaluation criteria and methods to help realize quality service requirements of communities being served by the Initiative. Therefore, specific sector criteria and methodology needs to be set during bid evaluation to achieve improved operational performance.

In material handling, improving load check practices is necessary to improve the health and safety of staff and supplies thereby deliver defect-free service to recipients and communities. There is dire need to significant comply with the requirement to train staff in standards and practices applicable to the operation of equipment. This is necessary to ensure good practice material handling that will lead to improved operational performance. There is need for intensified practice of periodic repair and overhaul of equipment to significantly improve operational performance of TRI. Setting weight standards for manual carriage and other means at TRI should be a routine standard to have improved safety for material handling staffs at The Rescue Initiative and thus, be able to consistently and reliably be involved in its operations.

With healthcare logistics practices in The Rescue Initiative, the study recommends undertaking testing and analytical clearance of vaccines and other healthcare supplies in its quality management practices. This will rejuvenate quality and safety targets of The Rescue Initiative and the community recipients of such healthcare supplies under its healthcare services and immunization programmes. Maintaining a transport and distribution policy is recommended to ensure integrity and responsiveness to community needs.

There should be improved load, transport, and distribution harmonization practices within its inventory control systems in order to improve its general operational performance. Development of an emergency response and crisis management programme is necessary to have improved safety and reduced delays in delivery of healthcare supplies in the programme activities of TRI. The Rescue Initiative – Kajo Keji should have a well-documented quality management policy for its vaccine logistics operations; maintain a transport and distribution policy to ensure integrity and responsiveness to community needs. There is need to improve load, transport, and distribution harmonization practices within its inventory control systems in order to improve its general operational performance.

## 8.5 Areas for further research

Following the findings of the study, it is suggested that further research may be carried out on:

* Logistics infrastructure and effectiveness of humanitarian agencies in conflict zones.
* Cluster management and logistics performance in humanitarian sector.
* Evaluating the impact of national logistics policies on effectiveness humanitarian agencies in South Sudan.

## **REFERENCES**

Adam, F., Csaki, C., Prier, E. and Bufacchi, V. (2012): 'Ethical Decision Making and Decision Support Systems in Public Procurement–A Theoretical Discussion', Supply Chain Forum: an International Journal: KEDGE Business School, 70-81.

Agaba, E. and Shipman, N. (2007): 'Public procurement reform in developing countries: The Ugandan experience', Advancing Public Procurement: Practices, Innovation and Knowledge-Sharing, pp. 373-391.

Ahmed A. *et al.* (2018): Organizational Factors and Organizational Performance: A Resource-Based view and Social Exchange Theory Viewpoint; International Journal of Academic Research in Business and Social Sciences, Vol. 8, No. 3, March 2018, Pg. 594 – 614.

Alli, O. Benjamin (2008): Fundamental Principles of Occupational Health and Safety, 2nd Edition, Geneva, International Labour Organisation.

Andrea Charles, (2014): Global Cold Chain Management: Complexities, Challenges, and Solutions; [Pharma IQ](http://pharmoutsourcing.com/105771-Pharma-IQ/), November 18, 2014.

Anglin, C. J., and Good, J. D. (2009): Contract Management Process and Mentorship Analysis of United States Special Operations Command's (USSOCOM) Special Operations Acquisition and Logistics Directorate of Procurement (SOAL-K): MBA Professional Report, Naval Postgraduate School, Monterey, CA.

Baccarini, D., & Collins, A. (2003): “Project Success - A Survey.” Journal of Construction Research, 5 (2): 211-231.

Baccarini, D., and Collins, A. (2003): “Project Success - A Survey.” Journal of Construction Research, 5 (2): 211-231.

Bergmans Chris (2002): Recommendations on Safety, Health and Environmental Management: Practices for Logistics Service Providers, Issue 01, Brussels, Belgium; ECTA.

Chartered Institute of Purchasing and Supply (2013): Ethical and Sustainable Procurement: Leading Global Excellence in Procurement and Supply; www.cips.org/ﬁles/SS/ESPGuide13.pdf.

CIPS, (2014): Developing Contracts: a practical guide: A CIPS Publication.

Coronel, S.S. and Kalaw, L., (2006): Investigating Corruption: A do it yourself guide: Philippine Centre for investigation Journalism.

Davison, B. and Wright, E., (2009): Contract Administration (CA), Washington DC: National Institute of Government Purchasing.

Dovan Derek (2017). Health and Safety Workbook: Work Equipment, Chapter 7, pp.29-31.

Ellen Stephanie (2020): “Slovin's Formula Sampling Techniques” Sciencing.com/ slovins-formula-sampling-techniques; December 14, 2020; https://sciencing.com/pps-sampling-6663947.html.

Elsey, R. D. (2007): Contract Management Guide, CIPS October 2007.

Farahani, Z. R., *et al.,* (2011): Logistics Operations and Management; Concepts and Models, 1st Edition, London, Elsevier Inc.

Fritz Institute & CILT (2015): Medical Logistics Practices in the Humanitarian Sector; Chartered Institute of Logistics and Transport, UK; www.hlcertification.org.

Gay, L. R., *et al.,* (2006): Educational Research: Competencies for analysis and applications, 8th Edition, Upper Saddle River, NJ: Merrill Prentice Hall, pp.29-44.

Geri, Alfred (2014): Implications of the Moyo - Kajo Keji Conflict. Gurtong.net*.* Retrieved 11 December 2014.

Government Procurement Solutions (2011): Mastering procurement A structured approach to strategic procurement; A guide for government agencies, New Zealand.

Haynes, D. (2017): Production and Operations Management: Materials Handling, Chapter 3, pp.65-74.

Health and Safety Executive (2011): Getting to Grips with Manual Handling. http:// www.hse.gov.uk INDG143 (rev2) September 2011: Web. 12 May 2021.

IATA (2020): Guidance for Vaccine and Pharmaceutical Logistics and Distribution: Set of considerations and awareness on large scale handling, transport and distribution of vaccines, pharmaceutical, life science and medical products, 1st Edition.

Kabale Thomas *et al.,* (2019): Effect of Logistics Management Practices on Operational Performance of Humanitarian Organizations: Case study: World Food Programme (WFP), Rwanda; International Journal of Research in Management, Economics and Commerce, Volume 09, Issue 6, June 2019, Page 41-49.

Kabir, S.M.S. (2016): Basic Guidelines for Research: An Introductory Approach for All Disciplines. Book Zone Publication, ISBN: 978-984-33-9565-8, Chittagong-4203, Bangladesh.

Kathrulima, R. I. (2016): Effects of material handling on an organization, Economics and Management Journal, Vol. 34, Issue. 06, pp.126-138.

Kibet, W. and Njeru, A. (2014): 'Effects of procurement planning on procurement performance: A case study of agricultural development corporation, Nairobi', *International Journal of Business & Commerce,* Vol. 3, Issue. 12.

Kizim, A. V. (2013): Establishing the maintenance and repair body of knowledge: comprehensive approach to ensuring equipment maintenance and repair organization efficiency, Elsevier, pp.813-818.

Kopp. S. Dr. (2005): Good Distribution Practices for Pharmaceutical Products: Quality Assurance and Safety: Medicines, Medicines Policy and Standards; Geneva: World Health Organisation.

Kritchanchai D., *et al,* (2019): Healthcare supply chain management: Macro and Micro perspectives. LogForum Vol. 15, Iss. 4, pp.531-544.

Lysons Kenneth and Farrington Brian (2006): Purchasing and Supply Chain Management; 6th Edition, London, Prentice Hall.

Madhani, M. P. (2010): Resource Based View (RBV) of Competitive Advantage: An Overview; ICFAI Business School, Research Gate.

Maria, M.J., *et al.,* (2018): Ethics and Procurement Performance of Humanitarian Organizations in Kenya; American Journal of Industrial and Business Management, Vol.8, pp.833-849.

Martner Carlos and Garcia Gabriella (2016): Performance measurement for intermodal corridors: a methodological approach, International Transport Forum, Roundtable Report, 158, pp.119-115.

Mweru, C. M. and Muya, T. M. (2015): Features of Resource Based View Theory: An Effective Strategy in Outsourcing; International Journal of Management and Commerce Innovations, ISSN 2348-7585 (Online) Vol. 3, Issue 2, pp.215-218.

Occupational Safety and Health Administration Standards (2007): United States Department of Labor, Small Business Handbook.

Occupational Safety and Health Administration Standards (2018): The Importance of Preventive Maintenance for Your Material Handling Equipment, United States Department of Labor, Small Business Handbook, April 4, 2018: web: 08 May, 2021.

Odion Volk (2016): Overall equipment effectiveness, John Wiley & Sons, pp.56-79.

Odunayo, A. O. and Odage, F. A. (2021): Logistics Management and Operations Performance of Oil and Gas Supply Chain: A Review of Literature; Asian Journal of Social Science and Management Technology, Vol. 3, Iss. 6, pp.76-84.

Office of Government Commerce, (2002): Principles of Service Contracts Contract Management guidelines: UK

Office of Government Commerce, (2008): National audit office December. Good practice contract management framework.

Organisation for Economic Cooperation and Development (2016): Logistics Development Strategies and Performance Measurement; Roundtable Report, 158; Paris, International Transport Forum.

Program for Appropriate Technology in Health (PATH) (2011): An Assessment of Vaccine Supply Chain and Logistics Systems in Thailand, Seattle: World Health Organization, Health Systems Research Institute, Mahidol University, PATH; 2011.

Rashton Allan and Croucher Phil, (2011): Handbook of Logistics and Distribution Management; 2nd Edition, New York, Prentice Hall.

Ravinder, H. and Misra, M. (2014): ABC analysis for inventory management, Journal of Production and Operations Management, Vol. 13, Issue.23, pp.237-249.

Rescue Initiative (2018): Audit of Health Care Services and Immunization Projects; July 2018, Internal Audit Report.

Rescue Initiative (2019): Evaluation of RI Logistics Operations in Mundri and Yei Counties; Logistics Performance Evaluation Report, 2019.

Sahay, S. B. *et al.* (2013): Humanitarian Logistics and Disaster Management: The Role of Different Stakeholders; Summary of Proceedings of ICHL, 2013, IIM Raipur.

Sebit, T. E. (2020). Cold chain logistics and performance of Public Vaccine Management Programmes in South Sudan: A Case Study of Central Upper Nile State Vaccine Cold Chain Hub (CUNS-CCH); A research thesis, Nkumba University.

Tadesse Takele and Admassu Mangesha (2006): Occupational Health and Safety, Ethiopian Public Health Training Initiative, pp.1-4.

Thai. V. Khi., (2009): International Handbook of Public Procurement, Auerbach Publications, CRC Press-Taylor and Francis Group. <http://www.auerbach-publications.com>.

The National Institute for Occupational Safety and Health (2007): Ergonomic Guidelines for Manual Material Handling, California Department of Industrial Relations.

United Nations Mission in South Sudan (2017): Kajo Keji, South Sudan: General Information; United Nations Mission In South Sudan (UNMIS), Retrieved 11 December 2017.

Waakhe, S. W. (2016): Yei River State residents fleeing to villages; Gurtong. 12 July 2016, Archived from [the original](https://radiotamazuj.org/en/article/yei-river-state-residents-fleeing-villages) on 18 August 2016,Retrieved: 12 August, 2016.

Waly Wane and Gayle H. Martin (2013): Education and Health Services in Uganda: Data for Results and Accountability, Launch edition, The World Bank and African Economic Research Consortium, November, 2013.

World Health Organization (2014): Immunization Supply Chain and Logistics: a neglected but essential system for national immunization programmes; Geneva, The Expanded Programme on Immunization of the Department of Immunization, Vaccines and Biologicals. WHO/IVB/14.05.

Yahia, E.M. (2010): Cold Chain Development and Challenges in the Developing World. Acta Hort.877: pp.127-132.

Zantos, J. (2008): Academic article on the effect of material on the profitability of an organisation, Research Gate, pp.32-44.

## APPENDIX I: Questionnaire

**Dear Sir/Madam,**

Dear Respondent,

I am **Ayan Alexander Modi**, a student pursuing a Master of Procurement and Logistics Management of Nkumba University. You have been selected as one of the resourceful respondents in the research I am conducting on: ***‘Logistics Mangement and Operational Performance of nongovernmental organisations in South Sudan: A Case study of The Rescue Initiative, Kajo Keji.***  I request for your cooperation in responding to the statements contained in this questionnaire is highly appreciated. The information you provide will be treated with utmost confidentiality and used for only academic purposes.

**Guidelines**

For **Section A**, kindly tick in the box that corresponds with your appropriate opinion/response or where appropriate, fill in the spaces provided.

For **Sections B, C, D**, and **E**, tick in the appropriate box that corresponds with your rank to levels of disagreement or agreement on the statements using the 5-point Likert Scale given below:

***1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, and 5 – Strongly Disagree***

**SECTION A: Background Information**

1. **Department/Responsibility in The Rescue Initiative**

|  |  |  |  |
| --- | --- | --- | --- |
| Head of Department |  | Field Operations |  |
| Procurement and Stores |  | Finance and Accounting |  |
| Transport and Logistics |  | Internal Audit and Risk |  |
| Quality Standards and Assurance |  | Supervisor |  |

1. **Age [years]**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18 - 25 |  | 26 - 35 |  | 36 - 45 |  | 46 - 55 |  | Over 55 |  |

1. **Gender/Sex**

|  |  |  |  |
| --- | --- | --- | --- |
| Male |  | Female |  |

1. **Level of Education**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Masters** |  | **Bachelors** |  | **Diploma** |  | **Certificate** |  | **Others …………............** |

1. **Length of work/responsibility period in The Rescue Initiative [Years]**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 0 - 5 |  | 6 - 10 |  | 11 - 15 |  | Over 15 |  |

**SECTION B: Procurement Processes of TRI**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Item** | **1** | **2** | **3** | **4** | **5** |
| 1. | Departmental procurement plans are prepared in line with the approved work plan by user departments of The Rescue Initiative |  |  |  |  |  |
| 2. | Procurements are consolidated by the Procurement Unit of The Rescue Initiative to ensure cost effective procurement |  |  |  |  |  |
| 3. | Only procurements provided under the approved procurement plan of the Rescue Initiative are undertaken |  |  |  |  |  |
| 4. | There is compliance with bid evaluation procedures set out in the procurement policy of The Rescue Initiative |  |  |  |  |  |
| 5. | In TRI, negotiations with suppliers are transparent |  |  |  |  |  |
| 6. | There is clear communication and record keeping in the contract management processes of the Rescue Initiative |  |  |  |  |  |
| 7. | Quality assurance checks on contracts of supply are undertaken and progress reports are submitted in The Rescue Initiative |  |  |  |  |  |
| 8. | There is compliance with the procedures for drawing contract implementation plans to guide contract management activities in The Rescue Initiative |  |  |  |  |  |

**SECTION C: Material handling practices in TRI**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Item** | **1** | **2** | **3** | **4** | **5** |
| 1. | Weight standards are set for manual carriage and other means in the operations of The Rescue Initiative |  |  |  |  |  |
| 2. | Material handling staffs of TRI undertake inspection of materials handling equipment before use. |  |  |  |  |  |
| 3. | Inspection of materials handling equipment for tensions, wear and tear is undertaken for reliable operations in The Initiative |  |  |  |  |  |
| 4. | There is periodic repair and overhaul of handling equipment at TRI |  |  |  |  |  |
| 5. | Load checking is done in the operations of The Rescue Initiative |  |  |  |  |  |
| 6. | Handling equipment is lubricated, adjusted and repaired at minor defects stage at TRI. |  |  |  |  |  |
| 7. | TRI staff are trained in material handling practices and standards |  |  |  |  |  |

**SECTION D: Healthcare logistics practices in TRI**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Item** | **1** | **2** | **3** | **4** | **5** |
| 1. | Healthcare supplies shipment preparation in The Rescue Initiative is harmonized with inventory control systems |  |  |  |  |  |
| 2. | Staff of The Rescue Initiative have the ability and experience to effectively control health care inventory |  |  |  |  |  |
| 3. | The Rescue Initiative maintains a transport and distribution policy to ensure integrity and improved responsiveness |  |  |  |  |  |
| 4. | The Rescue Initiative has a well-documented quality management policy for its healthcare logistics systems |  |  |  |  |  |
| 5. | The Rescue Initiative has set specifications and standards for its health care supplies requirements |  |  |  |  |  |
| 6. | Quality management at The Rescue Initiative – Kajo Keji involves testing and analytical clearance of healthcare supplies |  |  |  |  |  |
| 7. | There is commitment to health and safety policies at The Rescue Initiative |  |  |  |  |  |
| 8. | The Rescue Initiative maintains an emergency response and crisis management programme |  |  |  |  |  |

**SECTION E: Operational performance of TRI**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Statement** | **1** | **2** | **3** | **4** | **5** |
| 1. | TRI has ensured dependable service provision to communities |  |  |  |  |  |
| 2. | TRI has achieved cost effectiveness in its operations |  |  |  |  |  |
| 3. | TRI has ensured quality in service and operations |  |  |  |  |  |
| 4. | TRI has been able to flexibly operate in its services to the communities |  |  |  |  |  |
| 5. | TRI has committed to timeliness in its operations |  |  |  |  |  |
| 6. | TRI has ensured safety and health in its operations |  |  |  |  |  |
| 7. | TRI has ensured ready availability of projects inputs and community supplies needs |  |  |  |  |  |
| 8. | TRI has complied with standards and procedures in its operations |  |  |  |  |  |

***Thank You***

## APPENDIX II: Interview Guide

Dear Sir/Madam,

I am **Ayan Alexander Modi**, a student pursuing a Master of Procurement and Logistics Management of Nkumba University. You have been selected as one of the resourceful respondents in the research I am conducting on: ***‘Logistics Mangement and Operational Performance of nongovernmental organisations in South Sudan: A Case study of The Rescue Initiative, Kajo Keji.***  I request for your cooperation in responding to the questions contained in this guide is highly appreciated.

1. What is your designation/position in The Rescue Initiative?

**……………………………………………………………………………………………**

1. How do you view the logistics management practices in The Rescue Initiative?

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

1. How effective have the operations of The Rescue Initiative been?

.........................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................

1. What is your assessment of the contribution of procurement processes to operational performance of URT?

................................................................................................................................................................................................................................................................................................................................................................................................................................

1. What is your evaluation of material handling practices in The Rescue Initiative?

………………………………………………………………………………………………………………………………………………………………………………………………

1. How do you view the healthcare logistics practices of The Rescue Initiative?

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

1. How effectively has The Rescue Initiative performed in its operations?

………………………………………………………………………………………………………………………………………………………………………………………………

1. What suggestions would you make towards the improvement of logistics management and operational performance in TRI?

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***Appreciating your cooperation***

## APPENDIX III: Documentary review checklist

* TRI Performance Reports
* Employee Safety Evaluation Reports
* TRI Supplies Reports
* Risk and Hazard Analysis Reports
* Procurement and Disposal Records
* Transport and Distribution Reports