Role of Humanitarian Logistics Management Practices on Performance of Humanitarian Organizations in Kenya: A Case of United Nation World Food Program Kenya

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Abstract: **Humanitarian Logistics is a very important cluster of activities during emergencies due to natural or man-made disasters in an effort to prevent loss of lives and property. However, the subject is not well researched compared to the business logistics in profit making organizations where profit is their main reason of existence. The main objective of this study was to examine the role of humanitarian logistics management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya with the following specific objectives of the study: to examine the role of transport management on performance of humanitarian organizations in Kenya, to evaluate the role of inventory management on performance of humanitarian organizations in Kenya,to examine the role of order processing on performance of humanitarian organizations in Kenya,and to establish the influence of information flow on performance of humanitarian organizations in Kenya. The study adopted a cross sectional survey. The target population of this study was 270 employees from United Nation World Food Programme. A semi- structured questionnaire was administered through the e-mail survey and hand delivery. Secondary data was obtained from both published and unpublished records. The questionnaire was tested for validity and reliability. Both quantitative and qualitative techniques were used to analyses the data with the assistance of SPSS software program version 25. The study found that both transport management practices, Inventory management practices, order processing and information flow as humanitarian logistics management practices had significant role on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya hence the study recommended that managers in the humanitarian organisations in Kenya should include humanitarian logistics management practices in their strategic plan and in particular investment in transport management practices, Inventory management practices, order processing and information flow which may make it easy to bring about innovation in the organisation and good information sharing to both suppliers and clients.**

Keywords: **Transport management, Inventory management, order processing Information flow and Performance.**

1. INTRODUCTION

1.1 Introduction

The humanitarian environment is becoming increasingly complex, requiring a deeper understanding of conflict, security and local and international politics. Humanitarian organisations tend to be highly dependent upon logistics management, which are generally cornerstone humanitarian projects and programmes. Humanitarian logistics refer basically to the concept of procuring, mobilizing, storing and even distribution among other aspects that are aimed at delivering material assistance to the people that have been hit by disaster (van der Vorst, 2004). It refers therefore to the set of a system which helps to deliver humanitarian assistance effectively and promptly based on the optimal use of resources. Humanitarian logistics in emergency relief is the managing humanitarian emergency relief supplies from source to the beneficiaries efficiently and effectively.

The main task of a logistics system is to deliver the appropriate supplies, in good condition, in the quantities required, and at the places and time they are needed. Although mostly concerned with the movement of goods and equipment, relief

logistics also encompasses the relocation of disaster affected people, transfer of casualties, and the movement of relief workers. The basic aim of logistics in humanitarian assistance is to create an art of strategy with which material assistance can be delivered to those that have been hit by disasters. It is important to highlight two important concerns in this regard as provided by the Pan Africa Health Organization (2001).

One, that it is difficult to improvise the logistic structures during an emergency, and thus, there is need to ensure well planned and prepared framework for such kind of emergencies long before they occur. Either, there is need to use the resources at hand in an appropriate manner which can optimize the benefits that the beneficiaries get. Two, that the different stages that designate the flow of material supplies basically from the source to the beneficiaries constitutes of very closely interrelated linkages (Pan Africa Health Organization, 2001)

1.2 Statement of the Problem

Humanitarian logistics is a critical element of a successful relief operation as it focuses on the efficient management of flows of goods, information and services, to respond to the urgent needs of the affected populations under emergency conditions, such as those encountered during and after natural or man-made disasters. Since disaster relief is about 80% logistics it would follow then that the only way to achieve this is through slick, efficient and effective logistics operations and more precisely, supply chain management (Van Wassenhove, 2006). Therefore has been stiff pressure on humanitarian organizations to respond to emergencies in organized, timely, effective and appropriate manner. For decades supply chain performance has been a major area of attraction for researchers. However studies have established the factors affecting supply chain performance in manufacturing and commercial organizations whose focus is to deliver value to customers in order to make profit (Reichhart, 2007) but not in humanitarian management. One of the differences between supply chains for business and for humanitarian actions is the main focus. In business, the focus is the final consumer, who is the input source of funds for the entire chain. In the humanitarian case, the end user rarely participates in a business transaction, having little control over supplies. The humanitarian supply chain focusses on providing humanitarian assistance in the forms of food, water, medicine, shelter, and supplies to areas affected by large scale emergencies.

Nyamu (2012) carried out a study on impact of supply chain management challenges on humanitarian organizations in Kenya. The effects of supply chain challenges on performance of humanitarian organizations are: delay in the delivery of the right products, poor information integration, and uncertainty in demand among others. These studies have left an obvious research gap on examining the role of humanitarian logistics practices on operational performance, which need to be bridged to ensure that humanitarian logistics are improved and managed on the basis of informed evidence. This study will examine the role of humanitarian logistics practices on operational performance and address this gap.

Mohamed, (2012) study was pivotal in that it expunged how supply chain management practices help in the service delivery by humanitarian organizations. However, his study was limited to the performance relationship between supply chains and the service which humanitarian organizations deliver to the people. Moeiny & Mokhlesi, (2011) study established that the success of any humanitarian aid support is only through a properly endowed supply chain. However, the economic and political setting of their study was benchmarked on a developed nation, unlike in a developing nation like Kenya. Given the above shortcomings in the scope and context therefore, this intended study aims at addressing these questions: What is the role of humanitarian logistics on operational performance in Kenya with reference to United Nation World Food Program Kenya?

1.3 Objective of study

This section consisted of both general and specific objectives of the study

1.3.1 General Objective of study

The main purpose of this research was as follows

To examine the role of humanitarian logistics management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya.

1.3.2 Specific Objectives Of Study

The specific objectives for the study was as follows;

1. To assess the role of inventory management on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya.

3. To establish the role of Transport management on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya.

4. To determine the role of information flow on performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya.

5. To establish the role of order processing on performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya.

1.4 Research Question Of Study

1. What is the role of inventory management on performance of humanitarian organizations in Kenya?

2. What is the role of Transport management on performance of humanitarian organizations in Kenya?

3. What is the role of information flow on performance of humanitarian organizations in Kenya?

4. What is the role of order processing on performance of humanitarian organizations in Kenya?

1.5 Significance of the study

The study was significant to the Academicians, Management of United Nation World Food Program Kenya Host Government and researcher.

1.6 Scope of the Study

The study was constraint to only the findings on the role of humanitarian logistics management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya. The study clarified that the World Food Program Kenya administration was not strict to provide any approval for the organization's members needed to respond to the form of inquiry/questionnaires. Also the study's work plan depicts, it was extensively used 12 months from April 2020 to April 2021 from topic drafting to the final project presentation. The study focus mainly on the case study of supply chain department of World Food Program Kenya.

2. LITERATURE REVIEW

2.1 Theoretical Framework

A theoretical framework refers to the theory that a researcher chooses to guide him/her in his/her research. In this study, the theoretical framework will consist of theories/models, which exhibit the role of humanitarian logistics management practices on performance using four theories namely: Social Network Theory, the Resource Based Theory, Contingency Theory.

2.2 Conceptual Framework
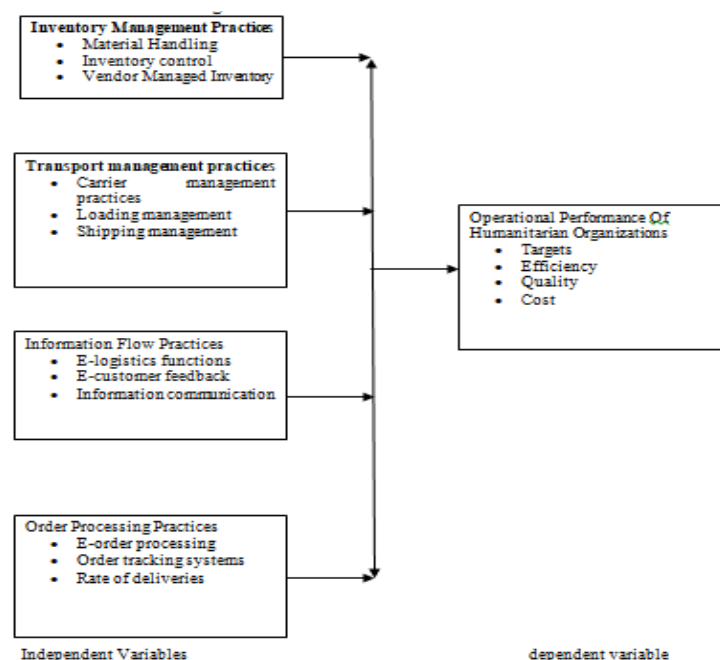
2.3 Empirical Review of relevant literature

Most research has focused on trying to implement and introduce humanitarian logistics and supply chain management to Humanitarian organizations in trying to make their efforts quicker, efficient and cost effective such researchers include, Kyalo and Omwenga(2018) Clark and Culkin (2007), Thomas (2003), Van Wassenhove (2006), Kleindorfer and Van Wassenhove (2004), Thomas and Mizushima (2005), Tomasini and Van Wassenhove (2004), Qiang and Nagurney (2008), Thompson (2008). Some even further suggest Supply Chain Analytics for Humanitarian Logistics Transformation (Nyaguthie, 2008) focuses on the important role of humanitarian logistics, Networks for Africa in support for the implementation of the Millennium Development Goals.

2.4 Critique of literature review relevant to study

The literature review give the overview of the available literature which frames or surrounds the problem being researched which is the role of humanitarian logistics on supply chain performance. The literature review was broad but yet it focused on the previous studies on the role of humanitarian logistics on supply chains performance with reference to United Nation World Food Programme across the globe. Also, there was historical as well as contemporary materials which was able to put the area of study into its context. In this review, the researcher was able to portray some convincing evidence to support its assertions in the empirical studies. On the other end, the researcher was able to cover opposing views in the literature review by indicating future trends in disasters likely to happen if not catered for by the role of humanitarian logistics on supply chain performance with reference to United Nation World Food Programme. This research is also able to describe the theories that explain the role of humanitarian logistics on supply chain performance with reference to United Nation World Food Programme. Finally, the researcher is able to reveal the gaps in the knowledge which the research was filled.

2.5 Research gap

The project intended to fill the existing research gap since there have not been any studies conducted on the role of humanitarian logistics management practices on performance of humanitarian organizations in Kenya in term of inventory management practices, Transport management practices, information flow practices and order processing practices. There has been lack of a clear organizational relationship between the different stakeholders, perhaps giving a roadmap of guidance on what each should observe. This has ultimately led to compromised service delivery by these organizations (Tysseland, 2009). All these are very significant issues that call for their study.

3. RESEARCH METHODOLOGY

3.1 Research Design

According to Orodho (2008) a research design is a comprehensive plan for data collection and analysis. The researchers' beliefs and understanding of the world influence the research design. The study adopted a cross-section survey research design. The survey may be qualitative or quantitative

3.2 Target Population

In this study, the target population comprised 270 Programme officers Logistics and supply chain managers and operations managers which was derived from the departments of supply chain management and operations management functions of United Nation World Food Program Kenya.

3.3 Sampling Frame

The sample frame for this study consisted of a list of 270 employees working at United Nation World Food Program Kenya logistics departments across the Kenya. The list was obtained from the United Nation World Food Program Kenya human resource department registries.

3.4 Sample size and Sampling Techniques

In this section, the study examined sampling technique, sampling procedures, as well as derivation of the sample size. Stratified random sampling was adopted in this study. A sample in this study referred to the respondents from which information was obtained (Kinyanjui, 2014). This study defines sampling as the process of selecting these groups. According to Westfall (2009), stratified sampling can be used when representatives from each subgroup within the

population need to be represented in the sample. The first step in stratified sampling is to divide the population into subgroups (strata) based on mutually exclusive criteria. Random or systematic samples are then taken from each subgroup. The sampling fraction for each subgroup may be taken in the same proportion as the subgroup has in the population.

In view of Mugo (2002), stratified sample is obtained by independently selecting a separate simple random sample from each population stratum. Lammers and Badia (2013) concludes these two views by positing that stratified random sampling is also a form of probability sampling. To stratify means to classify or to separate people into groups according to some characteristics. These separate groupings are referred to as subsets or subgroups. For a stratified random sample, the population is divided into groups or strata. A random sample is selected from each stratum based upon the percentage that each subgroup represents in the population. As recommended by Lammers and Badia (2013), the study applied two approaches of stratified sampling. In the first step, primary interest was in the representativeness of the sample for purposes of commenting on the population and in the second, the focus of interest was the comparison between and among the strata.

Sampling is defined as a process in which a representative of a population is chosen for a specific study. Sampling technique is the method of choosing a sample from a population. There are two main sampling techniques (Zikmund, 2003, Saunders, Lewis and Thornhill, 2009).

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

Where:

n = Sample Size

N = Population (270)

Cv= Coefficient of Variation (0.5)

e= Tolerance of desired level of confidence (at 95% level of confidence = 0.05)

$$n = \frac{270(0.5^2)}{\{0.5^2 + (270-1)0.05^2\}}$$

$$n = \frac{67.5}{0.9225} = 73.1707$$

n = 73.1707

73.1707 is rounded off to 73. The sample size of the study was 73 Programme officers Logistics and supply chain officers and operations officers

3.5 Data Collection Instruments

In this study the researcher used both primary and secondary sources of data. Primary data was gathered using structured and semi-structured questionnaires. Questionnaires are regarded as effective data collection instruments that allowed respondents to give much of their opinions pertaining to the research problem. The questionnaire was designed to address specific objectives, research question .Secondary information sources are data neither collected directly by the user nor specifically for the user. Secondary data means data that are already available (Kothari, 2006). It involves gathering data that already has been collected by someone else. This involves the collection and analysis of published material and information from internal sources. .

3.6 Pilot Test

Before the actual data collection, the pilot test was done. In accordance with (Kothari 2006) at least 10% of the sample consisted of the pilot test that is 7 respondents. In this study, the questionnaire was pre-tested using a representative sample identical to, but not those to be included in the actual study, before administering it to respondents in a field

setting. Such pre-testing is important as it may uncover ambiguity, lack of clarity or biases in questions wording, which should be eliminated before administering to the intended sample. The pilot test helped in detecting potential problems in research design and instrumentation as well as helping to check whether the questions asked are intelligible to the targeted sample and ensure that the measurement instruments used in the study was reliable and valid measures of the constructs of interest (Orodho, 2008). The suitability of the questionnaires of this study was pre-tested by first administering it to about 7 respondents.

3.7 Data Analysis and Presentation

Data analysis refers to examining the coded data critically and making inferences. The presentation of data refers to ways of arranging data to make it clearly understood. Data will be analyzed using both descriptive and inferential statistics. This is because descriptive statistics helps to describe the data collected and aim to summarize a sample while inferential statistics will be used to interpret the meaning of descriptive statistics besides making propositions about population and helped in drawing conclusions. The SPSS Version 25 was used because it is favored for it gave quantitative results. The descriptive statistical tool helped the researcher to describe the data and features of data that will be of interest.

Qualitative data was analyzed by reading the questionnaire. Descriptive statistics (frequencies and percentage) was computed for all the four objectives. Quantitative data was computed for inferential statistics with a 0.05 (5%) test significance level the resulting P values and Coefficients was used to compare the variables, where two sets of the variable was compared to see the extent to which they are related and if they can be used to predict each other.

4. RESEARCH FINDINGS AND DISCUSSION

4.1 Response Rate

Response rate is the percentage of people who responded to a survey. The study sample consisted of 73 Programme officers Logistics and supply chain managers and operations managers of supply chain management and operations management functions of United Nation World Food Program Kenya. The researcher distributed seventy three (73) questionnaires. Among the 70 questionnaires distributed and returned which represent 95.89%. According to Kothari (2004), a response rate of 50% is considered average, 60-70% is considered adequate while anything above 70% is considered to be excellent response rate. This response rate was, therefore, considered good representative of the respondents to provide information for analysis and derive conclusions.

4.2 Pilot Test

Pilot test was test using reliability and validity as follows

4.2.1 Reliability Analysis

The widely used Cronbach's coefficient alpha was employed to assess internal consistency. Bryman and Cramer (1997) stated that reliability of 0.70 is normally acceptable in basic research. Zikmund (2003) also posits that a Cronbach alpha of 0.60 as a minimum is acceptable. All the alpha coefficients ranged between 0.65 and 0.9 as shown in Table 4.1. Based on the coefficient values, the items tested were deemed reliable for this study.

Table 4.1: Reliability coefficient of the study variables

Variables	Cronbach Alpha	Remarks
Inventory Management Practices	0.84	Accepted
Transport Management Practices	0.78	Accepted
Information Flow Practices	0.72	Accepted
Order Processing Practices	0.76	Accepted
Performance Of Humanitarian Organizations	0.79	Accepted

4.2.2 Validity Results

The Kaiser-Mayor-Oklin measures of sampling adequacy show the value of test statistic as 0.576 and p-value < 0.05. Bartlett's test of sphericity had a chi-square value of 9606.959 p value of 0.000. Since the p value is less than 0.05 then it implies that there exist a relationship among the study variables therefore providing a ground for further statistical analysis to be conducted.

Table 4.2: Validity Results

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.576
Bartlett's Test of Sphericity	Approx. Chi-Square	9606.959
	Df	10
	Sig.	.000

Table 4.3: Demographic Information

	Respondent	Frequency	Percent
Gender	Male	46	65.7
	Female	24	34.3
	Total	70	100
Age	21-30	8	11.43
	31-40	32	45.71
	41-50	17	24.29
	50 and above	13	18.57
	Total	70	100
Level of education	O/A Level	5	7.14
	Certificate/Diploma	13	18.57
	Bachelors	33	47.14
	Post Graduate	19	27.14
	Total	70	100
Management Level In Organisation	Non-Management	30	42.86
	Subordinate Management	15	21.43
	Intermediate Management	10	14.29
	Senior (Top) Management	15	21.43
	Total	70	100

Table 4.3 above presents the distribution of the gender of respondents. The table indicates that the majority (65.7%) were male while 34.3% were female. This means that United Nation World Food Program Kenya is male dominated because of hard nature of work.

Most of the respondents (45.71%) were in the age bracket of 31-40 years, 18.57 % were over 50 years, 24.29% were in the age bracket of 41-50 years and 11.43% were between 21 to 30 years. It can be said that most of the employees are in the age bracket of 31 to 50 years. Which they were more energetic ready for hard task

The study sought to establish the respondents' level of education. 7.14% of the respondents had O/A levels, 18.57% of the respondents had certificate/Diploma, 47.14% had a Bachelor's degree while 27.14% of the respondents had post graduate degree. The well-educated respondents mean that they were well informed and furnished this study with better information which added value.

In terms of the level of management in departments, 42.86% of the respondents noted that there were in Non-Management level , 21.43% stated that there were in Subordinate Management level , 14.29% were in Intermediate Management level and the rest were in top management**.**

4.4 Descriptive Analysis for Study Variables on the Likert-Type Scale

Table 4.4: Descriptive Analysis of the role of inventory management practices on performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya

Statements	SA	A	N	D	SD	Mean	Std
I am familiar with inventory management practices in United Nation World Food Program Kenya	22.2	68.4	7	2.5	0	3.79	0.898
United Nation World Food Program Kenya has sufficient and appropriate warehouse to temporarily store supplies during disasters	30.9	37.5	27.2	0	4.4	3.9	0.988
United Nation World Food Program Kenya's warehouse location is very accessible for distribution..	11.0	21.3	52.2	15.4	0	2.28	0.858

United Nation World Food Program Kenya uses warehousing as a facilitator for coordination, sorting, and packaging activities for easier and efficient aid delivery to the beneficiaries.	9.6	32.4	39.7	18.4	0	3.33	0.887
In our organisation, warehouse is situated in a manner to improve material distribution operation.	9.6	28.7	22.1	39.0	0.7	3.07	1.044
Average						**3.274**	**0.935**

Table 4.5: Descriptive Analysis of the role of Transport management practices on performance of humanitarian organizations in Kenya

Statements	SA	A	N	D	SD	Mean	Std
I am familiar with Transport management practices in United Nation World Food Program Kenya	38	56.3	5.7	0	0	3.8	1.0
Our organization uses all modes of transportation available for the movements of supplies and people.	30.9	37.5	27.2	0	4.4	3.9	0.90
Third party transport companies are cooperative to United Nation World Food Programme during emergencies to transport supplies and people to the affected area.	9.6	42.6	28.7	19.1	0	3.43	0.91
United Nation World Food Programme delivers relief supplies to where they are required during emergencies.	17.6	25.7	36.8	19.9	0	3.41	1.00
Our organization distribution team has sufficient information as to whom the supplies should be delivered.	23.5	50.7	4.75	6.61	4.4	3.82	1.01
Our organization distribution team clearly understands the urgency of the situation	33.1	40.4	16.9	8.1	1.5	3.96	0.98
Ovaral						**3.72**	**0.97**

Table 4.6: Descriptive Analysis of the role of information flow practices on performance of humanitarian organizations in Kenya

Statements	SA	A	N	D	SD	Mean	Std
I am familiar with information flow practices in United Nation World Food Program Kenya	35.1	60.8	2.8	1.3	0	3.8	0.81
Quality and speed of information flow in United Nation World Food Program Kenya is not up to the standard.	30.9	33.1	34.6	1.5	0	3.93	0.85
Ability to disseminate accurate and timely information is not satisfactory in United Nation World Food Program Kenya.	18.4	32.4	37.5	11.8	0	3.57	0.92
Use of automated systems or mechanisms to increase logistics efficiency is not in place in United Nation World Food Program Kenya.	41.9	48.5	9.6	0	0	4.32	0.64
United Nation World Food Program Kenya has Modern information control system	34.6	27.9	36	1.5	0	3.96	0.88
United Nation World Food Program Kenya doesn't have access to necessary logistics information from data base of other organizations	14.0	33.1	29.4	19.9	3.7	3.34	1.06
United Nation World Food Program Kenya distribution team clearly understands the urgency of the situation	33.8	30.9	30.1	5.1	0	3.75	0.87

Table 4.7: Descriptive Analysis of the role of order processing practices on performance of humanitarian organizations in Kenya

Statements	SA	A	N	D	SD	Mean	STD
I am familiar with order processing practices in United Nation World Food Program Kenya	26.3	41.1	24.1	8.5	0	2.2	0.9
Orders are processed in a timely manner	35.3	30.1	8.13	24.3	2.2	3.72	1.24
United Nation World Food Program Kenya ensure zero double payment	24.3	59.6	4.4	9.6	2.2	3.94	0.93
United Nation World Food Program use of order tracking systems.	36.8	40.4	15.4	4.4	2.9	4.04	0.98

United Nation World Food Program achieve minimum order processing costs	33.1	27.2	28.7	11	0.0	3.82	1.02
United Nation World Food Program use of order processing systems	30.9	47.8	15.4	4.4	1.5	4.02	0.88

Table 4.8: Organisational performance

	SA	A	N	D	SD	Mean	Std.
United Nation World Food Program have ability to customize product to meet specific client demand	55.1	17.6	22.1	5.1	0.0	3.85	0.77
United Nation World Food Program level of client satisfaction has increased	3.7	16.2	31.6	32.4	16.2	3.41	1.06
United Nation World Food Program has client responsiveness flexibility	0	3.7	33.1	39	24.3	3.84	0.84
There has been a rise in the volume of donated goods	1.5	8.8	27.9	37.5	24.3	3.74	0.97
United Nation World Food Program has low percentage of defects	4.4	2.2	18.4	50.7	24.3	3.88	0.95
Quality of services delivered have increased	55.1	17.6	22.1	5.1	0.0	3.85	0.77
The firm has high percentage of finished goods in transit	1.5	8.8	27.9	37.5	24.3	3.74	0.97
There is efficiency of purchase order cycle time	3.7	16.2	31.6	32.4	16.2	3.41	1.06
						3.69	0.66

4.5 Inferential Statistics

Regression analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables. This can be utilized to assess the strength of the relationship between variables and for modeling the future relationship between them.

4.5.1 Regression analysis on inventory management practices and performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya

The first objective of the study was to establish the role of inventory management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya. The linear regression model was carried out to reveal the role of independent variables on dependent and the findings are as herein presented. As the model summary in Table 4.9 reveal, the R Square (R^2) for the model was 0.690. This implies that inventory management practices role up to 69.0% variation in the performance of humanitarian organizations in Kenya. This confirms that inventory management practices has a positive significant role on the performance of humanitarian organizations in Kenya.

Table 4.9: Model Summary for inventory management practices

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.831[a]	.690	.687	.64329

a. Predictors: (Constant), inventory management practices

The Analysis of Variance (ANOVA) result are as shown in Table 4.10. As the findings indicate, the F-Statistics for the model was 151.575 at a significant level of 0.000<0.05. This implies that there is a significant role of inventory management practices on performance of humanitarian organizations in Kenya. Zachmann (2012) stated that when inventory management practices is well though and directed towards meeting the client needs, it significantly influences the organizational performance by giving it a modern approach to new products and improving the existing products.

Table 4.10: Analysis of Variance (ANOVA) for Inventory Management Practices

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	82.154	1	82.154	151.575	.000[b]
	Residual	36.830	68	.542		
	Total	118.983	69			

a. Dependent Variable: performance of humanitarian organizations in Kenya

b. Predictors: (Constant), inventory management practices

The regression coefficients result as shown in Table 4.11 revealed that the Beta (ß) coefficient for inventory management practices was 0.802 which implies that a unit change in inventory management practices would lead to an increase in performance of humanitarian organizations in Kenya by up to 80.2%. The P-value for Supplier ICT Integration was 0.000 which is less than the standard P-value of 0.05. This implies that there is a significant and positive role of inventory management practices on performance of humanitarian organizations in Kenya. On this merit, we therefore reject the null hypothesis that there is no significant role of inventory management practices on performance of humanitarian organizations in Kenya. The findings are in line with those by Saurav (2019) who established that through continued focus on inventory management practices and procurement process become more flexible and effective thus enhancing firm performance.

Table 4.11: Regression Coefficients for Inventory Management Practices

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.844	.220		3.841	.000
	inventory management practices	.802	.057	.831	14.090	.000

a. Dependent Variable: Performance Of Humanitarian Organizations In Kenya

4.5.2 Regression analysis on Transport management practices and performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya

The second objective of the study was to establish the role of Transport management practices on performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya. The model summary (R, R^2, and adjusted R^2), ANOVA and regression coefficients were the main approaches used to test for the role of Transport management practices on performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya. The model summary results are as shown in Table 4.12. As the results reveal, the R^2 for the model was 0.652. This implies that up to 65.2% variation in performance of humanitarian organizations in Kenya is as a result of Transport management practices.

Table 4.12: Model Summary on Transport management practices

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807[a]	.652	.648	.68254

a. Predictors: (Constant), Transport management practices

The ANOVA test results are shown in Table 4.13. As the findings portray, the F-Statistics was 127.146 at a significance level of 0.000. This is an implication that Transport management practices has positive significant role on the performance of humanitarian organizations in Kenya since the P-value (0.000) is lower than the standard p-value of 0.05. Musau, Namusonge, G., Makokha, & Ngeno, (2017). confirm that Transport Management has significant effect on Organizational Performance Among Textile Manufacturing Firms in Kenya

Table 4.13: ANOVA results for Transport management practices

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	77.522	1	77.522	127.146	.000[b]
	Residual	41.461	68	.6097		
	Total	118.983	69			

a. Dependent Variable: performance of humanitarian organizations in Kenya

b. Predictors: (Constant), Transport management practices

The regression coefficient results on the other hand are as shown in Table 4.14. As the findings portray, the Beta coefficient for Transport management practices is 0.762 while the standardized coefficient if 0.289. The findings imply that a unit increase in Transport management practices would lead up to 76.2% increase in the performance of humanitarian organizations in Kenya. The P-value for the variable is 0.000 which is less than 0.05. This is to imply that Transport management practices has positive significant role on the performance of humanitarian organizations in Kenya.

Table 4.14: Regression Coefficients for Transport management practices

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.995	.228		4.358	.000
Transport management practices	.762	.059	.807	12.900	.000

a. Dependent Variable: performance of humanitarian organizations in Kenya

4.5.3 Regression analysis on information flow practices and performance of humanitarian organizations in Kenya

The third objective of the study was to examine the role of information flow practices on performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya. The linear regression model analysis was carried out to establish the role of information flow practices on performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya and the output included the model summary, the ANOVA results and the regression coefficients. The model summary results are as shown in Table 4.15. As the findings portray, the R^2 for the variable was 0.673. This implies that information flow practices significant role up to 67.3% variation of the performance of humanitarian organizations in Kenya.

Table 4.15: Model Summary for Information Flow Practices

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820[a]	.673	.669	.66115

a. Predictors: (Constant), information flow practices

The ANOVA results are as shown in Table 4.16. As the results portray, the F-statistics for the model was 140.001 at a significant level of 0.000<0.05. This implies that information flow practices significant positive role performance of humanitarian organizations in Kenya.

Table 4.16: ANOVA Results for Information Flow Practices

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	80.080	1	80.080	140.001	.000[b]
	Residual	38.903	68	.572		
	Total	118.983	69			

a. Dependent Variable: performance of humanitarian organizations in Kenya.
b. Predictors: (Constant), Information Flow Practices

The regression coefficients on the other hand are as shown in Table 4.17. As the results portray, the Beta coefficient for Information Flow Practices was 0.785. This implies that a unit change in Information Flow Practices would lead up to 78.5% increase in performance of humanitarian organizations in Kenya. The p-value was 0.000 which is less than the standard p-value of 0.05. This means that there is Information Flow Practices has positive significant role on performance of humanitarian organizations in Kenya hence the rejection of the null hypothesis that Information Flow Practices has no positive significant role on performance of humanitarian organizations in Kenya. The findings are in concurrence with those by Vilachoor (2018) who found out that Information Flow Practices is an essential strategy that determines the extent to which the organization is able to meet the needs of the customers.

Table 4.17: Regression Coefficients for Information Flow Practices

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.879	.226		3.889	.000
Information Flow Practices	.785	.058	.820	13.535	.000

a. Dependent Variable: performance of humanitarian organizations in Kenya

4.5.4 Regression analysis between order processing practices and performance of humanitarian organizations in Kenya.A case of United Nation World Food Program Kenya

The fourth objective of the study was to establish the role of order processing practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya. The linear regression model analysis results are as herein shown in form of model summary, ANOVA test and regression coefficients. The model summary

shown in Table 4.18 revealed that the R^2 for the model was 0.716. This is to imply that 71.6% of the variations in performance of humanitarian organizations in Kenya are as a result of order processing practices.

Table 4.18: Model Table 4.20 Summary for order processing practices

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.846[a]	.716	.713	.61622

a. Predictors: (Constant), order processing practices

The ANOVA results are as shown in Table 4.19. As the findings reveal, the F-statistic for the model is 171.404 at a significance level of 0.000<0.05. This is an implication that order processing practices significantly influences the variations in the performance of humanitarian organizations.

Table 4.19: ANOVA Results for Order Processing Practices

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	85.188	1	85.188	171.404	.000[b]
	Residual	33.796	68	.497		
	Total	118.983	69			

a. Dependent Variable: performance of humanitarian organizations

b. Predictors: (Constant), Order Processing Practices

The regression coefficients as shown in Table 4.20 on the other hand revealed that the Beta coefficient for Order Processing Practices was 0.798. This implies that a unit change in Order Processing Practices would lead up to 79.8% increase in the performance of humanitarian organizations. The p-value for the variable was 0.000 which is less than the standard P-value of 0.05. This is to mean that Order Processing Practices had a significant influence on the performance of humanitarian organizations.

Table 4.20: Regression Coefficients for Order Processing Practices

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.964	.199		4.833	.000
	Order Processing Practices	.798	.053	.846	14.978	.000

a. Dependent Variable: performance of humanitarian organizations

4.5.5 Overall Multiple Regression Model

The study sought to carry out an overall multiple regression model to examine the role of humanitarian logistics management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya. The mode used was of the form:

$$Y = \beta o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

After the regression model where the regression coefficients (Table 4.21) have been determined, the model now becomes:

$$Y = 0.296 + 0.232 X_1 + 0.248 X_2 + 0.217 X_3 + 0.262 X_4 + e$$

The multiple regression model results as shown below covers the model summary, the ANOVA test results and the regression coefficients for the four independent variables. The model summary results show that the R^2 for the model was 0.833 implying that the combined role of humanitarian logistics management practices (inventory management practices, Transport management practices, information flow practices and order processing practices) has signifacant influences of 83.3% on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya.

Table 4.21: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.913[a]	.833	.825	.48107

a. Predictors: (Constant), inventory management practices, Transport management practices, information flow practices and order processing practices

The ANOVA results on the other hand revealed that the F-statistic was 107.029 with a P-value of 0.000. This is to imply that the model is statistically significant hence it can significantly predict the relationship between inventory management practices, Transport management practices, information flow practices, order processing practices and performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya.

Table 4.22: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	99.080	4	24.770	107.029	.000[b]
	Residual	19.903	65	.231		
	Total	118.983	69			

a. Dependent Variable: Procurement Performance

b. Predictors: (Constant), inventory management practices, Transport management practices, information flow practices and order processing practices

The regression coefficients results revealed inventory management practices had a Beta coefficient of 0.232 implying that a unit change in inventory management practices would influence procurement performance by 23.2%. Transport management practices had a Beta coefficient of 0.248 which implies that a unit change in Transport management practices would influence performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya by 24.8%. Information flow practices had a beta coefficient of 0.217 which implies that a unit change in information flow practices would influence performance of humanitarian organizations in Kenya. by 21.7%. Finally, order processing practices had a Beta coefficient of 0.262 implying that a unit change in order processing practices would influence performance of humanitarian organizations in Kenya by 26.2%. The P-values for inventory management practices, Transport management practices, information flow practices and order processing practices were 0.005, 0.000, 0.006 and 0.003 respectively. This implies that the Humanitarian logistics management practices have a positive significant role on performance of humanitarian organizations in Kenya.

Table 4.23 Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.296	.178		1.661	.100
	Inventory Management Practices	.232	.080	.240	2.886	.005
	Transport Management Practices	.248	.068	.263	3.636	.000
	Information Flow Practices	.217	.077	.227	2.826	.006
	Order Processing Practices	.262	.084	.277	3.103	.003

a. Dependent Variable: performance of humanitarian organizations in Kenya

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of Major Findings

The current study stemmed from the realization of the research problem in literature humanitarian logistics management practices on performance of humanitarian organizations in Kenya. Empirically most of the studies on the role of humanitarian logistics management practices have been skewed towards use of primary data and only specific humanitarian logistics management practices had been evaluated. Among the several studies which had been done in the Kenyan perspective majority have not examined the causal joint role of humanitarian logistics management practices on performance of humanitarian organizations in Kenya. Consequently, the researcher's primary purpose was to examine the role of humanitarian logistics management practices on performance of humanitarian organizations in Kenya. Further, the study sought to test four hypotheses; Inventory management practices has no positive significance role on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya, Transport management practices has no positive significance role on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya, Information flow practices has no positive significance role on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya and Order processing practices has no positive significance role on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya

In order to meet the overall objective and test the study hypotheses the study adopted cross-section survey research design. Stratified sampling technique was used to select a sample of 73 respondent from United Nation World Food Program Kenya . Primary data was collected from Programme officers Logistics and supply chain managers and operations managers of supply chain management and operations management functions of United Nation World Food Program Kenya and out of 73 questionnaires which were issued only 70 were completely filled and returned which yielded a response rate of 95.89%. The independent variables attributed examined in the study were for inventory management practices, Transport management practices, information flow practices and order processing practices and for dependent variable is performance of humanitarian organizations in Kenya. Descriptive analysis such as frequency, percentage, mean and standard deviation were used to analyze the data which was summarized using figures and tables. Correlation analysis was used to examine the strength of the relationship between performance of humanitarian organizations in Kenya and humanitarian logistics management practices and regression analysis was used to examine the nature of the relationship between performance of humanitarian organizations in Kenya and humanitarian logistics management practices. On overall 66.3% of the variation in performance of humanitarian organizations in Kenya can be explained by for inventory management practices, Transport management practices, information flow practices and order processing practices while the remaining percentage can be explained by other factors excluded in the model. The findings of the study demonstrated that humanitarian logistics management practices have significanct role on performance of humanitarian organizations in Kenya.

5.2 Conclusions of the study

This section presents the conclusions made in the current study. Research objective one in this study was to assess the role of inventory management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya. The indicators of Material Handling, Inventory control and Vendor Managed Inventory. The indicators for United Nation World Food Program Kenya organizational performance in this case were Targets Efficiency, Quality and Cost. Material Handling, Inventory control and Vendor Managed Inventory had a positive significant relationship with the United Nation World Food Program Kenya organizational performance. It was therefore concluded that there was a positive and significant role of inventory management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya. To improve on the United Nation World Food Program Kenya organizational performance. Research objective two in the current study was to establish the role of Transport management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya. The pointers for Transport management practices were Carrier management practices, Loading management and Shipping management. The indicators for United Nation World Food Program Kenya organizational performance in this case were Targets Efficiency, Quality and Cost. Transport management practices were Carrier management practices, Loading management and Shipping management had a positive and significant relationship with United Nation World Food Program Kenya organizational performance. It was therefore concluded that there was a positive and significant role of Transport management practices on performance of humanitarian organizations in Kenya.

Research objective three in the current study was to examine the role of information flow practices on performance of humanitarian organizations in Kenya. The indicators for information flow practices were E-logistics functions, E-customer feedback Information communication. In this case, the indicators for United Nation World Food Program Kenya organizational performance in this case were Targets Efficiency, Quality and Cost. E-logistics functions, E-customer feedback Information communication had a significant positive role on United Nation World Food Program Kenya organizational performance. It was therefore concluded that there was a positive and significant the role of information flow practices on performance of humanitarian organizations in Kenya.

The last objective of this study was to determine the role of order processing practices on performance of humanitarian organizations in Kenya. The indicators order processing practices were E-order processing, Order tracking systems and Rate of deliveries while the pointers for United Nation World Food Program Kenya organizational performance in this case were Targets Efficiency, Quality and Cost. E-order processing, Order tracking systems and Rate of deliveries had a significant and positive role with United Nation World Food Program Kenya organizational performance. It was therefore concluded that there was a positive and significant role of order processing practices on performance of humanitarian organizations in Kenya.

5.3 Recommendation of the Study

Based on the study findings, the following recommendations are given under the study specific objectives: This study established a significant positive the role of inventory management practices on performance of humanitarian organizations in Kenya. A case of United Nation World Food Program Kenya; $p < 0.05$ (P=0.001) with an explanatory power of 69.0 percent. The study therefore recommends the inclusion of inventory management in the strategic plans of the United Nation World Food Program Kenya. Inventory management as evidenced in this study, of being capable to reducing costs of humanitarian projects, making sure there is full utilization of resources usage, reduces wastage of materials, improves quality of humanitarian projects, limits idleness, and improves clients service thus impacting positively on both humanitarian projects performance

In line with the theory of resource-based view (RBV) humanitarian organisations mainly emphasize on their internal strengths and weaknesses, in contrast to economics humanitarian organization which focused on organizational external opportunities and threats because when the external environment is unstable, organizational own resources and capabilities may be easier to control and according to the study it was established that transport Management positively predicts the performance. Therefore, the study recommends that managers in humanitarian organisation in Kenya should incorporate transport management in their operations processes such as procurement of raw materials and distribution of products in order to increase overall cost efficiency and reduced lead time thereby impacting positively on their performance.

Order processing involves all aspects of managing customer requirements, including initial order receipt, delivery, invoicing, and collection with capability of impacting positively on firm performance. This study established that order process management statistically and significantly influences the performance of humanitarian organisation; $p < 0.05$ with an explanatory power of 36.8 percent. It is therefore recommended in this study that managers of the United Nation World Food Program Kenya in Kenya should impress order process management such as electronic order processing, timely order processing, timely delivery, tracking of order movement and ensuring zero double payment as a way of managing their cost of projects and creation of client loyalty.

In humanitarian organisation, information flow management has become an important element that reflects collaboration within the logistics management and organisational performance with positive effect on the performance of firms, the study established that information flow management significantly positively predict the performance of humanitarian organisations with values of $p<0.005$ and an explanatory value of 67.3 percent. As a result, the study recommends that managers in the humanitarian organisations in Kenya should include information management in their strategic plan and in particular investment in information technology which may make it easy to bring about innovation in the firm and good information sharing to both suppliers and clients. Additionally, the study recommends investment on information systems useful to managers in humanitarian operations to bring about quality products and reduce the cost of transformation of goods.

5.4 Areas for Further Study

From the findings, the R^2 was 83.3% which means that the independent variables (inventory management practices, Transport management practices, information flow practices and order processing practices) explained performance of humanitarian organizations in Kenya to an extent of 83.3% There are other factors which are not captured by the proposed model in this study which are captured by 16.7% which is not explained. Another study can be carried out to determine other humanitarian logistics management practices explaining 16.7% of performance of humanitarian organizations in Kenya in view of the study context and scope. This research did not address all the issues around the humanitarian logistics management practices in any way and for that reason it is recommended that alternative study be done in other institutions for instance in the five non profit organisations perhaps applying the same factors used in this study so as to find out whether the outcomes will be consistent in an unlike setting.

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