

The Effect of Supplier Relationship Management on Humanitarian Supply Chain Performance: The Case of World Vision Ethiopia Addis Ababa Program Co-Ordination Office

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ABSTRACT

The objective of this study was to examine the effect of Supplier Relationship Management on Humanitarian Supply Chain Performance at World Vision Ethiopia Addis Ababa. To achieve the objective of the study, a quantitative approach with an explanatory design is used. A total of 231 valid questionnaires were distributed and collected using a simple random sampling technique. The internal consistency of variables was reliable in the study variables. Data were analyzed using inferential statistics like Pearson's bivariate correlation and multiple linear regression analysis techniques. The study result indicates that trust, commitment, cooperation and transparency/information sharing had a statistically positive and significant effect on the humanitarian supply chain performance of WVE. Whereas, power, communication and supplier performance management have a positive but statistically insignificant effect on the humanitarian supply chain performance. Accordingly, the researchers suggest practitioners to give emphasis for the supply relationship influencing factors to improve humanitarian supply chain performance. Finally, managerial and theoretical implications are forwarded along with future research directions.

Keywords: Supplier Relationship Management, Humanitarian Supply Chain Performance

Introduction

Since its introduction in the early 1980s (Oliver & Webber, 1982; Barratt, 2016), supply chain management (SCM) has become one of the most popular concepts within management (La Londe, 1997). Studies have articulated that the integration of supply chains is a vital concept for organisations' strategic as well as operational importance (Zailani & Rajagopal, 2005). Researchers like Gimenez and Ventura (2005) have stressed that the more integration the better performance of organisations. The world is a fast-changing place. Organisations are changing and adapting like never before as they try to figure out how to compete, survive and succeed on an ever-evolving planet. Those who didn't manage to keep up have failed. New organisations with new ideas, innovative ways to do business and an insatiable hunger to succeed continue to emerge the world over ready to satisfy our changing needs and expectations. The supply base, the role of the supply base and the way organisations are engaging

with suppliers are changing. Many factors are driving this and if we are to determine how purchasing and the supply base can add value for the future we first need to understand the landscape around us that is creating new and exciting challenges, imperatives and opportunities for us all (O'Brien, 2014).

Supplier Relationship Management (SRM) is a comprehensive approach to managing an organisation's interactions with the firms that supply the products and services it uses (Lamming, 2014). SRM plays an important role in the reduction of costs and the optimization of performance in organisations. SRM is understood as the sourcing policy based on the design of strategic and operational procurement processes as well as the configuration of supplier management (Appelfeller & Buchholz, 2011). SRM includes both business practices and software and is part of the information flow component of supply chain management (SCM). SRM practices create a common frame of reference to enable effective communication between an enterprise and suppliers who

may use quite different business practices and terminology. As a result, SRM increases the efficiency of processes associated with acquiring goods and services, managing inventory, and processing materials (McLachlin & Larson, 2011). Furthermore, to be efficiently and effectively response to a disaster, the humanitarian supply chain system should involve providing the right relief materials at the right time for victims (Vanajakumari, Kuman & Gupta, 2016). Humanitarian crises have forced disaster relief organisations to develop abilities that combine speed, flexibility, robustness, and the ability to restore normalcy (Gupta, Starr, Farahani & Matinrad, 2016; Altay, Gunasekaran, Dubey & Childe, 2018; Altay & Narayanan, 2022). This requires placing relationships at the center of supply chain management and thus it is possible to create a more collaborative and effective dynamic. Humanitarian organisations that work well with their suppliers are better placed to get their compliance when it comes to new rules and regulations. A collaborative relationship will also facilitate innovation, which is crucial for achieving growth and improving resilience (Miocevic & Crnjak-Karanovic, 2012). Most humanitarian organisations consider their suppliers as being one of the most, if not even the most, important sources of innovation. Supplier relationship management can increase the level of innovation-driven supply. Creating and managing an SRM often represents a major change in the way companies do business. In creating new value systems, companies must re-think how they view their customers and suppliers. They must concentrate not just on maximizing their own profits, but also on how to maximize the success of all organisations in the supply chain. Tactical and operational plans should be continuously shared and coordinated. Instead of encouraging companies to hold their information close, trust-building processes promote the sharing of all forms of information possible that will allow supply chain members to make better, aligned decisions (Liker & Choi, 2004). So far, the relevant literature has provided limited support and empirical evidence for the importance of SRM for humanitarian SCM and its execution. Therefore, the study emphasizes on investigating the influence of SRM on humanitarian supply chain performance at the World Vision Ethiopia Addis Ababa Program Co-ordination Office.

Statement of the Problem

The world faces many structural problems like hunger, lack of proper sanitation and displacement (Van der Laan, Brito & Vergunst, 2009). Therefore, the global demand for humanitarian assistance is rising and will continue to rise (Christopher & Tatham, 2011; Thomas

& Kopczak, 2005). Despite the growing humanitarian need, the humanitarian supply chain is challenged by different complexities. Among the complexities being; raising freight cost, inaccessibility, increased risk of losses, limited resources & competitive environment, constrained food supply among others, the increased need for accountability by donors and supply chain situations which are unpredictable, turbulent, and requiring flexibility (Oloruntoba & Gray, 2006). Thus, to overcome these complexities, key success factors are essential to achieve efficient and effective supply chains, to fulfill the donor and beneficiary demands as well as service requirements and generate competitive advantages. However, according to McLachlin and Larson (2011), humanitarian supply chains tend to be unstable, prone to political and military influence, and inefficient due to lack of joint planning and inter-organisational collaboration. In the context of NGOs that engaged in global relief & development, delivering humanitarian supplies within time, minimum cost, and appropriate quality level is very critical to save lives and improve the livelihood of shock-vulnerable communities. To the best of the researchers' knowledge, studies in humanitarian supply chain management in Ethiopia are limited and have not been widely developed. Almost no empirical studies have yet been done regarding the effects of supplier relationship management on humanitarian supply chain performance having considered multiple perspectives. However, Fikadu (2018) conducted in governmental organisation using collaboration and technology factors; Melesse (2020) conducted a study in the case of Save the Children International Ethiopia, and Gebreyesus (2020), conducted at the Ethiopian Red Cross Society. But, these reviewed empirical literature confirmed that non of these studies focus on determining the role of supplier relationship management on humanitarian supply chain performance. In spite of the very few studies in the humanitarian context, this study aimed at investigating the effect of supplier relationship management on humanitarian supply chain performance at World Vision Ethiopia. Thus, the value of this paper is that it provides further understanding and explanation of SRM's role as a crucial SCM process, as well as pointing out the necessity of focusing on the management of upstream supply chain relationships and their importance for overall supply chain performance in humanitarian organisations.

Objective and Significance of the Study

The objective of the study is to examine the effect of supplier relationship management on humanitarian

supply chain performance at World Vision Ethiopia. More specifically,

- To investigate the effect of trust on humanitarian supply chain performance.
- To examine the effect of power on humanitarian supply chain performance.
- To evaluate the effect of commitment on humanitarian supply chain performance.
- To assess the effect of cooperation on humanitarian supply chain performance.
- To explore the effect of communication on humanitarian supply chain performance.
- To measure the effect of transparency/information sharing on humanitarian supply chain performance.
- To estimate the effect of supplier performance management on humanitarian supply chain performance.

Conducting this study will be useful to the government, donors and other partners to help ease the pressures that humanitarian managers get from these stakeholders. The stakeholders, who are the main funder of humanitarian organisations, will be able to come up with policies that ensure humanitarian organisations achieve short-term goals of accountability and transparency in the usage of funds as well as enable them pursue long-term goals like supplier relationship management that will enhance performance; and the findings will also be valuable to future researchers and academicians as it will add little insight on the existing stocks of knowledge.

Scope of the Study

The study was delimited to the World Vision Ethiopia Addis Ababa Program Co-ordination Office. Though different factors affect the humanitarian supply chain performance, the researchers focused on seven main factors namely trust, power, commitment, cooperation, communication, transparency/information sharing and supplier performance management which are not studied yet to see the combined effect.

Literature Review

The humanitarian supply chain is a system that combines, coordinates, and manages the flow of materials, goods, and related information between suppliers and donors in order to satisfy beneficiaries' needs on time. The humanitarian supply chain includes emergency relief as well as ongoing assistance to underdeveloped countries.

It is the process of delivering aid in the form of products and services to beneficiaries (Fritz Institute, 2012). Humanitarian organisations' supply chain plays a very crucial role when providing relief to disaster victims, which involves, planning and management of all activities involved with sourcing, procurement and all logistics management activities. It also includes coordination and collaboration with actors who can be suppliers, intermediaries, donors, beneficiaries, third-party service providers, developmental programs and operational activities in times of disaster (CSCMP, 2011). In addition, HSCM requires the process of effective and cost-efficient plans, implementations and controls for aid flows from the point of origin to the point of consumption with the goal of reaching the aid recipients' requirements. Now a day, this area attracted the attention of both academics and practitioners (Oloruntoba & Kovács, 2015).

In the recent past, the world has witnessed more disasters than any other time in history (including both natural and manmade disasters) which have affected more than 5 billion people across the globe. According to the Centre for Research on the Epidemiology of the Disasters (CRED), the combined loss of all the disasters has cost more than 150 trillion US dollars and left more than 180 million people homeless. The earthquakes in Iran (2003), Sumatra (2004), Pakistan (2005), China (2008), Haiti (2010), and Japan (2011) were the major earthquakes in the last decade (Van Wassenhove & Pedraza Martinez, 2012). Therefore, this calls for better preparedness of disasters. The preparedness helps to tackle a disaster better, helps in mitigating the risk and alleviates the pain caused by the disaster. Humanitarian aid organisations have also nowadays under strict review of the government/NGOs/donors who pledge millions of dollars' worth aid in different forms. The donors expect their aid to reach the beneficiaries and in such cases, demonstrate accountability and transparency (Van Wassenhove, 2006).

In any humanitarian aid program, the major part (about 80%) of the relief activities consists of logistics. Hence, managing the flow can be done only by efficient and effective strategies or in other words, managing the supply chain. In any emergency, the logistics management deals with procuring and managing the food, non-food items, and gifts-in-kind (solicited and unsolicited) from appeal. It includes monitoring the commodity and financial information along the relief aid flow. Under such situations, timely and accurate information becomes a critical factor. Relief managers, depending upon this information, try to mobilize the resources to provide the aid to the beneficiaries and at the same time, make an appeal to their donor (Tomasini & Van Wassenhove, 2009).

Supplier Relationship Management and Supply Chain Performance

Supplier Relationship Management (SRM) is a systematic approach for developing and managing partnerships. It is focused on joint growth and value creation with a limited number of key suppliers based on trust, open communication, empathy and a win-win orientation (Lamming, 2014). There are different measures of SRM and supply chain performance. Organisations that practice SRM end up improving their supply chain performance. Continuous maintenance of a good relationship with your suppliers will protect an organisation from the problems of quality, increase efficiency and hence improve performance. This applies to all organisations, whether commercial or humanitarian. Without SRM, operations will slow down or even stop when business is booming because suppliers will tend to prioritize customers who have maintained a good relationship with them. With SRM, the supplier is made part of the organisation and will always keep that particular organisation in mind. Organisations should develop and maintain long-term relationships with suppliers by developing trust, sharing information, managing the supplier performance and using information technology in supply chain management just to mention a few (Rucha & Abdallah, 2017). Shepherd & Günter (2006) argue that it is essential to continuously measure and monitor the supply chain performance in these aspects and act upon the results in order to stay competitive. These performance indicators are highly interdependent (Bamford & Forrester, 2010).

Cost—According to Bamford and Forrester (2010) cost remains an important factor to measure supply chain performance since it correlates to profit, labor productivity and selling prices. Lead Time (LT) has become increasingly important for companies to respond quickly to demand fluctuations (Christopher, 2011). Quality is an important indicator and displays the ability of the supply chain to deliver superior customer service (Shepherd & Günter, 2006; Bamford & Forrester, 2010). Finally, flexibility is defined as the ability to increase production volumes as well as having customizable business processes, adaptable supply relationships, and quick and streamlined data flow. Flexibility measures allow companies to determine whether they have the appropriate level of flexibility in order to cover fluctuations in future demand and to arrange activities accordingly (Council, 2008). Shepherd and Günter (2006) even argue that by measuring flexibility a company not only gets a reflection on how parties cope

with rapid changes in demand but also rapid changes in supply.

Trust and Supply Chain Performance

According to the Network Theory (NT), the networks of the firm are developed through two types of interactions: exchange processes of information and goods, and adaption of these processes such as legal, logistical and technical. These interactions enable the parties to establish trust (Halldorsson & Kotzab, 2007). Trust can be defined as one party's belief that the other party in the relationship will not act opportunistically and not exploit its vulnerabilities even when such exploitation would not be detected (Stuart, Verville & Taskin, 2012). They claim that supply chain without trust between businesses will not be able to compete in the time-sensitive supply environment. They also explain that trust can lead to several benefits for companies: First, trust can help lower transaction costs. Second, safeguarding costs can be reduced by less need of extensive contracts. Third, trust will reduce opportunistic behavior and lead to more effective information flows and information sharing. To sum up the potential benefits of trust, it can lead to improved financial performance (Verville, Taskin & Law, 2011), greater market penetration and improved customer relationships (Stuart, Verville & Taskin, 2012). And thus:

- H1: Trustful relationship among the supply chain actors can have a positive and significant effect on the supply chain performance.

Power and Supply Chain Performance

Concept of power is one of the widest disciplines of study and plays important role in supply chain management. Power can be defined as a person's capability of influencing the decision-initiating process in the supply chain by being in a leading position in a virtual theoretical structure (Edirisinghe, Bichescu & Shi, 2011). Power is inherently relational and relative to the amount of resistance against the other party that can be overcome (Meehan, Joanne, Wright & Gillian, 2012). Managing power flow in this context means maintaining the power balance among the supply chain members. When we consider supply chain management, power balance and imbalance play a significant part. Balancing power is crucial to maintain the relationship between the members. When two members of supply chain have the same level of power to influence each other's decision then we say that

balanced power exists and when two or more members of supply chain are able to influence other member's decisions then it can be concluded that imbalance power exists (He, Ghobadian & Gallea, 2013; Hingley, 2005). Imbalance in power does not mean it is unambiguously implemented in relationships between supply chain members (Caniëls & Gelderman, 2007). Power imbalance is hypothesized as the buyer–supplier relationship on the basis of power interdependence. Moreover, this imbalance is the difference between the value of buyer and seller connected to their relationship. When the relationships are not symmetrical, the independent member weakens the buyer or supplier control the interchange. When the relationships are balanced then no member dominates the other member in the system (Caniëls & Gelderman, 2007). Therefore, from this perspective we can hypothesize as follows:

H2: Balancing of power signals among the supply chain actors has a positive and significant effect on supply chain performance.

Commitment and Supply Chain Performance

Commitment concerns the willingness of the trading partner to put effort into the buyer–supplier relationship (Mohr & Spekman, 1994). They also suggest that a high level of commitment from both parties involved in the relationship can lead to that both individual as well as joint goals can be reached without increasing the possibility of opportunistic behavior. Little and Marandi (2003) also state that relationship commitment is directly related to the duration of the relationship, therefore the longer the relationship, the greater the commitment and or loyalty is. Further, Hausman (2001) argues that the long-term endurance of a relationship is a consequence of the strength of the relationship. Rangan and Bell (2006) although suggest that trust between the supplier and buyer stimulates the development of commitment.

H3: High level commitment among the supply chain partners has a positive and significant effect on supply chain performance.

Transparency/Information Sharing and Supply Chain Performance

Transparency is defined by Kassahun, Hartog, Sadowski, Scholten, Bartram, Wolfert and Beulens (2014), as the amount of information exchange between supply chain partners. According to Mohr and Spekman (1994), transparency refers to the extent to which critical, often

proprietary, information is shared with one's partner. Hsu and Lin (2008) concur with this definition and state that information sharing can be either tactical (e.g. logistics, purchasing, operations scheduling) or strategic (customer and marketing information, corporate objective, etc.). As stated by Rangan and Bell (2006) a higher level of transparency involves knowing each other's business plans and strategies and if such a foundation is present the parties can engage in a trusting relationship. Monczka, Handfield, Giunipero and Patterson (2011) reason that transparency of critical information combined with joint efforts is essential to attain both incremental and breakthrough results beyond what each party can achieve. Mohr and Spekman (1994) further argue that closer relationships can result in both more frequent and relevant information exchanges between the two parties. They also state that the availability of relative information allows employees to perform different tasks in a more efficient way which leads to an increased level of performance. Therefore, we can claim that:

H4: The higher the transparency between supplier actors the more the supply chain performance.

Cooperation and Supply Chain Performance

Crotts, Dickson and Ford (2005) conceptualize cooperation as either similar or complementary actions that are taken by both parties within an interdependent buyer–supplier relationship in order to reach singular or mutual objectives. Aarseth, Rolstadås and Andersen (2014) also state that; cooperation can result in lead-time reduction as well as substantial savings in the material flow. In addition, Cousins, Lawson and Squire (2006) suggest that through cooperation, partners are able to profit substantially from rents, which can only be created if the parties work together. Gadde, Håkansson and Persson (2010) further argue that since parties within a buyer–supplier relationship have both shared and conflicting interests it is always characterized by both conflicts and cooperation. A relationship characterized by low cooperation and high conflict is considered hostile and therefore not expected to last unless it is considered valuable by one of the parties. If the relationship scores high in cooperation and low in conflict it can be seen as being too “nice” which can imply that the parties place too low demand on each other. Therefore, the researchers can claim that:

H5: The higher level of cooperation among the supplier has a positive and significant effect on supply chain performance.

Communication and Supply Chain Performance

Communication can be seen as the glue that holds the supply chain together (Mohr & Nevin, 1990). According to them, communication allows a supplier to improve its performance in accordance to the buyer's needs. Paiva, Phonlor and D'avila (2008) concur with this and state that since communication allows a supplier to improve its performance to correspond with the need of the buyer it plays an important role in the supply chain. Mohr and Nevin (1990) further suggest that by developing appropriate strategies for communication between the buyer and supplier the risk of problems or conflicts reduces substantially. Moreover, timely and frequent communication between the parties can help to resolve disputes as well as align perceptions and expectations (Morgan & Hunt, 1994). According to Mohr and Spekman (1994), communication quality is the key success factor for any partnership. Cousins, Lawson and Squire (2006) also argue that higher level of interaction and communication strengthens the supplier-buyer relationship which in turn leads to improved performance. Thus, from all these arguments we can deduce that:

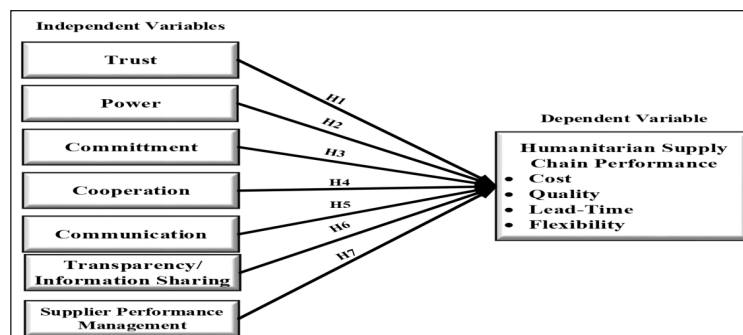
H6: Effective communication among supply chain partners has a positive and significant effect on supply chain performance.

Supplier Performance Management and Supply Chain Performance

Supplier performance management (SPM) is a business practice that is used to measure, analyze, and manage the performance of a supplier. Supplier management professionals seek to cut costs, alleviate risks, and drive continuous improvement (Moregan, 2001). By measuring and monitoring supplier performance on an ongoing basis, companies can realize some significant benefits. First, companies can avoid costly and potentially devastating supply disruptions. Second, companies can reduce the overall risk to other adverse scenarios like defects, environmental problems, or safety issues with a supplier's process, materials, or products. Third, companies that implement successful supplier performance management programs will be better able to spot problems early and begin to implement corrective actions before the problem becomes a big headache or hits the bottom line (Krause, 1997).

H7: Supplier performance management has a positive and significant effect on the supply chain performance.

Therefore, from the above arguments and discussions the following conceptual framework is developed.



Source: Adapted from Damlin, Dietersdóttir, Fornander, Brykt, Polyantseva, and Sundquist, 2013) and Rucha and Abdallah (2018).

Fig. 1

Research Methodology

According to Creswell (2012), given the research problem, the personal experiences of the researchers and the audience for whom the research report was written, the researcher used a quantitative approach with an explanatory design. The target population of this study is 330 (Internal Report of WVE, 2021). The sample size considered for this study is 317 using Tepping (1968)

formula. Simple random sampling technique was used to select sample respondents.

Measurement and Tool Validation: Primary data was collected through a self-administered five-point Likert scale (Likert, 1932) with closed-ended questionnaires. The independent variables are adopted from Van Weele (2010); Ojala and Hallikas (2006); Mohr and Spekman (1994); Giannakis (2007); and Rucha and Abdallah (2018). The outcome variable adopted from (Rucha

& Abdallah, 2018). As the tools are adopted, only face validity is checked. The researchers conducted reliability test to measure the consistency of the study measurement for each item of constructs using Cronbach's Alpha (α) value. George and Mallery (2020) provide the scale of Cronbach alpha coefficient: >0.9 excellent, $=>0.8$ good, $=>0.7$ acceptable, $=>0.6$ questionable and $=>0.5$ poor. Duffy and Kilbourne (2001) further stated a high

α (greater than 0.70) indicates that the items within a scale are measuring the same construct. Nunnally (1978) has suggested that score reliability of 0.70 or better is acceptable. As a rough guide, a Cronbach's alpha value of 0.7 and above is seen an acceptable value for Cronbach's alpha and values substantially lower than this threshold indicate an unreliable scale.

Table 1: Scale Reliability

Sr. No.	Variables of the Study	Cronbach's Alpha Value	No. of Items
1	Trust	.821	6
2	Power	.682	3
3	Commitment	.763	3
4	Cooperation	.932	3
5	Communication	.812	4
6	Transparency/Information Sharing	.737	5
7	Supplier Performance Management	.852	5
8	Humanitarian Supply Chain Performance	.915	10

Table 2: Expected Signs and Measurement

Sr. No.	Variables	Expected Signs	Measurement	Instrument Sources (Adapted)	No. of Items
1	Trust	+ve	Five point Likert scale	Van Weele (2010)	6
2	Power	+ve	Five point Likert scale	Hallikas et al. (2005) & Böhme et al. (2008)	3
3	Commitment	+ve	Five point Likert scale	Mohr and Spekman (1994) & Giannakis (2007)	3
4	Cooperation	+ve	Five point Likert scale	Rolstadås et al. (1995)	3
5	Communication	+ve	Five point Likert scale	Mohr & Nevin (1990) and Cousins & Menguc (2006)	4
6	Transparency/Information Sharing	+ve	Five point Likert scale	Rucha & Abdallah (2018)	5
7	Supplier Performance Management	+ve	Five point Likert scale	Rucha & Abdallah (2018)	5
8	Humanitarian Supply Chain Performance	+ve	Five point Likert scale	Rucha & Abdallah (2018)	10

Model Specification

The researchers used multiple linear regression models using the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \epsilon$$

Where- Y- the supply chain performance, X1- trust, X2-power, X3-commitment, X4-cooperation, X5-communication, X6- information sharing/transparency, and X7- supplier performance management; and ϵ - the error term.

Result and Discussion

The study targeted almost 317 respondents and 231 (70%) valid questionnaires were returned for the analysis. According to Kothari (2004), positive values of "r" indicate positive correlation between the two variables. Cohen (1998) interpreted the coefficient of correlation between 0 and 1 as in the following manner. The correlation coefficient (r) ranging from 0.10 to 0.29 may be regarded as indicating a low degree of correlation, r ranging from 0.30 to 0.49 may be considered as a moderate degree of correlation, and r ranging from 0.50 to 1.00 may be regarded as a high degree of correlation. Accordingly, correlation results presented in Table 3

shows significant positive relationship with trust, power, commitment, cooperation, communication, supplier performance management and humanitarian supply chain performance.

Table 3: Bivariate Pearson Correlation Matrix

Correlations								
	Trust	Power	Comm.	Coop	Comm	Tran	SPM	Perfom
Trust	1							
Power	.725**	1						
Comm.	.719**	.634**	1					
Coop.	.586**	.647**	.413**	1				
Com.	.579**	.577**	.614**	.349**	1			
Tran.	.402**	.260**	.324**	.073	.487**	1		
SPM	.635**	.537**	.450**	.402**	.563**	.564**	1	
Perfom.	.765**	.666**	.671**	.561**	.614**	.468**	.592**	1

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

Linearity Test

The first assumption is linearity, and it is a primary assumption. The assumption of linearity states that

conditional means of Y fall in a straight line (Darlington & Hayes, 2017). The scatter plot of residuals indicates that the points lie in a reasonably straight line from bottom left to top right. Therefore, we can conclude that the assumption of linearity was not violated.

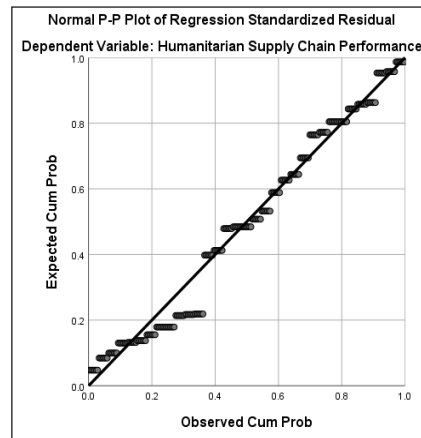


Fig. 2

Normality Test

The classical normal linear regression model (CNLRM), an extension of CLRM, assumes that the error term (u_i) in the regression model is normally distributed. It is thus important that to check whether the error term is normally distributed (Gujarati, 2011). Both kurtosis and skewness

are used as measures of deviation from normality. A kurtosis value between ± 1.0 is considered excellent for most psychometric purposes, but a value between ± 2.0 is in many cases also acceptable, depending on the particular application (George & Mallery, 2020). Thus, based on the result, the normality of the distribution was satisfied with this data.

Table 4: Skewness-Kurtosis for Normality Test

Descriptive Statistics					
	N	Skewness		Kurtosis	
	Stat.	Stat.	S.E	Stat.	S.E
Trust	231	.043	.160	-.388	.319

Descriptive Statistics					
	N	Skewness		Kurtosis	
	Stat.	Stat.	S.E	Stat.	S.E
Commitment	231	-.601	.160	.600	.319
Cooperation	231	-.991	.160	.864	.319
Communication	231	-.539	.160	.546	.319
Transparency/Information Sharing	231	-.287	.160	-.385	.319
Supplier Performance Management	231	.440	.160	-.503	.319
Humanitarian Supply Chain Performance	231	.162	.160	-1.017	.319
Valid N (listwise)	231				

Multi-Collinearity Test

Multi-collinearity can be tested either from correlation coefficient results or from the Value of Tolerance and VIF. According to Sekaran and Bougie (2016), the acceptable value of tolerance and Variance Inflation Factor (VIF) is above 0.10 and below 10 respectively.

Table 5: Collinearity Diagnosis

Coefficients ^a			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Trust	.284	3.526
	Power	.347	2.880
	Commitment	.402	2.484
	Cooperation	.516	1.938
	Communication	.467	2.143
	Transparency/Information Sharing	.586	1.707
	Supplier Performance Management	.444	2.250

a. Dependent Variable: Humanitarian Supply Chain Performance.

Test of Homoscedasticity

The standard suggestion for examining the assumption of heteroscedasticity in regression analysis is to plot the predicted variable values against the residual values. Heteroscedasticity is indicated when these values spread or fan out from left to right or right to left. The graph of ZRESID and ZPRED should look like a random array of dots evenly dispersed around zero. If this graph funnels out, then the chances are that there is heteroscedasticity in the data. If there is any sort of curve in this graph, then the chances are that the data have broken the assumption of linearity (Field, 2005). Thus, the scatter plot shows that the majority of the points are concentrated around 0 which shows that no violation of homoscedasticity.

Model Summary

After testing all the relevant classical linear regression model assumptions for the data used, the researchers conducted the regression model analysis to predict the effect of the independent variables (supplier relationship management) on the dependent variable (humanitarian supply chain performance). According to (George & Mallery, 2020), multiple coefficient of determination (R square) is the proportion of variance in the dependent (or criterion) variable that is explained by the combined influence of two or more independent (or predictor) variables. R^2 is the most commonly used measure of the overall effect size of the independent or predictor variables on the dependent variable.

Table 6: Model Summary

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.829 ^a	.687	.678	.41183

a. Predictors: (Constant), Supplier Performance Management, Cooperation, Commitment, Transparency/Information Sharing, Communication, Power, Trust.

b. Dependent Variable: Humanitarian Supply Chain Performance.

Based on Table 6 of the model summary result, 68.7% of the variation accounted for the dependent variable (humanitarian supply chain performance). The remaining 31.3% was due to other factors (i.e. extraneous variables and random errors).

Analysis of Variance (ANOVA) or F-Test

This indicates that the sample data provide sufficient evidence to conclude that the regression model was well fit.

Table 7: Analysis of Variance (ANOVA)

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	83.176	7	11.882	70.057	.000 ^b
	Residual	37.823	223	.170		
	Total	120.998	230			

a. Dependent Variable: Humanitarian Supply Chain Performance b. Predictors: (Constant), Supplier Performance Management, Cooperation, Commitment, Transparency/Information Sharing, Communication, Power, Trust.

Regression Coefficients

that trust had statistically positive and significant effect on humanitarian supply chain performance.

The regression coefficient result of the model showed

Table 8: Coefficients of Variables

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.515	.253		-5.994	.000
	Trust	.388	.086	.316	4.496	.000
	Power	.101	.087	.073	1.156	.249
	Commitment	.235	.077	.181	3.065	.002
	Cooperation	.187	.051	.190	3.651	.000
	Communication	.116	.060	.105	1.922	.056
	Transparency/Information Sharing	.255	.070	.179	3.650	.000
	Supplier Performance Management	.040	.065	.034	.608	.544

a. Dependent Variable: Humanitarian Supply Chain Performance.

Hypothesis (H1)

The study result indicated that the effect of trust on humanitarian supply chain performance was positive and statistically significant. Thus, the study data result supported hypothesis 1 (H₁) and the researchers, thus, accepted the hypothesis. It is, therefore, the result is in agreement with the findings of Nyamoita (2015), Minoo (2015) and Ngouapegne and Chinomona (2018).

Hypothesis (H2)

Power has a positively but statistically insignificant effect on the humanitarian supply chain performance level of WVE. Thus, the data does not support hypothesis 2 (H₂). Power is the capability of a firm to influence the behavior of other firms or having the potential to affect the situation of supply chain (Borgström & Hertz, 2007). Most international aid flows from the world’s wealthiest countries to relief efforts in developing countries, like Ethiopia. When the relationships are not symmetrical, the independent member weakens the buyer or supplier control the interchange. Thus, it could be insignificant, unlike the

business-based supply relationships management which strictly necessitated a balanced power among them.

Hypothesis (H3)

The study result indicated that the effect of commitment on humanitarian supply chain performance is positive and statistically significant. This appears to suggest that WVE should consider the supplier relationship management dimension of commitment as it is positively & significantly correlated with the humanitarian supply chain performance. Thus, the study result supported hypothesis 3 (H₃) and the researchers accepted the hypothesis. It is, therefore, in agreement with the findings of Minoo (2015) and Ngouapegne and Chinomona (2018).

Hypothesis (H4)

The study result indicated that the effect of cooperation on humanitarian supply chain performance is positive and statistically significant. This appears to suggest that WVE should consider the supplier relationship management dimension of cooperation as critical success factors of

performance. Thus, the study result supported hypothesis 4 (H_4) and the researchers accepted the hypothesis. It is, therefore, in agreement with the earlier findings of Nyamoita (2015) and Lutende (2018).

Hypothesis (H5)

Communication had positively but statistically insignificant effect on humanitarian supply chain performance level of WVE. So the data does not support H_5 . The finding is in contrast of the findings of Mohr and Nevin (1990), Paiva, Phonlor and D'avila (2008), and Morgan and Hunt (1994). The researchers believe that communication is the life blood to reach vulnerable groups within the limits of expectations. Thus, it requires replications in similar context.

Hypothesis (H6)

The study result indicated that the effect of transparency/information sharing on humanitarian supply chain performance is positive and statistically significant. The study result supported hypothesis 6 (H_6) and the researchers accepted the hypothesis. It is, therefore, in agreement with the earlier findings of Alahmad (2021) and Mushi, Mwaiseje and Changalima (2021).

Hypothesis (H7)

Supplier performance management had positively but statistically insignificant effect on humanitarian supply chain performance level of WVE. Therefore, the result does not support H_7 . This shows that the current finding agreed with the earlier findings of Rucha and Abdallah (2018). This is because unlike the business based supply relationship, the humanitarian relationship does not require suppliers' performance analysis as the supply chain for humanitarian is the ultimate sense-and-respond supply chain.

Managerial Implications and Future Direction

The study result indicated that trust, commitment, cooperation and transparency/information sharing has statistically positive and significant effect on humanitarian supply chain performance of WVE whereas, power, communication and supplier performance management has positively but statistically insignificant effect on humanitarian supply chain performance.

Implications for Theory

The research findings indicate that supply relationship management dimensions positively and significantly influence the supply chain performance in humanitarian organisations and are congruent with the findings of Rucha and Abdallah (2018) and Nyamoita (2015). But power, communication and supplier performance management are positive but statistically insignificant. Lee (2002) stated that SRM is a discipline of working collaboratively with those suppliers that are vital to the success of your organisation to maximize the potential value of that relationship. SRM is about developing two-way, mutually beneficial relationships with your most strategic supply partners that deliver greater levels of innovation than could be achieved by operating independently. This study, thus, calls up on the applications of Social Exchange Theory (SET), Resource Dependency Theory (RDT) and Network Theory (NT). SET attempts to study inter-organisational relationships from the dyadic perspective, concentrating on the social structure of the relationship rather than the transaction (Homans, 1958). SET posits that all human relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives. As a result, actors will remain in a relationship as long as there is value to be had (Cropanzano & Mitchell, 2005). The Resource Dependency Theory (RDT) posits that no single firm has all the resources and functions needed to operate successfully. According to Halldorsson (2007), network theory aims to understand how personal chemistry between supply chain parties can influence trust building and long-term commitment. In the theory, direct communication is perceived as an enabler for building unique relationships, which could result in the customization of the supply chain to meet the unique customer demands. It requires the application of IT. In the humanitarian sector, however, supply chain management is still largely manual. This, therefore, means that organisations have to enter into exchange relationships with other organisations for the betterment of supply chain performance.

Implications for Practitioners

Humanitarian supply chain (HSC) and logistics focus on the process of planning, implementing and controlling the efficient, cost-effective flow and storage of goods and materials, as well as related information, from the point of origin to the point of consumption for the purpose of alleviating the suffering of vulnerable people (Thomas & Kopcak, 2005). It shares some common aspects with its

commercial supply chain in that in both sides the most must be obtained out of scarce resources and limited budgets. Additionally in HSC, it is important to reach more beneficiaries in need and serve them more quickly. Also, donors increasingly demand accountability, transparency and value for money in return for their sponsorship. Meeting these higher challenging performance and accountability standards requires humanitarian organisations to be more professional in their approach to managing their operations and supposed to be networked (Thomas & Kopczak, 2005). The researchers suggest that humanitarian supply chain is central to disaster relief for several reasons. First, it is crucial to the effectiveness and speed of response for major humanitarian programs, such as health, food, shelter, water, and sanitation. Second, with procurement and transportation included in the function, it can be one of the most expensive parts of a relief effort. Third, since the logistics department handles tracking of goods through the supply chain, it is often the repository of data that can be analyzed to provide post-event learning. Logistics data reflects all aspects of execution, from the effectiveness of suppliers and transportation providers to the cost and timeliness of response, to the appropriateness of donated goods and the management of information. Thus, to be effective and efficient, supply chain for humanitarian is the ultimate sense-and-respond supply chain. Once a disaster occurs, an aid agency sends in a team of experts to complete an initial assessment of the extent of the damage and the number of people affected. The assessment forms the basis for an appeal that lists specific items and quantities needed to provide immediate relief to the affected populations. Emergency stocks of standard relief items are sent in from the nearest relief warehouses. Such smooth operations require highly bonded, trustfulness, commitment, cooperation and collaboration as well as timely communications just to mention some among the dimensions of SRM. However, in most of the practical areas, there is a lack of institutional learning, limited collaborations and inadequate use of technology which adversely affect the supply chain performance. Thereof, practitioners, policy makers and planners should take the agenda into account and work towards it for current and future operations in the area.

Limitations and Further Research Directions

In this study, power, communication and supplier performance have a positive but statistically insignificant. Thus, the researchers suggest future researchers to replicate these variables in the same context. It is also suggested that other studies be done to investigate the challenges facing humanitarian organisations in their supplier relationship

management efforts. Because, unlike the business world, the humanitarian supply chain could require different networking models. This will enable these organisations come up with ways of mitigating these challenges and hence increase the performance of their supply chains. Because in the humanitarian supply chain, the focus is on short-term direct relief rather than investment in systems and processes that will reduce expenses or make the relief more effective over the long term. It would have been very good again had the results had generalized to the areas at large, but it is very difficult to generalize as the data is collected from the coordination's office at Addis Ababa, Ethiopia. Additionally, considering the different dimensions of SRM, there is a need for detailed study with a longer time period. However, for our short-term study, we concentrated on the most common influential variables to maintain the relations of supply chain members that were detected through literature research.

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