MODERATING EFFECT OF ORGANIZATIONAL SECURITY CULTURE ON THE RELATIONSHIP BETWEEN SUPPLY CHAIN SECURITY MANAGEMENT AND OPERATIONAL PERFORMANCE OF HUMANITARIAN VALUE CHAINS IN KENYA

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DECLARATION AND APPROVAL

Declaration by Student
This is my unique work and has not been submitted for examination in any other university.

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The research proposal has been developed under my supervision.

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DEDICATION
I dedicate this research to my Husband, Titus Isoe, who has been my most outstanding support and cheerleader.
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ACRONYMS AND ABBREVIATIONS

ANTP National Private Transport Association
BPS Board of Postgraduate
EU European Union
FBI Federal Bureau of Investigation
ICSC International Cargo Security Council
IO Industrial
SCS Supply Chain Security
IT Information Technology
JKUAT Jomo Kenyatta University of Agriculture and Technology
KRCSC Kenya Red Cross Society
NCSC National Cargo Security Council
NGO Non-Governmental Organization
RBV Resource-Based View
SC Supply Chain
SCM Supply Chain Management
SCOR Supply Chain Operations Reference
TAPA Transported Asset Protection Association
TMS Transportation Management Systems
USD United States Dollars
WHO World Health Organization

DEFINITION OF TERMS

Freight or Cargo management: The safeguarding of cargo across the whole of the manufacturing, shipping, and transportation operations has been emphasized by Sales and Scholte (2023).
Operational Performance: The quantifiable elements of an organization's process results, such as dependability, production cycle time, and inventory turnover (Kaydos, 2020).

Supply Chain Security: Implementing policies, procedures, and technology helps supply chain managers protect their goods, facilities, equipment, data, and employees from loss, damage, or terrorist attacks (Hassija et al., 2020). This also helps stop the introduction of illegal substances, people, or weapons of mass destruction into the supply chain.

Humanitarian Supply Chain Management: It is the responsibility of humanitarian supply chain managers to integrate and coordinate the efforts of a large, geographically dispersed group of specialists in order to fulfill humanitarian aid's most fundamental mission: the delivery of goods and services to the needy, whose immediate or long-term survival may depend on the effective execution of supply chain and logistics operations, including the crucial final fifty meters.

Humanitarian Value Chain: The network that is generated when supplies, services, financial resources, and information travel between donors, beneficiaries, suppliers, and various divisions of humanitarian organizations in order to give recipients with physical help.

System: A culture, an individual, or any information artifact or electro-mechanical system may be considered an information artifact. In general, it refers to social entities that are organized, generate outcomes from inputs, connect with outputs in order to deliver results, and project those results.

Supply Chain Performance: A method that is structured and organized, with the goal of monitoring the efficacy and productivity of activities inside supply chains.

ABSTRACT

Recently, business process managers all over the world have grown more aware of the susceptibility of their supply chains to a growing number of security breaches and interruptions that are experienced by global supply networks. Because of this, supply chain security has been heightened by using various methods, methodologies, and technological advancements to defend supply chain property. The purpose of this research was to assess the moderating effects of organizational security culture on the relationship between security chain management and the operational efficacy of humanitarian value chains in Kenya. Specifically, this study focused on Kenya. The specific goals of the study were to establish the moderating effect of organizational security culture on the relationship between freight security management, facility security management, and information security management on the operational performance of humanitarian value chains; evaluate the moderating effect of organizational security culture on the relationship between supply chain security management and the operational performance of humanitarian value chains; and establish the moderating effect of organizational security culture on the relationship between supply chain security management and the operational performance of humanitarian value chains. The concepts of Resource-Based View, Systems, and Contingency served as the basis for the study that was conducted utilizing a cross-sectional design. The census approach was used to conduct research on a target population consisting of one hundred respondents from Kenyan humanitarian organizations. A semi-structured questionnaire was used to collect the data, and descriptive and inferential statistics was used to evaluate the results after they have been compiled. In order to show the facts, tables and figures were utilized. The results indicated that improvement in organizational security culture would increase the effect of Freight security management (β=0.203, P=0.000) and Facility security management (β=0.340, P=0.000) on operational performance while on the other hand, it would reduce (β=0.284, P=0.000) the effect of Information security management on operational performance. Therefore, the study concluded that there is significant moderating role of organizational security culture on the relationship between supply chain security management and the operational effectiveness of humanitarian value chains in Kenya. The study recommended that management in humanitarian organizations should make sure that their personnel is informed with the Freight/Transport security efforts that are being implemented by their organization. In addition, the report suggested that they make certain that their company monitors and keeps track of all commodities while they are in transit or storage. The research also suggested that management of humanitarian organizations should make it a priority to educate their workforce about the various facility security strategies being implemented by their organization.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Recently, researchers and practitioners have given much thought to supply chain security—specifically, the safety of humanitarian value chains. As a result of this, there has been a rise in the number of both natural and man-made catastrophes. Increasing rates of robbery and fraud in supply networks are the root source of stressful signals in these systems. Managers in every industry across the globe have lately become aware of the security risks posed to business supply networks by a broad range of interruptions to global supply chains. Security breaches and disruptions pose a danger to national security in many countries, despite widespread attention being paid to the September 11 attacks in the United States of America (USA).

Raw materials travel from suppliers to manufacturers, who combine them into completed goods and coordinate their timely delivery into the hands of consumers according to the supply chain management theory (SCM), which integrates suppliers, production, distribution, and customers. Recent developments in supply chain systems have led to the birth of integrated supply chain management, which may find several applications across a variety of industries. Advantages include better on-time deliveries, shorter production cycles, and less stock on hand (of both raw materials and completed goods). Other gains include greater
adaptable, efficiency, and usefulness; higher rates of capacity realization and asset use; and reduced costs. Humanitarian supply chain management aims to decrease the toll of a disaster on people by ensuring the timely and efficient delivery of aid supplies, data, and services.

Hassija et al. (2020) define “security management” as the implementation of systematic approaches and advancements to safeguard inventory resources (including items, equipment, information, and personnel) against theft, damage, or threats, as well as to deter unauthorized insertion of concealed items, individuals, or weapons of mass destruction into the supply chain. As a direct result of Batra et al. (2020), the security of inventory networks is now widely recognized as an essential component of effectively monitoring business risk. As a result of the fact that sudden incidents can result in obvious and potential damage to property, items, framework, individuals, notoriety, market position, generosity, and overall entirety, organizations are giving a great deal of consideration to security by allocating additional cash, time, and assets to ensure that protection is present in their store network. Although most firms are allocating substantial resources and a focus to security measures, very little data is available to corporations that are looking to limit their exposure to abrupt and doubly detrimental or troublesome incidents impacting their supply chains. Supply chain security is part of supply chain risk management and aims to stop artificial attacks, like stealing, harming, or destroying products and assets. Therefore, supply chain security is not an isolated plan and may be enforced across the supply chain and borders (countries, departments, competitors, customers, and transportation modes). In contrast, awareness ought to be integrated at each stage of interaction. Due to the potential for damage or disruption to operations in the event of a breach, supply chain security should be a top concern for businesses. Disparities in pricing, inefficient delivery times, and lost goods are all possible results of supply chain vulnerabilities. Customers may be harmed and litigation can be avoided if approved or altered items are not checked for authenticity before delivery. Protecting supply chains from cyber and physical harm is a priority for modern security management systems. Theft, sabotage, and terrorist acts are all examples of physical dangers that may come from both within and outside of an organization. Malware attacks, software piracy, and illegal access are all examples of cyber risks and weaknesses in IT and packaging systems. While it is impossible to completely remove risks, supply chain security may help ensure the smoother, more cost-effective transport of goods and a quicker bounce-back time after interruptions. Governmental agencies, NGOs, international organizations, and private corporations have all taken independent but complementary steps to improve the security of the humanitarian supply chain. These responses might take the shape of anything from locally enacted regulations to international studies. Contract management, quality management, risk management, network reengineering, and creating or obtaining selections are all examples of methods that have been recognized by researchers as ways to enhance supply chain performance while reducing costs and waste. Similarly, expanding the number of production lines to facilitate rapid volume transfer would help companies keep their market competitive edge.

New security initiatives, standards, and safeguards have been implemented in response to recent concerns about the safety of humanitarian supply chains. As a result of the growing significance of supply chain security, various initiatives, standards, and procedures have been implemented. Even if the upper echelons of a wide variety of companies care about SCS, they may have trouble allocating funds to initiate or improve SCS efforts. This makes sense, considering the size of the budget needed to develop or enhance SCS. This means that supply chain security must be linked with supply chain management, and is an absolute must for every company. Supply chain actors may be detected via the use of security measures, which help businesses prepare for and respond to emergencies in the supply chain. Feng (2020) suggests that cargo/freight management, facility management, and information management are the four main types of security procedures. These four classes serve as the study's independent variables. Corporate culture is a combination of factors such as organizational security culture and the fourth category, human resource management. This variable is formed by fusing organizational security culture with human resource management; its purpose is to govern the connection between supply chain security management and supply chain performance. The research that has been done so far has uncovered a wide variety of pertinent hazards that are associated with supply chains. These risks include those associated with the environment, culture, finances, quality, and safety. However, supply chain security is a risk driver that has received little attention in previous research. Nonetheless, supply chain managers lack an appropriate comprehension of supply chain security management and its consequential effects on SCM tactics. Insufficient study of the topic and the development of applicable theoretical frameworks for use in both academic and applied settings are likely contributing factors. With the use of logistics and transportation management systems (TMS), the supply chain security aspect of supply SCM works to lessen the dangers involved in the supply chain. Supply chain security aims to identify, assess, and prioritize risk management actions through tiered defenses, much like freight security management. There must be several layers of protection to protect the different resources, assets, and infrastructures used in the making of a product. A well-trained and highly-motivated workforce is essential for the successful completion of numerous asset optimization-related activities. As a result of their position, workers may be in a position to act as insiders and aid criminals by providing them with access to facilities, information, or goods, or they may even commit crimes themselves using these resources.

Following the September 11th and 20th attacks in the United States, supply chain security has risen to the top of government and business agendas. It is estimated that losses caused by theft alone in the supply chain in the United States amount to between USD 4 billion and USD 12 billion per year, while total worldwide losses might surpass USD 50 billion. According to Eliakunda (2018), a typical American business probably loses something in the neighborhood of 12 percent of its assets per year due to inefficiencies in the supply chain. These inefficiencies may occur anywhere in the country. The same may be said for the United States, where the Federal Bureau of Investigation (FBI) estimates that cargo theft costs between $10 and $30 billion annually. According to estimates provided by the European Parliament (Ekwall & Lantz, 2018), the annual value of stolen trucks and consignments in Europe totals around €8.2 billion. According to many different data figures, the total value of pirated and counterfeit goods in Europe in 2007 was around $176 billion. In another study from the European Commission, it was stated that in 2006, about 3 million pharmaceutical items were discovered to be fake (Eliakunda, 2018). Because logistics companies want to keep the situation a secret from their clients, these numbers might be much higher. These are alarming quantities of losses that should worry any manager.
The social and economic costs of a disruption in the logistics chain are growing, making this an issue of paramount importance across Latin America and the Caribbean. This issue is also crucial to the prosperity of the area. When it comes to the nations that make up Central America, this problem is of even greater strategic importance because of the growing criminal activity that disrupts supply chains and drives up the expenses that are associated with conducting business in relation to logistics. According to Eliakunda (2018), the yearly cost of fighting instability and violence throughout the area is around 6.5 billion US dollars. Furthermore, the absence of security has detrimental consequences on the economy, including lowering operational performance, lowering national and foreign investment, and lowering employment and productivity by increasing the cost of consumer items owing to the additional expenditures incurred.

Additionally, there is a considerable geographical component to logistics security. In order to effectively combat organized crime and terrorist acts on a global scale, it is essential to coordinate specialized responses at the regional level so that we may take advantage of the increasing interconnectedness of logistical networks. National Cargo Security Council (NCSC) estimates put the annual amount of money lost in the US due to unreported theft and the indirect costs connected with it between $ 20 billion and $ 60 billion. Companies invest between 15% and 20% of their logistics budgets on safety measures, according to the National Private Transport Association (ANTP), also located in Mexico. While these investments are well-intentioned, they seldom pay off in terms of improved quality (Eliakunda, 2018). Participants in the European supply chain who want to prevent or lessen the effects of crimes including theft, terrorism, and counterfeiting are enrolling in voluntary certification programs and getting their companies certified.

The reach of such accreditations might be anywhere from the country to the world. When it comes to logistics and transportation safety in Europe, the Transferred Asset Protection Association (TAPA) has emerged as the leading industry group. Multiple studies (Hamidu, 2022; Avis, 2020; Eliakunda, 2018) concluded that traffic on both legal and illicit routes had increased the level of insecurity in various North Eastern communities, making travel there more hazardous. The increasing instability along these borders has been a major source of worry for international commerce. As a result, cross-border commerce has decreased and nations have had to reallocate resources to ensure safety, as is the situation in Nigeria with the deployment of a multinational army in the country's northeast. The northeastern city of Maiduguri and the far northern cities of Kano and Sokoto have been hit particularly hard.

Transportation in a number of Northeastern areas has been impacted by the region's varied topography. Adamawa and Borno have seen their gains undone by rising insurgency linked to the area's porous borders. Due to worsening circumstances, more people are migrating to the sub-Saharan area from places like Libya, Mali, and other parts of North Africa, as well as famine-stricken countries like Chad and Niger (Eliakunda, 2018). The transportation system has been impacted by the armed conflicts in the area, including al-Qaida, Boko Haram, and others. Most people in Africa get about by car, and this mode of transportation is crucial to the continent's overall economic and social development.

The security or lack thereof in Africa can have various effects on the markets in the countries which are doing business with them. As a result of these attacks, shipping companies face increased insurance and security costs, which are inherited from customers in some form. There is a paucity of published material or academic study on the subject of cargo security and the associated difficulties in Tanzania. Studies such those (Hamidu, 2022); (Avis, 2020); and (Eliakunda, 2018) demonstrate that terminals and operators spend a reasonable amount of money in the safety of the items that they hold. These investments often take the form of hiring security personnel, alarm systems, facing and gate installations. Since there are no current research on the topic in Tanzania, comparable insight is lacking, making it impossible to establish the real value of cargo security. Dar es Salaam's port and operators have been found to either inadequately handle data and information regarding their security challenges or fail to properly utilise this knowledge in their security initiatives.

As a result of the protection dangers associated with the transportation industry, several policies have been put into place to fight security threats and make it possible to prevent terrorist attacks that include transport and supply networks. The most significant danger is believed to originate from the use of containerization. However, possible security hazards include harmful chemicals being rerouted for malevolent purposes as well as materials being hijacked and used for such purposes (OECD, 2020). Since the assaults on September 20, the government's response has been one of restricting borders, air and ocean ports, and transportation routes, which has put a pressure on supply chains. In North Africa, this is truer than everywhere else. A flurry of analysis and writings on offer chain security addressing followed their actions and the consequences of the new security standards, ensuring the continuity and efficacy of offer chain operations regardless of variations in security-related expenses. However, studies of logistics and SCM in African countries suggest that safety is not an issue.

The topic of ensuring the safety of supply chains and logistical activities in Kenya has become more important in both the country's practical application and its academic study. It has recently been a focus of study within SCM and logistics. As a result of the various security dangers that are linked with the transportation business, a great number of rules have been put into place to fight security threats and make it possible to prevent terrorist attacks that include transport and logistics systems. According to Linskov et al. (2018), the hijacking of hazardous chemicals for malevolent purposes and rerouting of those items are other possible security issues. However, the containerized danger is regarded to be the most significant. As a result of the government's reaction to the terrorist attacks on and continuing to this day, supply networks, especially those serving northeastern Kenya, have been strained. The result has been delays in the delivery process. As a result of these actions and the new security regulations, several academic studies and articles have been published on the topic of supply chain security. The focus of these reports and articles was on how to keep supply chain operations running smoothly and efficiently despite the added costs of security. The focus of this research was on the prevalence of discussions of safety in previously published works on SCM in Kenya. In particular, this study examined the ways in which supply chain security solutions have been documented in the existing literature, the ways in which supply chain security practice can be improved, and the gaps in knowledge that need to be filled by future supply chain security studies.

Kenya is home to a number of different humanitarian organizations that are active at the present time. There is a wide variety of motivation for the formation of such organizations. According to Akande and Gillard (2019), a humanitarian reaction is necessary
in a variety of different scenarios. It is quite possible that chronic vulnerability brought on by food insecurity would result in the need for humanitarian assistance. The presence of informal settlements in places such as Nairobi, which are home to more than sixty percent of the city's population, creates problems with the provision of housing, as well as violence and drought that are tied to ethnic tensions. In Kenya, there are organizations that fall into one of these four categories that provide humanitarian aid. In the first group are organizations that provide humanitarian aid and are supported by the government, such as the Kenya Red Cross Society (KRC), which was created in 1965 by an act of the Kenyan parliament. Between the years 1939 and 1965, it carried out its duties as the BRCS. Since 1966, the International Committee of the Red Cross as well as other international authorities have acknowledged the organization (www. krcs.co.ke). The second kind of humanitarian groups are those that are privately funded and registered with the NGO Council of Kenya as Non-Governmental groups (NGOs) (Jjuuko, 2022). Other international organizations such as Oxfam, Save the Children, and MSF are also included in this category. These are only some of the organizations that fall under this umbrella. The third kind of humanitarian organization consists of establishments of worship, such as churches and mosques, that provide both leadership and financial support for the organization. Among these are the Adventist Relief Association, the Lutheran World Relief (LWR), and the Christian Reformed Church (CRS). The United Nations Organization-affiliated humanitarian organizations make up the last category of humanitarian groups. Several humanitarian organizations work under the UNO's aegis, including UNICEF (which works on children's rights), UNDP (which works on development projects in different countries), WHO (which works on health issues for people all over the world), and UNHCR (which works on refugee concerns, including resettlement) (Jjuuko, 2022). Emergencies during the last several years, including terrorist attacks, natural disasters, and regional power outages, have highlighted the lack of disaster preparedness among many Kenyan institutions.

Disruptions in the supply chain brought on by external events may have a substantial effect on both the finances and operations of businesses that are not well prepared for them. Therefore, strengthening the security of supply networks is of the utmost importance. The safekeeping of crucial papers, essential supplies, and other items that may be required during an emergency is an essential part of the preparation that goes into the management of supply chain security. It may be economically prohibitive to store emergency supplies at each and every site in the supply chain. In addition, it is possible that in the case of an outside incident, such as a fire or a storm, the objects that are held on-site may be damaged or rendered inaccessible, hence preventing access to the emergency supplies that are kept at each facility. Therefore, the suggested secure site selection procedure is able to strike a compromise between operational efficacy and cost efficiency by identifying the least number of viable off-site storage facilities and their locations.

1.2 Statement of the Problem
A supply chain's efficacy and efficiency depend on internal factors such as progressiveness, collaboration, inter-firm relations, company culture, and management skills. At any one moment, the supply chains might experience disruptions as a result of security risks such as maritime piracy, sabotage, intentional mischief, and rioting. These dangers might be the result of opportunistic acts carried out by parties located on the outside of the supply chain, or they could be the result of simple acts carried out by individuals working for supply chain organizations. According to estimates provided by the International Criminal Supply Chain Council (ICSC), the amount of money that may be lost as a result of criminal activity directed against supply networks equaled around 5% of world commerce in the year 27. On the other hand, a significant share of the losses caused by the theft of goods are not recorded. The National Council on Security and Crime (NCSC) estimates the annual cost of unreported theft and the indirect expenses associated with it in the United States anywhere between $ 20 billion to $ 60 billion (Lorenc & Kunar, 2021). According to Luthra and Mangla (2018), supply chain security management is vital for an organization to have in order to help the company in securely attaining its business goals and objectives.

Supply chain security faces new threats every day, sometimes one hundred percent of the time. Supply chain management is likely to include many parties, including individuals, businesses, governments, and countries. Problems might arise from a lack of confidence in other links in the chain, from concerns about cyber security, or even from cargo theft. Hence this portrays Security as the most crucial issue in humanitarian SCM that organizations deal with in this modern age. The security of an organization's supply chain has emerged as one of the most crucial and valuable things it may possess. However, there is an increased risk that information may be stolen or changed and modified, which would cause disruption to the whole organization's system and have a negative impact on the business's ability to continue operating normally. Coordinating individuals, processes, and technology, as well as implementing technical, formal, and informal controls of the security system, may lead to an effective execution of supply chain security efforts. This can be accomplished by achieving this goal. When considering solutions to security issues, it is important to look at the supply chain from both an internal and an external viewpoint. However, the most significant obstacle for companies is to prudently invest in security in a manner that allows them to both comply with rules and get possible extra advantages that help to the achievement of efficiency throughout the supply chain. This is the fundamental problem that businesses face.

The majority of the research and writing on supply chain security management has been conducted from the vantage point of industrialized nations. In the context of developing nations like Kenya, only a small number of research have examined the phenomenon. We still don't know how much of an impact supply chain security management has on operational performance, or how much of an impact it has when combined with an organization's culture. This presents a knowledge gap that the current study seeks to fill.

1.3 Research Objectives
This section covers the general and specific objectives of the study

1.3.1 General Objective
The study aims to identify the moderating role of organizational security culture on the relationship between supply chain security management and the operational effectiveness of humanitarian value chains in Kenya.

1.3.2 Specific Objectives
The study shall be guided following specific objectives: -
i. To establish the moderating effect of organizational security culture on the relationship between freight security management and the operational performance of humanitarian value chains in Kenya.

ii. To determine the moderating effect of organizational security culture on the relationship between facility security management and operational performance of humanitarian value chains.

iii. To establish the moderating effect of organizational security culture on the relationship between information security management and operational performance of humanitarian value chains.

iv. To determine the moderating effect of organizational security culture on the relationship between supply chain security management and operational performance of humanitarian value chains.

1.4 Research Hypothesis of the study

v. Organizational security culture does not significantly moderate the relationship between freight security management on the operational performance of humanitarian value chains in Kenya.

vi. Organizational security culture does not significantly moderate the relationship between facility security management and the operational performance of humanitarian value chains.

vii. Organizational security culture does not significantly moderate the relationship between information security management and the operational performance of humanitarian value chains.

viii. Organizational security culture does not significantly moderate the relationship between supply chain security management and the operational performance of humanitarian value chains.

1.5 Justification of the study

1.5.1 Management of Humanitarian Organizations

The research will be of great help to the management of humanitarian organizations as it highlights the influence they may have on the performance of their supply chains through the implementation of well-thought supply chain initiatives.

1.5.2 Government of Kenya

The research will also be of great importance to the government of Kenya and policymakers as it will highlight challenges humanitarian organizations face in supply chain security management and thus be able to lay down policies that will assist in improving their service delivery.

1.5.3 Academicians and Researchers

The research will also greatly help academicians and researchers, for it will provide insight and a better understanding of the subject matter. It provides a basis and is a reference material for further research on related areas.

1.6 Scope of the Study

Organizational security culture as a moderator between supply chain security management and the efficacy of humanitarian assistance value chains in Kenya will be investigated in this research. Systematic and contingency theories serve as their foundation. Twenty humanitarian organizations will serve as the study’s base, and responders will be selected from the operations, finance, security, and logistics departments. These are the departments represented by the responders, and they deal daily with supply chain security management challenges.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

The chapter provides an empirical literature assessment of earlier studies on the topic and the theoretical and conceptual underpinnings of those investigations.

2.2 Theoretical Framework

A theoretical review is a group of connected ideas that may or may not be fully formed (Kivunja, 2018). The research is guided by a theoretical framework that defines the variables to be tested, the parameters to be measured, and the statistical correlations to be investigated. Studies that evaluate hypotheses by deduction have shown that theoretical frameworks are helpful (Kivunja, 2018). Organizational security culture and supply chain security management are discussed in terms of their effects on the efficiency of supply chains for humanitarian objectives. A fundamental explanation of the studied phenomena was provided by looking at the Resource Based (RBV), systems, and contingency theories.

2.2.1 Resource-Based View Theory

The Resource Based View Theory is essential as it establishes the relationship between the abilities of organizations and how it influences their performance (McDougal et al., 2019). According to the RBV theory, an organization's resources include both its physical and immaterial assets (Nason & Wiklund, 2018). Resources, capacity, and competences are the three main ideas behind this approach (Nason & Wiklund, 2018).

Organizations' performance is attributed to a firm’s resources, such as facilities, humans, cargo, and information. Competitive advantage is gained by organizations that can manage their resources effectively (McDougal et al., 2019). The unevenly scattered capabilities throughout the organizations are responsible for security along the supply chain and would cost the organization money to move. The RBV must be adapted for effective supply chain security management since resources and capabilities are so important to the management and performance of the supply chain (McDougal et al., 2019).

It is hoped that organizations' supply networks be protected by security measures. The RBV theory provides complete support for the independent variables of this investigation, which are predominantly attributable to resources (Figure 2.1). Logistics service providers' real and tangible assets include their freight/cargo and their facilities (Miki et al., 2021). Organizational competence stems from information, and human resources are the fountainhead of cascading knowledge on the capacity side of the idea. The theory was established to supplement the Industrial Organization (IO), which looked at issues external to the corporation but integral to the performance of the industry as a whole (Akbari et al., 2019). Like the Industrial Organization, the RBV emphasizes internal sources of workable competitive advantage and tries to understand why businesses in the same industry have different
performance connections (Nikmah et al., 2021). According to Rotjanakorn et al. (2020), a company's competitive advantage may be preserved through developing and using distinctive competencies. Statement of the RBV's guiding principles, which include the correlation between satisfied customers, a competitive edge, and increased excellence in performance. According to Rotjanakorn et al. (2020) and Akbari et al. (2019), an organization's most important resources can be either measurable, such as cash on hand or inventory of raw materials, or intangible, such as the loyalty of its customers or the expertise of its employees. The practical benefit achieved by these primary benefits is tangible, one intangible asset that is copied, and operational assets and performance improvements plus more performance are regularly measured. For example, financial concepts went up higher profits than before revenues or market share in one year (Ployhart, 2021). The importance of the RBV cannot be overstated, as it provides crucial insight into the factors that influence the efficiency with which security management is implemented in SCM.

2.2.2 Systems Theory
In 1972, Hungarian scientist Ludwig von Bertalanffy created General System Theory (Ramage et al., 2020). From a sociological perspective, the theory of systems represents the interdisciplinary approach used by an organization. A sociological system consists of four main parts: characteristics, objects, internal object-environment interactions, and external object-environment interactions (Kyalo, 2018). In a system, components may be thought of as either parts or as independent variables. What makes a gadget unique are its characteristics, which include its features, traits, and components. There are preexisting links between the parts of any system. People collaborating towards a common goal may also be thought of as a system. A border separates what would be part of the system from what is outside it. The open system theory focuses on how different departments and people interact within an organization and how that organization interacts with its outside environment (Sony & Naik, 2020). A system is considered an entity when it has an effective input-output relationship, and the open systems technique is used to apply the pressure from the output to initialize the system first (Ivanov et al., 2018). The changes in one area of the organization impact all other parts. The primary responsibility of management in an organization is to act as a connecting link between various organizational subsystems. The theory of systems is a framework that may be used to explain and analyze a collection of items that function as a unit and produce some result. It focuses on the role of complex systems in society, nature, and science (Craighead et al., 2020).

Any creature, culture, piece of information, or electro-mechanical device can be called a system. Generally, it describes organized social structures that communicate with outputs to produce results from inputs (Craighead et al., 2020). According to Supply Chain Security Management, increased firm productivity is the sole outcome of operational performance based on internal and external integration systems. Humanitarian SCM aims to reduce human suffering when a natural or man-made catastrophe occurs by coordinating the efforts of all those involved in the chain of supplies (Negi and Negi, 2021).

2.2.3 Contingency Theory
There is no universally optimal way to organize a company, choose top executives, or formulate policies, and the contingency theory justifies this stance. However, the internal and external contexts influence the optimum course of action. Leaders with a contingent mindset can quickly adjust their approach to meet the needs of the business when it faces new challenges. According to contingency theory, an organization's goals may be better met if its structure and management approach are well-suited to the tasks at hand and the composition of its workforce (Lartey, 2020). As a result, the theory strongly emphasizes the necessity of having a leadership style that is compatible with the organizational culture and produces the required operational results.

![Theoretical Framework](Figure%201.png)

**Figure 1: Theoretical Framework**
**Source:** Researcher (2022)

2.3 Conceptual Framework
The conceptual framework, as described by Salki et al. (208), provides an explanation of the basic link that exists between the study variables. The researcher has little trouble recognizing the anticipated connection. Within the scope of this investigation, the operational performance of humanitarian value chains in Kenya will serve as the study's dependent variable, and organizational culture will play the role of a moderator. Security for freight management, security for facilities, and security for information management are some of the independent factors that need to be investigated. In Figure 2, this is demonstrated.
Figure 2: Conceptual Framework
Source: (Researcher, 2022)

2.3.1 Freight Security Management
Defending against deliberate criminal acts that might compromise transportation infrastructure, vehicles, and systems, as well as people, requires a mix of preventive measures, as well as human and material resources, as defined by Yang and Hsu (2018). There has been a surge in the development of new technologies, such as after-theft monitoring systems and anti-theft gadgets. According to Yang and Hsu (2018), attention is paid to the numerous tracking technologies that follow the items during the delivery process. Nevertheless, the implementation of a variety of technical solutions is just a portion of the overall plan for transport security. There is a need for tracking and tracing all the cargo while in transit to guarantee its protection and the transportation vessel.

2.3.2 Facility Security Management
According to Gurtu and Johny (2021), the term “facility management” refers to the coordinated and comprehensive planning of an organization's physical locations with the goal of enhancing the business's overall efficiency. According to Olutola et al. (2022), facility management is responsible for maintaining the safety of the facilities in which items are kept and distributed. Optimal warehouse layout designing (e.g., entry/exit controllability; marked control areas; adequate lighting conditions) and efficient facility monitoring (e.g., 24-hour surveillance, security guards, and taping activities of loading containers) are the practices that are commonly used in facility management (Olutola et al., 2022). Safeguarding the facilities in an organization is critical because the most valuable assets, such as goods and critical information that will negatively impact the organization's performance, are stored there.

2.3.3 Information Security Management
Information relating to a firm’s business activities and dealings is occasionally provided to suppliers and partners of the organizations. Hence, protecting such information to ensure it does not fall into the wrong hands is vital in the competitive world (McLaughlin & Gogan, 2018). Therefore, humanitarian organizations need to implement adequate security measures to enhance the protection of this information/data. McLaughlin and Gogan (2018) defined information management as the safeguarding of key data of the organization in the supply chain. Misusing information may be a tool for identifying unlawful events and preventing security cracks. Information management is an essential component of SCM.

The avoidance of security breaches and the protection of participants in the supply chain process are both made easier when one is in possession of full information on the activities that take place throughout the supply chain, both downstream and upstream. Unauthorized access to computers and infrastructure theft are examples of threats in implementing security initiatives. It also includes access to secured areas and smart cards and gadgets containing important data sensitive to companies.

2.3.4 Organizational Security Culture
According to Wiley et al. (2020), supply chain employees need to understand their company’s corporate culture in order to increase system and company efficiency and effectiveness. However, Paglia (2022) argues that a company’s culture determines the extent to which security is integrated into the daily activities of its employees and how it views the future. As a result, it is clear that top-level leadership's backing of their staff is crucial for ensuring a secure supply chain.

The most vital aspect of intra-organizational SCS efforts is organizational culture. According to Paglia (2022), this is referred to as “socializing security” since it produces and enhances a feeling of SCS among staff members. The structure of the company, the leadership, the skill sets of the workers, employee education on security concerns, and training are all significant variables connected with integrating security across the corporate culture. According to Da Veiga et al. (2020), the majority of firms' security plans place a strong emphasis on the need of maintaining a high level of staff knowledge in order to improve overall security levels. It is imperative to note that top management highly influences organizational security culture. Top leadership usually crafts the organization’s vision, mission, core values, and strategic moves to be pursued. They also allocate resources, which may determine the security management level within the organization’s facilities.

2.3.5 Operational Performance of Humanitarian Value Chains
Supply chain performance, as defined by the research of Banomyong et al. (2019), is a way for objectively measuring the efficiency and reliability of supply chain processes. Anjomshoei et al. (2022) argue that the efficiency of a company's supply chain is critical to the success of any business strategy. According to Banomyong et al. (2019), the supply chain's major goal is to strengthen the capabilities of all its members to ensure continuous business operations. Many scholars have started measuring supply chain performance using various methodologies that have created a variety of performance measurements. A particular technique of earlier data that measured performance and was used in supply chain models was presented by Banomyong et al. (2019). The Supply Chain Council’s SCOR model is one of the most widely used metrics for gauging supply chain performance, according to research by Ikatrnasari et al. (2020). In addition, the model offers a rigorous scientific foundation for satisfying the supply chain's constituent companies' performance needs. Second, it considers the activities that take place throughout the offer chain to be a collection of interdepartmental and cross-organizational procedures. 3. Curious about the channels of interaction and cooperation amongst supply chain members. It provides methods of management that lead to maximum levels of productive performance. 5. Participating in multi-dimensional supply chain performance monitoring (Prasetyaningisih et al., 2020); a. SC reliability: doing this through delivering the correct amount of merchandise to the right buyer at the right time. b. SC responsiveness: doing this by rapidly adjusting the supply chain in response to changes in demand. b. SC Responsiveness: This term describes how quickly the product can be sent to customers. c. SC Flexibility: how easily the supply chain can adapt to new conditions in order to maintain or improve its competitive advantage. All of the money spent on running the supply chain is considered part of d. SC expenses. D. Efficient use of assets to meet consumer needs is what we mean when we talk about economical utilization.
2.4 Empirical Review

2.4.1 Freight Security Management and Performance of Humanitarian Supply Chains

Many people see supply chains as collections of virtual firms, each of which owns a diverse range of assets and is responsible for managing resources. An integral part of the asset base consists of the materials (raw materials, semi-finished goods, finished products, etc.) or shipments that travel from the first stages of production to the ultimate customers (Kolioussis et al., 2020). The assets may consist of persons working inside the supply chain, as well as equipment, storage facilities, transportation vessels, or transportation boats. According to Tong et al., 2020, the most effective management of these assets is crucial for ensuring the cost-effective execution of core supply chain functions like transport, stockpiling, goods handling and storage, packaging, and labeling. (Holguin-Veras, V., et al., 2020) The phrase "cargo management" is used to describe the process of protecting goods throughout their production, shipping, and transportation phases. Businesses utilize a variety of security methods to safeguard the supply chain against threats. Research by Holguín-Veras et al. in 2020 suggests that cargo itself poses one of the greatest possible dangers to supply chain safety. A common security problem when handling cargo is stealing, which causes disturbance within the supply chain. Transport supply security has gained importance as international economies have embarked progressively on economic and secure supply chains that span the world (Tong et al., 2020).

Nonetheless, events such as terrorist attacks, stolen goods, and smuggling, amongst others, have made transportation more difficult and unpredictable. According to Tong et al.'s research from 2020, the number of terrorist attacks on transportation and logistics networks more than quadrupled between the years 2000 and 2003 compared to the preceding decade. The implementation of methods for protecting transport logistics systems is time-consuming and costly, but the potential financial gains may be difficult to capture, making it impossible to quantify such benefits.

According to Harris (23), transport security protects people in addition to data, equipment, systems, buildings, and commercial assets. Transport security protects these assets by things like facility design and layout, environmental factors, emergency response preparedness, training, access control, intrusion detection, and power and fireplace protection (Bartle et al., 2021). Plans for business continuity or disaster recovery are necessary precautions to take in order to minimize the disruption of company operations in the event of an accident, explosion, or act of sabotage. The protection of employees' lives and the facilities they operate in should be a priority for transport security. The safety of every staff member should always come first when it comes to transport security's priorities. The second step is to protect the assets of the organization and get the information technology back up and running in the event that a natural catastrophe occurs. The protection of sensitive data requires that it be kept out of the hands of unauthorized parties. According to Kaszubowski (2019), the World Health Organization is not authorized to access and use it. This may be accomplished by stopping information thieves and hackers from accessing essential information and storage drives, severing network connections, or unplugging the system.

Kaszubowski (2019) argues that it is necessary for businesses to have supply networks that are both safe and robust. He divides the process of bolstering protections against theft of property, cargo, and intellectual property into four stages: Access control, identification badges, and surveillance equipment are all examples of level one physical security procedures. The second level is reactive and involves checking for and analyzing offer continuity plans and offer bases. Level three is proactive and includes advanced cyber security as well as business continuity plans. Level four is the most advanced and includes learning from previous disruptions and formal security strategies. Within the field of criminology, antagonistic assaults have received a significant amount of attention and study. This indicates that attacks on supply chains may take place anytime the offender, the target, and the lack of adequate security come together. If there is a greater emphasis placed on security, then potential criminals would logically choose targets with less protection. This phenomena has been clearly seen in freight transport, where securing terminals in transport chains has produced a drop in events in the linkages between terminals (Kaszubowski, 2019). This phenomenon has been clearly documented in freight transport. As a consequence of this, a number of writers are of the opinion that "a supply chain is only as strong as the weakest of its links."

According to the study "Voluntary supply chain security program impacts" by Aragn-Correa et al. (2020): According to the results of an Associate's level empirical research conducted with BASC member businesses, Supply Chain Security Management may be a new topic in the area of operations management analysis, and as a consequence, introductory and tutorial articles are scarce in the field. Concerns regarding the security of global supply chains have recently pushed the deployment of the latest security initiatives connected to nursing to the point where they are now considered an integral part of SCM. The research concludes that there is a sweet spot between academic investigations into supply chain security, the development of ever-higher security norms, and the implementation of effective social control measures. The academic research community has a clear objective to close this gap in consignment security by safeguarding the worldwide supply chain and industrial security of goods at ports (Aragn-Correa et al.). The research reaches the conclusion that theoretical supply chain security studies fill a need in the field.

2.4.2 Facility Security Management and Performance of Humanitarian Supply Chains

The implementation of physical security measures is often considered to be an organization's top priority. When constructing physical facilities and settings, many companies put more emphasis on the formal and aesthetic elements than they do on the security aspects and standards. This may lead to a lack of attention being paid to security processes (Munyaka & Yadavalli (2021)). Stability in operations, the ability to focus on core competencies while outsourcing to meet other needs, and improved client interactions thanks to the ability to predict and monitor consumer demand and react to customer responses are all benefits of establishing long-term connections. Customers are prompted to specify needs and preferences, provide productive solutions, and track the progress of their orders thanks to enhanced customer service. Better service to customers might help achieve these aims. Agarwal et al. (2020) argue that supply chain collaboration is crucial for a number of reasons, including the following: increasing sales, decreasing supply time, producing products in smaller batches, decreasing stock levels, improving corporate performance, shortening the
customer satisfaction cycle, and so on. Research by Baharmand et al. (2021) reveals that supply chain partners that collaborate have several benefits, including a higher likelihood of successfully meeting consumers' needs.

Researchers Munyaka and Yadavalli (2021) set out to examine the link between SCM practices and improved business outcomes like market share and productivity. The goals of this research were to (1) develop five dimensions of SCM practices (strategic partnership with suppliers, customer relationship, level of information exchange, quality exchange, Information Security Management); (2) examine the connection between SCM practice and competitive advantage; (3) enhance the performance of the organization; and (4) shift competition from rivalry between firms to rivalry among suppliers.

The vulnerability of physical assets to security threats is largely attributable to the fact that cargo, and particularly high-value cargo, is the primary focus of criminal activity. This opens the door for potential theft or misuse of the supply chain's transportation assets and equipment. A criminal may opt to steal the whole trailer or container if they are unsuccessful in breaking into it to get to the valuables within. A supply chain's human resources are likewise an essential component of the chain. Without staff that is both well-trained and motivated, many of the actions that are committed to the optimization of assets cannot be completed effectively. According to Dubey et al. (2019), some writers believe that labor expenses account for as much as fifty percent of total expenditures across the whole supply chain.

When a business wants to increase its system security, one of the first security efforts they often do is to beef up their physical security. By physically limiting access and managing access, unauthorized persons is kept out of the site, which protects the intellectual property of the site, as well as the capital equipment, people, inventory, work in progress, completed items, and product integrity. Theft prevention, which involves safeguarding against the unlawful removal of products from the process, has been the primary emphasis of traditional security strategies up until recently.

### 2.4.3 Information Security Management and Performance of Humanitarian Supply Chains

According to Sahebi et al.’s research from 2020, a fluid exchange of information between a company's suppliers and its end consumers is one of the most important pillars of a practical and cost-effective supply chain. The use of data in decision-making is optimal, and it also helps businesses create pricing. According to Singh et al. (2018), improper knowledge management has the potential to do enterprises irreparable harm. Enterprises have struggled to adopt transport security during the last several decades, according to study from 2020 conducted by Sahebi et al. Because of the lightning-fast evolution of technology, the organization's area unit is now involved in transit security of hardware and instrumentality (Singh et al., 2018) because of the rising usage of mobile devices that are susceptible to theft. This includes laptops, phones, onerous drives, and USB. This is owing to the fact that the usage of mobile devices has increased. The thiefery of mobile devices is not the only method that cybercriminals and other malicious actors will employ to get the information they seek. According to Singh et al. (2018), hackers will be able to get crucial and sensitive information by attaching a USB or a small low-memory card to computers. This will allow them to avoid physically entering the corporate database.

The most recent advancements in data technology have been applied to the manufacturing, distribution, and consumption of goods, which has resulted in the introduction of mechanical automation, a reduction in the amount of workers required, and significant cost savings for supply chains. According to Dubey et al. (2019), large businesses that want to keep their dominating position in the supply chain in distribution marketplaces should encourage the use of modern information systems. When it comes to supply chains, adopting new information systems necessitates the collaboration of numerous actors in order to share and analyze huge volumes of data. Relationships that are integrated across the supply chain are both essential to the organization's success and an essential part of its structure. According to Singh et al. (2018), SCM is defined as the procedures and practices targeted at the economic and economical movement of each material and information between the corporation, suppliers, and consumers. The opportunity for consumer feedback is created by the conversation and sharing of data that takes place between partners. Therefore, searching for answers to problems faced by an organization may, without a shadow of a doubt, have a beneficial effect on the outputs and performances of the company.

In most cases, the information pieces consist of a number of documentation showing either regulatory compliance or the validity of the shipment. However, supply chain and logistics research organizations may benefit from being made aware of these challenges since there is a growing awareness of the importance of information security. Although there is a possibility that these technologies may increase the efficiency of supply chain operations, there is also evidence that security may be compromised. According to Dubey et al. (2019), the proliferation of computers and smart mobile phones makes it challenging to safeguard the information, networks, and systems of businesses. According to Dubey et al.’s 2019 research, the loss of laptops carrying vital and sensitive corporate documents left over 74,000 employees, suppliers, and contractors vulnerable to data intrusion.

According to Singh et al. (2018), the ever-changing character of the contemporary environment has played a role in the rise in the amount of money lost by businesses as a result of fraudulent activity, sabotage, and theft. According to Aranda et al. (2029), natural catastrophes such as earthquakes, volcanoes, floods, lightning, fires, and dust waves are examples of external dangers that are neither caused by or impacted by human activity. According to Singh et al. (2018), natural catastrophes of this kind have the potential to do significant damage to information systems and may even halt the provision of electronic services entirely. A comprehensive plan for the protection of sensitive data is urgently required. The information that is shared by 27 with their partners in the supply chain is one of the most valuable assets that businesses possess. Before information may be exchanged, businesses need to put in place appropriate safety measures.

Due to a rising dependence on information technology, the risk of security events and breaches grows, and companies are becoming more susceptible to a wide variety of cyber-attacks (Singh et al., 2018). Breach of security may result in major financial losses, as well as in the interruption and cessation of activities. As a direct consequence of this, the role of Information Security Management (ISM) has evolved into one that is needed of each and every company.

According to Aranda et al.’s 2019 study, there are scholars who believe that effective information management may also increase the flexibility of supply chains. When information from the downstream is shared in a timely manner, disturbances in the upstream...
may be swiftly averted or their negative implications can be mitigated. Aranda et al.’s 2019 research suggests that prior information might be utilized to mitigate some risks, such as labor conflicts. For instance, if a company has advance knowledge that a strike is going to happen soon, then the company could build up its inventory of mitigation strategies in advance. Supply chain disruptions, such those induced by financial, strategic, operational, and hazard vulnerabilities, may be mitigated by the use of information exchange. This is due to the fact that information exchange occurs in both directions.

2.4.4 Supply Chain Security Management, Organizational Security Culture, and Operational Performance of Humanitarian Supply Chains

Humanitarian organizations execute supply chain tasks such as planning and managing all operations related to material, information, and money flows in disaster aid. Preparation, fast response, reconstruction, and recovery are only few of the numerous phases of a disaster relief concept, and humanitarian supply chains play a crucial part in each (Bechtsis et al., 2022). Humanitarian supply chains, as defined by Betsis et al. (2022), need innovation, Freight Security Management, and flexibility. It may surely be unexpected, chaotic, and call for flexibility because of the complex surroundings caused by the catastrophes that can strike anywhere and at any time, sadly frequently in developing nations with insufficient infrastructure or political instability (Falagara Sigala et al., 2020).

In the prior body of research, the link between security and efficiency as characteristics that may be promptly coupled for favorable effect has been outlined. The normative nature of these inquiries is the primary focus, and empirical evidence is often absent from them. According to Falagara Sigala et al. (2020) and Bechtsis et al. (2022), enhancing security may also provide “collateral benefits.” These “collateral benefits” include trade facilitation, asset visibility and tracking, speedier standard development, and other similar benefits. The same idea of “collateral benefits” is maintained in the same way. According to Bechtsis et al. (2022), large corporations may have the luxury of trading off the expenses associated with supply chain transparency for the advantages connected with increased security. According to Bechtsis et al. (2022), there is a strong connection between the safety of the supply chain and its overall productivity. This is due to the fact that increased levels of security may result in less delays at customs, and that increased levels of openness about information on the movement of products may result in lower shipping costs and times. Naturally, the backbone of a supply chain is comprised of both the tangible assets, such as cargo and transport vehicles, as well as the infrastructural components of both transit and storage, and the human resources that are employed in the supply chain. According to Anjomshoae et al. (2022), research has resulted in the development of numerous methods that optimize asset utilisation, hence cutting costs while simultaneously boosting performance. Criminals, on the other hand, might target the same assets in order to commit theft or other unlawful acts, which is why they need to be properly monitored and protected. Human resources have the potential to be the supply chain's weakest link. Workers may choose to function as insiders on their own will or may be coerced into working with criminal organizations (Lusiantoro & Pradiptyo, 2022). (Aranda et al., 2019) Previous research has shown that it is important to strike a balance between risks and performance in order to keep supply networks from becoming too vulnerable. The managers of supply networks need to cultivate the competences necessary to maximize the effectiveness of their supply chains while minimizing their exposure to risk. Tien (2019) proposed that the deployment of security measures results in high costs for businesses, but that these costs are offset by the long-term advantages that these measures provide to firms in the form of an increase in the overall supply chain's efficiency. The P & Ga consulting firm looked at the potential financial benefits of establishing a safe SCM system for businesses shipping goods between Thailand and the United States (Banomyong, 2018). This article explores the benefits to service providers and finds evidence linking security measures to business prosperity. A number of monetary benefits resulted from the security measures taken, including (i) more transparency in terms of freight arrival timing and tracking; (ii) avoided cost on US Customs' trade security measures; (iii) decreased inventory size; (iv) increased sales; and (v) decreased theft and pilferage (Banomyong, 2018). We also looked at the proactive security measures that boost productivity in the workplace rather than the reactive ones. Researchers Fernando et al. (2018) examined the influence of supply chain security procedures on operational security performance among logistics service providers in a developing country and found that these policies had a significant effect. Research indicates that service providers in Malaysia may improve their security operational performance by implementing four key supply chain security measures. The organization's security culture acts as a moderating and positive influence on the link between facilities management and the organization's operational security performance. Nevertheless, there were some takeaways from the research. For instance, firms in developing nations need to be aware of supply chain security measures that may result in considerable advantages to their organizations might provide them extra incentives to implement these efforts. These practices include, but are not limited to, biometric authentication, two-factor authentication, and multi-factor authentication. Researchers in the field of supply chain security have started to take into account the influences of organizational culture (Lusiantoro & Pradiptyo, 2022). This is despite the fact that the study of supply chain security is still in its infantile stage. The establishment of a security culture is a collaborative effort that is led by management and undertaken in conjunction with the workforce. In line with this, Lusiantoro and Pradiptyo (2022) researched the behavior of workers towards security procedures while they did their everyday jobs. They found that businesses with security-minded workers may reap advantages in a number of areas, including productivity. This supports the argument made in earlier research that supply chain security procedures are associated with the relevance of human attitude, HR practices, and other employee-level impacts on organizational performance.

By delegating responsibility down the chain, companies may foster a culture among their lowest-level personnel, which in turn improves supply chain safety (Lusiantoro & Pradiptyo, 2022). This may be accomplished by delegating authority to workers at the base level. It is suggested that a security culture provides companies with the chance to protect their supply chain operations and will assist organizations in more successfully implementing security efforts. This is due to the fact that it helps organizations execute security initiatives. The positive impact of security efforts practices on supply chain operations is thus expected to grow in the context of a more robust security culture. One of the potential drawbacks of security measures, however, according to Aslam et
al. (2021), is that they provide the targeted populace a false sense of security. As a consequence of this, if attempts to adopt SCS are made, the inability to combine these efforts with performance may cause many security programs to become obsolete or to be discontinued. As a consequence of this, it is of the utmost importance for SCS to cultivate and preserve an organizational culture that comprehends both the significance and the procedures associated with security. Aslam et al. 2021 note that previous researchers' results suggest that an organization's attempts to cultivate a SCS culture are advantageous to security practices. According to Pham et al. (2019), an organization's culture may be established by several means, such as its norms, behaviors, communication strategies, information practices, distribution methods, expected performance, results, and traditions. Thus, managers may utilize organizational culture as a crucial tool in managing employees and achieving corporate objectives (Aslam et al., 2021).

According to Banomyong (2018), the term "security culture" may be used in its broadest meaning to relate to the knowledge of workers and the actual actions taken. Therefore, the participation of people in security is of the utmost importance. This includes contributing to the formation of firm rules and operational blueprints that will lead to a secure environment. The proliferation of a security culture among workers may provide management with assistance in the formulation of suitable security policies by means of the interaction and participation of workers, with the ultimate goal of lowering the total risk that can be ascribed to security issues. In the absence of the direct written procedure or rule, there must be a security culture in which a heightened awareness of the issue of cargo theft is embedded in the implicit norms that guide the behavior of the workforce. However, a company's security culture is determined by the complexity of the business, and self-sufficient personnel are particularly valuable in global organizations (Aslam et al., 2021).

According to Banomyong (2018), those who are not directly engaged with the organization may pose a danger to the premises by acts like as demonstrations, rioting, and robberies. According to Anjomshoae et al. (2022), the human component has the potential to intentionally do damage by accessing information without the appropriate permissions to do so, destroying the information, or disclosing it to a third party. Initiatives to combat threats to transportation security, Internal Threats are Human Threats, According to Flagara Sigala et al., 2020: has produced When an FAO staff member abuses his authority despite having access to information systems, the risks posed by these threats are significantly increased. In general, the following list is a concise summary of the most significant human sources that pose a risk to information systems: Employees who deliberately cause damage to the assets of the firm, as well as employees who are unaware of the potential security threats and so accidentally cause damage to the assets of the organization. One kind of an internal danger that may be produced by two or more personnel working together is called collusion. It is difficult to anticipate assaults and infiltration by staff members of vital organization resources and information because staff members often get authorization to access data and information (Falagara Sigala et al., 2020). This makes it difficult to anticipate attacks and infiltration by staff members. One good illustration of this would be the security guard that works for the company and has worked their way up to earning access to all of the departments. As a result of the fact that this individual might conduct security violations and breaches without the other employees being aware of it, it is essential to have security awareness in order to safeguard the assets of the firm.

A supply chain's human resources are likewise an essential component of the chain. Without staff that is both well-trained and motivated, many of the actions that are committed to the optimization of assets cannot be completed effectively. According to Anjomshoae et al. (2022), some writers believe that labor expenses account for up to half of the costs incurred across the supply chain. Distribution of available labor capacity across the supply chain must be optimized for maximum efficiency and adaptability. Personnel may be seen as a weak link in the supply chain despite this (Anjomshoae et al., 2022). Because they may have unfettered access to assets like buildings and cargo, employees pose a risk of becoming "insiders" who aid criminals or conduct crimes themselves (Batra et al., 2020). It's feasible to imagine both of these outcomes. When no one specific individual can be identified as the root of a problem, it might be difficult to determine who or what is to blame for an occurrence. Human variables not often linked with deviant conduct are the most common cause of serious security problems (Craighead et al., 2020). Many recent breaches may be attributed to factors including high levels of stress, insufficient training or oversight, and poorly designed systems or procedures. Human resource management promotes a culture of trust and safety in the workplace, protecting the integrity of the company's products and assets at all times.

2.5 Critique of Reviewed Literature of the Study

The literature on supply chain security initiatives has focused mainly on the four essential supply chain security boosters covered in the literature study. The literature on developing security methods to fight supply chain risks or disruptions is extensive, but not particularly in-depth beyond these four improvements. Furthermore, although the literature on supply chain security efforts has identified numerous enhancers for creating supply chain security initiatives, few studies have gone beyond this to focus on how businesses may create or deploy these enhancers (Jjuuko, 2022). This is because few research have gone beyond this to investigate how supply chains might be secured. Nevertheless, the focus of research on attempts to secure the supply chain should be on developing strategies and gaining a knowledge of how such strategies might be effectively implemented. The cost burden of supply chain security efforts may prevent them from being fully implemented. Piracy, terrorism, and robbery are all well-known sources of company risk that might potentially jeopardize the successful execution of a supply chain security plan. In a similar vein, there is a lack of literature on how businesses should decide between competing supply chain security approaches. What considerations should a management make when considering how to enhance supply chain security, given the firm's limited resources? A company's or an individual's risk tolerance is one of the elements that will determine which strategy to pursue (Lorenc & Kunar, 2021).

There was a lack of attention to specific risks or development of enhancers to construct resilient supply chain security against specific threats in the reviewed literature on the topic. However, experts in the field have argued that proper supply chain security strategies can't be developed unless hazards are first separated and identified. Therefore, enhancers may be used to mitigate certain
threats. There are a several methods to categorize supply chain disruptions, depending on whether they were caused by internal or external reasons. Then, several forms of supply chain security may be required, based on the specifics of each group. Even in wealthy nations, research on the scale of loss due to security issues is not very old.

2.6 Research Gaps
According to Luthra and Mangla (2018), the literature on SCM that is currently accessible is of limited value in comprehending supply chain security. There is a lack of academic research that addresses problems with SCM that are connected to security. Even while a few writers, such as (Lartey, 2020) and (McLaughlin & Gogan, 2018), have emphasized the significance of security activities in the supply chain, these initiatives have only been explored theoretically and have not been put to the test in an empirical setting. Increasing supply chain defense was the topic of the case study that Munyaka and Yadavalli (2021) presented. They noted that the term "secured supply chain" refers to a supply chain in which a variety of precautions have been taken to ensure a specific degree of safety while the business is in operation.

Initial empirical research on efforts to improve supply chain safety reveals a significant knowledge gap. This obscures the ways in which supply chain security measures succeed or fail in actual operations. It's possible that the proposals made in principle won't work in reality. Research on supply chain security measures has so far almost entirely ignored contexts outside of the industrialized world. However, there is evidence to suggest that the worst supply chain disasters (in terms of human lives lost) have happened in less developed nations. For instance, in underdeveloped nations, the penetration of counterfeit medications into the pharmaceutical supply chain is more widespread and has had more serious consequences than in industrialized ones (Yang & Hsu, 2018). It is estimated that 2,500 people in 1995 and 192,000 people in 20 in Nigeria and China died as a direct result of using fake drugs (Hamidu, 2022).

Political unrest, rebel activity, post-election violence, fraud, corruption, and other unethical corporate practices all pose greater risks to the supply chains of developing nations (Hamidu, 2022). Threats may be seen and responded to differently in industrialized and developing countries due to cultural and economic differences. Furthermore, bound developing nations may be more vulnerable to interruptions than extra mature, established countries because to differences in economic growth, such as the quality of infrastructure like road and rail networks. As such, studying how developing nations manage supply chain security is a crucial area for future study (Da Veiga et al., 2020).

Also, the study that has been done in the field of supply chain security management has shown that there is only a limited application of theory (something that McLaughlin and Gogan (2018) accepted). Our capacity to comprehend supply chain security measures, the factors associated with those initiatives, and the connections between them may have been hindered by our inability to put theory into practice. Additionally, it makes it difficult to generalize study results from one situation to another. Nason and Wiklund (2018) argue that the existing body of research on supply chain security management could include theoretical frameworks more effectively to enhance our understanding of this issue. Moreover, the few works of literature reviewed contain only the resource-based view theory, which is insufficient for explaining supply chain security management and performance.

2.7 Recap of Reviewed Literature
Based on the reviewed studies, supply chain security management is likely to result in more significant benefits to the concerned organizations. A challenge exists in measuring supply chain performance in a humanitarian setup, for their objectives may vary from one sector to another. The biggest challenges are the various mechanisms that humanitarian institutions use to implement various supply chain security strategies and also the goodwill of the top management. It is also clear that there is limited literature in the area, especially in developing countries. In this regard, much emphasis has been put on the study of security strategies in the general organization.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
This chapter introduces the research strategy, the population of interest, the sampling plan, the tools used in the study, and the procedures for data collection, analysis, and presentation. The statistical analysis model that was used for the data analysis is outlined in the chapter's concluding part as well.

3.2 Research Design
Research designs aim to set up conditions for data collection and breakdown in a certain way, combining the research goal's relevance with economics. This action is taken to fulfill the purpose of the research. This not only establishes the theoretical foundations upon which the research rests, but also provides as a road map for the subsequent steps of the study, including data collection, processing, measurement, and analysis. Since the study's overarching objective is to identify the factors that cause certain effects, it uses a correlational research technique. The research examines the participants' experiences and the outcomes of those encounters. Correlational research designs are helpful for tracking the current study population's circumstances, traits, and perspectives across time since they provide a clear image of the trends. Furthermore, a correlational research approach may be used to characterize the current prevalence of a certain attribute within a specified group. The questionnaire used in this study is an appropriate tool for gathering data from participants. The design satisfies all requirements for both experimental and non-experimental research. Pearson's correlation coefficient, or Pearson's r for short, is a statistical tool for evaluating the validity of a study. Correlation coefficients are typically measured between -1.00 and +1.00. The strongest negative link is a correlation of -1.00, the largest positive correlation is a correlation of +1.00, and no association at all is represented by a correlation of 0. Since it will thoroughly examine the correlation among factors without affecting the variables themselves, it will also be suitable for this investigation.

3.3 Target Population
The term "population" refers to the larger group from which researchable "samples" are taken. The target population of this study is the top 20 Leading NGOs in terms of utilization of funds on projects, as shown in Appendix V. The study collects data from key organizational officials to provide necessary information relevant to the study. Among these officials include logistics officers, supply chain officers, operations officers, finance officers, and security officers. The study sort responses from 1 officer per department per organization.

3.4 Census Method
A census is a comprehensive examination of every component, or every single person, within a population. All twenty humanitarian groups were counted using a census method based on areas. One hundred functional employees, or one functional officer from each of the four functions (logistics, SCM, operations, finance, and security), from each of the twenty humanitarian organizations, made up the units of analysis. The population of 100 functioning persons was found to be exceedingly small; as a result, when the study population is small, the entire population must be examined.

Table 1: Sampling Frame

<table>
<thead>
<tr>
<th>Categorization</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics Officer</td>
<td>20</td>
</tr>
<tr>
<td>Supply Chain Officer</td>
<td>20</td>
</tr>
<tr>
<td>Operations Officer</td>
<td>20</td>
</tr>
<tr>
<td>Finance Officer</td>
<td>20</td>
</tr>
<tr>
<td>Security Officer</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Author, 2021

3.5 Construction of Research Instruments
Research methodologies, tools, and resources are all together referred to as “research instruments” or “research instruments.” This information was gathered with the use of a semi-structured questionnaire. A questionnaire is a research technique used to collect data from a large sample and attempt to crystallize the objectives of the research into questions. Answers to questions are derived from data collected via hypothesis testing, as stated by Leite et al. (2018). Both open-ended and closed-ended questions on the independent, moderating, and dependent variables were included in the study’s questionnaire. It tends to lessen subjectivity and facilitate the completion of qualitative and quantitative analyses (Leite et al., 2018). After two weeks, surveys will be dropped and picked up, with a one-week extension granted at the respondents' request.

3.6 Piloting of Research Instruments
According to Malmqvist et al. (2019), pilot research is carried out to find problems in the design and composition and to give proxies for data used in the probability sample selection. Research by Malmqvist and coworkers (Malmqvist, et al., 2019) suggests that while pre-testing a questionnaire, it's important to use the same protocols as when actually analyzing the data. In order to evaluate the many types of replies that are provided and determine whether or not they help the researcher achieve the objectives that have been established for the study, pilot studies are vital.
It is anticipated that just a small percentage, perhaps between one and ten percent of the total population, will participate in the pre-test. Within the context of this inquiry, the research questionnaires were piloted on ten percent of the overall sample size. The pilot research will include a total of eight participants. They came from one of the twenty NGOs that were on the list, and their selection was made at random.

3.6.1 Reliability of Research Instruments

In their definition of reliability, Malmqvist et al. (2019) state, “accuracy given measurement consistency.” The same findings may be produced in a number of different conditions, which is another way of saying “measurement reliability.” The internal consistency method was utilized in this study since it has been shown to be the most reliable method overall. The statistic known as Cronbach Alpha is used to evaluate the degree of internal consistency. According to DeSimone and Harms (2022), in order for the test to have an internal consistency, the dependability values should be based on the average inter-relationships between all of the individual test items. To be regarded reliable, a Cronbach's Alpha Coefficient value of more than 0.7 is required. Here is how we will determine the Cronbach alpha (α): \( \alpha = \frac{K}{(K-1)}[1-\frac{\sum k^2}{\sigma^2}] \) where K represents the number of components, \( k^2 \) represents the sum of the variances for the k item scores, and total represents the variance for the aggregate measurement scores.

3.6.2 Validity of Research Instrument

In his definition of validity for scientific studies, Andrade (2018) focused on how well the results of the research reflected the phenomena being studied. The extent to which the system really measures the variables of interest is likewise a measure of its validity. Content validity was used in this investigation. According to Andrade (2018), a qualitative kind of validity known as content validity is one in which the definition's scope is specified in a very precise manner, and analysts or judges assess whether the test is entirely within the scope. The two most effective techniques to determine whether or not the information presented is reliable are to first confer with seasoned evaluators in the field and then to interrogate the instrument or test in issue using a series of questions. This exercise will include the participation of two supply chain security professionals. The supervisor of the research project will also be of assistance.

3.7 Data Collection Methods and Procedures

Data collection is the straightforward, methodical social affair of data applicable to the research issues. The study shall gather essential information utilizing the drop-and-pick strategy. Questionnaires will be dropped and picked after two weeks to allow the respondents the sufficient opportunity to react to the questionnaires. This technique is favored because of the dynamic nature of employees in management positions.

3.8 Proposed Data Analysis Techniques & Procedures

Analyzing data entails thinking critically about it in order to identify trends, summarize key information, and draw conclusions. Data processing, as proposed by Lemon & Hayes (2020), entails preparing collected information for analysis by editing, categorizing, and tabulating it. Information gathered from secondary or primary sources may be entered into a data entry tool to be seen and processed. The data was analyzed using both descriptive and inferential statistics. Since Pearson's correlation coefficient is used to measure how strongly two variables are related to one another, it will be used here to determine the strength of the relationships between the independent and dependent variables.

The hypothesis will be examined using the F-test. Data analysis will make use of multivariate analysis. A collection of methods known as multivariate analysis are used to examine data sets with numerous variables. Linearity between predictors and the outcome is shown by multiple regression models. Multiple regression will use the following kind of equation; the F-test will be used to evaluate the hypothesis. Multivariate analysis will be used to examine the data. When analyzing data sets with several variables, researchers often turn to a suite of techniques known as multivariate analysis. Linearity between predictors and the outcome is shown by multiple regression models. For multiple regression, the resulting equation will look like this:

\[
Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \hspace{2cm} \text{Equation 1}
\]

Where;
- \( Y \) represents Operational Performance
- \( X_1 \) represents Freight Security Management
- \( X_2 \) represents Facility Security Management
- \( X_3 \) represents Information Security Management
- \( \epsilon \) represents the error term

In the model, \( \beta_0 \) is the constant value while the coefficient \( \beta = 1,..,3 \) is the slope of the coefficients showing the effect of independent variables \( X_1, X_2, X_3 \) on the dependent variable \( Y \). The error \( (\epsilon) \) term shows the unexplained factors in the model.

3.8.1 Moderating Role of Organizational Security Culture

The presence of moderation indicates that the relationship between two variables is subject to the influence of a third variable. In addition, moderation is used to indicate the individual characteristics or contextual circumstances that alter the strength of the connection relating the predictor parts and the outcome components. To determine whether or not moderation is present, this study will use a technique based on Kenny and Baron's (1986) four-step analysis (Otuya, 2019). The variation in \( R^2 \) is to be used as confirmation that the particular moderating effects of organizational culture are there. As a result, the moderation0 model will have the shape shown above;

\[
Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_1 \ast M + \beta_5 X_2 \ast M + \beta_6 X_3 \ast M + \epsilon \hspace{2cm} \text{Equation 2}
\]

Where;
- \( Y \) represents the Performance of humanitarian Supply Chains
- \( X_1 \) represents Freight Security Management
- \( X_2 \) represents Facility Security Management
- \( X_3 \) represents Information Security Management
M represents Moderator (Organizational Security culture)
ε represents the Error term.
The results shall be summarized using tables.

3.9 Diagnostic Tests
Following that, the research model's future assumptions will be put to the test. Before running any model, diagnostics are performed to verify that the right model coefficients are obtained.

3.9.1 Normality Test
The Kolmogorov-Smirnov test will be performed to check for normality in the data. For K-S values over 0.05, it is not possible to reject the null hypothesis that the data are typical.

3.9.2 Test for Multicollinearity
It is common for there to be a strong correlation between the independent and dependent variables when multicollinearity is present. Regression coefficients are unknowable and standard errors are infinite if perfect multicollinearity is ignored, while standard errors are enormous if imperfect multicollinearity is ignored. Rejection or acceptance of the null hypothesis loses precision and accuracy when standard errors are large. The intensity of multicollinearity, rather than its mere existence, is the real issue during estimate. VIF was used to determine whether multicollinearity existed, with a value of 0 indicating the absence of multicollinearity and 10 indicating its existence (Salmerón et al., 2020).

3.9.3 Heteroscedasticity
The Breusch-Pagan-Godfrey method will be used to check for heteroscedasticity. The work of Salmerón et al. in 2020 assumes that the error variance is homoscedastic by default. The heteroscedasticity of the error variance, which would result from rejecting the null hypothesis, would cast doubt on the reliability of the FGLS model's prediction.

3.10 Hypothesis Testing
The p-value method will be used to test the hypothesis. If the p-value is less than 0.05, then the null hypothesis (H0) is rejected.

3.11 Ethical Considerations
Research ethics are a set of standards to help scientists’ direct moral investigations. This will be achieved in the study by obtaining authorization letters from the Ethics Review Committee, the School of postgraduate studies of Mount Kenya University, and a research license from NACOSTI. To ensure that the study report is free of plagiarism and does not violate any copyright, the researcher will submit it to Turnitin for a plagiarism check, where the minimum university level of 20% should be guaranteed. The study also recognized the need for the anonymity of participants as an ethical component, thereby failing to indicate their identifiable data. In addition, the researcher explained the study's goals, anticipated benefits, and potential dangers to the volunteers to assure their volitional involvement and informed permission. The study also considered the potential psychological, social, and legal harm by preventing breaches of privacy, safe study procedures, and attention to the sensitivity of research questions. The questions were also precisely matched to the study's research design to ensure the validity of the results.
CHAPTER FOUR
DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction
The topics of data analysis, presentation, interpretation, and debate are covered in this chapter. The chapter is broken up into parts numbered 1, 2, and 3. The first part of this report examines the respondents’ information in terms of their demographic characteristics. The premise of linear regression is discussed in the second portion, and the presentation, interpretation, and debate are covered in the last section (the third section). The overarching purpose of this study was to determine the impact that organizational security culture plays in mitigating the connection that exists between supply chain security management and the operational efficiency of humanitarian value chains in Kenya.

4.2 Data Collection Process and Response Rate
One hundred people from the top twenty Leading NGOs in terms of money utilization on projects were asked to fill out the study questionnaire, and 78 of those people actually turned it in. This corresponds to a 78.0% response rate. This information was essential for determining the ROI. A greater response rate is preferred to reduce the likelihood of data discrepancies. A high response rate (above 80%) from a small assigned sample is preferable to a poor response rate (less than 20%) from a big one, according to Lindemann (2019).

Table 1: Questionnaire Response Rate

<table>
<thead>
<tr>
<th>Number of Questionnaires issued</th>
<th>No. Returned</th>
<th>% of Questionnaires returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>78</td>
<td>78</td>
</tr>
</tbody>
</table>

4.2.1 Data Preparation and Cleaning
The data were inspected for errors and cleaned up after they were gathered in order to get them ready for analysis. The reason why this needed to be done was to make certain that the quality of the statistical analysis that came after it would not be compromised in any way. Achieving data accuracy, integrity, correctness, completeness, and consistency was the goal here so that additional later manual problem shooting and the possibility of inaccurate analytical conclusions could be avoided.

4.2.2 Visual and Range Checks
An examination of the dataset was carried out in order to determine whether or not there were any mistakes in the data input or any values that were absent. Research in the social sciences often encounters the problem of missing data (Allison, 2002; Johnson & Young, 2011). Checks were also performed on the frequencies and ranges of the data in the event that the data included any incorrect or odd values. None of the replies presented any significant flaws or omissions that would call for any kind of corrective action.

4.2.3 Reliability Test
The questionnaire underwent a battery of testing to establish its validity and ensure it would accurately collect data. Mohajan, (2017). To what degree the research equipment would have consistently provided results, we conducted reliability tests. Data credibility was established by investigating such issues as data provenance, data collection procedures, the presence of bias, and the level of precision. To what extent the results have held up over time was successfully determined by the reliability test. Internal consistency was the method of choice for the study's reliability analysis, which resulted in the calculation of Cronbach's Alpha (α). Because the suggested value of 0.7 was chosen as the threshold, the tool is considered consistent only when the Cronbach's Alpha value is larger than or equal to 0.7; in all other cases, the tool must be examined and adjusted appropriately. Table 2 presents the findings received from the reliability tests that were conducted.

Table 2: Reliability of Research Instruments

<table>
<thead>
<tr>
<th>Variable</th>
<th>No of Items</th>
<th>Cronbach Alpha</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight security management</td>
<td>6</td>
<td>0.924</td>
<td>Reliable</td>
</tr>
<tr>
<td>Facility security management</td>
<td>6</td>
<td>0.951</td>
<td>Reliable</td>
</tr>
<tr>
<td>Information security management</td>
<td>7</td>
<td>0.944</td>
<td>Reliable</td>
</tr>
<tr>
<td>Organizational security culture</td>
<td>3</td>
<td>0.903</td>
<td>Reliable</td>
</tr>
<tr>
<td>Operational performance</td>
<td>4</td>
<td>0.827</td>
<td>Reliable</td>
</tr>
<tr>
<td>Total</td>
<td>26</td>
<td>0.910</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

Cronbach's alpha ranged from 0.888 to 0.9641 across the two dimensions of operational performance and information security management in Table 2. Given that the questionnaire's internal consistency was much more than 0.7, we can conclude that the questionnaire's questions were highly consistent with one another. Consequently, no more adjustments were made to the instrument, and it was retained as is.

4.2.4 Validity of Research Instrument
Pre-testing ensured that the questionnaire was sound in terms of its content, language, sequence, form and layout, question difficulty, and instructions, which were all used to evaluate the questionnaire's instrument validity. The surveys were well-prepared, according to my superiors and a few other company owners and managers I consulted. No participant experienced any issues with them throughout the pilot study. This is because the questions were easy to understand and obvious to everyone who participated in the pilot study. This suggested that the instrument was successful in meeting the criteria for clarity, relevance, simplicity, and objective validity.
4.3 General information of the Respondents

The purpose of the research was to determine the background information of the respondents as well as the organization, post, degree of education, and length of time spent working at the present post were all included in the material. The findings are shown in Figure 3.

Figure 2: Position in the Organization

The study outcome revealed that logistics officers were 23.1% of the respondents, while security officers were 21.8%, operations officers were 19.2%, procurement officers were 19.2% and finance officers were 16.7%.

Figure 3: Highest Level of Education

As indicated in Figure 3 indicated 30.8% of the respondents were post graduate while 67.9% were having various bachelor while only 1.3% were having diplomas. The results indicated that majority of the respondents were having bachelor degrees.

Figure 4: Number of years worked at the organization

As shown in Figure 4, majority of the respondents have worked in their current organization between 6 and 10 years and 33.3% have worked in their current organizations for between 11 and 15 years. On the other hands, 3.8% have worked less than five years while 6.4% have worked for more than 15 years.
Figure 5: Attended any professional training on supply chain security
As indicated in figure 5, the results indicated that only 38% of the respondents have attended professional training on supply chain security while 62.0% have not attended any professional training on supply chain security.

4.4 Diagnostic Test for Linear Regression Analyses
Diagnostic tests conducted in this study entailed normality test, Multi-collinearity Test and Homoscedastic Test.

4.4.1 Normality Test
Statistical mistakes are widespread in literature; many parametrical correlation, regression, variance analysis and t-test procedures are based on Gaussian or ordinary distribution assumptions. In the absence of this assumption, a reliable conclusion would not be probable. The breach of the presumption of normality does not cause serious problems with large samples (< 30 or 40) (Ghasemi & Zahedias 2012). This allows us to use parametric methods, as the distribution of samples is usually used for large samples (< 30 or 40) irrespective of their form. Ghasemi and Zahedias (2012) propose the visual assessment of normality. Based on the figures below, the deviation from normality was less than the approximation to the fit line.

Table 3: Tests of Normality

<table>
<thead>
<tr>
<th></th>
<th>Kolmogorov-Smirnov Statistic</th>
<th>df</th>
<th>Sig.</th>
<th>Shapiro-Wilk Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Performance</td>
<td>.224</td>
<td>78</td>
<td>.000</td>
<td>.830</td>
<td>78</td>
<td>.000</td>
</tr>
<tr>
<td>Freight Security Management</td>
<td>.195</td>
<td>78</td>
<td>.000</td>
<td>.871</td>
<td>78</td>
<td>.000</td>
</tr>
<tr>
<td>Facility Security Management</td>
<td>.219</td>
<td>78</td>
<td>.000</td>
<td>.852</td>
<td>78</td>
<td>.000</td>
</tr>
<tr>
<td>Information Security Management</td>
<td>.226</td>
<td>78</td>
<td>.000</td>
<td>.854</td>
<td>78</td>
<td>.000</td>
</tr>
<tr>
<td>Organizational Security Culture</td>
<td>.195</td>
<td>78</td>
<td>.000</td>
<td>.859</td>
<td>78</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction
4.4.3 Multi-collinearity Test

The phenomenon known as multicollinearity occurs whenever there is a significant connection between two or more independent variables. According to Cooper and Schindler (2011), multi-collinearity causes the regression factor to vary, which makes it more difficult to interpret the factor as a predictor of variables that may be used for prediction. The multi-coordinate inflation factor (VIF) as well as tolerance values were calculated. The rule of thumb does not apply if the VIF values are less than 10, or the tolerance value is one or fewer, which indicates that there is no multi-collinearity.

Table 4: Multi-collinearity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>Tolerance</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight security management</td>
<td>0.171</td>
<td>5.865</td>
</tr>
<tr>
<td>Facility security management</td>
<td>0.246</td>
<td>4.065</td>
</tr>
<tr>
<td>Information security management</td>
<td>0.150</td>
<td>6.669</td>
</tr>
<tr>
<td>Organizational security culture</td>
<td>0.209</td>
<td>4.785</td>
</tr>
</tbody>
</table>

Source: Field Data (2023)

In the present analysis of the tolerances of 0.150 to 0.246, which are all above 0.1, indicates a multi-collinearity test carried out and hence the VIF of the current study ranged from 4.065 to 6.669, which were below a threshold of 10, as required. This indicates that there was no multi-linearity in the data set.

4.4.4 Homoscedastic Test of Operational performance

The Breusch-Pagan-Godfrey approach will be used in order to perform the heteroscedasticity test. The assumption that the error variance is homoscedastic is known as the null hypothesis (Salmerón et al., 2020). If the null hypothesis is rejected, this will indicate that the error variance is heteroscedastic, and the FGLS model's prediction will be called into question as a result of this phenomena. Because the investigation did not find evidence to contradict the null hypothesis, it may be concluded that the distribution was homoscedastic.

Table 5: Modified Breusch-Pagan Test for Heteroskedasticity

<table>
<thead>
<tr>
<th>Chi-Square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>.372</td>
<td>1</td>
<td>.542</td>
</tr>
</tbody>
</table>

a. Dependent variable: Operational Performance
b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.
4.5 Descriptive Statistics

4.5.1 Descriptive Statistics of Freight security management and Operational performance

The study's overarching goal was to examine how freight security management affects workflow productivity throughout Kenya's humanitarian value chains. The study set out to collect data on freight management and security frequencies, percentages, means, and standard deviations. Results are presented in their full in Table 6.

Where 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree, 1 = Strongly Disagree, S.D=Standard Deviation

<table>
<thead>
<tr>
<th>Statements</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am familiar with Freight/Transport security initiatives in our organization</td>
<td>20.5</td>
<td>47.4</td>
<td>14.1</td>
<td>11.5</td>
<td>6.4</td>
<td>3.64</td>
<td>1.13</td>
</tr>
<tr>
<td>(16)</td>
<td>(37)</td>
<td>(11)</td>
<td>(9)</td>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our company constantly keeps detailed records of our goods on hand.</td>
<td>25.6</td>
<td>52.6</td>
<td>3.8</td>
<td>10.3</td>
<td>7.7</td>
<td>3.78</td>
<td>1.17</td>
</tr>
<tr>
<td>(20)</td>
<td>(41)</td>
<td>(3)</td>
<td>(8)</td>
<td>(6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our company has security controls, which are clear processes that are always followed to the letter. Our company monitors and keeps tabs on all of the items while they are being transported and stored.</td>
<td>15.4</td>
<td>53.8</td>
<td>20.5</td>
<td>3.8</td>
<td>6.4</td>
<td>3.68</td>
<td>1.00</td>
</tr>
<tr>
<td>(12)</td>
<td>(42)</td>
<td>(16)</td>
<td>(3)</td>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The implementation of our cargo safety procedures has increased the dependability of our supply chain.</td>
<td>15.4</td>
<td>48.7</td>
<td>16.7</td>
<td>10.3</td>
<td>9</td>
<td>3.51</td>
<td>1.15</td>
</tr>
<tr>
<td>(12)</td>
<td>(38)</td>
<td>(13)</td>
<td>(8)</td>
<td>(7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Because of our capacity to monitor and trace, our operating expenses have been reduced.</td>
<td>11.5</td>
<td>60.3</td>
<td>15.4</td>
<td>6.4</td>
<td>6.4</td>
<td>3.64</td>
<td>0.99</td>
</tr>
<tr>
<td>(9)</td>
<td>(47)</td>
<td>(12)</td>
<td>(5)</td>
<td>(5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our company constantly keeps detailed records of our goods on hand.</td>
<td>3.8</td>
<td>62.8</td>
<td>17.9</td>
<td>10.3</td>
<td>5.1</td>
<td>3.50</td>
<td>0.92</td>
</tr>
<tr>
<td>(3)</td>
<td>(49)</td>
<td>(14)</td>
<td>(8)</td>
<td>(4)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results in Table 6 revealed that 20.5% (16) of the respondents strongly agreed that they are familiar with Freight/Transport security initiatives in our organization and a further 47.4% (37) agreed on the same statement. Moreover, 14.1% (11) of the respondents were undecided, 11.5% (9) disagreed while 6.4% (5) strongly disagreed that they are familiar with Freight/Transport security initiatives in our organization. With a mean of 3.64 and a significant S.D of 1.13, implying that the respondents agreed on the stamen.

However, 25.6% (20) of the respondents strongly agreed and a further 52.6% (41) agreed that their firm always maintain accurate inventory records. Also, 3.8% (3) of the respondents were undecided, 10.3% (8) disagreed while 7.7% (6) strongly disagreed that their firm always maintain accurate inventory records. With a mean of 3.78 and a significant S.D of 1.17, the respondents agreed on the statement.

In regards to their firm have security control which are unambiguous procedures that are strictly adhered to, 15.4% (12) of the respondents strongly agreed while 53.8% (42) agreed. Moreover, 20.5% (16) of the respondents were undecided, 3.8% (3) disagreed and a further 6.4% (5) strongly disagreed that their firm have security control which are unambiguous procedures that are strictly adhered to. With a mean of 3.68 and a significant S.D of 1.00, the respondents agreed on the assertion.

On the statement that, their firm tracks and traces all goods during transport and storage, 15.4% (12) of the respondents strongly agreed while 48.7% (38) agreed. However, 16.7% (13) of the respondents were undecided and 10.3% (8) disagreed while 9% (7) strongly disagreed that Our firm tracks and traces all goods during transport and storage. With a mean of 3.51 and a significant S.D of 1.15, the participants agreed on the statement.

According to the finding of the study, 11.5% (9) of the respondents strongly agreed while 60.3% (47) agreed that their Cargo safety measures improves our supply chain reliability. Also, 15.4% (12) of the respondents were undecided, 6.4% (5) disagreed and a further 6.4% (5) strongly disagreed that their Cargo safety measures improves our supply chain reliability. With a mean of 3.64 and a significant S.D of 0.99, the respondents agreed on the statement.

From the results of the study, 3.8% (3) of the respondents strongly agreed while 62.8% (49) agreed that their tracking and tracing ability reduces our operational costs. On the other hand, 17.9% (14) were undecided, 10.3% (8) disagreed and another 5.1% (4) strongly disagree that their tracking and tracing ability reduces our operational costs. With a mean of 3.50 and a significant S.D of 0.92, the respondents agreed on the assertion.

4.5.2 Influence of Facility security management on Operational performance

The second goal of the research was to evaluate the impact that facility security management has on the operational efficiency of humanitarian value chains in Kenya. To measure facility security management, six observable variables was used to measure latent variable (unobservable). The results of descriptive statistics (frequency, percentage, means and standard deviations) are as shown in Table 7.

<table>
<thead>
<tr>
<th>Statements</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am familiar with facility security initiatives in our organization</td>
<td>33.3</td>
<td>38.5</td>
<td>12.8</td>
<td>1.3</td>
<td>14.1</td>
<td>3.76</td>
<td>1.32</td>
</tr>
<tr>
<td>(26)</td>
<td>(30)</td>
<td>(10)</td>
<td>(1)</td>
<td>(11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our facilities are monitored 24/7 for security reasons</td>
<td>15.4</td>
<td>56.4</td>
<td>14.1</td>
<td>3.8</td>
<td>10.3</td>
<td>3.63</td>
<td>1.12</td>
</tr>
<tr>
<td>(12)</td>
<td>(44)</td>
<td>(11)</td>
<td>(3)</td>
<td>(8)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The results in Table 7 revealed that 33.3% (26) of the respondents strongly agreed that they are familiar with facility security initiatives in our organization and a further 38.5% (30) agreed on the same statement. Moreover, 12.8% (10) of the respondents were undecided, 1.3% (1) disagreed while 14.1% (11) strongly disagreed that they are familiar with facility security initiatives in our organization. With a mean of 3.76 and a significant standard deviation of 1.32, implying that the respondents agreed on the statement.

However, 15.4% (12) of the respondents strongly agreed and a further 56.4% (44) agreed that their facilities are monitored 24/7 for security reasons. Also, 14.1% (11) of the respondents were undecided, 3.8% (3) disagreed while 10.3% (8) strongly disagreed that their facilities are monitored 24/7 for security reasons. With a mean of 3.63 and a significant S.D of 1.12, the respondents agreed on the statement.

In regards to the layout of our facilities promotes security management, 28.2% (22) of the respondents strongly agreed while 46.2% (36) agreed. Moreover, 10.3% (8) of the respondents were undecided, 5.1% (4) disagreed and a further 10.3% (8) strongly disagreed that the layout of our facilities promotes security management. With a mean of 3.77 and a significant S.D of 1.23, the respondents agreed on the assertion.

On the statement that, monitoring of our facilities reduces on our operational costs, 26.9% (21) of the respondents strongly agreed while 44.9% (35) agreed. However, 15.4% (12) of the respondents were undecided and 13.1% (10) disagreed while 11.5% (9) strongly disagreed that monitoring of our facilities reduces on our operational costs. With a mean of 3.74 and a significant S.D of 1.21, the participants agreed on the statement.

According to the finding of the study, 28.2% (22) of the respondents strongly agreed while 46.2% (36) agreed that the layout of our facilities increases our supply chain flexibility. Also, 11.5% (9) of the respondents were undecided, 2.6% (2) disagreed and a further 11.5% (9) strongly disagreed that the layout of our facilities increases our supply chain flexibility. With a mean of 3.77 and a significant S.D of 1.23, the respondents agreed on the statement.

From the results of the study, 16.7% (13) of the respondents strongly agreed while 38.5% (30) agreed that monitoring of our facilities has improved our reliability. On the other hand, 26.9% (21) were undecided, 3.8% (3) disagreed and another 14.1% (11) strongly disagree that monitoring of our facilities has improved our reliability. With a mean of 3.40 and a significant S.D of 1.23, the respondents agreed on the assertion.

**4.5.3 Influence of Information security management on Operational performance**

The third goal of the research was to investigate the impact that information security management has on the operational effectiveness of humanitarian value chains in Kenya. Examining descriptive statistics, which provided a summary of the observable variables that were used to quantify information security management, allowed us to accomplish this goal successfully. The frequency, percentage, mean, and S.D of seven observable variables that finally assessed information security management were included in the descriptive findings of this study.

**Table 8: Descriptive Statistics of Information security management on Operational performance**

<table>
<thead>
<tr>
<th>Statements</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am familiar with information security management initiatives in our organization</td>
<td>(37)</td>
<td>(25)</td>
<td>(5)</td>
<td>(3)</td>
<td>(8)</td>
<td>4.03</td>
<td>1.28</td>
</tr>
<tr>
<td>We have controlled access to our organization’s information</td>
<td>(16)</td>
<td>(52)</td>
<td>(17)</td>
<td>(9)</td>
<td>(5)</td>
<td>3.65</td>
<td>1.07</td>
</tr>
<tr>
<td>We use appropriate storage techniques to ensure organization information is secure</td>
<td>(34)</td>
<td>(43)</td>
<td>(7)</td>
<td>(5)</td>
<td>(4)</td>
<td>3.90</td>
<td>1.20</td>
</tr>
<tr>
<td>Controlled access to our organization information reduces our operational costs</td>
<td>(21)</td>
<td>(53)</td>
<td>(10)</td>
<td>(3)</td>
<td>(8)</td>
<td>3.73</td>
<td>1.16</td>
</tr>
<tr>
<td>Proper storage of our information improves the security of our supply chain</td>
<td>(19)</td>
<td>(46)</td>
<td>(23)</td>
<td>(3)</td>
<td>(8)</td>
<td>3.65</td>
<td>1.08</td>
</tr>
<tr>
<td>The appropriate management of information has improved our supply chain reliability</td>
<td>(12)</td>
<td>(59)</td>
<td>(34)</td>
<td>(6)</td>
<td>(5)</td>
<td>3.38</td>
<td>1.05</td>
</tr>
<tr>
<td>Proper of information management has enhanced our supply chain responsiveness</td>
<td>(17)</td>
<td>(44)</td>
<td>(21)</td>
<td>(9)</td>
<td>(5)</td>
<td>3.59</td>
<td>1.09</td>
</tr>
</tbody>
</table>

The results in Table 8 revealed that 47.4% (37) of the respondents strongly agreed that they are familiar with information security management initiatives in our organization and a further 32.1% (25) agreed on the same statement. Moreover, 6.4% (5) of the respondents were undecided, 3.8% (3) disagreed while 10.3% (8) strongly disagreed that they are familiar with information security management initiatives in our organization. With a mean of 4.03 and a significant S.D of 1.28, implying that the respondents agreed on the statement.
However, 16.7% (13) of the respondents strongly agreed and a further 52.6% (41) agreed that they have controlled access to our organization’s information. Also, 17.9% (14) of the respondents were undecided, 5.1% (4) disagreed while 7.7% (6) strongly disagreed that they have controlled access to our organization’s information. With a mean of 3.65 and a significant S.D. of 1.07, the respondents agreed on the statement.

In regards to the statement that they use appropriate storage techniques to ensure organization information is secure, 34.6% (27) of the respondents strongly agreed while 43.6% (34) agreed. Moreover, 7.7% (6) of the respondents were undecided, 5.1% (4) disagreed and a further 9% (7) strongly disagreed that they use appropriate storage techniques to ensure organization information is secure. With a mean of 3.90 and a significant S.D. of 1.20, the respondents agreed on the assertion.

On the statement that, controlled access to our organization information reduces our operational costs, 21.8% (17) of the respondents strongly agreed while 53.8% (42) agreed. However, 10.3% (8) of the respondents were undecided and 3.8% (3) disagreed while 10.3% (8) strongly disagreed that controlled access to our organization information reduces our operational costs. With a mean of 3.73 and a significant S.D. of 1.16, the respondents agreed on the statement.

According to the finding of the study, 19.2% (15) of the respondents strongly agreed while 46.2% (36) agreed on proper storage of our information improves the security of our supply chain. Also, 23.1% (9) of the respondents were undecided, 3.8% (3) disagreed and a further 7.7% (6) strongly disagreed that the proper storage of our information improves the security of our supply chain. With a mean of 3.65 and a significant S.D. of 1.08, the respondents agreed on the statement.

From the results of the study, 12.8% (10) of the respondents strongly agreed while 35.9% (28) agreed that the appropriate management of information has improved our supply chain reliability. On the other hand, 34.6% (27) were undecided, 10.3% (8) disagreed and another 6.4% (5) strongly disagree that the appropriate management of information has improved our supply chain reliability. With a mean of 3.38 and a significant S.D. of 1.05, the respondents agreed on the assertion.

Lastly, 17.9% (14) of the respondents strongly agreed while 44.9% (35) agreed that proper of information management has enhanced our supply chain responsiveness. On the other hand, 21.8% (17) were undecided, 9% (7) disagreed and another 6.4% (5) strongly disagree that proper of information management has enhanced our supply chain responsiveness. With a mean of 3.59 and a significant S.D. of 1.09, the respondents agreed on the assertion.

4.5.4 Influence of Organizational security culture strategies on Operational performance

The fourth purpose of the research was to determine the impact that an organization's security culture has on the efficiency with which humanitarian value chains in Kenya carry out their daily operations. Examining descriptive statistics, which provided a synopsis of the observable factors that were used in the process of measuring corporate security culture, allowed for the accomplishment of this goal. The frequency, percentage, mean, and S.D of three observable factors that ultimately assessed corporate security culture were included in the descriptive findings.

Table 9: Descriptive Statistics of Organizational security culture on Operational performance

<table>
<thead>
<tr>
<th>Statements</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am familiar with my organization’s security culture</td>
<td>30.8</td>
<td>44.9</td>
<td>7.7</td>
<td>6.4</td>
<td>10.3</td>
<td>3.79</td>
<td>1.24</td>
</tr>
<tr>
<td>(24)</td>
<td>(35)</td>
<td>(6)</td>
<td>(5)</td>
<td>(8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My organization’s top leadership supports supply chain security management initiatives</td>
<td>16.7</td>
<td>37.2</td>
<td>28.2</td>
<td>7.7</td>
<td>10.3</td>
<td>3.42</td>
<td>1.17</td>
</tr>
<tr>
<td>(13)</td>
<td>(29)</td>
<td>(22)</td>
<td>(6)</td>
<td>(8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are formal supply chain security training programs in my organization.</td>
<td>39.7</td>
<td>32.1</td>
<td>11.5</td>
<td>6.4</td>
<td>10.3</td>
<td>3.85</td>
<td>1.30</td>
</tr>
<tr>
<td>(31)</td>
<td>(25)</td>
<td>(9)</td>
<td>(5)</td>
<td>(8)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the results in the table 10, 30.8% (24) of the respondents strongly agreed that they are familiar with my organization’s security culture and a further 44.9% (35) agreed on the same statement. Moreover, 7.7% (6) of the respondents were undecided, 6.4% (5) disagreed while 10.3% (8) strongly disagreed that they are familiar with my organization’s security culture. With a mean of 3.79 and a significant S.D. of 1.24, implying that the respondents agreed on the statement.

However, 16.7% (13) of the respondents strongly agreed and a further 37.2% (41) agreed that their organization’s top leadership supports supply chain security management initiatives. Also, 28.2% (22) of the respondents were undecided, 7.7% (6) disagreed while 10.3% (8) strongly disagreed that their organization’s top leadership supports supply chain security management initiatives. With a mean of 3.65 and a significant S.D. of 1.07, the respondents were undecided on the statement.

In regards to the statement that there are formal supply chain security training programs in my organization, 39.7% (31) of the respondents strongly agreed while 32.1% (25) agreed. Moreover, 11.5% (9) of the respondents were undecided, 6.4% (5) disagreed and a further 10.3% (8) strongly disagreed that there are formal supply chain security training programs in my organization. With a mean of 3.85 and a significant S.D. of 1.30, the respondents agreed on the assertion.

4.5.5 Operational performance of humanitarian value chains in Kenya

The study’s main goal was to examine how supply chain security management affects the efficiency with which humanitarian value chains in Kenya function. Finally, the five observable variables' frequency, percentage, mean, and S.D were calculated and presented in the descriptive results. The performance of humanitarian value chains in Kenya from an operational standpoint. Where 5= Strongly Agree, 4= Agree, 3= Undecided, 2= Disagree, 1= Strongly Disagree.

Table 10: Descriptive Statistics of Operational performance of humanitarian value chains in Kenya

<table>
<thead>
<tr>
<th>Statements</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Our supply chain is very dependable in all respects.</td>
<td>47.4</td>
<td>34.6</td>
<td>10.3</td>
<td>6.4</td>
<td>1.3</td>
<td>4.21</td>
<td>0.96</td>
</tr>
<tr>
<td>(37)</td>
<td>(27)</td>
<td>(8)</td>
<td>(5)</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
We have a flexible supply chain in order to fulfill the requirements of our customers. 34.6% (27) agreed, 46.2% (36) agreed, 15.4% (12) agreed, 2.6% (2) disagreed, and 1.3% (1) strongly disagreed that they have a highly reliable supply chain. With a mean of 4.21 and a significant S.D of 0.96, implying that the respondents agreed on the statement. However, 34.6% (27) of the respondents strongly agreed and a further 46.2% (36) agreed that they have a flexible supply chain to meet our customer needs. Also, 15.4% (12) of the respondents were undecided, 2.6% (2) disagreed while 1.3% (1) strongly disagreed that they have a highly reliable supply chain. With a mean of 4.10 and an insignificant S.D of 0.85, the respondents agreed on the statement.

On the statement that, they have a supply chain that is responsive to customer needs, 41% (32) of the respondents strongly agreed while 44.9% (35) agreed. However, 6.4% (5) of the respondents were undecided and 6.4% (5) disagreed while 1.3% (1) strongly disagreed that they have a flexible supply chain to meet our customer needs. With a mean of 4.10 and an insignificant S.D of 0.85, the participants agreed on the statement.

On the statement that they have a supply chain that is responsive to customer needs, 37.2% (29) of the respondents strongly agreed while 41% (32) agreed that their operational costs are within planned levels. Also, 14.1% (11) of the respondents were undecided, 5.1% (4) disagreed and a further 2.6%(2) strongly disagreed that their operational costs are within planned levels. With a mean of 4.05 and a significant S.D of 0.98, the respondents agreed on the statement.

4.6 Moderating Effect of Organizational Security Culture On The Relationship Between Freight Security Management And The Operational Performance

The study set out to examine the links between freight security management, corporate security culture, and the efficacy of humanitarian value chains in Kenya. This was accomplished by conducting a Pearson correlation analysis test, the results of which are shown in Table 11.

Table 11: Correlation Analysis Freight security management

<table>
<thead>
<tr>
<th></th>
<th>FSM</th>
<th>OSC</th>
<th>OP</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSM: Freight security management</td>
<td>Pearson Correlation</td>
<td>.853**</td>
<td>.627**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.709**</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>OSC: Organizational Security Culture</td>
<td>Pearson Correlation</td>
<td>.653**</td>
<td>.100</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>78</td>
<td>78</td>
</tr>
</tbody>
</table>

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

The operational efficiency of humanitarian value chains in Kenya is directly correlated with freight security management, as shown in table 11. The r value was 0.709, and the P value was 0.000, therefore this is the case. The results imply that Kenya's humanitarian value chains will benefit from enhanced performance if freight security is better managed. In a similar vein, there was a substantial association between the management of freight security and the organizational security culture of humanitarian value chains in Kenya. This implies that organizational security is significantly related to freight security management of humanitarian value chains in Kenya.

Once a linear relationship was established, a hierarchical regression analysis was conducted to learn how freight security management and the operational performance of humanitarian value chains in Kenya are affected by the presence or absence of a culture of security within the organization. The linearity of the connections was first verified before proceeding. Baron and Kenny (1986) proposed hierarchical regression analysis, which was employed in this study to investigate the moderating effect of many independent variables. According to the findings of the research, there are three stages involved in determining whether or not there is a moderating impact.

**Step One** involved testing the influence of independent variables in this freight security management on dependent variable. **Step Two** entailed testing the effect of independent variables and moderating variable in this case organizational security culture on dependent variable.
Finally step Three involved, testing the effect of, independent variable, moderating variable and the interactive term (product of independent and moderating variable) on dependent variable. Mod erating effect happens if the effect of interaction is significant in the third step.

The three steps involved in hierarchical regression analysis for moderating effect were written as:

Step One: \[ Y = \beta_0 + \beta_1 X_1 + \varepsilon \]
Step Two: \[ Y = \beta_0 + \beta_1 X_1 + \beta_2 M + \varepsilon \]
Step Three: \[ Y = \beta_0 + \beta_1 X_1 + \beta_2 M + \beta_3 X_1 M + \varepsilon \]

Where,

- \( \beta_0 \) represented Constant Term,
- \( \beta_i \) i = 1 to 3 is the regression coefficients which measured the change induced on the study variables.
- \( X_1 \): Freight Security Management
- \( M \): Organizational security culture;
- \( X_1 * M \): Interaction term between Freight Security Management and organizational security culture;
- \( Y \): Operational Performance and;
- \( \varepsilon \): Error disturbance.

The relevant results are summarized in Table 12.

### Table 12: Model Summary for Freight Security Management

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.709*</td>
<td>.502</td>
<td>.495</td>
<td>.53823</td>
<td>.502</td>
<td>76.615</td>
<td>1</td>
<td>76</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.710*</td>
<td>.504</td>
<td>.491</td>
<td>.54076</td>
<td>.002</td>
<td>.291</td>
<td>1</td>
<td>75</td>
<td>.591</td>
</tr>
<tr>
<td>3</td>
<td>.738*</td>
<td>.545</td>
<td>.526</td>
<td>.52160</td>
<td>.041</td>
<td>6.612</td>
<td>1</td>
<td>74</td>
<td>.012</td>
</tr>
</tbody>
</table>

### Source: Research Data (2023)

From Table 12, in Model 1, the R² of 0.495 was obtained in this model. This means that freight security management explains 49.5% of variance in the dependent variable. Model 2, the findings showed that when organizational security culture was added in the model, the R² insignificantly moved to 0.504 (50.4%) from 0.502 (50.2%) implying that an additional 0.002(0.2%) was added in the model.

Model 3 then looks at the moderating role of organizational security culture in determining the impact of freight security management on the efficiency with which humanitarian value chains move goods. Organizational security culture was used as a moderator, hence we used the interaction terms between the two variables in our regression model. Freight security management and organizational security culture interacted in a way that accounted for 54.5% of the total model variance (R² = 0.545, p =.012), suggesting that organizational security culture may moderate the connection between FSM and humanitarian value chain efficiency. An extra 4.3% (R²=.043) is represented by the last R square.

### Table 13: Regression Coefficients: Freight Security Management

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.962</td>
<td>.256</td>
<td>7.678</td>
<td>.000</td>
</tr>
<tr>
<td>Freight Security Management</td>
<td>.598</td>
<td>.068</td>
<td>7.09</td>
<td>.000</td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.975</td>
<td>.258</td>
<td>7.660</td>
<td>.000</td>
</tr>
<tr>
<td>Freight Security Management</td>
<td>.538</td>
<td>.132</td>
<td>4.088</td>
<td>.000</td>
</tr>
<tr>
<td>Organizational security culture</td>
<td>.056</td>
<td>.104</td>
<td>.084</td>
<td>.539</td>
</tr>
<tr>
<td>(Constant)</td>
<td>3.384</td>
<td>.602</td>
<td>5.622</td>
<td>.000</td>
</tr>
<tr>
<td>Freight Security Management</td>
<td>.001</td>
<td>.245</td>
<td>.000</td>
<td>.999</td>
</tr>
<tr>
<td>Organizational security culture</td>
<td>-.485</td>
<td>.233</td>
<td>-.724</td>
<td>.041</td>
</tr>
<tr>
<td>FSM*OSC</td>
<td>.178</td>
<td>.069</td>
<td>1.406</td>
<td>.257</td>
</tr>
</tbody>
</table>

### Source: Research Data (2023)

Table 4.23 shows the coefficient result for the moderating influence of organizational security culture on the association between freight security management and the operational performance of humanitarian value chains. Freight security management was included as a covariate in step 1, and the resulting regression coefficient of 0.598, P=0.000, indicates that an increase of one unit in Freight Security Management leads to an improvement of 0.598 units in the operational performance of humanitarian value chains. Humanitarian value chain operational performance was positively impacted by the inclusion of an organization's security culture in Step 2 of the model (P=0.591). At the third and final stage, when the interaction term is introduced (the cross-product of Freight Security Management and organizational security culture), the impact of organizational security culture on the correlation between Freight Security Management and operational performance becomes apparent. Below is an illustration of how this data was included into the model equation:
Y = 3.384 + 0.001X_1 - 0.485M + 0.178X_1M
Where Y is the operational performance of humanitarian value chains (Dependent Variable)
X_1 is the Freight Security Management (Independent Variable)
M is the organizational security culture (Moderating Variable)

From the model, the organizational security culture interaction freight security management coefficient is positive, meaning that the interactive effect is positive, therefore, as organizational security culture increase by one unit, the level of Freight Security Management effect on operational performance significantly increases by 0.178 (P=0.012).

4.7 Moderating Effect of Organizational Security Culture On The Relationship Between Freight Security Management And The Operational Performance
The purpose of this study was to analyze how a company's security culture affects the correlation between stricter security measures and better results in humanitarian supply chains. The Pearson correlation analysis test was employed to achieve this goal, and the results are shown in Table 14.

Table 14: Correlation Analysis Freight security management

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>0.819**</td>
<td>0.583**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>N</td>
<td>78</td>
<td>78</td>
<td>78</td>
</tr>
</tbody>
</table>

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

Table 14 shows that there is a statistically significant 0.583 association between facility security management and the operational success of humanitarian value chains in Kenya. These results are consistent with the existence of a correlation between the two factors. That means better management of facility security would also increase the efficiency with which Kenya's humanitarian value chains function. There exists a notable correlation between the management of facility security and the cultivation of an organizational security culture within humanitarian value chains in the context of Kenya. This implies that organizational security is significantly related to Facility Security Management of humanitarian value chains in Kenya.

Organizational security culture was found to moderate the connection between facility security management and the operational performance of humanitarian value chains in Kenya via a hierarchical regression analysis, after a linear relationship had been established between the variables. This action was taken once a linear connection between the variables was established. In order to measure the moderating effect in the current study, we employed hierarchical regression analysis, as proposed by Baron and Kenny (1986). Whether or not a moderating effect exists may be determined in three steps, as shown by the study.

Step One involved testing the influence of independent variables in this facility security management on dependent variable.

Step Two entailed testing the effect of independent variables and moderating variable in this case organizational security culture on dependent variable.

Finally step Three involved, testing the effect of independent variable, moderating variable and the interactive term (product of independent and moderating variable) on dependent variable. Moderating effect happens if the effect of interaction is significant in the third step.

The three steps involved in hierarchical regression analysis for moderating effect were written as:

Step One: Y = β_0 + β_1X_1 + ε
Step Two: Y = β_0 + β_1X_1 + β_2M + ε
Step Three: Y = β_0 + β_1X_1 + β_2M + β_3X_1M + ε

Where,
β_0 represented Constant Term,
β_i; i = 1 to 3 is the regression coefficients which measured the change induced on the study variables.
X_1 = Facility Security Management
M = Organizational Security Culture;
X_1M = Interaction term between Facility Security Management and organizational security culture;
Y = Operational Performance and;
ε = Error/disturbance.

The relevant results are summarized in Table 15.

Table 15: Model Summary for Facility Security Management

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Change Statistics</th>
</tr>
</thead>
</table>

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From Table 16, in Model 1, the R² of 0.339 was obtained in this model. This means that facility security management explains 33.9% of variance in the dependent variable. Model 2, the findings showed that when organizational security culture was added in the model, the R² insignificantly moved to 0.408 (40.8%) from 0.339 (33.9%) implying that an additional 0.068 (6.8%) was added in the model.

This research uses the Model 3 framework to analyze how a company’s security culture affects the correlation between physical security measures and efficiency in humanitarian supply chains. Interaction variables between the independent variable and the moderator, here the corporate security culture, were added in the regression model. A total of 54.3% of the variation (R² = 0.543, p < .000) was explained by the correlation between facility security management and organizational security culture, as shown by the study’s results. This data demonstrates that the link between facility security management and the operational success of humanitarian value chains might be mediated, at least in part, by an organization’s security culture. With an R² of 0.203, we may deduce that the independent variables account for 20.3% of the total variation in our dependent variable.

### Table 16: Regression Coefficients: Facility Security Management

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.467</td>
<td>.276</td>
<td>8.942</td>
<td>.000</td>
</tr>
<tr>
<td>Facility Security Management</td>
<td>.450</td>
<td>.072</td>
<td>.583</td>
<td>6.249</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.411</td>
<td>.264</td>
<td>9.144</td>
<td>.000</td>
</tr>
<tr>
<td>Facility Security Management</td>
<td>.162</td>
<td>.126</td>
<td>.209</td>
<td>1.351</td>
</tr>
<tr>
<td>Organizational security culture</td>
<td>.305</td>
<td>.104</td>
<td>.456</td>
<td>2.943</td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.630</td>
<td>.528</td>
<td>8.771</td>
<td>.000</td>
</tr>
<tr>
<td>Facility Security Management</td>
<td>-.596</td>
<td>.193</td>
<td>-.772</td>
<td>-3.086</td>
</tr>
<tr>
<td>Organizational security culture</td>
<td>-.734</td>
<td>.240</td>
<td>-.1097</td>
<td>-3.059</td>
</tr>
<tr>
<td>FCSM*OSC</td>
<td>.304</td>
<td>.065</td>
<td>2.451</td>
<td>4.685</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Operational Performance

### Source: Research Data (2023)

During the first stage, upon inputting the facility security management data, the regression coefficient was determined to be 0.450 with a corresponding p-value of 0.000. This indicates that a one-unit increase in facility security management is associated with a 0.450 unit increase in the operational performance of humanitarian value chains. During the second phase of the investigation, the incorporation of organizational security culture into the model demonstrated a statistically significant positive impact on the operational performance of humanitarian value chains (P=0.004). In the third stage of the analysis, the incorporation of the interaction term, which signifies the cross-product of facility security management and organizational security culture, unveils the noteworthy moderating influence of organizational security culture on the relationship between facility security management and operational performance. The aforementioned observations were also shown in the model equation, as seen below.

Y = 4.630 - 0.596X₁ - 0.734M + 0.304X₁M

Where Y is the operational performance of humanitarian value chains (Dependent Variable)

X₁ is the Facility Security Management (Independent Variable)

M is the organizational security culture (Moderating Variable)

From the model, the organizational security culture interaction facility security management coefficient is positive, meaning that the interactive effect is positive, therefore, as organizational security culture increase by one unit, the level of facility security management effect on operational performance significantly increases by 0.304 (P=0.000).

### 4.8 Moderating Effect of Organizational Security Culture On The Relationship Between Freight Security Management And The Operational Performance

The purpose of this study was to investigate how corporate security culture may moderate the connection between information security management and operational efficiency throughout humanitarian value chains. To do so, a test based on Pearson correlation analysis was conducted, and the results are shown in Table 17.

### Table 17: Correlation Analysis Freight security management

<table>
<thead>
<tr>
<th>ISM: Information security management</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

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There are three moderators, security culture of the company, were included to the regression model. Information security management and organizational security culture interacted in a way that accounted for a large portion of the model's variance.

Model 3 aims to investigate the mediating role of corporate security culture in the connection between information security management and the efficacy of humanitarian value chains. This suggests there is a strong connection between information security management and the safety of Kenya's humanitarian supply lines.

<table>
<thead>
<tr>
<th>OSC: Organizational Security Culture</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>OP: Operational Performance</td>
<td>Pearson Correlation</td>
<td>Sig. (2-tailed)</td>
<td>N</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 17 shows that there is a 0.614 association between the management of information security and the efficiency with which humanitarian value chains in Kenya function. There is a statistically significant relationship between these two factors, as shown by the p-value for this correlation being 0.000. This data demonstrates that bolstering Kenya's humanitarian value chains' operational effectiveness may be achieved via better information security management. Humanitarian value chains in Kenya were examined, and a significant link was discovered between information security management and a culture of corporate security. This suggests there is a strong connection between information security management and the safety of Kenya's humanitarian supply lines.

Once a linear relationship was established, a hierarchical regression analysis was conducted to learn how an organization's security culture influenced the connection between information security management and the efficacy of humanitarian value chains in Kenya. This action followed the establishment of the linear connection. Hierarchical regression analysis, proposed by Baron and Kenny (1986), was utilized to dissect the moderating effect in this study. According to the findings of the research, there are three stages involved in determining whether or not there is a moderating impact.

**Step One** involved testing the influence of independent variables in this information security management on dependent variable.

**Step Two** entailed testing the effect of independent variables and moderating variable in this case organizational security culture on dependent variable.

**Step Three** involved, testing the effect of, independent variable, moderating variable and the interactive term (product of independent and moderating variable) on dependent variable. Moderating effect happens if the effect of interaction is significant in the third step.

The three steps involved in hierarchical regression analysis for moderating effect were written as:

Step One: $Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Step Two: $Y = \beta_0 + \beta_1 X_1 + \beta_2 M + \varepsilon$

Step Three: $Y = \beta_0 + \beta_1 X_1 + \beta_2 M + \beta_3 X_1 M + \varepsilon$

Where,

- $\beta_0$ represented Constant Term,
- $\beta_i; i = 1\text{ to } 3$ is the regression coefficients which measured the change induced on the study variables.
- $X_1 =$ Information Security management
- $M =$ Organizational Security Culture;
- $X_1 M =$ Interaction term between Information security management and organizational security culture;
- $Y =$ Operational Performance and;
- $\varepsilon =$ Error/disturbance.

The relevant results are summarized in Table 15.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.614*</td>
<td>.377</td>
<td>.368</td>
<td>.60224</td>
<td>.377</td>
<td>45.898</td>
<td>1</td>
<td>76</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.646b</td>
<td>.417</td>
<td>.401</td>
<td>.58624</td>
<td>.040</td>
<td>5.205</td>
<td>1</td>
<td>75</td>
<td>.025</td>
</tr>
<tr>
<td>3</td>
<td>.712c</td>
<td>.506</td>
<td>.486</td>
<td>.54308</td>
<td>.089</td>
<td>13.396</td>
<td>1</td>
<td>74</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant); Information security management (FCSM),
b. Predictors: (Constant); Information security management, organizational security culture (OSC)
c. Predictors: (Constant); FCSM, OSC, FCSM*OSC

**Source: Research Data (2023)**

From Table 16, in Model 1, the $R^2$ of 0.377 was obtained in this model. This means that information security management explains 37.7% of variance in the dependent variable. Model 2, the findings showed that when organizational security culture was added in the model, the $R^2$ significantly moved to 0.417 (41.7%) from 0.377 (37.7%) implying that an additional 0.040(4.0%) was added in the model.

Model 3 aims to investigate the mediating role of corporate security culture in the connection between information security management and the efficacy of humanitarian value chains in terms of operations. Interaction variables between the independent variable and the moderator, security culture of the company, were included to the regression model. Information security management and organizational security culture interacted in a way that accounted for a large portion of the model's variance (50.6%; $R^2 = 0.506; p = .000$); this suggests that organizational security culture may moderate the connection between information
security management and operational performance in humanitarian value chains. Additional 12.9% (R²=0.129) is represented by the last R square.

Table 19: Regression Coefficients: Information security management

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.574</td>
<td>.240</td>
<td>10.713</td>
<td>.000</td>
</tr>
<tr>
<td>Information security management</td>
<td>.424</td>
<td>.063</td>
<td>.614</td>
<td>6.775</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.456</td>
<td>.239</td>
<td>10.258</td>
<td>.000</td>
</tr>
<tr>
<td>Information security management</td>
<td>.201</td>
<td>.115</td>
<td>.291</td>
<td>1.741</td>
</tr>
<tr>
<td>Organizational security culture</td>
<td>.255</td>
<td>.112</td>
<td>.381</td>
<td>2.281</td>
</tr>
<tr>
<td>(Constant)</td>
<td>4.075</td>
<td>.495</td>
<td>8.236</td>
<td>.000</td>
</tr>
<tr>
<td>Information security management</td>
<td>-.367</td>
<td>.189</td>
<td>-.531</td>
<td>-1.949</td>
</tr>
<tr>
<td>Organizational Security culture</td>
<td>-.530</td>
<td>.238</td>
<td>-.792</td>
<td>-2.227</td>
</tr>
<tr>
<td>FCSM*OSC</td>
<td>.230</td>
<td>.063</td>
<td>1.943</td>
<td>3.660</td>
</tr>
<tr>
<td>a. Dependent Variable: Operational Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research Data (2023)

When information security management was included as a covariate in step 1, the regression coefficient was 0.424, P=0.000, indicating that an increase of one unit in information security management is associated with a 0.424 unit improvement in the operational performance of humanitarian value chains. A favorable and statistically significant influence on operational performance of humanitarian value chains was found after step 2’s incorporation of organizational security culture into the model (P=0.004). In the third step, when the interaction term is introduced the cross-product of information security management and organizational security culture, the impact of organizational security culture on the relationship between Information security management and operational performance becomes clear. Below is an illustration of how this data was included into the model equation:

\[ Y = 4.075 - 0.367X_1 - 0.530X_2 + 0.230X_1X_2 \]

Where Y is the operational performance of humanitarian value chains (Dependent Variable)

\( X_1 \) is the Information security management (Independent Variable)

\( M \) is the organizational security culture (Moderating Variable)

From the model, the organizational security culture interaction information security management coefficient is positive, meaning that the interactive effect is positive, therefore, as organizational security culture increase by one unit, the level of information security management effect on operational performance significantly increases by 0.230 (P=0.000).

4.9 Moderating Effect of Organizational Security Culture on the Relationship Between Supply Chain Security Management and Operational Performance of Humanitarian Value Chains

The fourth objective of the study determine the moderating effect of organizational security culture on the relationship between supply chain security management and operational performance of humanitarian value chains. This section present findings of the multiple linear regressions and hierarchical regressions.

4.9.1 Multiple Regression for Supply chain security management on Operational performance

Humanitarian value chains in Kenya were analyzed using a multiple linear regression model to determine how supply chain security management affected operational effectiveness. The study’s R square and model coefficients may then be calculated. Current results are shown in Table 20.

Table 20: Regression Analysis of Independent Variables and Operational performance

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Model Summary</th>
<th>Change Statistics</th>
<th>ANOVA*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Std. Error of the Estimate</td>
<td>R Square Change</td>
<td>F Change</td>
</tr>
<tr>
<td>1</td>
<td>.792a</td>
<td>.627</td>
<td>.612</td>
<td>.47226</td>
<td>.627</td>
<td>41.409</td>
</tr>
<tr>
<td>a. Predictors: (Constant), Facility security management (FCSM), information security management (ISM), Freight security management (FSM)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>27.707</td>
<td>3</td>
<td>9.236</td>
<td>41.409</td>
<td>.0006</td>
</tr>
<tr>
<td>Residual</td>
<td>16.504</td>
<td>74</td>
<td>.223</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44.212</td>
<td>77</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.142</td>
<td>.231</td>
<td>9.259</td>
<td>.000</td>
</tr>
<tr>
<td>FSM</td>
<td>.146</td>
<td>.138</td>
<td>.173</td>
<td>1.055</td>
</tr>
<tr>
<td>FCSM</td>
<td>.228</td>
<td>.107</td>
<td>.296</td>
<td>2.144</td>
</tr>
<tr>
<td>ISM</td>
<td>.617</td>
<td>.124</td>
<td>.872</td>
<td>4.971</td>
</tr>
<tr>
<td>a. Dependent Variable: Operational performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The multiple linear regression pattern as defined in Table 19 was based upon a return of the four predictor variables against operational performance:

Operational performance = 2.142+0.146X₁+0.228X₂+ 0.617X₃

The Table 4.13 further showed that the linear relation of operational performance with the three predictor variables is positive and linear; the facility security management, information security management and freight security management. The correlation coefficient was 0.792, (r=0.792). The determination factor (r²) was 0.627, and this indicates that 62.7% of the variance of the operational performance can be explained by four predictor variables in the analysis, and the remaining 37.3% by other factors not expressed in the model.

The F-test results of the ANOVA results given F (3, 74) = 41.409, p < .01, which was sufficiently broad in explaining the dependent variabilities to support the fitness of the model. It also implies that supply chain security management is a valuable indicator of operational performance of humanitarian value chains.

Table 21 showed optimistic and important predictive potential for facility security management, information security management and freight security management. If the supply chain security management is held at zero (or is missing), the operational performance will 2.142, p<0.05. This means that operational performance will be positive and significant. Freight security management of 0.146, which is statistically unimportant, is a strong indicator of operational performances, as the freight security management is increased by a unit, operational performance results in a insignificant increase by 0.146 units.

Where information security management, Freight security management, organizational security culture are under control, the current 0.228 beta-level of the facility security management means an improvement by one unit of the present facility security management results in a substantial operational performance increase of 0.228 units.

Where facility security management and Freight security management are under control, the current 0.617 beta-level of information security management means an improvement by one unit of the present information security management results in a substantial operational performance increase of 0.617 units.


The security culture of the organization was a moderating factor. This section includes research results on how a company’s security culture affects the correlation between SCM and the efficiency with which humanitarian value chains function. Baron and Kenny (1986) introduced a hierarchical regression technique, which was used in this research to assess the moderating impact. The research outlined a three-stage process for evaluating moderating factors.

Step One involved testing the influence of independent variables in this supply chain security management on dependent variable. Step Two entailed testing the effect of independent variables and moderating variable in this case Organizational Security Culture on dependent variable.

Finally step Three involved, testing the effect of, independent variable, moderating variable and the interactive term (product of independent and moderating variable) on dependent variable. Moderating effect happens if the effect of interaction is significant in the fourth step.

The three steps involved in hierarchical regression analysis for moderating effect were written as:

Step One: Y= β₀ + β₁X₁ + β₂X₂ + β₃X₃ + ε
Step Two: Y= β₀ + β₁X₁ + β₂X₂ + β₃X₃ + β₄M + ε
Step Three: Y= β₀ + β₁X₁ + β₂X₂ + β₃X₃ + β₄M + β₅X₄ + β₆M + β₇X₄M + ε

Where,

- β₀ represented Constant Term,
- βᵢ; i = 1 to 7 is the regression coefficients which measured the change induced on the study variables.
- X₁= Freight Security management
- X₂= Facility Security management
- X₃= Information Security management
- M=Organizational Security Culture;
- X₄=Interaction term between Supply chain security management; and Organizational Security Culture;
- Y=Operational performance and;
- ε=Error/disturbance.

The relevant results are summarized in Table 21.

Table 21: Model Summary for Moderating Variable of Organizational Security Culture

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.792a</td>
<td>.627</td>
<td>.612</td>
<td>.47226</td>
<td>.627</td>
<td>41.409</td>
<td>3</td>
<td>74</td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.794b</td>
<td>.630</td>
<td>.610</td>
<td>.47323</td>
<td>.004</td>
<td>.698</td>
<td>1</td>
<td>73</td>
<td>.406</td>
</tr>
<tr>
<td>3</td>
<td>.878c</td>
<td>.770</td>
<td>.747</td>
<td>.38097</td>
<td>.140</td>
<td>14.617</td>
<td>3</td>
<td>70</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Freight security management (FSM), Facility security management (FCSM), Information security management (ISM)

b. Predictors: (Constant), Freight security management, Facility security management, Information security management, Organizational Security Culture (OSC)
All of the independent variables in Model 1 had a positive and statistically significant association with humanitarian value chain operational effectiveness (p=0.000) as shown in Table 22. With this model, we were able to get an R² of 0.627. Therefore, these factors account for 62.7% of the total variation in the dependent variable. In addition, when Organizational Security Culture was included as a moderator in Model 2, the results showed that the relationship between the independent variables and the moderator was not statistically significant (p>0.05) when examining the effect on operational performance in humanitarian value chains. The R² moved to 0.630 (63.0%) from 0.627 (62.7%) implying that an additional 0.004 (0.4%) was added in the model.

Model 3 examines the moderating effect of an organization's security culture on the connection between supply chain security management and operational performance in humanitarian value chains. The results, the relationship between supply chain security management and operational performance in humanitarian value chains may be moderated by organizational security culture by a significant amount ($R^2 = 0.140, p = .000$). The final R square as a result of moderation was found to be 0.770 implying that the model explained 77.0% variance in operational performance of humanitarian value chains.

Table 22: Regression Coefficients for Moderating Variable of Organizational Security Culture

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Constant)</td>
<td>2.142</td>
<td>.231</td>
<td>9.259</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Freight security management</td>
<td>.146</td>
<td>.138</td>
<td>.173</td>
<td>1.055</td>
<td>.295</td>
</tr>
<tr>
<td>Facility security management</td>
<td>-.228</td>
<td>.107</td>
<td>-.296</td>
<td>-2.144</td>
<td>.035</td>
</tr>
<tr>
<td>Information security management</td>
<td>.617</td>
<td>.124</td>
<td>.872</td>
<td>4.971</td>
<td>.000</td>
</tr>
<tr>
<td>2 (Constant)</td>
<td>2.115</td>
<td>.234</td>
<td>9.041</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Freight security management</td>
<td>.183</td>
<td>.146</td>
<td>.217</td>
<td>1.260</td>
<td>.161</td>
</tr>
<tr>
<td>Facility security management</td>
<td>-.204</td>
<td>.111</td>
<td>-.264</td>
<td>-1.838</td>
<td>.070</td>
</tr>
<tr>
<td>Information security management</td>
<td>.649</td>
<td>.130</td>
<td>.917</td>
<td>4.989</td>
<td>.000</td>
</tr>
<tr>
<td>Organizational Security Culture</td>
<td>-.087</td>
<td>.104</td>
<td>-.130</td>
<td>-1.836</td>
<td>.046</td>
</tr>
<tr>
<td>3 (Constant)</td>
<td>4.049</td>
<td>.466</td>
<td>8.698</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>Freight security management</td>
<td>-.429</td>
<td>.274</td>
<td>-.508</td>
<td>-1.563</td>
<td>.122</td>
</tr>
<tr>
<td>Facility security management</td>
<td>-1.006</td>
<td>.185</td>
<td>-1.303</td>
<td>-5.438</td>
<td>.000</td>
</tr>
<tr>
<td>Information security management</td>
<td>1.389</td>
<td>.245</td>
<td>1.962</td>
<td>5.666</td>
<td>.000</td>
</tr>
<tr>
<td>Organizational Security Culture</td>
<td>-.939</td>
<td>.199</td>
<td>-1.403</td>
<td>-4.707</td>
<td>.000</td>
</tr>
<tr>
<td>FSM*OC</td>
<td>.203</td>
<td>.077</td>
<td>1.600</td>
<td>2.632</td>
<td>.010</td>
</tr>
<tr>
<td>FCSM*OC</td>
<td>.340</td>
<td>.064</td>
<td>2.747</td>
<td>5.311</td>
<td>.000</td>
</tr>
<tr>
<td>ISM*OC</td>
<td>-.284</td>
<td>.075</td>
<td>-2.438</td>
<td>-3.774</td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: Research Data (2023)

Table 22 shows the moderated influence of organizational security culture on the link between supply chain security management and humanitarian value chain operational performance. Step 1 results showed that two of the independent factors were significant and one had a negative influence on supply chain security management. Organizational security culture had a negative and negligible influence on operational performance when incorporated in step 2 of the model ($β=0.087, P=0.406$). This means that a marginal improvement of 0.466 units in operational performance may be expected for every one unit rise in the organization's security culture.

Step three adds the interaction term (the cross-product of supply chain security management and Organizational Security Culture), which nullifies the positive coefficient for freight security management. There was statistical significance for each of the new interaction terms. Therefore, model 3's findings indicate that an organization's security culture significantly moderates the connection between physical security measures and productivity. The model equation, as given below, reflected these results as well.

\[
Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5M + \beta_6X_1M + \beta_7X_2M + \beta_8X_3M + \beta_9X_4M + \varepsilon
\]

Where $Y$ is the operational performance of humanitarian value chains (Dependent Variable)

- $X_1$ is the freight security management (Independent Variable)
- $X_2$ is the facility security management (Independent Variable)
- $X_3$ is the information security management (Independent Variable)
- $M$ is the Organizational Security Culture (Moderating Variable)

The results indicated that Organizational Security Culture have mixed outcome on operational performance of humanitarian value chains. Based on the model, there is a favorable interacting impact between Organizational Security Culture and facility security management. This means that there is a substantial reduction in the impact of facility security management on operational performance of 0.340 units for every unit increase in organizational security culture ($P=0.0001$). A positive correlation was found
between freight security management and corporate security culture. The coefficient for the effect of freight security management on operational performance is -0.203 (P=0.010), indicating that a one-unit increase in corporate security culture significantly reduces this effect. Organizational security culture is shown to have a negative interacting impact with information security management, as indicated by a negative value for the corresponding coefficient. This means that there is a considerable reduction in the impact of information security management on operational performance of 0.284 units for every one unit improvement in organizational security culture.
CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction
This chapter presents the summary of major findings of the study, conclusions, recommendations and the suggested areas for further research.

5.2 Summary of the Findings
The study set out to examine the relationship between supply chain security management and the efficacy of humanitarian value chains in Kenya, with the hopes of gaining a better understanding of the role that corporate security culture plays in moderating this relationship. The appendix shows that primary data was collected from the top 20 NGOs in terms of how their funds were really used on projects. This section summarizes the study's most significant findings, while succeeding parts give more in-depth analyses of those results.

5.2.1 Freight security management on Operational performance
The primary goal of this study was to determine the impact of freight security management on the operational performance of humanitarian value chains in Kenya and the moderating role played by organizational security culture. Descriptive statistics showed that most respondents agreed that their company keeps up-to-date inventory records and has security controls that consist of clear, consistently applied processes. Further, they agreed that their Cargo safety measures improves our supply chain reliability and tracking and tracing ability reduces our operational costs.

The findings of a Pearson correlation analysis and a linear regression analysis demonstrated a favorable and substantial link between freight security management, organizational security culture, and the operational effectiveness of humanitarian value chains in Kenya. Freight security management and organizational security culture interacted in a way that accounted for 54.5% of the total model variance ($R^2 = 0.545, p = .012$), suggesting that organizational security culture may moderate the connection between FSM and humanitarian value chain efficiency. An extra 4.3% ($R^2=0.043$) is represented by the last $R^2$. A positive coefficient for the interaction between organizational security culture and facility security management indicates a positive interactive effect; consequently, a 0.340 ($P=0.0001$) reduction in the level of facility security management's impact on operational performance is observed for every one-unit increase in organizational security culture.

5.2.2 Facility security management and Operational performance
The second goal was to examine the role of organizational security culture in influencing the connection between facility security management and the effectiveness of humanitarian value chains' operations. Majority of the respondents confirmed that facilities are monitored 24/7 for security reasons. However, respondents were undecided that monitoring of their facilities has improved their reliability.

Correlation coefficient meant that facility security management, organizational security culture was closely linked to operational performance of humanitarian value chains. The findings of the study revealed that the interaction between facility security management and organizational security culture had a substantial impact, explaining 54.3% of the variance ($R^2 = 0.543, p = .000$). This suggests that organizational security culture potentially moderates the relationship between facility security management and the operational performance of humanitarian value chains. The R-squared value of 0.203 indicates that an extra 20.3% of the variance in the dependent variable can be explained by the independent variables in the model. The positive coefficient of the interaction between organizational security culture and facility security management indicates that there is a positive interactive effect. This implies that when the organizational security culture increases by one unit, there is a significant decrease of 0.203 ($P=0.010$) in the impact of freight security management on operational performance.

5.2.3 Information security management on Operational performance
The third goal was to determine the role of corporate security culture in influencing the correlation between IS management and humanitarian value chain efficiency. The vast majority of those who participated in the survey said their business benefits from restricted access to sensitive data because it lowers operating expenses.

The findings of the study indicated a significant correlation between information security management and operational success within the context of microfinance organizations. The findings of the study suggest that the interaction between information security management and organizational security culture has a significant impact, accounting for 50.6% of the variance in operational performance of humanitarian value chains. This indicates that organizational security culture potentially moderates the relationship between information security management and operational performance. The statistical analysis yielded a significant result ($R^2 = 0.506, p = .000$), supporting this conclusion. The R-squared value of 0.129 indicates that an extra 12.9% of the variance in the data can be explained by the model. The coefficient for the interaction between Organizational Security Culture and Information Security Management is found to be negative, indicating a negative interactive effect. This implies that as the level of Organizational Security Culture increases by one unit, there is a significant decrease of 0.284 units in the effect of Information Security Management on operational performance.

5.2.4 Effect of Organizational security culture on Operational performance
The fourth goal is to assess the role of corporate security culture in influencing the connection between supply chain security management and the efficiency with which humanitarian value chains function. The vast majority of respondents said that they had been trained in supply chain security and are acquainted with the company's security culture. The results confirmed the link between microfinance institutions' security cultures and their overall efficiency in business operations. The results of a hierarchical regression analysis showed that the relationship between supply chain security management and operational performance in the humanitarian value chain was moderated by organizational security culture by 14.0% ($R^2 = 0.140, p = .000$). The final $R^2$ as a result of moderation was found to be 0.770 implying that the model explained 77.0% variance in operational performance of humanitarian value chains from 62.7%. 
5.3. Conclusions
The following inferences were made in light of the research results:
It was shown that a security culture inside an enterprise significantly attenuated the correlation between freight security management and the efficiency with which humanitarian value chains in Kenya functioned. When a culture of security is present in a firm, it has a good effect on freight security management, which in turn boosts the efficiency with which humanitarian value chains in Kenya function. Therefore, successful humanitarian value chains in Kenya would benefit from enhanced corporate security cultures. In addition, the study found that the relationship between facility security management and the operational effectiveness of humanitarian value chains in Kenya is significantly impacted by an organization's security culture. Security culture has a significant impact on humanitarian value chains in Kenya, both in terms of facility security management and operational effectiveness. Facility security management improves as a consequence of a rise in corporate security cultures, which benefits the efficiency of humanitarian value chains in Kenya.

Information security management and organizational security culture were shown to have a substantial influence on the operational efficiency of humanitarian value chains in Kenya. Information security management and the success of Kenya's humanitarian value chains are hampered by the country's pervasive culture of paranoia. Security-aware corporate cultures are on the rise, mitigating the impact of information security management on the operational effectiveness of humanitarian value chains in Kenya.

The study's findings indicate that a company's culture of security has a significant bearing on the relationship between supply chain security management and the efficiency with which humanitarian value chains function. Corporate security culture has a multiplier effect on the efficiency with which humanitarian value chains use supply chain security management.

5.4 Recommendations
The study recommends the following as derived from the study conclusions. With relation to the first set of goals, the research suggested that management in humanitarian organizations should make sure that their personnel is informed with the Freight/Transport security efforts that are being implemented by their organization. In addition, the report suggested that they make certain that their company monitors and keeps track of all commodities while they are in transit or storage.

The research also suggested that management of humanitarian organizations should make it a priority to educate their workforce about the various facility security strategies being implemented by their organization. In addition, the research suggested that the management should keep an eye on their facilities in order to increase the degree to which they can be relied upon.

In addition, the research suggested that the management of humanitarian organizations should make it a priority to educate their personnel about the information security management efforts that are being implemented inside their respective organizations. In addition, the management has to implement an adequate management of information so that they can increase the dependability of their supply chain.

In conclusion, the research suggested that management of humanitarian organizations should make it a priority to educate their workers about the security culture of the organization they work for. This can be achieved by offering formal supply chain security training programs in their organization. Besides, top leadership should support supply chain security management initiatives by availing adequate resources.

5.5 Suggestions for Further Research
In spite of the significant contributions provided by this study, it draws attention to a few elements that need to be taken into consideration by subsequent researchers. First, the assumptions proposed for this study stress the need for efficient and effective supply chain security management in order to boost operational performance. A total of 62.7% of the variation in the operational performance of humanitarian value chains was found to be attributable to the aforementioned three pillars of supply chain security management. While these three factors undoubtedly had a role in this success, there are certainly more possible contributors to consider. In order to better understand supply chain security management in humanitarian situations, future studies should take these into account.

The study focused on the 20 most financially successful NGOs worldwide and analyzed their project spending habits. Because of this, the advice of the research can only be used to a certain extent and cannot be generalized to the other NGOs in Kenya. In a similar vein, the scope of the research might be broadened such that it includes previously excluded NGOs companies. There is also need to include mediating or intervening variables so as to establish their effect over and above supply chain security management on operational performance.

REFERENCES


34. Kyalo, N. C., Iravo, A. M., & Maurice, S. A. K. W. A. THE EFFECT OF RECORDS MANAGEMENT PROCEDURES ON INVENTORY MANAGEMENT PERFORMANCE IN GOVERNMENT MINISTRIES IN KENYA.


Dear Respondent,

I am a student at Mount Kenya University undertaking a Master of Science Degree in Procurement and Supplies Management. As a partial requirement for the degree award, I am researching "The Linkage of Kenya's Humanitarian Value Chains' Operational Performance and Supply Chain Security Management." Kindly I request you to respond to the items in the questionnaire by taking time off your busy schedule. All the information you provide will be used exclusively for academic purposes only and treated as confidential as possible.

Yours Faithfully,

Lena Gakii

Appendix II: Consent Form for Respondent

You are kindly requested to participate in a study titled: Moderating Effect Organizational Security Culture on the Relationship between Supply Chain Security Management and Operational Performance of Humanitarian Value Chains in Kenya. You have been selected as a respondent, and your consent to this is critical to the success of this study. Please read the statements below; if you agree, acknowledge, and are willing to participate, please sign at the end of the form.

1. Participation in this study is voluntary; you can participate or decline.

APPENDICES
2. Even after you agree to participate, you can withdraw at any stage or decide not to answer some or all questions, and there will be no consequence whatsoever.

3. This data collection has been clarified exclusively for academic purposes on the subject matter: The moderating effect of Organizational Security Culture on the relationship between Supply Chain Security Management and Operational Performance of Humanitarian Value Chains in Kenya. You had the opportunity to get more details for further understanding.

4. For any use of the collected data for purposes other than the one stated, a consent has to be sorted from you and you have the right to grant or reject.

5. No benefits pledged or attached to this data collection influenced your acceptance to participate in this study.

6. The collected data will be treated with utmost confidentiality, data protection and protect your rights as participant.

7. Personal details and identity will be anonymously used in the research report by applying codes that will not reveal any personal details or opinions that can personally identify you.

8. The opinions and answers to you provide the question without concealing your identity will be cited in various platforms such as conferences, journal publication, thesis reports in soft and hardcopies.

9. Any potential risks affecting you or any other respondent shared with the researcher can be reported to the relevant authorities.

10. When duly filled and signed, this consent form will be the sole property of Mount Kenya University and you have the right to access by request to the Directorate of Graduate studies.

11. Once the findings are published, you have the right to access like any other persons as part of knowledge dissemination through the right to information.

12. You are provided with contact details of the researcher to seek any further clarifications needed: Lena Gakii, +254729272061; Email: lenahgakii24@gmail.com

13. For any complaints or wish to share information, you can reach the university: Ethics Review Committee (ERC), Mount Kenya University, P.O Box 342 – 00 Thika, Kenya.

I, ____________________________, declare to have read the points above, understood, and accept to voluntarily participate to provide answers to the questionnaire for this study and at this moment grant an informed consent.

Signature (participant): __________________________ Date: __________________________

Acknowledged/witnessed the informed consent by the researcher:

Signature: __________________________ Date: __________________________
Appendix III: Questionnaire
The tool is aimed at gathering information on “Moderating effect Organizational Security Culture on the relationship between Supply Chain Security Management and Operational Performance of Humanitarian Value Chains in Kenya” Confidentially and anonymity of responses shall be upheld. Fill the questions provided by ticking (✓) appropriately.

PART A: Organizational Data
Please provide the following information regarding your firm.
1. Name of Non profit organisation…………………………………………………………
2. What is your position?
   a) Logistics Officer [ ]
   b) Procurement Officer [ ]
   c) Operations Officer [ ]
   d) Finance Officer [ ]
   e) Security Officer [ ]
3. What is your highest level of education?
   a) Post graduate [ ]
   b) Bachelor [ ]
   c) Diploma [ ]
   d) Specify any other ……………………………
4. Number of years that you have worked at the organization.
   a) 0 – 5 years [ ]
   b) 6 - 10 [ ]
   c) 11 – 15 [ ]
   d) 16 – 20 [ ]
   e) Above 20 years [ ]
5. Have you ever attended any professional training on supply chain security?
   a) Yes [ ]
   b) No [ ]
6. If yes, please specify…………………………………………………………………………

PART B: Freight Management and Operational Performance of Humanitarian Supply Chains
Please indicate to what degree you agree with the following statements regarding Freight Management and Performance of Humanitarian Supply chains. Where SA= Strongly Agree, A=Agree, UD= Undecided, D =Disagree, SD= Strongly Disagree

<table>
<thead>
<tr>
<th>Transport security statement</th>
<th>SA</th>
<th>A</th>
<th>UD</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) I am aware with the safety and security actions that are being taken by our business around freight and transportation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Our company constantly keeps detailed and accurate records of our inventory.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) At our company, we have security controls, which may be described as clear protocols that are always followed to the letter.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Our company keeps meticulous records on the whereabouts of all commodities while they are in transit or storage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) The dependability of our supply chain is improved by the cargo safety precautions we have in place.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) The capacity we have to monitor and trace things helps us keep our operating expenses down.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7. List other Freight/transport security initiatives embraced in your organization

PART C: Facility Management and Operational Performance of Humanitarian Supply Chains
Please indicate to what degree you agree with the following statements regarding Facility Management and Operational Performance of Humanitarian Supply chains. Where SA= Strongly Agree, A=Agree, UD= Undecided, D =Disagree, SD= Strongly Disagree

<table>
<thead>
<tr>
<th>Facility Management Statement</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) I am familiar with facility security initiatives in our organization</td>
<td>SA A UD D SD</td>
</tr>
<tr>
<td>2) Our facilities are monitored 24/7 for security reasons</td>
<td></td>
</tr>
<tr>
<td>3) The layout of our facilities promotes security management</td>
<td></td>
</tr>
<tr>
<td>4) Monitoring of our facilities reduces on our operational costs</td>
<td></td>
</tr>
<tr>
<td>5) The layout of our facilities increases our supply chain flexibility</td>
<td></td>
</tr>
<tr>
<td>6) Monitoring of our facilities has improved our reliability</td>
<td></td>
</tr>
</tbody>
</table>

7. List other facility security initiatives embraced by your organization

PART D: Information Management and Operational Performance of Humanitarian Supply Chains
Please indicate to what degree you agree with the following statements regarding Information Management and Operational Performance of Humanitarian Supply chains. Where SA= Strongly Agree, A=Agree, UD= Undecided, D =Disagree, SD= Strongly Disagree

<table>
<thead>
<tr>
<th>Information Management Statement</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) I am familiar with information security management initiatives in our organization</td>
<td>SA A UD D SD</td>
</tr>
<tr>
<td>2) We have controlled access to our organization’s information</td>
<td></td>
</tr>
<tr>
<td>3) We use appropriate storage techniques to ensure organization information is secure</td>
<td></td>
</tr>
<tr>
<td>4) Controlled access to our organization information reduces our operational costs</td>
<td></td>
</tr>
<tr>
<td>5) Proper storage of our information improves the security of our supply chain</td>
<td></td>
</tr>
<tr>
<td>6) The appropriate management of information has improved our supply chain reliability</td>
<td></td>
</tr>
<tr>
<td>7) Proper of information management has enhanced our supply chain responsiveness</td>
<td></td>
</tr>
</tbody>
</table>

8. List other information security initiatives embraced by your organization

PART E: Supply Chain Security Management, Organizational Culture and Operational Performance of Humanitarian Supply Chains
Please indicate to what degree you agree with the following statements regarding Supply Chain Security Management, Organizational Culture and Operational Performance of Humanitarian Supply Chains. Where SA= Strongly Agree, A=Agree, UD= Undecided, D =Disagree, SD= Strongly Disagree

<table>
<thead>
<tr>
<th>Supply Chain Security Management, Organizational Culture and Operational Performance of Humanitarian Supply Chains Statement</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) I am familiar with my organization’s security culture</td>
<td>SA A UD D SD</td>
</tr>
<tr>
<td>2) My organization’s top leadership supports supply chain security management initiatives</td>
<td></td>
</tr>
</tbody>
</table>
PART F: Operational Performance of Humanitarian Supply Chains
Please indicate to what degree you agree with the following statements regarding Operational Performance of Humanitarian Supply
Chains. Where SA= Strongly Agree, A=Agree, UD= Undecided, D =Disagree, SD= Strongly Disagree

<table>
<thead>
<tr>
<th>Operational Performance of Humanitarian Supply Chains Statement</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SA</td>
</tr>
<tr>
<td>1) We have a highly reliable supply chain</td>
<td></td>
</tr>
<tr>
<td>2) We have a flexible supply chain to meet our customer needs</td>
<td></td>
</tr>
<tr>
<td>3) We have a supply chain that is responsive to customer needs</td>
<td></td>
</tr>
<tr>
<td>4) Our operational costs are within planned levels</td>
<td></td>
</tr>
</tbody>
</table>
# Appendix IV: Workplan

<table>
<thead>
<tr>
<th>Activity/Year 2022/Month</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept Paper</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chapter One</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Chapter Two</td>
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<tr>
<td>Chapter Three</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposal Presentation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Collection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Data Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final Thesis Report, Dissemination &amp; Publishing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix V: Budget

<table>
<thead>
<tr>
<th>S/No.</th>
<th>Cost Driver</th>
<th>Estimated costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Internet surfing</td>
<td>15,000</td>
</tr>
<tr>
<td>2.</td>
<td>Binding</td>
<td>5,000</td>
</tr>
<tr>
<td>3.</td>
<td>Printing</td>
<td>15,000</td>
</tr>
<tr>
<td>4.</td>
<td>Transport</td>
<td>30,000</td>
</tr>
<tr>
<td>5.</td>
<td>Airtime</td>
<td>3,000</td>
</tr>
<tr>
<td>6.</td>
<td>Data collection</td>
<td>20,000</td>
</tr>
<tr>
<td>7.</td>
<td>Data analysis</td>
<td>10,000</td>
</tr>
<tr>
<td>8.</td>
<td>Publishing</td>
<td>20,000</td>
</tr>
<tr>
<td>9.</td>
<td>Miscellaneous</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>128,000</strong></td>
</tr>
<tr>
<td>S/No</td>
<td>Name of NGO</td>
<td>Funds Raised (Ksh)</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>1</td>
<td>World Vision Kenya</td>
<td>8,242,294,456.00</td>
</tr>
<tr>
<td>2</td>
<td>Care International</td>
<td>5,020,518,856.00</td>
</tr>
<tr>
<td>3</td>
<td>Compassion International Inc</td>
<td>4,675,061,577.00</td>
</tr>
<tr>
<td>4</td>
<td>AMREF Health Africa in Kenya</td>
<td>4,412,713,900.00</td>
</tr>
<tr>
<td>5</td>
<td>Centre for Health Solutions – Kenya</td>
<td>3,675,194,575.00</td>
</tr>
<tr>
<td>6</td>
<td>GiveDirectly Kenya</td>
<td>3,526,269,837.00</td>
</tr>
<tr>
<td>7</td>
<td>The African Academy of Sciences (AAS)</td>
<td>3,349,835,794.00</td>
</tr>
<tr>
<td>8</td>
<td>Programme for Appropriate Technology in Health (PATH)</td>
<td>2,789,775,855.00</td>
</tr>
<tr>
<td>9</td>
<td>Action Africa Help International</td>
<td>2,785,478,499.00</td>
</tr>
<tr>
<td>10</td>
<td>International Medical Corps</td>
<td>2,782,788,226.08</td>
</tr>
<tr>
<td>11</td>
<td>Plan International</td>
<td>2,774,618,394.00</td>
</tr>
<tr>
<td>12</td>
<td>Samaritans Purse International Relief</td>
<td>2,725,313,742.00</td>
</tr>
<tr>
<td>13</td>
<td>Family Health International (FHI 360) / Kenya</td>
<td>2,686,308,293.00</td>
</tr>
<tr>
<td>14</td>
<td>American Refugee Committee</td>
<td>2,5,408,403.90</td>
</tr>
<tr>
<td>15</td>
<td>Population Services Kenya</td>
<td>2,361,346,660.00</td>
</tr>
<tr>
<td>16</td>
<td>Medecins Sans Frontieres - Holland (Artsen Zonder Grenzen - Holland)</td>
<td>2,088,503,447.00</td>
</tr>
<tr>
<td>17</td>
<td>Aids Healthcare Foundation, Kenya</td>
<td>1,952,805,330.00</td>
</tr>
<tr>
<td>18</td>
<td>Save the Children International (Kenya)</td>
<td>1,853,673,065.66</td>
</tr>
<tr>
<td>19</td>
<td>Elizabeth Glaser Pediatric Aids Foundation</td>
<td>1,620,418,321.00</td>
</tr>
<tr>
<td>20</td>
<td>International Rescue Committee</td>
<td>1,608,761,737.00</td>
</tr>
</tbody>
</table>

Source: NGO Board Annual Sector Report, 29.