FACTORS AFFECTING HUMANITARIAN LOGISTICS ON CORONA PANDEMIC CONTROL A DOWN STREAM ANALYSIS IN TANZANIA: A CASE STUDY OF MUHIMBILI NATIONAL HOSPITAL

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF BUSINESS MANAGEMENT IN TRANSPORT AND LOGISTICS MANAGEMENT

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CERTIFICATION

The undersigned certify that he has read and hereby recommends for an acceptance by the Open University of Tanzania a dissertation entitled "***Factors Affecting Humanitarian Logistics toward Corona Pandemic Control***" in partial fulfillments of the requirements for the award of Masters of Business Management in Transport and Logistics of Open University of Tanzania.

……..

Dr. Chacha Matoka

(Supervisor)

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I, **Felician Alfred Mbwafu,** declare that, this dissertation is my own original work and that it has not been presented and will not be presented to any other University, for a similar or any other degree award.

……..…….

Signature

…….

Date

DEDICATION

This dissertation is dedicated to my late mother and fathers your humility, patience, and kindnesses are still remembered. My beloved, may you rest in eternal peace.

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ABSTRACT

The purpose of this study was to assess the factors affecting humanitarian logistics towards corona pandemic control a downstream analysis in Tanzania. Specifically, this study assess the effect of Government policies on effectiveness of humanitarian logistics at Muhimbili national hospital, determine the effect of information flows on effectiveness of humanitarian logistics at Muhimbili national hospital, and determine the effect of financial resources on effectiveness of humanitarian logistics at Muhimbili national hospital. A sample of 180 participants was drawn from a population of 327. Questionnaire was used to collect primary data. Data was analysed using descriptive and multiple regression analysis. The study findings revealed that government policy has great contribution on the variation of humanitarian logistics toward corona pandemic. Additionally, study findings revealed that information flow has great contribution on the variation of humanitarian logistics toward corona pandemic. Furthermore, study findings revealed that financial resources have great contribution on the variation of humanitarian logistics toward corona pandemic. The study recommended that government should assess its rules governing humanitarian operations, as well as address the needs of development partners, and organisation should create a reliable sources of information to minimize a number of information which is are not appropriate to humanitarian operation during pandemic situation.

Key words: *Humanitarian logistics, government policy, information flow and financial resources, and corona pandemic*

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ABREVIATIONS AND ACRONYMS

ANOVA	:	Analysis of Variance
CIS	:	Customer Integrated System
EMD	:	Emergency Medical Department
GoT	:	Government of Tanzania
ICT	:	Information Communication Technology
IFRC	:	International Federation of Red Cross and Red Crescent Societies
MNH	:	Muhimbili National Hospital
NGOs	:	Non - Governmental Organisation
PCA	:	Principal Component Analysis
PMO	:	Prime Minister Office Tanzania
PMU	:	Procurement Management Unit
RBV	:	Resource Based View
RM	:	Relationship Management
SPSS	:	Statistical Package for Social Science
TRCS	:	Tanzania Red Cross Society
UNICEF	:	United Nations International Children Education Funds
WFP	:	World Food Programmes
WHO	:	World Health Organisation

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter covers the general understanding of corona pandemic and humanitarian logistics. Corona pandemic has become a global problem in that context the need of humanitarian logistics play a crucial role in saving the life of affected people. Humanitarian actors are responsible to supply humanitarian aids like water, food and medicines in life saving action. Therefore, logistics play peculiar role in life saving of people during Corona disaster in the country. The humanitarian actors separate can't handle quick situation without involvement of other stakeholders into the downstream the need arises in assessing effectiveness of humanitarian logistics into downstream.

1.2 Background of the Study

COVID-19 (CORONA) is an acute respiratory disease caused by SARS-CoV-2 that mainly affects the lungs and is associated with mental and neurological manifestations amongst others (WHO 2020). Most COVID-19 patients experience fever, cough, fatigue, anorexia and shortness of breath. However, other non-specific symptoms may include sore throat, nasal congestion, headache, diarrhea, nausea and vomiting. Transmission of the SARS-CoV-2 virus can occur through direct, indirect or close contact with secretions, such as saliva and respiratory secretions or respiratory droplets, expelled from an infected person. Indirect contact transmission involving contact through vomits may also be possible (WHO, 2020).

Humanitarian logistics defined as process of planning, coordinating, executing and controlling of cost effective and efficient flow and storage of materials, information and funds from point of origin to consumption for the purpose of achieving ultimate victims requirements like foods, shelters, medicines and equipment caused by natural or man- made disasters, humanitarian logistics indicate crucial effort in preparation and response to complex emergencies and natural or man-mage disaster and minimization of the suffering of victims and vulnerable people (Vitasek, 2010).

For more than 2 years ago, over 700 natural disasters has been registered worldwide and affected not less than 450 million people (Kinyua, 2013). In the 1990s, the number of victims was increased three times compared to 1970s due to increased number of disasters. The number of natural disasters led to increased risk of death, suffering and destruction due to demographic and economic changes. The large number of affected people by natural and man-made disasters located in third world countries like Kenya and Tanzania. The most affected people are vulnerable and unable to help themselves due to poverty, environmental degradation and crowded conditions.

Disaster management involved four several stages; minimization, preparedness, response and rehabilitation (Van Wassenhove, 2006). The first two stages appear prior to the disaster occurrence and take important precautions step to avoid instead of minimise negative impacts. Another two steps emphases short term response post to disaster occurrence and long term rehabilitation to bring community to its original situation or more. Humanitarian logistics and supply chain management involves the

management of several functions like evacuation, food, provision of water, health care or refugee camps.

Humanitarian logistics effectiveness can be measured in various aspects such as delivery, flexibility, reliability and responsiveness. In humanitarian late delivery of the requirements can cost lives (Kinyua, 2013). In this view, delivery and effectiveness in logistics is a major success factor in humanitarian because it guarantees the effective flow of the materials like medicines and foods. To ensure and safeguard the lives of affected people, Government and humanitarian organizations must be effective, timely, appropriate and well organized. In applied humanitarian logistics, logistics requires to become flexible in order to able rapid response to unpredictable conditions in effectiveness (Altay, Gunasekaran, Dubey, & Childe, 2018). Effectiveness in humanitarian logistics regarded as a key and essential factor in life saving of the affected people. Effectiveness means that capability of the humanitarian organizations to meet individual victim's needs and services.

This study intends to analyse the factors contributing to humanitarian logistics in Tanzania towards provision of various goods and services to corona pandemic victims and it's confronting backwards towards effectiveness of government policy, financial resources and information flows due to that resource based view theory applied. This study seek to analyze the factors affecting effectiveness of humanitarian logistics towards corona pandemic control a downstream analysis in Tanzania

1.3 Statement of the Problem

According to the World Health Organization (WHO), as of December 20th there have been over 75 million cases and over 1.6 million deaths of corona virus disease 2019 (COVID-19) since the start of the pandemic . Since the spread of the COVID-19 pandemic is still accelerating, with an extraordinary impact on global economies, social security and human lives, it is no longer a health issue but a social issue that inextricably links to everyone. Until now, there is bulk of open data published online for people to timely tracking the situation of the pandemic, however, only focus on the raw data is far from totally understanding the real situation and providing supportive evidence for decision making (Ministry of health, 2020) by which the study arises to assess the effectiveness of humanitarian logistics towards corona pandemic control a downstream analysis.

Nowadays, the disaster is inevitable and seems difficult to deal with it. Disaster defined as a threat of harming lives of the people, society disruption that lead widespread of materials, human or environment wounded which surpass the ability of people to cope with conditions using their own resources (IFRC, 2008). According to Scarpin and Silva, (2014) more than 207 million people worldwide had become a victims by natural disaster and about 296,800 people among them lost lives and more than US dollar billion 109 registered worldwide for destruction in assets. This implies that large number of countries and their people are greatly affected by man-made disaster (like wars, refugee crisis and conflicts) or natural disaster caused by (floods, droughts, famine and earthquakes) worldwide in current decade (EM-DAT, 2011).

April 2018, heavy rainfall occurred in various regions of Tanzania led floods. The flood caused effects to different parts include Dar es Salaam, Arusha, Morogoro and many other parties of Tanzania regions. Based on IFRC reports, more than 15,862 people were directly affected by floods in these regions and led a death of 11 people in Dar es Salaam and one (1) in Arusha while 11 people were injured in Dar es Salaam (IFRC, 2018).

Therefore, this study seek to analyze the factors affecting effectiveness of humanitarian logistics towards corona pandemic a downstream analysis in Tanzania in Muhimbili national hospital. A study by Kovacs and Spens (2009) on the humanitarian logistics challenges in Ghana revealed that delays, lack of resources, improper donations, poor infrastructure and lack of transportation vehicles and warehouse identified as key challenges in humanitarian logistics effectiveness.

A study by Beyene (2018) found that donor funding and government factors identified as major external forces that significantly predict humanitarian logistics effectiveness. This study didn't examined the effect of policies and procedures, relationship management and ICT as humanitarian logistics performance factors. A study by Chingono and Mbohwa (2016) revealed that IT use in humanitarian logistics and supply chain management separated into coordination in delivery, collaboration, transaction processing and supply chain planning but fail to examined the effect of funds, RM and resources in humanitarian logistics and supply chain management. Thus, insufficient funds, distortion of information and development partner's procedures and policies still were the problems.

However, the above authors conducted studies in humanitarian effectiveness but less attention focused on effect of RM, policies and procedures, resources and ICT that has been a large problem in effectiveness of humanitarian logistics. The eruption of Corona pandemic until November 2021 in Tanzania reported cases where 26,227 and confirmed death 727 (WHO) thus the need for immediate intervention is necessity for purpose of controlling and serving vulnerable into the downstream

1.4 Research Objectives

The purpose of this study was to assess the factors affecting humanitarian logistics toward corona pandemic control which was guided by general and specific objectives.

1.4.1 General Objective

The general objective of the study is to assess factors affecting humanitarian logistics towards corona pandemic control a downstream analysis in Tanzania.

1.4.2 Specific Objectives

i. To assess the effect of Government policies on effectiveness of humanitarian logistics at Muhimbili national hospital
ii. To determine the effect of information flows on effectiveness of humanitarian logistics at Muhimbili national hospital
iii. To determine the effect of financial resources on effectiveness of humanitarian logistics at Muhimbili national hospital

1.5 Research Hypotheses

i. H_{01}: There is no significant effect of Government policies on effectiveness of humanitarian logistics at Muhimbili national hospital.

ii. H_{02}: There is no significant effect of information flow on effectiveness of humanitarian logistics at Muhimbili national hospital.

iii. H_{03}:There is no significant effect of financial resources on effectiveness of humanitarian logistics at Muhimbili national hospital.

1.6 Significance of the Study

The study would be a part in partial fulfillment of the requirement for award of master of business administration. The study also would be significant to various humanitarian actors and humanitarian logistics stakeholders in Tanzania such as Government of Tanzania (GoT), Scholars and students as well. The significance of the study would be classified into humanitarian actors and contribution to the body of knowledge. The discussion on the significance of the study would be of great importance to the humanitarian organizations and stakeholders interested in the humanitarian response. This study analyze the factors affecting the effectiveness of humanitarian logistics towards corona pandemic control in Tanzania a downstream analysis. The findings would be served as a tool for policies formulation and help to maintain, regulate and manage the challenges facing government and stakeholders. The findings, conclusions and recommendation would be critical tools for references of another future studies also contribution of knowledge, in which other scholars and students can use as referencing source as fact due to few citatation on corona as is the new pandemic. The study would have critical contribution into development of

humanitarian logistics and supply chain management as separate and vital management science.

1.7 Scope of the Study

This study centered at Muhimbili National Hospital where it is presumed to be the centre of target population and homeland of the intended study.

1.8 Organization of the Study

This study organised into five (5) chapters. Chapter one presents introduction, background of the study in which allied overview about the study discussed, statement of the problem, objectives of the study, research questions, scope, and significance of the study. Chapter two presents definitions of the key terms based on the study, theoretical and empirical context of the study, framework model and study gaps. Chapter three covers methodology of the study. Chapter four presents data analysis, interpretation and discussion of the findings. Chapter five presents summary of the findings, conclusion and recommendations, and area for further study.

CHAPTER TWO

LITERTAURE REVIEW

2.1 Overview

This chapter critically focuses on literature review. It presents a definition of the key terms, the theoretical review in line with study objectives and variables, empirical review, conceptual model and research gap.

2.2 Definition of the Key Terms

2.2.1 Corona Pandemic

Corona pandemic is an acute respiratory disease caused by SARS-CoV-2 that mainly affects the lungs and is associated with mental and neurological manifestations amongst others (WHO, 2020).Most COVID-19 patients experience fever, cough, fatigue, anorexia and shortness of breath. However, other non-specific symptoms may include sore throat, nasal congestion, headache, diarrhea, nausea and vomiting. Transmission of the SARS-CoV-2 virus can occur through direct, indirect or close contact with secretions, such as saliva and respiratory secretions or respiratory droplets, expelled from an infected person. Indirect contact transmission involving contact through vomits may also be possible (WHO, 2020).

2.2.2 Humanitarian Logistics

Humanitarian logistics is the process of mobilizing resources, people, knowledge and skills in order to help affected people either by natural or man-made disasters and complex emergency (Thomas & Kopczak, 2005). It involves a number of activities such as transportation, procurement, storage and warehouse, customs clearance,

order tracking and tracing. Humanitarian logistics play critical role in the current and future effectiveness of the humanitarian activities and programs through three fundamental roles. Firstly, enhance major humanitarian programs achievement like shelter, food and health in order to provide effective and efficient response. Secondly, humanitarian logistics is very critical and expensive portion of relief operations and finally, logistics unit or department can have a lot of data that can be analyzed for post-event learning like supplier effectiveness, cost information and response rightness and goods donation appropriateness.

2.2.3 Humanitarian Logistics Effectiveness

According to Demeke (2016) humanitarian effectiveness is the ability of the humanitarian logistics operations to bring humanitarian requirements in order to alleviate the victims suffering from natural or man-made disaster or emergency.

2.2.4 Government Regulations

Government regulations are effectively rules that define the bounds of legal behavior. Most regulations are expressed in a natural language (e.g., English), a form that requires some interpretation. In some cases regulations are intentionally vague to accommodate special interests or political pressures or to allow for a range of circumstances (Andrei, 2005).

2.2.5 Financial Resources

Financial resources are the set of liquid assets of an organization, including cash, bank deposits and liquid financial investments.

2.2.6 Information Flow

Information flow is the movement of information between people and systems. Efficient and secure information flows are a central factor in the performance of decision making, processes and communications (Carvalho, Rocha & Abreu, 2016).

2.3 Review of the Theories

According to Mentzerh (2008). A good research question should be grounded from theory. This study was grounded from Resource Based View.

2.3.1 Resources Based View Theory (RBV)

Resource based view originated by Coase in 1937 demonstrating the importance of resources and its impact on the performance of the organization (Mahoney, 2001). In business perspective, the theory argue that each business entity need a unique set of resources in order to gain competitive edge in the market by responding quickly to the changing market situation (Chogo, 2018). Considering this study, the theory reflect the significance of the resources like government policy, information flows and financial resources to serve the victims of corona pandemic. These resources should be well planned, organized and controlled to enable actors to alleviate the victims live in systematic and comprehensive way. Government of the particular country has to spare much effort in humanitarian logistics to enhance sustainable effectiveness of the humanitarian logistics. Humanitarian logistics would not become effective in the absence of the resources that lead to increase number of vulnerable (Endale, 2016). In relation to the study objective, this theory backup objective three as to assess the effect of the financial resources to the performance of

humanitarian logistics in Tanzania. RBV is best used to evaluate a firm's existing resource portfolio or when leveraging the firm's resources to enter new product markets but this theory didn't determine the appropriate level of analysis due to the broad definitions of resources.

2.4 Empirical Review

This part reviewed the past studies which studied from various researchers on analysis of factors affecting effectiveness of humanitarian logistics. The empirical review in this study divided into two (2) context; Worldwide and Africa context.

2.4.1 Worldwide Context

Beyene (2018) examined the external factors that impact humanitarian logistics performance in Ethiopia. The study focused two (2) into objectives; to determine the extent of external factors impacting humanitarian logistics effectiveness and identify significant difference in humanitarian logistics effectiveness among actors. The study adopted mixed research design (qualitative and quantitative). The study targeted three (3) humanitarian actors as population. The study used census method to select the participants. The study also used questionnaire and semi structured interview to collect data from participants. The collected data was analyzed using one way ANOVA and multiple regression analysis. But the study failed to analyze the quality measures of humanitarian logistics in deliveries, flexibility and responsiveness.

2.4.2 African Context

Rucha and Abdallah (2017) examined the effects of supplier relationship management (SRM) on effectiveness of humanitarian supply chain at the World

Food Programme (WFP) Somalia. The study guided with only one objective as to assess the effect of SRM on services effectiveness of WFP in Somalia. The population of the study was employees' from WFP includes senior and supply chain officers. The sample of the study comprised of seven (7) officers from WFP food family supplier and eight seven (87) staff from WFP. The data was collected using questionnaires from sixty three (63) respondents who made response rate of 72%. The data collected analysed by using multiple regression analysis to achieve study objectives. The study managed to analyze the effectiveness of supplier relationship management but failed to analyze the effectiveness of information flows by which this study will be a linchpin benchmark for covering effectiveness of information flow.

The result of the study revealed that WFP undertake continuous training for their employees from department related to supply chain and established special mechanisms to ensure suppliers comply with the quality standards. The study also found that implementation and order management done through ICT. Finally, the study result revealed that WFP delivers flow free food goods to receivers by collaborating closely with logistics personnel and key internal staff which in turn fails to analyze other contributing factors affecting effectiveness of humanitarian logistics chain at the World Food Programme (WFP) Somalia this study will be a map road towards analyzing how humanitarian logistics chain can add value to various humanitarian logistics actors.

A study by Chingono and Mbohwa (2016) on the information technologies (IT) for humanitarian supply chain management Zimbabwe. The study used survey design in

Zimbabwe. The study population was all Non-Governmental Organizations (NGOs) and other humanitarian actors in Harare, Zimbabwe. The study adopted random sampling techniques (probability sampling). The data was collected using questionnaire, interview and group discussion with logistics personnel and relevant managerial. About 150 questionnaires was administered and directly distributed and only 105 questionnaires was filed and returned. The study fails to address the effective of control mechanism on humanitarian supply chain management Zimbabwe. The study result revealed that IT use in humanitarian logistics and supply chain management separated into coordination in delivery, collaboration, transaction processing and supply chain planning. The study result revealed that shortage of skills, supplier support and customers integration system (CIS) identified as major problems in humanitarian logistics and supply chain management through information technologies.

Mohaghar, Sahebi and Arab (2017) conducted a study on appraisal of risks associated with humanitarian supply chain through Best-Worst Method (BWM). The study aim to give comprehensive review of risks associated with humanitarian logistics chain in Tehran. The data collected using interview with 4 humanitarian experts who identified 2 risk sand analyzed using BWM and significant of each logistics chain risks was computed. The findings revealed that people awareness, context of the culture and lack of proper educational system are common risks associated with humanitarian logistics chain.

Shiyam, Suresh and Raghu (2018) examined the factors influencing humanitarian operations effectiveness. The study adopted survey design. The sample of fifteen

(15) various organizers were selected. The data was collected using interview. The data was analysed using Interpretive Structural Modeling (ISM) method. The study findings revealed that coordination in planning, proper decision, and accountability improves effectiveness of humanitarian operations in Indian.

Shafiq and Soratana (2019) conducted a qualitative study on humanitarian logistic sand supply chain management in Thailand. The study reviewed seventy three (73) articles and studies where by sixty eight (68) were qualitative, two (2) were pure quantitative and three (3) were mixed. The data from these studies were analyzed by using multiple analysis including regression analysis and findings revealed that standardization, policies and procedures considered as important streamline in the effectiveness of humanitarian logistics and supply chain management in Thailand.

2.5 Research Gap

A large number of studies reviewed theoretical and empirical in global and very few local context which describe numerous factor affecting effectiveness of humanitarian logistics such as government restriction, professional staff, donor funds, ICT, cultural awareness and coordination in planning and decisions. The researcher of this study show agreement on various factors affecting effectiveness of humanitarian logistics discussed by Beyene (2018), Shafiq and Soratana (2019) Suresh and Raghu (2018) and Sheshe (2018). But, there are conditions of disagreement either in various variables used or research design adopted by authors from literature reviewed that lead to variation.

Sheshe (2018) examined the risk factors and its effects on humanitarian pharmaceutical supply chain in Tanzania. On his study, Sheshe (2018) addressed risk prioritization and treatment as key factors that effect on performance of humanitarian pharmaceutical supply chain in Tanzania. This study leaves a gap as it didn't determine the effects of Government policies and regulations, effects of ICT, effects of financial resources and influence of relationship management.

Beyene (2018) conducted a study on the external factors that impact humanitarian logistics performance in Ethiopia. On his study, Beyene (2018) focused only on donor funding and government factors as key factors external influence humanitarian logistics performance. In this study, author leave a gap as fails to consider the influence of information flows in effectiveness of humanitarian logistics.

Rucha and Abdallah (2017) conducted a study on the effects of supplier relationship management (SRM) on performance of humanitarian supply chain at the World Food Programme (WFP) Somalia. The authors considered continuous training for employees and effect of ICT on order management bring major effects on performance of humanitarian supply chain at WFP but leave a gap as they fail to determine the effects of Government policies and resources on effectiveness of humanitarian supply chain at WFP.

2.6 Conceptual Framework

According to Kumar (2011) conceptual framework described as basis of the research phenomena. It describes aspects that researcher choose from theoretical

review to be the basis of the enquiry. This study consider government policy, financial resources and information flows to be independent variables and effectiveness based on humanitarian logistics was dependent variable

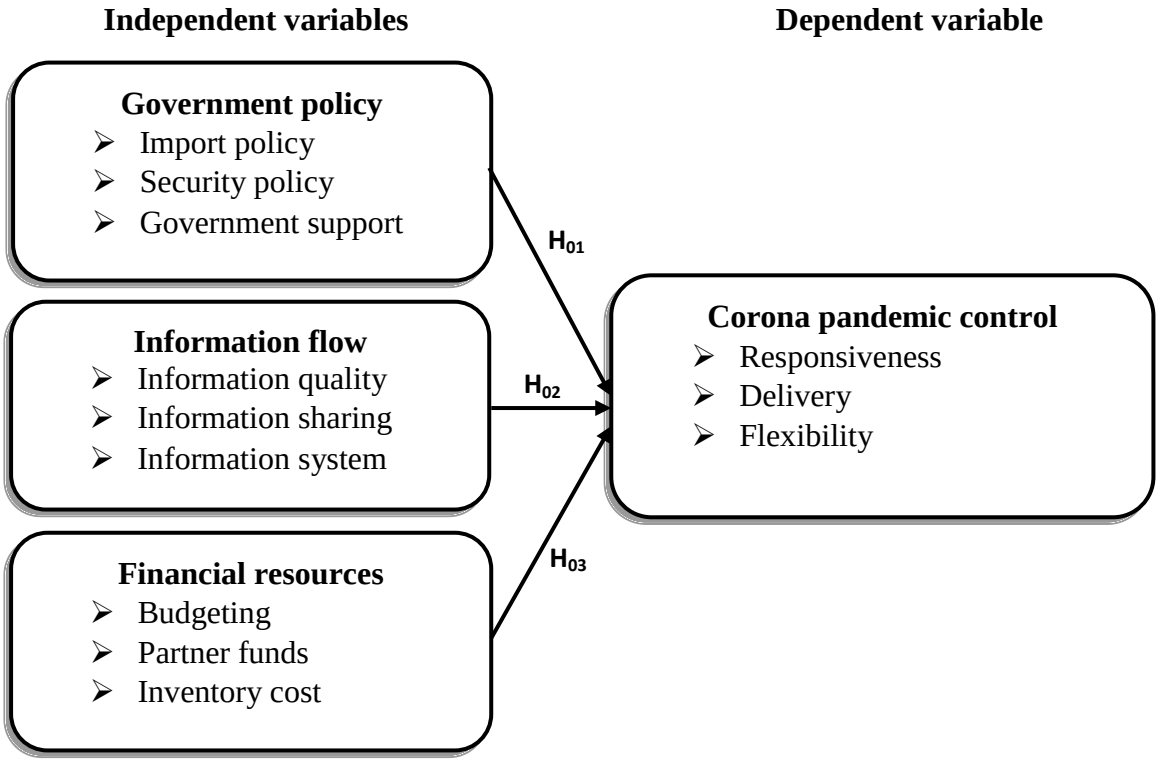

Figure 2. 1 Conceptual Framework

2.6.1 The effect of Government policies on effectiveness of humanitarian logistics

Government policies has a severe impact on relief operations. Openness to assistance can lead to the timely delivery of aid whereas a reluctance to receive assistance can have devastating consequences. With lives at stake and no time to lose in humanitarian crises, understanding the host government's impact on the logistics performance of humanitarian organisations is crucial. In this study, it presents an in-depth multiple-case study that explores this aspect. Government actions are

explained by their dependency on International health organizations and the levels of tensions between their interests (i.e., conflicting strategic goals). In addition, governments regulatory and enforcement capabilities are important for ensuring that they can safeguard their interests. Four stances that host governments can adopt in regulating logistics-related activities: non-restrictive, opportunistic, selectively accommodating and uncompromising. Each of these has different implications for the logistics performance of humanitarian logistics

2.6.2 Effect of information flows on effectiveness of humanitarian logistics

Humanitarian logistics represents a broad range of activities taking place within humanitarian organizations, the bulk of these activities are also components of a broader humanitarian supply chain - the network involved with providing physical aid to beneficiaries. Humanitarian logistics information systems improve information flows, which integrates logistics units more efficiently with non-logistics units within the humanitarian supply chains and provides better feedback to donors, ensuring more effective operations. Humanitarian logistics activities occur across the disaster management cycle. Humanitarian logistics information systems not only improve logistics activities in each phase, but can improve the continuity of humanitarian operations by sharing information throughout the transition of different disaster management cycle phases. Through collaboration between organizations, humanitarian logistics information systems also have the potential to reduce corruption and the market distortion which can occur during humanitarian operations.

2.6.3 Effect of financial resources on effectiveness of humanitarian logistics

Furthermore, since funding systems can limit the scope of humanitarian response, it is also crucial to have reliable forecasts for fundraising pledges and donations (Wakolbinger & Toyasaki, 2011). This is basically the problem of forecasting supply. Despite potentially limited technical skills and training of practitioners. Moreover, numerous intermediaries (e.g., financial service providers or governmental institutions) that are involved in managing funds and donations for the humanitarian assistance (Wakolbinger et al., 2011) spend a significant amount of donations on administrative processes 3 that do not have a direct impact on beneficiaries (Goldschmidt and Kumar, 2016). As such, donor expectations on project results are sometimes not fulfilled, making them reluctant to donate, which limits HOs in their scope of action (Besiou and Van Wassenhove, 2020).In that context financial resources act as tool in serving and supporting humanitarian logistics activities when emergencies occurs.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Overview

This part present research design, study area, population, sample size and sampling techniques, methods of data collection, variables measurements and methods that used to analyze collected data in the study.

3.2 Research Philosophy

This is a methodical approach to examining social phenomena in order to gain a specific understanding and attempt an explanation (Saunders *et al*., 2009). The researcher used the positivism research philosophy in this study. Positivism research philosophy holds that reality is stable and can be observed objectively (Kumar, 2011). Positivism research design is appropriate because realities are stable and can be observed objectively as fact study based on assessing effectiveness of humanitarian logistics towards corona pandemic control thus pave way for significant and reliable outcomes.

3.3 Research Approach

Quantitative research approach was applied in study. Quantitative research approach entails statistical investigations in order to obtain study results. The quantitative approach involves quantifying data collection and analysis in numerical form using statistical processes. Statistical measurements employed in quantitative research to characterize and discover relationships, answer research questions, and make predictions (Marczyk, DeMatteo and Festinger's, 2005).

3.4 Research Design

According to Kothari (2004) research design defined as conceptual in which study is conducted. It provides the blueprints for data collection, measurements of variables and data analysis. In this study descriptive research design was used. Descriptive research design considered to be an appropriate because it is used to establish the nature of current condition and analyse it (Creswell, 2013). Descriptive research normal used to describe the problem as it is happen without variables control. According to Fowler (2013) descriptive research design is about describing and identifying the relationships exist between variables under phenomena.

Descriptive design allow a researcher to use quantitative research approach to analyze the factors affecting the effectiveness of humanitarian logistics in Tanzania towards corona pandemic control a downstream analysis. Quantitative approach concerned with quantification of data collection and analysis in a numeric form through statistical procedures. In quantitative, statistical measures used to describe and identify the effectiveness and to answer research questions and make prediction (Alise & Teddlie, 2010).

3.4.1 Study Area

The study conducted at Muhimbili National Hospital (MNH), Tanzania. MNH located at Dar es Salaam City Centre. Justification of the study area is because Muhimbili National Hospital is the one of the largest hospital in Tanzania and it covers victims of corona pandemic almost all over the country. MNH was the first hospital in Tanzania to be admitted patient who had corona symptom. Therefore, MNH has experienced several corona pandemic cases in Tanzania.

3.4.2 Population of the Study

Study population is the individuals, group, organization or community that researcher collected information about phenomena or them (Kumar, 2011). The population relies on the nature of the problem, it means that if there is broad problem, the population become large and vice versa. The population of the study consist 12 corona pandemic specialist and 315 respondents from various stakeholders of Muhimbili national hospital. In this view, the study have a population of about 327 respondents.

Table 3. 1Population Distribution

s/n	Department/ Unit	Population (N)
1.	Corona pandemic specialist	12
2.	Emergency medical department	143
3.	Procurement Management Unit	10
4.	Corona survival	162
	Total	**327**

Source; MNH data (2021)

3.4.3 Sample Size and Sampling Techniques

3.4.3.1 Sample Size

According to Singh and Masuku (2014) sampling defined as subset selection of individuals from study population to approximate the features of the whole population. Therefore, sampling is the technique used to determine the appropriate sample size that sufficient to present the whole study population and provides true inferences concerned with population can be derived from results obtained (Kadam and Bhalerao, 2010). Sample size is the number of respondents selected from study

population to create the sample (Kothari, 2004). The study used the simplified Yamne (1967) formula to obtain sample size of 180 respondents from target population. Yamne (1967) formula parameters;-

N – Population of the study (N=327)

n – Sample size (?)

e – Level of the precision (e=0.05)

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{327}{1 + 327(0.05)^2}$$

n = 180 respondents

From the formula, the sample size of this study was 180 respondents obtained from population of the study.

Table 3. 2Sample size distribution

S/N	Department/ Unit	Population (N)	Sample size (n)
1.	Corona pandemic specialist	12	6
2.	Emergency medical department	143	79
3.	Procurement Management Unit	10	6
4.	Corona survival	162	89
	Total	**327**	**180**

Source; Field data (2022)

3.4.3.2 Sampling Techniques

According to Kumar (2011) sampling is the process of choosing a small number (few) from large group (population) to become fundamental for approximating and predicting the occurrence of required information, condition or outcome based on the

population. There is difference in sampling techniques in quantitative study. In this view, this study adopted stratified sampling technique for quantitative.

According to Kumar (2011) stratified sampling technique is a probability sampling technique used to stratify the population in a way that entire population in the stratum is homogeneous. This study, the researcher used stratified sampling technique to select the sample of 180 respondents from Muhimbili National Hospital (MNH). According to Kumar (2011), stratified sampling is a type of probability sampling approach in which the researcher attempts to stratify the group so that the population inside a stratum is homogenous with respect to the feature on which it is stratified. Stratified sampling technique includes various sample phases and within which other sampling techniques could be used, stratified random sampling was used.

In this study, respondents grouped into four (4) strata, then respondents data were proportionally selected randomly from their strata. The groups are corona pandemic specialist, emergency medical department (EMD), and Procurement Management Unit (PMU) and corona victims.

3.5 Unit of Analysis

A unit of analysis is defined as individual, group or organization from which the required information about study to be obtained and become the key point of reference in the study analysis (Chinelo, 2016). According to Trochim (2006) in any research project, unit of analysis is the most significant ideas (unit of sampling) which researcher going to investigated. Saunders, Lewis and Thornhill (2007) urged that in research design a clear description of unit of analysis should be given a

special attention to avoid contradiction and separate unit of analysis with other units from the actors. In considering on the above intellect thought, this study adopted specialist of corona pandemic as key unit of analysis for quantitative data.

3.7 Measurements of the Variables

According to Kumar (2011) in quantitative research design, data should be measured to enable them to be analyzed. Measurement can be defined as the technique for value and scale identification of the particular variables. In this study, there are two main types of the variables; dependent and independent variables. The dependent variable of the study is effectiveness of humanitarian logistics and independent variables are government policies, information flows, and resources. These variables under the study were measured using 5-point Likert scale. See appendix II

3.8 Types of the Data

According to Blaikie (2007) demonstrate that it is important to collect information about research questions and hypothesis in order to enable researcher to get answers of the research question administered to respondents and attaining research objective. In social science, data can be into the two main types; primary and secondary data.

3.8.1 Primary Data

Primary data are the information generated by researcher for the first time, who is responsible for study design, collection, analysis and reporting (Kumar, 2011). In this study, primary data collected directly from Muhimbili National Hospital (MNH) by visiting and conduct interview to the selected respondents. Quantitative information

from this study collected through questionnaire. These information were the first hand data. Questionnaire was the major quantitative data source.

3.8.1.1 Data Collection Methods

Data collection defined as process of gathering study information which composes primary and secondary data for the purpose of generating facts, truths and evidence about study phenomena (Babbie, 2015). In this study, researcher used questionnaires to collect primary data.

Questionnaire is the list of a well written questions to be answered by respondents. In this method, respondents read questions and interpret them on expected and final write appropriate answer (Kumar, 2011). In this study, the primary quantitative data were self-administered to the respondents whereby 180 questionnaires were administered to the respondents. This method have great advantage over other data collection methods such as group discussion and observation as it was not consume much effort and time because it was composed with standard answers that simplify compilation of the data.

To meet the aim of obtaining the reliable information, respondents read out the questions as printed and it was very specific and organized with specific range of the questions. In other word, the questions were closed ended.

3.9 Data Analysis

Data analysis is the process of cleaning, transforming, inspecting and modeling data for the purpose of highlighting required information, generating conclusions and

decision making support (Kothari, 2011). Data analysis process consisted a series of phases includes, entering data into software Statistical Package for Social Science (SPSS) or Ms. Office (Ms. Excel) called data entry. Another phase is data cleaning whereby errors or data quality were checked. A researcher frequency identify them is sing value in data sheet and replacing these value using series mean method. These methods calculated the mean values for the variables and give every missing case its value. In this study, the researcher used descriptive statistics and inferential statistics to analyze the quantitative data.

Descriptive statistics based on questionnaire data used to produce summary of the results that needed further analysis. Descriptive statistics provides basic summaries of characteristics of the sample in term of frequency and percentage (Pallant, 2010). The descriptive statistics in this study restricted in that it did not identify the relationship between variables and the influence of each variable on the efficacy of humanitarian logistics. As a result, inferential analysis was required.

Pearson correlation and multiple regressions analysis and regression analysis was used to assess the relationship of variables. Multiple regression analysis was used to examine the effect of government policies, information flow and resources on the effectiveness of humanitarian logistics in Tanzania. In multiple regression analysis, adjusted R^2 (coefficient of determination) was used to show variability in humanitarian logistics explained by government policies, information flow and resources, while R (correlation coefficient) was used to illustrate the degree of association between variables in this study. Regression model as follow;-

$$Y= \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_{it}$$

Whereas;

Y	-	Humanitarian logistics
X_1	–	Government policies
X_2	–	Information flow
X_3	–	Resources
β_0	-	Constant
ε_{it}	–	Margin of error

3.10 Regression Assumptions

Ordinary Least Square (OLS) regression assumptions are typically taken into account in a basic regression equation. The key presumptions were examined to ensure that the data met the requirements for analysis in order to meet the goals of the regression analysis. Five underlying presumptions of the Ordinary Least Square were examined (Green, 2008; Park, 2011). These include multicollinearity, homoscedasticity, outlier, linearity, and normalcy.

3.10.1 Linearity Assumption

The relationship between the independent variables must be linear for regression to occur. For each increment of the predictor, the mean value of the outcome variables follows a straight line. Using P-P plots to determine where they fall along the diagonal line, this assumption is verified.

3.10.2 Normality Assumption

The linear regression model presupposes a normally distributed distribution for the regression residuals (differences between observed and predicted values). Checking

for normalcy is done using the histogram. The bell-shaped distribution of residuals, with a mean near to 0 and an SD close to 1, should be seen, demonstrating a normal distribution of residuals.

3.10.3 Outlier Assumption

Regression makes the assumption that residual values outside of the histogram's 3 are outliers. Tabachnick and Fidell (2007), who contend that any number outside the range of |3| constitutes an outlier, endorse this. Usually, outliers cause bias parameter estimates like mean. Outliers may also alter the sum squares in order to appear outlier-like. Typically, sum squares are employed to calculate the standard error. Therefore, the standard error is probably also impacted if the sum square is biased. As a result, the confidence interval is skewed. Once a problem is discovered, the case value must be deleted.

3.10.4 Homoscedasticity Assumption

Regression makes the assumption that residual values outside of the histogram's 3 are outliers. Tabachnick and Fidell (2007), who contend that any number outside the range of |3| constitutes an outlier, endorse this. Usually, outliers generate skew parameter estimates like mean. Outliers may also alter the sum squares in order to appear outlier-like. Typically, sum squares are employed to calculate the standard error. Therefore, the standard error is probably also impacted if the sum square is biased. As a result, the confidence interval is skewed. Once a problem is discovered, the case value must be deleted.

3.10.5 Multicollinearity assumption

Multiple regressions make the assumption that the data are not multicollinear and that there is no significant correlation between the independent variables. The

presence of multicollinearity was examined using the Variance Inflation Factor (VIF) values. Finding the factors that are contributing to the multicollinearity danger and eliminating them with a VIF mean cuff threshold of 5 are potential solutions (Craney & Surles, 2002).

3.10.6 Validity of the Data

Validity of the data can be defined as the extent to which data collection instrument and analytical tool measured what is expected to measure (Saunders *et al*., 2009). In other word, validity of the data derived from reliable source of data collection and simplicity of language used by researcher when constructing research questions and makes them free from ambiguity (Mugenda & Mugenda, 2003). In this study, data validity was secured by expert judgmental, this means that supervisor read out the questionnaires and identify questions that research tools expect to measure.

3.11 Data cleaning and processing

3.11.1 Pilot Study Results

A pilot study was necessary to be carried out in order to check how conversant the scales to the respondents. 20 respondents from OUT were involved. They were supplied each one a questionnaire to fill in. After that, all filled in questionnaires were checked and rechecked. Data were loaded and run into SPSS for checking preliminary results. Results showed the tool was ok. This was because the tools were verified scales. After the pilot study demographic characteristics were advised to be placed at the bottom in order to increase the chance of respondents giving out a correct response before proving biographic data.

3.11.2 Error Check

All data filled by respondents in questionnaires were checked for errors. Then all data entry was rechecked by the second knowledgeable person who crosschecked both data set and questionnaires accuracy in order to make sure that all data were correctly entered. Errors were found and corrected. Further descriptive statistics error checking was done to spot entries outside the scale response range .

3.11.3 Missing Data

SPSS Missing Value Analysis (MVA) was conducted in order to determine the missing data. Both non monetary and employees performance scale was less than 5%, suggested random missing; hence, imputation was done using excel.

A standard regression equation usually takes into account the Ordinary Least Square (OLS) regression assumptions. To achieve the regression analysis objectives, the crucial assumptions were checked for the data to be able to qualify for analysis. The Ordinary Least Square has five assumptions that were reviewed (Green, 2008; Park, 2011). These are linearity, normality, outlier, Homoscedasticity and multicollinearity.

3.12 Reliability of the Data

The degree to which a research instrument generates identical results under consistent settings is referred to as its reliability (Kothari, 2004). In this study, the researchers used Cronbach's Alpha method to assess the data reliability in the study variables. Furthermore, the data's reliability was established by the discovery of the data gathered, the categories of data, the techniques used for data collecting, the time

needed for data collection, the minimal mistakes and bias, and the degree of accuracy attained.

3.13 Ethical Consideration

The researcher followed the concept of voluntary participation, which states that subjects not be coerced into participating in this study. The study's goal was explained, and participants gave the option of participating or not. The researcher safeguard the participant's anonymity; they ensured that the information acquired not be made available to anybody who is not directly engaged in the study. As a result, it was critical to reassure participants that the personal information they contribute will not be revealed.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Overview

The findings on factors affecting humanitarian logistics towards corona pandemic control a downstream analysis in Tanzania are presented and discussed in this chapter. This study had three objectives: to assess the effect of Government policies on effectiveness of humanitarian logistics at Muhimbili national hospital, to determine the effect of information flows on effectiveness of humanitarian logistics at Muhimbili national hospital and to determine the effect of financial resources on effectiveness of humanitarian logistics at Muhimbili national hospital.

The sample characteristics are described in Section 4.2. The study variables based on indicators are described in Section 4.3. The descriptive statistics, reliability, and correlation among study constructs are shown in Section 4.4. In Section 4.5 the regression results are presented, followed by a discussion of the findings in Section 4.6.

4.2 Sample Descriptions

The sample descriptions under study were gender, age, and educational level. Frequencies, percentages and means were analyzed.

4.2.1 Gender Distribution

Table 4.1 presents gender distribution as an essential component in data collecting from personnel. Respondents were asked to indicate their gender category in order to assist researchers in demonstrating the features of the study population. According to

the findings, the majority of the respondents were male who accounted almost 75% of all participants. Female were only 25% of total respondents. The findings imply that procurement duties at MNH may be done by either gender as long as the person is capable of achieving institutional goals.

Table 4. 1 Gender Distribution

		Frequency	Percent
Valid	Male	123	74.5
	Female	42	25.5
	Total	**165**	**100.0**

Source: Data Analysis, (2022)

4.3.2 Distribution of Age

The age distribution of the employees was critical to the study's findings. According to the findings, the majority of the staff's age range is between 36 and 40 years old who account nearly 1/3rd of all participants followed by 31 to 35 years old who constitute ¼ of all participants. The last group was those Above 51 years who account just 5% of all participants followed by 41 to 45 years who account almost 10%.

This means that MNH workers are capable of delivering desired outcomes and better services in a cost-effective, effective, and efficient manner.

Table 4. 2 Age categories

		Frequency	Percent
Valid	Below 30 years	23	13.9
	31 to 35 years	41	24.8
	36 to 40 years	43	26.1
	41 to 45 years	20	12.1
	46 to 50 years	29	17.6
	Above 51 years	9	5.5
	Total	**165**	**100.0**

Source: Study findings (2022)

4.2.3 Respondents' Education

Table 4.3, presents the participant's education level. The majority of the respondents are holders first degree who constitute of nearly 30% of all participants followed by a master's degree who constitute just above 20%. The last group is PhD holders who constitute less than 5% followed by those with certificates who constitute just above 5%. The findings imply that the MNH employees are capable of performing procurement operations and meeting institutional objectives.

Table 4. 3 Participant's Education Categories

		Frequency	Percent
Valid	Certificate	11	6.7
	Diploma	29	17.6
	Advanced diploma	35	21.2
	First degree	45	27.3
	Post Graduate (Master's)	38	23.0
	PhD	7	4.2
	Total	**165**	**100.0**

Source: Data Analysis, (2022)

4.3 Descriptive Statistics for the Variables Results

Three independent variables were analyzed namely the effect of Government policies, the effect of information flows, and effect of financial resources. Lastly was the dependent variable effectiveness of humanitarian logistics at Muhimbili national hospital. Means, standard deviation, maximum and minimum scores were analyzed. The cut-off points suggested in Albdour & Altaraweh (2014), adjusted to 5-point rating levels were used. The cut off depend on many things. It also depends on type of scale and what it measures. But if you are using likert scale then, for likert scale 1

to 2.33 (low), 2.34 to 3.67 (moderate), and 3.67 to 5 (high). To do this there is need to change scoring of your scale from 1 to 5 for each item.

4.3.1 Descriptive Statistics Results for the effect of Government policies Variable

Descriptive statistics (mean, standard deviation, minimum, and maximum scores) were computed for the effect of government policies variable scale (Table 4.4). The results shows that the government delegated authority to handle emergency situations as soon as possible scored highest (M = 4.1030, S.D. = 1.07422) followed by Tanzania import policies has improved responsiveness (M = 4.0121, SD = .99381). Thirdly was Tanzania empowers local governments to deal with emergency circumstances by expanding free humanitarian imports (M = 3.9939, SD = .99079). The least way through which effect of government policies variable were described was that government assistance has enhanced the delivery of humanitarian relief (M = 2.5333, SD = 1.28088) followed by Tanzania has adaptable import processes and policies to meet humanitarian requirements in times of crisis (M = 2.5455, SD = 1.40753) and third from bottom was Tanzania levies high charges on humanitarian products such as food (M =2.6121, SD = 1.39068).

Table 4.4 Descriptive Statistics Results for the effect of Government policies Variable

	Min.	Max.	Mean	Std. Dev.
Tanzania has adaptable import processes and policies to meet humanitarian requirements in times of crisis.	1.00	5.00	2.5455	1.40753
Tanzania empowers local governments to deal with emergency circumstances by expanding free humanitarian imports.	1.00	5.00	3.9939	.99079

Tanzania has adaptable import policies to deal with droughts both before and after they occur.	1.00	5.00	3.8182	1.04340
Tanzania import policies has improved responsiveness	1.00	5.00	4.0121	.99381
Tanzania humanitarian regulations has enhanced delivery	1.00	5.00	3.9030	1.06625
Export restrictions play a crucial role in ensuring food supply in disaster-affected areas.	1.00	5.00	3.8848	1.03833
Tanzania levies high charges on humanitarian products such as food.	1.00	5.00	2.6121	1.39068
Tanzania export restrictions bring large impact on food security	1.00	5.00	3.8182	1.07790
Humanitarian security policies have increased in quality.	1.00	5.00	3.8606	1.05863
Tanzania has implemented security and humanitarian strategies to increase flexibility	1.00	5.00	3.9333	1.00081
The government and other development partners educate residents on how to prepare for pandemic	1.00	5.00	3.8182	1.10582
Government assistance has enhanced the delivery of humanitarian relief.	1.00	5.00	2.5333	1.28088
Government established standards mechanism & procedures to reduce risks associated with disasters	1.00	5.00	3.8720	1.04591
The government makes a concerted effort to improve responsiveness.	1.00	5.00	3.7697	1.15095
The government delegated authority to handle emergency situations as soon as possible.	1.00	6.00	4.1030	1.07422

Source: Data Analysis,

4.3.2 Descriptive Statistics Results for the effect of Effect of Information Flow Variable

Descriptive statistics (mean, standard deviation, minimum, and maximum scores) were computed for the effect of information flows variable scale (Table 4.5). The results shows that our organization share trustworthy operational budget data with business partners scored highest (M = 4.2667, S.D. = .80496) followed by Monitor humanitarian programs (M = 4.2545, SD = .93479). Thirdly was Errors are greatly reduced and operational accuracy is improved when an information system is used. (M = 4.2256, SD = .89529). The least way through which the effect of information flows variable was described was that as part of our supply chain activities, we have worked to create an information system that is interoperable with our suppliers' and

customers' systems. (M = 3.9455, SD = 1.08905) followed by our organization order management, for example, requires correct information communication with trading partners. (M = 4.0061, SD = 1.07350) and third from bottom was the present information system is user-friendly and offers consistent documentation. (M = 4.0364, SD = .99933).

Table 4.5 Descriptive Statistics Results for the effect of Effect of Information Flow Variable

	Min	Max.	Mean	Std. Dev.
Our organization share timely information with business partners, such as a Local Purchase Order (LPO) and a delivery note	1.00	5.00	4.2424	.94451
Our organization order management, for example, requires correct information communication with trading partners.	1.00	5.00	4.0061	1.07350
Our organization and business partners should communicate detailed demand and planning information.	1.00	5.00	4.2242	.85790
Our organization exchange adequate sales management information with trading partners.	1.00	5.00	4.1091	.95648
Our organization share trustworthy operational budget data with business partners.	1.00	5.00	4.2667	.80496
Monitor humanitarian programs	1.00	5.00	4.2545	.93479
Our organization openly shares information with humanitarian organisation.	1.00	5.00	4.1030	.99158
Our suppliers and customers openly share information with us.	1.00	5.00	4.1333	1.02132
The information shared by participants (suppliers, manufacturers and customers) in our supply chain is available on a real-time basis.	1.00	5.00	4.1697	.96034
Our organization is capable of responding to consumer demands through information exchange with supplier.	1.00	5.00	4.1152	.98406
Throughout our supply chain, information distortion is kept to a minimum.	1.00	5.00	4.1333	1.09061
As part of our supply chain activities, we have worked to create an information system that is interoperable with our suppliers' and customers' systems.	1.00	5.00	3.9455	1.08905
Errors are greatly reduced and operational accuracy is improved when an information system is used.	1.00	5.00	4.2256	.89529

The present information system is user-friendly and offers consistent documentation.	1.00	5.00	4.0364	.99933
Information system increases the level of cooperation/interaction between functional areas	1.00	5.00	4.1455	.88521

Source: Data Analysis, (2022)

4.3.3 Descriptive Statistics Results for Effect of Financial Resources Variable

Descriptive statistics (mean, standard deviation, minimum, and maximum scores) were computed for the effect of financial resources variable scale (Table 4.6). The results shows that responsiveness scored highest (M = 4.2000, S.D. = .85682) followed by Cost-effective practices (M = 4.1646, SD = .86000). Thirdly was Budget increased the delivery of humanitarian needs in an emergency circumstance. (M = 4.1585, SD = .86471). The least way through which the effect of financial resources variable was described was Inventory holding costs (M = 3.7030, SD = 1.25048) followed by the organization has received sufficient cash from humanitarian players to help the victims' health (M = 3.9212, SD = 1.05915)

Table 4.6: Descriptive Statistics Results for Effect of Financial Resources Variable

	Min.	Max.	Mean	Std. Dev.
Organisation has an appropriate funding to satisfy the humanitarian needs of victims in a timely manner.	1.00	5.00	4.0909	1.02302
The organization has received sufficient cash from humanitarian players to help the victims' health.	1.00	5.00	3.9212	1.05915
Private contributors and the government provide finances and other financial resources to the organization.	1.00	5.00	4.1091	.89727
The budget improved the responsiveness of humanitarian requirements to victims.	1.00	5.00	4.0182	.99064

Budget increased the delivery of humanitarian needs in an emergency circumstance.	1.00	5.00	4.1585	.86471
Organisation has enough facilities to store humanitarian needs prior to pandemic occurred	1.00	5.00	4.0424	1.08959
Organisation minimize inventory holding costs through the use of information system to trace and monitor requirements	1.00	5.00	3.7758	1.12267
Organisation use cost-effective practices in humanitarian to improve overall logistics and supply chain performance	1.00	5.00	4.0667	.87745
Inventory adequacy in organization has improved	1.00	5.00	4.1091	.97542
Responsiveness	1.00	5.00	4.2000	.85682
Minimum inventory cost enhanced flexibility in humanitarian operations	1.00	5.00	4.1091	1.01824
Inventory holding costs	1.00	5.00	3.7030	1.25048
Cost-effective practices	1.00	5.00	4.1646	.86000
Inventory adequacy	1.00	5.00	4.1455	.85007
Minimum inventory cost	1.00	5.00	4.1394	.87581

Source: Data Analysis, (2022)

4.3.4 Descriptive Statistics Results for Effectiveness of Humanitarian Logistics at Muhimbili national hospital Variable

Descriptive statistics (mean, standard deviation, minimum, and maximum scores) were computed for the Effectiveness of Humanitarian Logistics at Muhimbili national hospital scale (Table 4.7). The results shows that MNH has ability to bring educational needs for pandemic victims scored highest (M = 4.2606, S.D. = 1.01150) followed by Responsiveness (M = 4.2545, SD = .85293). Thirdly was Highest service level (M = 4.2364, SD = .93633). The least way through which Effectiveness of Humanitarian Logistics at Muhimbili national hospital was described was Bring free defect (M = 3.7091, SD = 1.50210) followed by Good infrastructure improved delivery of the products during pandemic (M = 3.8303, SD = 1.40827). Thirdly was Effective delivery enhanced humanitarian logistics performance during pandemic (M = 3.8727, SD = 1.27434)

Table 4.6: Descriptive Statistics Results for Effectiveness of Humanitarian Logistics at Muhimbili national hospital Variable

	Min.	Max	Mean	Std. Dev.
MNH has improved products delivery during pandemic	1.00	5.00	3.8303	1.19258
MNH has improved logistics operations during pandemic to deliver medical supplies to victims	1.00	5.00	3.9818	1.17636
MNH has ability to bring educational needs for pandemic victims	1.00	5.00	4.2606	1.01150
Effective delivery enhanced humanitarian logistics performance during pandemic	1.00	5.00	3.8727	1.27434
Good infrastructure improved delivery of the products during pandemic	1.00	5.00	3.8303	1.40827
MNH has flexible cost structure to improve staff knowledge in humanitarian during pandemic	1.00	5.00	4.0000	1.08200
MNH has flexible control mechanisms to improve humanitarian logistics during pandemic	1.00	5.00	3.9576	1.14950
MNH has flexible demand management to improve humanitarian logistics during pandemic	1.00	5.00	3.9939	1.07917
Flexibility in humanitarian activities improved logistics performance during pandemic	1.00	5.00	4.0485	1.04067
Flexibility in humanitarian activities enhanced quality during pandemic	1.00	5.00	4.1879	.93436
Bring on time humanitarian needs	1.00	5.00	4.3091	.81613
Bring value added	1.00	5.00	4.0364	1.04701
Bring free defect	1.00	5.00	3.7091	1.50210
Highest service level	1.00	5.00	4.2364	.93633
Responsiveness	1.00	5.00	4.2545	.85293

Source: Data Analysis, (2022)

4.4 Variables Descriptive Statistics, Reliability and Correlation Analysis

Descriptive statistics were computed for the Independent variables. All scored high mean score on factors affecting humanitarian logistics on corona pandemic control a downstream analysis in Tanzania: a case study of Muhimbili national hospital. The cut-off points suggested in Albdour & Altaraweh (2014), adjusted to 5-point rating levels were used. The cut off depend on many things. It also depends on type of

scale and what it measures. But if you are using likert scale then, for likert scale 1 to 2.33 (low), 2.34 to 3.67 (moderate), and 3.67 to 5 (high). To do this you should change scoring of your scale from 1 to 5 for each item.

The effect of Government policies on effectiveness of humanitarian logistics at Muhimbili national hospital was found to be high (M = 3.5724, SD = .63423). effect of information flows on effectiveness of humanitarian logistics at Muhimbili national hospital variable was found to be high as well (M = 4.1443, SD = .84043), and the effect of financial resources on effectiveness of humanitarian logistics at Muhimbili national hospital was also was found to be high (M = 4.0491, SD = .72607). Although all independent variables were high still the effect of information flows variable scored highest mean followed by and the effect of financial resources variable results. Last was effect of Government policies variable. The dependent humanitarian logistics at Muhimbili national hospital scored also high (M = 4.0339, SD = .51659)

Using (Cohen, 1988) cut off for correlation, the correlations between pairs of individual dimensions of the independent variables were between. .078 and .211 indicating moderate and significant correlation.

The effect of government policy was significantly positively correlated with the humanitarian logistics at Muhimbili national hospital ($r = .211$, $p < .001$). The effect of the effect of information flows was found to high, significant and positively correlated to humanitarian logistics at Muhimbili national hospital ($r = .118$, $p < .05$). Effect of the effect of financial resources was found to be high, significant and

positively correlated to humanitarian logistics at Muhimbili national hospital (r = .078, p = .01)

Scale test for reliability analysis was carried out to determine the internal consistency of the measurements scales. Cronbach's alphas (Table 4.7) in the diagonal show good internal consistency for all variables tested for reliability. The effect of government policies (.848) , the effect of information flows (.977) and the effect of financial resources(.940) The dependent variable effectiveness of humanitarian logistics at Muhimbili national hospital (.738) (George and Mallery, 2014).

Table 4.7 Variables Descriptive Statistics, Reliability and Correlation Analysis

		Mean	Std. Dev.				
GP	Pearson Correlation	3.6301	.63423	**848**			
IF	Pearson Correlation	4.1443	.84043	.120**	**.977**		
FR	Pearson Correlation	4.0491	.72607	.186*	.886**	**.940**	
HCPC	Pearson Correlation	4.0339	.51659	.211***	.118*	.078**	**.738**

*p < 0.05 (two – tailed), **p< 0.01 (two – tailed) ***p < 0.001 (two – tailed)

GP = Government policy, IF = Information Flow, FR = Finance Resources and HCPC = humanitarian logistics at Muhimbili national hospital

Source: Data Analysis, (2022)

4.5 Multiple Regression analysis

The factors affecting humanitarian logistics (independent variables) on effectiveness of humanitarian logistics at Muhimbili national hospital was estimated using multiple regression analysis (dependent variable). Tables 4.8-4.10 present the findings. Table 4.8 summarizes the model, with the corrected R^2 statistics (.188) being of particular importance. This means that 18.8% of the difference in effectiveness of humanitarian logistics at Muhimbili national hospital.

Table 4.8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.434[a]	.188	.173	.47407

a. Predictors: (Constant), FR, GP, IF
b. Dependent Variable: HCPC

Source: Data Analysis, (2022)

The findings of the analysis of variance (ANOVA) are shown in Table 4.9. It's also referred to as model fit outcomes. The F-statistics and their related sig. value are of particular interest in this table. The F-statistics is 12.120 percent ($p < 0.001$) according to the results. The findings support the model's prediction that "the model has power to predict effectiveness of humanitarian logistics at Muhimbili national hospital from factors affecting humanitarian logistics." As a result, it appears that the model may accurately predict effectiveness of humanitarian logistics based on factors affecting humanitarian logistics scores

Table 4.9 Anova Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.172	3	2.724	12.120	.000[b]
	Residual	35.285	157	.225		
	Total	43.456	160			

a. Dependent Variable: HCPC
b. Predictors: (Constant), FR, GP, IF

Source: Data Analysis, (2022)

The coefficients of the regression model are presented in Table 4.10. The coefficients demonstrate that government policies predicts effectiveness of humanitarian logistics positively, with a standardized B =.133 ($p < 0.01$) value. According to these findings,

effectiveness of humanitarian logistics whose direct affected with government policies characteristics improved by 18.8 %. The findings also suggest that information flow B =.510 ($p < 0.001$) significantly and positively predicts effectiveness of humanitarian logistics. Financial resources likewise significantly and favorably predicts effectiveness of humanitarian logistics, B = .557 ($p < 0.001$)

Table 4.10: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	3.692	.335		11.031	.000		
	GP	.133**	.061	.161	2.193	.030	.959	1.043
	IF	.510***	.096	.826	5.313	.000	.214	4.679
	FR	.557***	.112	.780	4.965	.000	.210	4.768

a. Dependent Variable: HCPC
*p < 0.05 (two – tailed), **p< 0.01 (two – tailed) ***p < 0.001 (two – tailed)

Source: Data Analysis, (2022)

4.6 Outliers, Normality, Linearity and Homoskedasticity Regression Assumptions Testing Results for Ethics

The distribution of residuals is represented by a bell-shaped curve in the histogram (figure 4.1). (Mean is close to 0 and SD close to 1, evidencing of a normal distribution of residuals). In addition, residuals plot along the diagonal line, as seen in Figure 4.2. As a result, there isn't much departure from the usual. The histogram (Figure 4.1) reveals that some of the residual values are within the 3 cutoff,

indicating that there are no outliers. Any value outside the cutoff of |3|, according to Tabachnick and Fidell (2007), is an anomaly.

The diagonal dots in Figure 4.3 are speeded up along the diagonal line, indicating that the data is linear.

The case residual dots are dispersed rectangularly about zero (0) in Figure 4.3, implying homoscedacististy (equality of variance). As a result, there is no reason to suspect heteroscedasticity (unequal variance in the data).

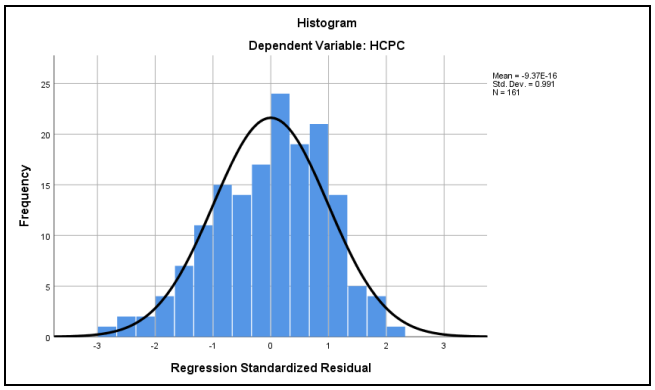

Figure 4.1 Histogram

Source: Data Analysis (2022)

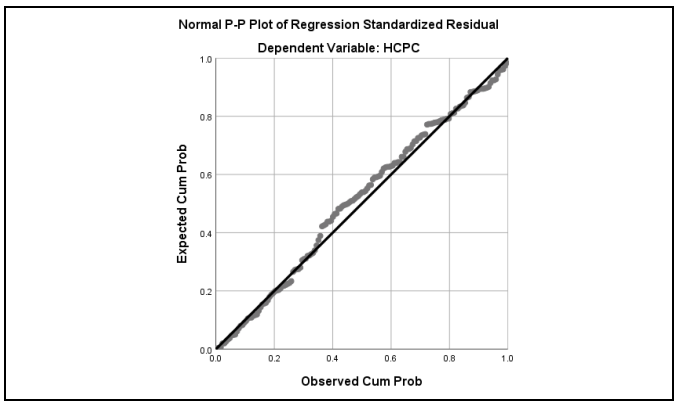

Figure 4.2 Normal P-Plots for the Standardized Residual Variables

Source: Data Analysis (2021)

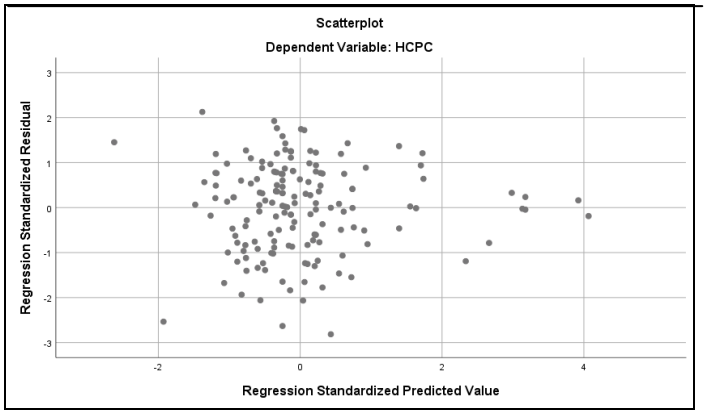

Figure 4.3: Scatter plot for the Standardized residual for Variables

Source: Data Analysis (202)

4.10 Discussion of the Findings

This section discusses the data analysis findings by connecting them to the concepts and theories used in this study. Discussion was based on the specific objectives of this study as to assess the effectiveness of Government policies on humanitarian logistics toward corona pandemic control at Muhimbili national hospital, to determine the effectiveness of information flows on humanitarian logistics toward corona pandemic control at Muhimbili national hospital, and determine the effectiveness of financial resources on humanitarian logistics toward corona pandemic control at Muhimbili national hospital.

4.7.1 Effect of Government Policy on Effectiveness of Humanitarian Logistics at Muhimbili National Hospital

The effect of government policy on effectiveness of humanitarian logistics at Muhimbili National Hospital was analyzed. This study found that government policy

was statistically significant and positively related to effectiveness of humanitarian logistics at Muhimbili National Hospital. These results are similar to the findings by Beyene (2018) who found that differences in government factors and funding of the variance in humanitarian logistics toward corona pandemic control. In line with this finding, Mebrahtom (2016) found that government-related factors accounted most of the performance of humanitarian relief groups, and the model predicted that adding another unit of government problems will reduce performance of the humanitarian logistics. The government-related difficulties had a detrimental impact on responsiveness, collaboration, flexibility, and cost performance. Among these are government bureaucracy, stalled national policies regarding humanitarian groups, registration requirements, customs and clearance delays, and tax exemption processes. This implies that government must minimize government-related impediments to humanitarian logistics effectiveness by refining rules and regulations governing the humanitarian aid process, the government must primary accountable for protecting its people from catastrophe. As a result, the government should strive quickly to decrease delays and expenses associated with loading and unloading. moreover Dube, Van der Vaart., Teunter, Van Wassenhove (2016) found that the availability of financial resources is not a prerequisite for host government control. We found host governments that had developed subtle ways of regulating humanitarian logistics without using significant financial resources. For example, random checks and high penalties for non-compliance are common, relatively low-cost, tactics employed by institutions (Sutinen and Kuperan, 1999). Second, although political motives are widely cited as the reason for host governments imposing tight regulations (Balcik et al., 2010; Kunz and Reiner, 2012; Pettit and Beresford, 2005;

Tomasini and Van Wassenhove, 2009), we found substantial evidence of genuine reform leading to tight regulations. For example, several respondents mentioned that host governments receiving in-kind assistance for healthcare increasingly impose stringent quality control measures in response to the massive influx of counterfeit medicines in developing countries (Fernandez et al., 2008). This perhaps partially explains why the bulk of regulatory challenges in inventory management relate to international sourcing.

4.7. 2 Effect of Information Flow on Effectiveness of Humanitarian Logistics at Muhimbili national hospital

This study found that information flow was statistically, significantly and positively related to effectiveness of humanitarian logistics at Muhimbili national hospital. The effect of information flow on humanitarian logistics toward corona pandemic control was the second objective of this study. The findings are similar to the findings by Yousefi & Abilabaei (2015) who found that information quality has great and direct effect on performance of pharmaceutical supply chain pharmaceutical. This means that information quality, in conjunction with information sharing, has a favorable association with performance quality in the pharmaceutical supply chain. Based on RBV theory, information has regarded as intangible resources in organisation as organisation are now required to go to great lengths to create relationships and share information across supply chain networks in order to improve the quality of their products and services while also strengthening their cost and sustainability performance. The findings is supported by to Kreidler (2013) on IT used who argues that IT application usage in relief support of IDPs and refugees between 1998

and 1999 was effective as compared to those that did not use the IT applications in relief theatres such as Rwanda (1994), Bosnia (1994-95) and Somalia (1992-93). Morever The regression shows that at constant zero of the impudent variable that is IT usage there will be an increase in relief logistics effectiveness scores. The study also established a significant 27 relationship between relief logistics effectiveness and the independent variable IT usage. The findings were in line with studies by Dess, Lumpkin and Eisher (2019) and Sople (2020) who confirmed that information technology solutions enable better logistics decision making, provide information on costs, lead to more control over the physical distribution and relief supply of goods and services, make accounting more accurate, help link data and systems with the systems of supplier and assist in accessing the performance of key logistics functions like the number of on time deliveries from suppliers, the number of outstanding payments, the cost of running warehouses or the total inventory value of distribution centres.

The findings show that there is a relationship between IT usage and relief logistics effectiveness. This supports a mutual relationship between IT usage and relief logistics effectiveness. The relation is positive, meaning an increase in IT usage resulting in higher relief logistics effectiveness. The findings were similar to Davis and Fugate (2012) as well as Lindenberg and Bryant (2011) findings in that IT adoption and usage enhances relief operations by supporting the field personnel in coordination and planning interventions. This has transformed previous relief activities termed as traditional. The personnel is empowered with access to information and dissemination of the same for quick and efficient response where needed.

4.7.3 Effect of Financial Resources on Eeffectiveness of Humanitarian Logistics at Muhimbili National hospital

This study found that financial resources as a factor is statistically, significantly and positively related to effectiveness of humanitarian logistics at Muhimbili national hospital. The effect of financial resources on humanitarian logistics toward corona pandemic control was the third objective of this study. These results also similar to the findings by Beyene (2018) revealed that donor financing explains power of the variation in humanitarian logistics performance, and every unit increase in donor funding boosts humanitarian logistics performance by moderate assuming all other factors remain constant. This outcome is statistically significant above zero.

In line with this findings by Demeke (2016) fond that holding other parameters constant, a unit change in donor contributions for logistics facilities and capacities, as well as long-term catastrophe planning, results in high rise in humanitarian logistics performance. Based on RBV theory, information and fund flows are exchanged, and contributors and recipients are linked. As a result, humanitarian logistics units must grasp donors' positions and give timely financial reports to donors in order to develop confidence and preserve financing. This appears to indicate that adequate funding is required to support effective and efficient humanitarian logistics performance. It also implies that humanitarian aid groups must understand the donors' plans and interests in order to preserve and increase their contributions.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the study findings, conclusion and recommendations and area for further studies. It begins with an overview of the findings, then moves on to conclusions, recommendations, and suggestions for further study.

5.2 Summary of the Study Findings

5.2.1 Effect of Government Policy on Humanitarian Logistics toward Corona

The findings revealed that government policy greatly influence the humanitarian logistics toward corona pandemic in Tanzania. KMO and Bartlett's Teston results indicated that the sample size was adequacy appropriate for the further analysis. The results also show that government policy has great contribution on the variation of humanitarian logistics toward corona pandemic. Based on multiple regression analysis, the results indicated that null hypothesis that there is no significant effect of government policy on humanitarian logistics toward corona pandemic was rejected. Therefore, there is significant effect of government policy on humanitarian logistic toward corona pandemic in Tanzania.

5.2.2 Effect of Information Flow on Humanitarian Logistics toward Corona

The findings revealed that information flow greatly influence the humanitarian logistics toward corona pandemic in Tanzania. KMO and Bartlett's Teston results

show that the sample size was adequacy appropriate for the further analysis. The results also show that information flow has great contribution on the variation of humanitarian logistics toward corona pandemic. Based on multiple regression analysis, the results indicated that null hypothesis that there is no significant effect of information flow on humanitarian logistics toward corona pandemic was rejected. Therefore, there is significant effect of information flow on humanitarian logistic toward corona pandemic in Tanzania.

5.2.3 Effect of Financial Resources on Humanitarian Logistics toward Corona

The findings revealed that financial resources greatly influence the humanitarian logistics toward corona pandemic in Tanzania. Results show that the sample size was adequacy appropriate for the further analysis. The results also show that financial resources have great contribution on the variation of humanitarian logistics toward corona pandemic. Based on multiple regression analysis, the results indicated that null hypothesis that there is no significant effect of financial resources on humanitarian logistics toward corona pandemic was rejected. Therefore, there is significant effect of financial resources on humanitarian logistic toward corona pandemic in Tanzania.

5.3 Conclusion

The main objective of this study was to assess factors affecting humanitarian logistics toward corona pandemic in Tanzania: A case of Muhimbili National Hospital (MNH). Specifically, this study was guided by three (3) objectives; to assess the effectiveness of Government policies on humanitarian logistics toward

corona pandemic at Muhimbili national hospital, to determine the effectiveness of information flows on humanitarian logistics, and to determine the effectiveness of financial resources on.

5.3.1 Effect of Government Policy on Humanitarian Logistics toward Corona

Based on the study findings, the study concludes that government policy has significant effect on humanitarian logistics toward corona pandemic in Tanzania. Therefore, friendly and flexible import policy, security policy and strong government support to humanitarian organisations positively would influence humanitarian logistics toward corona pandemic in Tanzania. On another words, strong government policies and inadequate support on humanitarian issues would affect negatively humanitarian operations during toward corona pandemic.

5.3.2 Effect of Information Flow on Humanitarian Logistics toward Corona

Based on the study findings, the study concludes that information flow has significant effect on humanitarian logistics toward corona pandemic in Tanzania. Therefore, appropriate information quality and effective way of sharing information to humanitarian organisations positively would influence humanitarian logistics toward corona pandemic in Tanzania. On another words, distortion of information and ineffective way of sharing information on humanitarian issues would affect negatively humanitarian operations during toward corona pandemic. The study concludes that, IT usage ensured effective coordination between the relief organizations, the affected people as well as the stakeholders involved. The coordination is as a result of increased automation, flexibility, information flow, and

resource planning and response relationship. The study concludes that if all independent variables are held at zero, there will be an increase in relief logistics effectiveness. On the same relief logistics had a statistical significant relationship with IT usage. The study further concludes that there is a relationship between IT usage and relief logistics effectiveness. This supports a mutual relationship between IT usage and relief logistics effectiveness. This portrays a positive relationship thus IT usage increase reflects an increase in relief logistics effectiveness.

5.3.3 Effect of Financial Resources on Humanitarian Logistics toward Corona

Based on the study findings, the study conclude that financial resources has significant effect on humanitarian logistics toward corona pandemic in Tanzania. Therefore, appropriate budgeting allocation, donors support and minimum inventory cost to humanitarian organisations positively would influence humanitarian logistics toward corona pandemic in Tanzania. On another words, inadequate budgeting, lack of donors fund and high inventory cost on humanitarian issues would affect negatively humanitarian operations during toward corona pandemic.

5.4 Recommendations of the Study

Based on the study findings from analysis, discussion of the findings and conclusions, the study come up with the following recommendations;-

This study found that government policy has significant effect on humanitarian logistics toward corona pandemic. Therefore, the study recommend that government should assess its rules governing humanitarian operations during toward corona pandemic, as well as address the needs of development partners like UNHCR and

UNICEF, in order to guarantee that needs are met in a timely and efficient manner during pandemic.

In addition, the government should place a greater emphasis on implementing standards that improve the performance of logistics operations during pandemic by addressing the benefits and weaknesses encountered during pandemic situation.

Based on the findings that information flow has significant effect on humanitarian logistics toward corona pandemic. The study recommends that organisation should create a reliable sources of information to minimize a number of information which is are not appropriate to humanitarian operation during pandemic situation.

To successfully and effectively raise the organizations' profile, to stay up to date with current advancements and legislation in the field, to oversee and sort out data all the more effortlessly, to accurately monitor their funds, to safely keep up their clients' contact points of interest, to comprehend who is utilizing their administrations and how they can enlarge their range, to empower benefit clients to bolster each other through online groups and to spare expenses and work all the more adequately permitting staff to work remotely and adapt-ably the management of relief organisations in Kenya should upgrade and input more IT services.

Finally, based on the findings that financial resources has significant effect on humanitarian logistics toward corona pandemic. The study therefore recommend that organisation should allocate sufficient funds on humanitarian operations to ensure quality goods and services accessibility during pandemic situation.

5.6 Potential Areas for Further Studies

This study focused on the factors affecting of humanitarian logistics toward corona pandemic in Tanzania. Specifically, this study guided by three (3) independent variables; Government policies, information flows and financial resources on humanitarian logistics toward corona pandemic in Tanzania. Therefore, another studies should be carried to determine the effect of other government situational factors, environmental factors and infrastructural factors to assess the effect of humanitarian logistics performance during pandemic situation in Tanzania.

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APPENDICES

APPENDIX I

QUESTIONNAIRES

V100: GENERAL INFORMATION

For each and every question provided, kindly select a suitable answer by proving a tick to the box that better reflect your opinions

V101. What is your gender?

a) Male [ ]

b) Female [ ]

V102. Which of the following age group better indicate your age?

a) Below 30years [ ] b) 31to 35years [ ]

c) 36to 40years [ ] d) 41to 45years [ ]

e) 46to 50years [ ] f) 51 years and above [ ]

V103. Which of the following describes your education level?

a) Certificate [ ] b) Diploma [ ]

c) Advanced diploma [ ] d) First degree [ ]

e) Post graduate [ ] f) PhD (Doctor) [ ]

V300: GOVERNMENT POLICIES

For each and every question provided, please select a suitable answer that indicate your level of disagreement or agreement by proving a tick to the box using Likert scale as ranked from; 1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree & 5-Strongly Agree

Code	GOVERNMENT POLICY	1	2	3	4	5
GP1	Tanzania has adaptable import processes and policies to meet humanitarian requirements in times of crisis.	1	2	3	4	5
GP2	Tanzania empowers local governments to deal with emergency circumstances by expanding free humanitarian imports.	1	2	3	4	5
GP3	Tanzania has adaptable import policies to deal with droughts both before and after they occur.	1	2	3	4	5
GP4	Tanzania import policies has improved responsiveness	1	2	3	4	5
GP5	Tanzania humanitarian regulations has enhanced delivery					
GP6	Export restrictions play a crucial role in ensuring food supply in disaster-affected areas.	1	2	3	4	5
GP7	Tanzania levies high charges on humanitarian products such as food.	1	2	3	4	5
GP8	Tanzania export restrictions bring large impact on food security	1	2	3	4	5
GP9	Humanitarian security policies have increased in quality.	1	2	3	4	5
GP10	Tanzania has implemented security and humanitarian strategies to increase flexibility	1	2	3	4	5
GP11	The government and other development partners educate residents on how to prepare for pandemic	1	2	3	4	5
GP12	Government assistance has enhanced the delivery of humanitarian relief.	1	2	3	4	5
GP13	Government established standards mechanism & procedures to reduce risks associated with disasters	1	2	3	4	5
GP14	The government makes a concerted effort to improve responsiveness.	1	2	3	4	5
GP15	The government delegated authority to handle emergency situations as soon as possible.	1	2	3	4	5

V400: INFORMATION FLOW

For each and every question provided, please select a suitable answer that indicate your level of disagreement or agreement by proving a tick to the box using Likert scale as ranked from;

1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree&5-Strongly Agree

Code	Description	1	2	3	4	5
IF1	Our organization share timely information with business partners, such as a Local Purchase Order (LPO) and a delivery note	1	2	3	4	5
IF2	Our organization order management, for example,	1	2	3	4	5

	requires correct information communication with trading partners.					
IF3	Our organization and business partners should communicate detailed demand and planning information.	1	2	3	4	5
IF4	Our organization exchange adequate sales management information with trading partners.	1	2	3	4	5
IF5	Our organization share trustworthy operational budget data with business partners.	1	2	3	4	5
IF6	Our organization openly shares information with humanitarian organisation.	1	2	3	4	5
IF7	Our suppliers and customers openly share information with us.	1	2	3	4	5
IF8	The information shared by participants (suppliers, manufacturers and customers) in our supply chain is available on a real-time basis.	1	2	3	4	5
IF9	Our organization is capable of responding to consumer demands through information exchange with supplier.	1	2	3	4	5
IF10	Throughout our supply chain, information distortion is kept to a minimum.	1	2	3	4	5
IF11	As part of our supply chain activities, we have worked to create an information system that is interoperable with our suppliers' and customers' systems.	1	2	3	4	5
IF12	Errors are greatly reduced and operational accuracy is improved when an information system is used.	1	2	3	4	5
IF13	The present information system is user-friendly and offers consistent documentation.	1	2	3	4	5
IF14	Information system increases the level of cooperation/interaction between functional areas	1	2	3	4	5
IF15	The use of an information system improves the efficiency of supply chain activities.	1	2	3	4	5

V500: FINANCIAL RESOURCES

For each and every question provided, please select a suitable answer that indicate your level of disagreement or agreement by proving tick to the box using Likert scale as ranked from;

1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree&5-Strongly Agree

Code	**Description**	**1**	**2**	**3**	**4**	**5**
FR1	Organisation has an appropriate funding to satisfy the humanitarian needs of victims in a timely manner.	1	2	3	4	5
FR2	The organization has received sufficient cash from humanitarian players to help the victims' health.	1	2	3	4	5
FR3	Private contributors and the government provide finances and other financial resources to the organization.	1	2	3	4	5
FR4	The budget improved the responsiveness of humanitarian requirements to victims.	1	2	3	4	5
FR5	Budget increased the delivery of humanitarian needs in	1	2	3	4	5

	an emergency circumstance.					
FR6	Organization obtains a specific condition on the usage of supporter funds for humanitarian purposes	1	2	3	4	5
FR7	Organisation ensure efficient and effective use of supporter's funds in the transparency manner	1	2	3	4	5
FR8	Supporters usually need that their funds be directed to humanitarian operations	1	2	3	4	5
FR9	Fund support improved humanitarian products delivery	1	2	3	4	5
FR10	Supporters funds enhanced flexibility in humanitarian activities	1	2	3	4	5
FR11	Organisation has enough facilities to store humanitarian needs prior to pandemic occurred	1	2	3	4	5
FR12	Organisation minimize inventory holding costs through the use of information system to trace and monitor requirements	1	2	3	4	5
FR13	Organisation use cost-effective practices in humanitarian to improve overall logistics and supply chain performance	1	2	3	4	5
FR14	Inventory adequacy in organization has improved responsiveness	1	2	3	4	5
FR15	Minimum inventory cost enhanced flexibility in humanitarian operations	1	2	3	4	5

V600: HUMANITARIAN CORONA PANDEMIC CONTROL

For each and every question provided, please select a suitable answer that indicate your level of disagreement or agreement by proving a tick to the box using Likert scale as ranked from;

1-Strongly disagree, 2-Disagree, 3-Neutral, 4-Agree & 5-Strongly Agree

Code	**Description**	**1**	**2**	**3**	**4**	**5**
HCPC1	MNH has improved products delivery during pandemic	1	2	3	4	5
HCPC2	MNH has improved logistics operations during pandemic to deliver medical supplies to victims	1	2	3	4	5
HCPC3	MNH has ability to bring educational needs for pandemic victims	1	2	3	4	5
HCPC4	Effective delivery enhanced humanitarian logistics performance during pandemic	1	2	3	4	5
HCPC5	Good infrastructure improved delivery of the products during pandemic	1	2	3	4	5
HCPC6	MNH has flexible cost structure to improve staff knowledge in humanitarian during pandemic	1	2	3	4	5
HCPC7	MNH has flexible control mechanisms to improve humanitarian logistics during pandemic	1	2	3	4	5
HCPC8	MNH has flexible demand management to improve humanitarian logistics during pandemic	1	2	3	4	5

HCPC9	Flexibility in humanitarian activities improved logistics performance during pandemic	1	2	3	4	5
HCPC10	Flexibility in humanitarian activities enhanced quality during pandemic	1	2	3	4	5
HCPC11	MNH has ability to bring on time humanitarian needs to victims during pandemic	1	2	3	4	5
HCPC12	MNH has ability to bring value added and quality services to pandemic victims	1	2	3	4	5
HCPC13	MNH has ability to bring free defect humanitarian needs to pandemic victims	1	2	3	4	5
HCPC14	Responsiveness enhanced highest service level in humanitarian operations during pandemic	1	2	3	4	5
HCPC15	Responsiveness improved humanitarian logistics performance of firm during pandemic	1	2	3	4	5

Thank You for Your Time

APPENDIX II

VARIABLES MEASUREMENT

Variables	Indicators	Measurement
Government policies	➢ Security policy ➢ Import policy ➢ Government support	5-point Likert scale where 1 strongly disagree and 5 strongly agree 1 – Strongly disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly agree
Information flow	➢ Information quality ➢ Information sharing ➢ Information system	5-point Likert scale where 1 strongly disagree and 5 strongly agree 1 – Strongly disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly agree
Financial resources	➢ Budget ➢ Partners fund ➢ Storage costs	5-point Likert scale where 1 strongly disagree and 5 strongly agree 1 – Strongly disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly agree
Humanitarian corona pandemic control	➢ Delivery ➢ Flexibility ➢ Responsiveness	5 point Likert scale where 1 strongly disagree and 5 strongly agree 1 – Strongly disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly agree