Exploration of Accountability as a Mediator between Managerial Competencies and Supply Chain Performance of Relief Aid Organisations in Western Uganda

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ABSTRACT

The study investigated whether accountability mediates the relationship between managerial competencies and the supply chain performance of relief aid organizations in western Uganda. A cross-sectional and correlational design was used involving a sample of 108 relief aid organizations operating in western Uganda. Organizations were stratified according to the humanitarian clusters of food security, logistics, education, water and sanitation, health, and education. Self-administered questionnaires were used to collect primary data. Data were analysed using SPSSv22, while mediation was tested using Analysis of Moments Structure (AMOS) v22 software. Accountability was found to partially mediate the association between managerial competencies and supply chain performance in relief aid organizations in western Uganda. A mediation effect of accountability in the relationship between managerial competencies and supply chain performance was tested. Previous studies tended to focus on direct relationships between the aforementioned variables. The current study enriches literature, especially in the developing country's context and more so in the downstream of the supply chain. Future studies could take a longitudinal approach since the current study was cross-sectional. The study guides humanitarian actors to recruit staff with managerial competencies to ensure transparency and effectiveness in the delivery of relief activities hence achieving the desired supply chain performance.

Keywords: *Accountability, Managerial competencies, Performance, Supply chain.*
JEL Classification: *H12; L39.*

Highlights of this paper

- This study provides empirical evidence of the mediating effect of accountability in the relationship between managerial competencies and supply chain performance. Previous studies examined direct relationships.
- It provides recommendations for policy since it has been found that competent staff are effective, ensure transparency and comply with policies in ensuring the right supplies reach the intended beneficiaries.

1. INTRODUCTION

In the present study, we examine whether accountability mediates the relationship between managerial competencies and the supply chain performance of relief aid organizations in western Uganda. The performance of relief aid organizations' supply chains has continued to attract the interest of scholars and practitioners alike (Guersola, De Lima, & Steiner, 2018; Haavisto & Kovács, 2014; Tumusiime, 2022). The increased interest in the subject is because of the criticality of humanitarian supply chains in ensuring that the right supplies reach the right beneficiaries (Zulfiya, 2017). The council of supply chain management in 2010 defines supply chain performance as the capacity of a supply chain to source the right goods from the right source, at the right price, brought to the right place, and distributed to the right beneficiaries, in the right condition (Thomas & Kopczak, 2005; Zulfiya, 2017). Scholars have in the past explained supply chain performance in humanitarian operations based on human and logistic competencies (De Camargo Fiorini, Chiappetta Jabbour, Lopes de Sousa Jabbour, & Ramsden, 2021; Heaslip et al., 2019; Meduri, 2021; Rajakaruna & Wijeratne, 2019; Tatham, Altay, Bölsche, Klumpp, & Abidi, 2013). Nevertheless, most of these studies relied on evidence from other countries other than Uganda. It is only recently that one study in western Uganda found that managerial competencies are positively associated with supply chain performance (Aryatwijuka, Kamukama, Frederick, & Rukundo, 2020). That notwithstanding, extant literature affirms that accountability can have a significant impact on supply chain performance (Anjomshoae, Banomyong, Mohammed, & Kunz, 2022; Awuku, Sakyi-Darko, & Gyan, 2020; Harun, 2021; Hilhorst, Melis, Mena, & Van Voorst, 2021; Iqbal & Ahmad, 2022; Mwaura, 2013).

While managerial competencies and accountability can individually explain supply chain performance, it is urged that accountability is the mechanism through which the effect of managerial competencies on supply chain performance can be better explained. That debate could be attributed to the fact that accountability in relief operations involves transparency in terms of providing stakeholders with timely and accurate information and being open to scrutiny (Iqbal & Ahmad, 2022). Complying with set procedures like laws, policies, and guidelines for supply management (Bakalikwira, Bananuka, Kaawaase Kigongo, Musimenta, & Mukyala, 2017). And effectiveness in terms of delivering the intended supplies and this improves the performance of the supply chain (Aryatwijuka et al., 2020). Supply chain performance is possible when relief aid organizations have staff with the skills, knowledge, and abilities necessary to comply with set guidelines, provide timely and complete information to the stakeholders, and produce the desired results in line with their terms of service (Bakalikwira et al., 2017). Hence the assertion that humanitarian organizations may not deliver the right supplies to the right beneficiaries without proper accountability mechanisms implemented by resourceful managers. However, there is currently lack of empirical evidence that explains supply chain performance through managerial competencies and accountability. Although researchers have identified accountability and managerial competencies as vital for supply chain performance, their scholarly works have mostly focused on direct relationships, among the aforementioned variables. Besides, according to Nkundabanyanga, Ntayi, Ahiauzu, and Sejjaaka (2014) in exploring and understanding the association between two or more variables, it is important to examine mediating effect. Hence, the present study examines the

mediating effect of accountability in the association between managerial competencies and supply chain performance basing on empirical data from relief aid organizations conducting operations in western Uganda.

Additionally, we do not find studies that are perception-based and used questionnaires to establish the association between managerial competencies, accountability, and supply chain performance based on evidence from Uganda, unlike documentary-based performance metrics. According to Orobia, Nakibuuka, Bananuka, and Akisimire (2020) perception-based studies integrate both the position and opinions of the respondents (managers), in the process of answering the questionnaires respondents may get an insight into improving performance. In the current study respondents were managers of procurement, transportation, stores, field, and administration whose perception is paramount in improving the efficiency of relief supply chains.

Practically, operational actors in charge of relief supply chains require skills, knowledge, and abilities to comply with guidelines, ensure transparency in their operations, and effectiveness to have the right supplies reach intended beneficiaries. The rest of the paper proceeds as follows: Study setting, Literature and theoretical review, Hypothesis development, Methodology, Results, Conclusions and Implications.

2. STUDY SETTING

Uganda is the biggest refugee host in Africa with more than 1.6 refugees (UNHCR, 2022). The majority originating from the Democratic Republic of Congo (DRC), South Sudan, Somalia, Eritrea, Sudan, Ethiopia, Rwanda, and Burundi (UNHCR, 2022). These refugees are settled in various refugee camps in the country including, Oruchinga, Kyaka II, Rwamwanja, Nakivale, Kyangwali all of which are in the western part of the country (OPM, 2018). With this number of refugees, the need for humanitarian support has kept growing and various stakeholders including government, donors, and relief aid organizations which run supply chains to ensure these refugees are received, fed, medicated, and settled (OPM, 2018; Turyamureeba, 2017). Despite being at the center of these efforts, relief aid organizations operating in western Uganda have continued to experience challenges in running supply chains (Aryatwijuka, Kamukama, Frederick, & Rukundo, 2020).

For instance, an audit report by the United Nations office of internal oversight on relief operations in Uganda for a period between 2013-2017 discovered overstated operational costs, irregular contract awards, redundant stocks, poor quality of supplies especially food, and rigid supply chains (Nystrand, 2014; Parker, 2018). Additionally, rigidity along the supply chain as evidenced by the inability to vary the supply mix and meet unexpected demand for relief supplies given the continuous new refugee arrivals resulting in food rations of up to 50% of the expected distribution quantities (Nathan & Benon, 2020; Okiror, 2019). From the above challenges, it is important that a study is carried out to examine the supply chain performance of relief aid organizations so that they can improve their supply chains to attain beneficiary and donor trust.

Considering the importance of supply chain efficiency in relief operations, especially in western Uganda, and while stakeholders are desirous of an improvement, the study went beyond examining performance records and adopted a behavioral aspect by examining the role of managerial competencies and accountability which may not be easy to understand by just examining documentary performance data.

3. LITERATURE REVIEW

3.1. Theoretical Background

3.1.1. The Resource Based View

The Resource Based View (RBV) theory as advanced by Wernerfelt (1984) and revised by Barney (1991) is used to explain organizational performance that is based on the organization's ability to maximumly utilize its

resources to attain and sustain a competitive advantage (Orobia et al., 2020; Prakash, Besiou, Charan, & Gupta, 2020). The theory looks at resources both tangible and physical including information, firm characteristics, knowledge, infrastructure, and procedures that are necessary to improve efficiency of relief aid organizations' supply chains (Barney, 1991; Prakash et al., 2020).

Fundamental to the RBV are the following assumptions: One, firms have strategic and unique resources at their disposal and this is the basis for their performance and sustained competitive advantage. Two, organizational resources may not be easily accessed by competitors without a cost. Hence, organizations can not sustain their performance if their resources are imitated or accessed by competitors. Whereas the theory explains firm performance, relief aid organizations by their nature carry out their operations while running supply chains, hence organizational performance is indeed supplied chain performance (Prakash et al., 2020). According to Kovács and Tatham (2009) understanding in detail the resources and abilities of managers of relief aid organizations are key in responding to emergencies synonymous with relief operations. That, the success of any operation is dependent on how organizations utilize their internal resources and across the entire supply chain.

The Resource-based view theory applies to this study since it looks at human resources with managerial competencies as an enabler of supply chain performance. Generally, the RBV theory furthers the understanding of how the competencies of humanitarian actors enable them to plan and execute activities along the supply chain efficiently and effectively (Prakash et al., 2020). This is a basis for predicting the supply chain performance of relief aid organizations with managerial competencies. That when relief aid organizations have staff with the right competencies, they will comply with organizational policies (accountability) and hence supply chain performance.

3.1.2. Stakeholder Theory

The theory as Advanced by Freeman (1984) explore the role of various actors that coordinate to ensure that beneficiaries receive the right supplies at the right time and in the right condition. That organizations need to consider the needs of all stakeholders including primary, secondary and tertiary. This is a pre-condition for humanitarian operations and supply chain performance as interests beneficiaries, donors, governments, media, employees and host communities have to be considered (Conyon & He, 2016). Organizations need to consider the all stakeholders as the success of their activities depends on cooperation and coordination with all actors (Freeman, 1984). The theory stresses the importance of accountability in ensuring supply chain performance of relief aid organizations through transparency while complying with operational guidelines form organizations, donors and host governments (Prakash et al., 2020). Relief aid organizations become accountable by considering the needs of all stakeholders. Accountability makes organizations effective, compliant, transparent and most importantly efficient (Bakalikwira et al., 2017)

Having knowledge of how various stakeholders interact is vital for managers in building key alliances, especially in understanding how donors champion supply chain performance through accountability (Haavisto & Kovács, 2014).

While it is difficult in practice to meet the needs of every stakeholder, relief aid organizations should endeavor to balance what is necessary, possible or impossible in short, mid and long term (Madueno, Jorge, Conesa, & Martínez-Martínez, 2016).

However, increased accountability reduces efficiency as stakeholders get interested in operational details arising out of transparency and this may slow the speed of operation which is vital for supply chain efficiency (Starr & Van Wassenhove, 2014).

Stakeholders differ in terms of power and interest as their needs can be urgent or legitimate hence managers should be competent to balance their varying needs in the operational environment (Mitchell, Agle, & Wood, 1997).

For example, while meeting the needs of donors whose contributions both financial and in kind are vital for relief operations, the urgent needs of the beneficiaries should also be considered (Hansen & Vedung, 2010). As stressed by Madueno et al. (2016) it is not very easy to satisfy all stakeholders given their varying needs and expectations. We opine that for accountability to be achieved, organizations should attract and recruit staff with skills, knowledge and attitudes as these competencies are crucial in addressing and meeting stakeholder needs and ultimately supply chain performance.

3.2. Hypothesis Development

3.2.1. Managerial Competencies and Supply Chain Performance

Managerial competencies refer to the skills, knowledge, and abilities in coordinating, planning, controlling and monitoring activities of an organization (Orobia et al., 2020). Extant literature shows that supply chain performance depends on the ability of relief aid organisations to have competent staff who will always make decisions that impact on the success of relief operations (Haddad, 2017; Heaslip et al., 2019; Kovács & Tatham, 2010; Rajakaruna & Wijeratne, 2019; Tatham et al., 2013). The perfomance of an organsiations's supply chain depends on abilities of employees who undertake relief opertions (Kovács, Tatham, & Larson, 2012).

Similarly, a systematic review by De Camargo Fiorini et al. (2021) established that that managerial competencies are key for relief supply chain performance. Besides, Meduri (2021) avers that during a crisis that is synonymous with relief activities, the management skills of the actors are vital for the success of the operation.

Extant literature (Haddad, 2017; Kovács & Tatham, 2010; Kovács et al., 2012) has shown that there is a positive relationship between managerial competencies and supply chain performance. Furthermore, Orobia et al. (2020) and Kamukama, Kyomuhangi, Akisimire, and Orobia (2017) found that the is a positive and significant association between the performance of an organization and the competencies of the staff running those organizations. Whilst these scholarly works were undertaken in the banking industry, the current study examined the situation in the humanitarian industry. Relatedly, scholars Seate, Pooe, and Chinomona (2016); Long, Fei, Amechi, and Kowang (2018) found a strong and positive association between organizational performance and employee competencies was established in the commercial industry. These findings were compared and validated in the humanitarian sector. Besides these studies (Long et al., 2018; Seate et al., 2016) were conducted in the developed world, the same was examined in the developing country's context. Hence, we expect that an improvement in managerial competencies of the relief operational actors is associated with an improvement in supply chain performance of relief aid organisations. Thus, it is hypothesized that:

H1: Managerial competencies is associated with supply chain performance of relief aid organisations in Western Uganda.

3.2.2. Accountability and Supply Chain Performance

Accountability refers to the process through which an organization commits to respond to and balance the needs of stakeholders in its decision-making processes and activities and delivers against this commitment (Lloyd, Oatham, & Hammer, 2007). Currently, due to donor fatigue and ever-changing beneficiary needs, there is a call for accountability of relief aid organizations (Bruckner, 2010). Donors now base their funding decisions on proven accountability, which leads to effectiveness and cost efficiency (Haavisto & Kovács, 2014).

Existing literature on accountability shows that relief aid organizations that have shown a commitment to accountability have received tremendous support from donors as support is currently tagged on reputational opinion and proven efficiency (Rubel, 2015; Tirone, 2012).

Studies by Bawole and Langnel (2016) and Kwasi (2014) show a negative relationship between intentions and outcomes. The same duality has been observed by Starr and Van Wassenhove (2014) who avers that an increase in accountability breeds inefficiency as stakeholders get interested in operational details arising out of transparency, this might reduce the speed of the supply chain hence poor performance.

Studies on accountability and supply chain performance in relief aid organizations have shown a positive relationship (Ebrahim, 2010; Tirone, 2012). However, less research has focused on accountability in developing countries but more so downward accountability, which focuses on the aid beneficiaries (Kwasi, 2014). Mwaura (2013) posits that a unit increase in accountability leads to a unit increase in the performance of relief aid organizations. Relief aid organisations can realize supply chain performance of having the right supplies reaching the intended beneficiaries by ensuring transparency (Hilhorst et al., 2021; Iqbal & Ahmad, 2022). Transparency (Harun, 2021) and effectiveness (Onyango, 2016). It is therefore vital that organizations need to put in place robust accountability mechanisms not only to meet donor needs but most importantly the beneficiaries and this will lead to supply chain performance (Anjomshoae et al., 2022; Awuku et al., 2020). It is hence postulated that:

H2: Accountability is associated with supply chain performance of relief aid organisations in western Uganda.

Additionally, the study tested whether accountability mediates the association between managerial competencies and supply chain performance. In the relief sector, the skills possessed by staff have a bearing on relief aid organizations exhibiting transparency, complying with organizational policies and being effective (Bakalikwira et al., 2017). This is possible because, once the staff running relief operations have skills, knowledge and abilities, they will be able to provide timely information to all stakeholders, will comply with operational guidelines and consequently will be effective.

According to a study conducted in Uganda's health sector, it was also established that employee competencies are associated with accountability (Bakalikwira et al., 2017). The finding links well with the asserion by Diane, Stephan, and Brown (2012) who avers that managerial competencies are a pre-condition for accountability. Relatedly, organizations can achieve set goals when they have competent staff who ensure accountability to various stakeholders (Martina, Hana, & Jiri, 2012). Studies by Kwasi (2014) and Mwaura (2013) found that increased accountability boosts performance of relief aid organizations. This finding is not different from that other scholars like Andrews (2014); Ebrahim (2010) & Tirone (2012) who established that organizational performance is as a result of accountability.

Transparent, effective and compliant organizations provide quality relief supplies , cost-effectively, in a timely and flexibility manner (Anjomshoae et al., 2022; Awuku et al., 2020; Harun, 2021; Hilhorst et al., 2021; Iqbal & Ahmad, 2022). We believe that organisations with proper accountability mechanisms result into acquiring the right relief supplies, at the right cost and can be delivered to the right beneficiaries. When operational actors are transparent, beneficiaries will beforehand know what relief supplies are to be supplied on a given day, and this reduces chances of diverting supplies to non-existent beneficiaries on the account of lack of information on delivery and distribution information. However, it takes management with knowledge, skills, and ability to send the right information to the various stakeholders, and follow operational procedures aimed at delivering the right supplies to the right beneficiary in the right condition, time and cost. Therefore, in the current study we try to examine whether managers with abilities, skills and knowledge can be transparent, compliant and effective to improve supply chain performance. We postulate that:

H3: Accountability mediates the association of managerial competencies and supply chain performance of relief aid organisations in western Uganda.

4. METHODOLOGY

4.1. Research Design

The study employed correlational and cross-sectional research designs involving 150 relief aid organizations in western Uganda as per the office of the Prime Minister (OPM, 2018). A sample of 108 was determined using the formula by Yamane (1973). Western Uganda was chosen due to the highest refugee population of 800,000 persons and the most diverse beneficiaries community with refugees of over 8 nationalities (OPM, 2018). Stratified sampling was used to pick organisations operating under the humanitarian clusters of logistics, food security, health, water and sanitation and education. The stratification factor was according to the sectors of relief operation. To get a balanced representation per humanitarian cluster, stratified sampling was adopted aided by a stratification fraction. (

$$sample = \frac{Strata}{Population} \times S$$). Simple random sampling was used to select a given relief aid organisations and from a

particular cluster. Purposive sampling was used to pick the respondents who are involved in supply activities. The respondents included procurement managers, logistics officers, stores staff, field and administrative officers. Though a maximum of 6 respondents per organization was targeted, the actual respondents ranged between 4 and 5 per firm. Why a lower number than anticipated? The study received responses from 105 out of the sample of 108 relief aid organizations hence giving a response rate of 97.2%. However, data was aggregated and analyzed at firm level so as to get a position reflected by a particular organization.

From Table 1, Majority of the respondents263(68%) were males with the highest academic qualification of a bachelor's degree (208(53.9%), and for more than 5 years 203(52.6%) were employed as field officers and hence were reasonably experienced in field operations. From Table 2, majority of the organisations were involved in logistic activities (42(40%), were based in Nakivale refugee settlement 37(35.2%) and had been involved in humanitarian activities for over 1o years (78(74.3%) an indication that they had considerable experience in relief operations. See Table 1 and Table 2 for details.

Table 1. Respondent characteristics.

Item	Category	Frequency	Percentage
Gender	Male	263	68.1
	Female	123	31.9
Level of education	Certificate	24	6.2
	Diploma	67	17.4
	Degree	208	53.9
	Post graduate	87	22.5
Years of service	0-1 year	26	6.7
	2-5 years	157	40.7
	Above 5years	203	52.6
Position	Procurement Manager	40	10.4
	Logistics officer	62	16.1
	Stores staff	91	23.6
	Field officer	149	38.6
	Administrative officer	44	11.4

4.2. Measurement of Variables and the Questionnaire

Data was collected using a closed ended questionnaire. It was preferred because, one, it enables easy computation of mean scores and other statistical analyses. Two, it reduces researcher bias during analysis. And lastly, it eases determination of direction of the responses and the degree of agreement or disagreement with the statement put forward (Orobia et al., 2020). In measuring study variables, we based on items that other researchers had earlier constructed, tested, and published. Aware that the study setting was different, we modified and tested these variables during a pilot study and assessed their validity and reliability.

Table 2. Organisational characteristics.

Item	Category	Frequency	Percentage
Cluster	Logistics	42	40
	Food Security	32	30
	Water and Sanitation	9	8.6
	Health	10	10.5
	Education	12	10.9
Years in relief operations	0-5 years	4	3.8
	6-10 years	23	21.9
	Above 10 years	78	74.3
Location of Settlement	Oruchinga	4	3.8
	Nakivale	37	35.2
	Rwamwanja	19	18.1
	Kyaka	30	28.6
	Kyangwali	15	14.3

The items were anchored on 5-point Likert scale ranging from 1(Strongly disagree) up to 5 (Strongly agree). A 5-point Likert scale was preferred as it increases response quality and response rate (Kamukama et al., 2017). It also keeps respondents interested in participating in the survey otherwise, a longer scale makes some respondents bored and frustrated. And were measured as follows:

- Managerial competencies: Knowledge, Skills, Ability (Kamukama et al., 2017; Orobia et al., 2020).
- Accountability : Compliance, transparency, and effectiveness (Harun, 2021; Iqbal & Ahmad, 2022; Onyango, 2016).
- Supply chain Performance: Cost, quality, speed and flexibility (Beamon & Balcik, 2008; Blecken, Hellingrath, & Dangelmaier, 2009; Schulz & Heigh, 2009).

4.3. Control of Common Method Variance

Aware that common method variance (CMV) affects studies in social sciences especially when a questionnaire is used to collect data (Orobia et al., 2020) data were checked for the presence of CMV. As a procedural remedy, data was collected at least from 4 respondents per organization, multiple scales were used for perception-based independent measures and anonymized respondents. Besides respondents were encouraged to be honest since there was no predetermined right or wrong answer. Additionally, we avoided double-barreled questions to limit the possibility of lowering the reliability of the scale.

As guided by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) using Harman's single-factor test, exploratory factor analysis was used to test common method variance. Several factors were generated from each variable with none singularly accounting for more than 18.67% of the variance in a variable, an indication of no common method since the acceptable threshold is not more than 50% (Kasekende, Munene, Ntayi, & Ahiauzu, 2015). Lastly, the questionnaire was pre-tested academicians and practitioners who included respondents who were carrying out relief operations in northern Uganda, this was a population that was similar to the one of the current study to enhance content validity.

4.4. Data Management, Analysis, and Quality Control

Data were checked and cleaned by checking for outliers, missing values and the negatively worded items in the questionnaire reverse coded. Using the name of the relief aid organization as the "breaking variable", data was aggregated to a firm level. Questionnaires were checked further for inconsistency and missing values in responses given by the respondents. Frequencies were ran to identify missing values.

The missing values attributed to omissions by respondents and constituted less than 1% were considered trivial (Kamukama et al., 2017) and inconsequential to suppress the standard deviation (Field, 2009). Since the missing values were as a result of omissions unrelated to other variables, the criteria of data missing completely at random were met (MCAR) (Little & Rubin, 1997). In treating the missing variables, a maximum likelihood estimation imputation was used (Field, 2009). For the case of outliers, they were identified and treated using the Mahalanobis distance squared test (Tabachnick, Fidell, & Ullman, 2007).

Statistical package for social scientists ([SPSS], v22), was used for analysis. Parametric tests including normality of distribution of data, homogeneity of the variance, linearity, homoscedasticity and multicollinearity diagnostics were run and as guided by Field (2009) all the conditions were met and the data set was deemed suitable for further analysis. In order to examine whether respondents understood the variables of the study as per the theoretical underpinnings, and to assess whether the measurement models offered an acceptable fit for the data, confirmatory factor analysis was carried out aided by AMOS v22 (Anderson & Gerbing, 1988). From the results, the models of accountability, managerial competencies, and supply chain performance fit postulated model and the observed data (Lowry & Gaskin, 2014).

To assess the reliability and validity of data, composite reliability, average variance extracted (AVE), and item factor loadings were used. As guided by Hair, Back, Babin, and Anderson (2010), the AVE for managerial competencies, accountability, and supply chain performance were above the recommended cut-off of 0.5, this confirmed convergent validity. This was an indication that measures of the same variable are related. Discriminant validity was also examined by comparing inter item correlations with the reliability of respective constructs, and it was found that the correlation coefficients were less than construct reliability an indication of discriminant validity (Hair et al., 2010). This proved the uniqueness of a variable and that what it measures, is not measured by other constructs.

The items that were retained were used to test the direct relationships and mediation. To ensure that we retain only valid questions, the questionnaire was shared with 5 academicians, and 10 practitioners for assessment of robustness. The feedback was examined to fine tune the research tool and a few amendments were made before data collection for the current study.

5. RESULTS

5.1. Hypothesis Testing and Modeling

Using structural equation modeling (SEM), we estimated a model for managerial competencies, accountability and supply chain performance. Table 3 presents the model fit indices. Following the guidelines of Hu and Bentler (1999) set at as follows; That Tucker–Lewis index (TLI) must be ≥0.90, the goodness-of-fit index (GFI) which must be ≥0.90, Comparative fit index (CFI) must be ≥0.90, Root mean square error of approximation (RMSEA) must be ≤0.06, Normed fit index (NFI) must be ≥0.90, while the ratio of chi-square to degrees of freedom (CMIN/DF) must be <3, the model fit indices for our model as indicated in Table 3 were within the acceptable range and hence estimated the postulated relationships.

To tested whether accountability mediates the relationship between managerial competencies and supply chain performance. Bootstrap method was used to test the indirect and direct relationships as guided by Hayes and Preacher (2010) at a confidence level of 95% (Bootstrap=2000). The results are presented in Tables 4 and 5. First of all, from Table 4, there is a significant direct effect of managerial competencies on supply chain performance (β=.424, t-Value=4.78, P<.01).

This is in support of hypothesis 1 (H1). This implies that a positive change in managerial competencies is associated with a positive change in supply chain performance. Secondly, from Table 4, there is a significant direct effect of accountability on supply chain performance (β=.493, t-Value=5.7, P<.01). This implies that appositive change in accountability is associated with a positive change in supply chain performance, this supports hypothesis 2 (H2).

Table 3. Showing summaries of the measurement model fit indices results.

Variable	CMIN	DF	PCLOSE	CMIN/DF	GFI	AGFI	NFI	TLI	CFI	RMSEA
			≥0.05	<3	≥0.95	≥0.90	≥0.95	≥0.95	≥0.95	≤0.08
Managerial Competencies	25.7	11	0.037	2.339	0.979	0.954	0.993	0.980	0.981	0.067
Accountability	40.004	27	0.181	1.577	0.981	0.956	0.986	0.963	0.974	0.074
Supply Chain Performance	52.083	27	0.125	2.097	0.981	0.951	0.989	0.981	0.962	0.053

Note: Tucker–Lewis index (TLI), The goodness-of-fit index (GFI), Comparative fit index (CFI), Root mean square error of approximation (RMSEA), Normed fit index (NFI) The ratio of chi-square to degrees of freedom (CMIN/DF).

Table 4. Testing hypotheses of direct relationships.

	Path	Beta Unstandardized	S.E	Beta Standardized	t-Value	P	Decision
H1	Performance<--- MC	0.416	0.087	0.424	4.78	***	Supported
H2	Performance<--- ACC	0.488	0.079	0.493	5.75	***	Supported

Note: *** Relationship is significant at the 0.05level. MC, Managerial competencies; ACC, Accountability

Table 5. Total, direct & indirect effects.

Paths	Boot Estimates	S.E	t	Lower Bounds	Upper Bounds	P-Value
Total effects						
MC→ACC	0.327	0.043	7.14	0.037	0.525	0.001
MC→SCP	0.424	0.087	4.78	0.080	0.516	0.002
ACC→SCP	0.493	0.079	5.75	0.399	0.657	0.000
Direct effects						
MC→ACC	0.327	0.043	7.14	0.037	0.525	0.001
MC→SCP	0.359	0.077	4.78	0.227	0.577	0.003
ACC→SCP	0.440	0.079	5.75	0.399	0.657	0.000
Indirect effect						
MC→SCP	0.065	0.030	3.39	0.203	0.466	0.001

Note: Relationship is significant at the 0.05level. Bootstrap at 95% level of confidence. MC, Managerial competencies; ACC, Accountability; SCP, Supply chain performance; S.E, standard error.

While assessing the mediating effect, it is observed that the strength of the association between managerial competencies and supply chain performance as seen in Table 4 was β=.424 and significant as P<.01. On Introduction of accountability, the strength of association reduces to β=.359 however it remained significant as observed in Table 5.

The mediation effect is further demonstrated from the model after mediation in Figure 1. From the results, a partial mediation effect of accountability on the association between managerial competencies and supply chain performance is confirmed, and hence hypothesis 3 (H3) is supported. The ratio index calculated by comparing the indirect effect of 0.065 with the direct effect of 0.359 is 18.1%. This implies that 81.9% of the effect of managerial competencies on supply chain performance is direct while 18.1% goes through accountability.

**TESTING MEDIATION EEFECT OF ACCOUNTABILITY ON
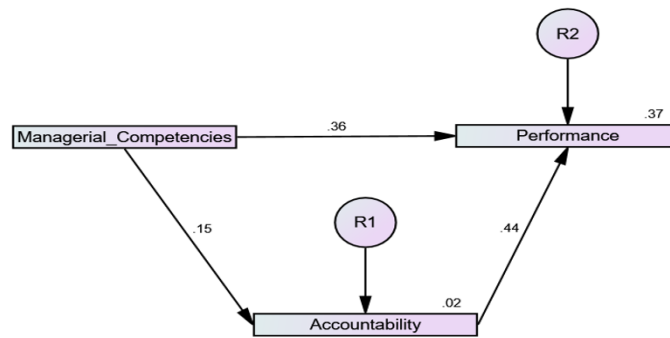MANAGERIAL COMPETENCIES AND SUPPLY CHAIN PERFORMANCE**

Figure 1. Model after mediation.

6. DISCUSSION AND CONCLUSIONS

The main finding arising out of the current study is that managerial competencies improve supply chain performance of relief aid organisations through accountability. From a the Resource Based View theory (Prakash et al., 2020), it has been established that operational actors with knowledge, abilities and skills are key resources that ensures accountability and hence supply chain performance of relief aid organisations.

It implies that once relief aid organizations attract, recruit and retain employees with the right attitudes, knowledge, and skills, these staff will undertake a proper needs assessment, and decide on better sources of supplies and better ways of transportation up to distribution to the right beneficiaries. Hence with competent staff, relief aid organizations' supply chains will be in flexible, timely, and cost-effective. Considering that majority of relief aid organization staff had been serving for over 5 years, it points to the experience acquired over the years that enables organizations to obtain relief supplies from the right providers, at the right time, price and delivers to the right recipients. Besides, the experience is vital for supply risk identification and management hence supply chain performance.

The findings on the relationship between managerial competencies and supply chain performance are not different from other scholars such as De Camargo Fiorini et al. (2021); Meduri (2021); Heaslip et al. (2019); Rajakaruna and Wijeratne (2019); Tatham et al. (2013); Haddad (2017) and Kovács and Tatham (2010) who aver that for efficiency in relief operations organisations need to have actors with the specific skills, knowledge and abilities that enable relief aid organisations deliver the right supplies to the intended beneficiaries.

Nevertheless, the findings in our study show that operational actors are unable to comply with operational procedures, share key information with various stakeholders, and operate effectively unless if they have the required skills, abilities, and knowledge. For staff to prepare periodic reports to donors, share reliable information and carry out relief operations effectively, they require some formal education. From the demographic characteristics of the respondents, the majority are graduates, an indication that they have formal education and have the required experience to plan and execute relief operations. Moreover, studies have examined and established that there is a significant and positive association between managerial competencies and accountability (Bakalikwira et al., 2017; Diane et al., 2012). Whereas a study conducted in commercial banks by Mwesigwa, Nansiima, and Suubi (2014) found a positive and significant relationship between managerial competencies and accountability, the current has proved that it is true for the humanitarian industry.

Consequently, accountability as measured in terms of transparency, compliance and effectively is a positive and significant influencer of supply chain performance. When operational actors follow procurement and logistics guidelines, share information to the beneficiaries as to when and what supplies are to be distributed, it will increase

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speed, and flexibility, reduce cost and improve quality of supplies along the supply chain. With information sharing and transparency in general operational actors get feedback on the wishes of the beneficiaries especially on supply mix where beneficiaries can suggest alternative ways of meeting their needs. Additionally with increased transparency and compliance comes with more donor and beneficiary support (Rubel, 2015; Tirone, 2012). Therefore, it is paramount to note that accountability is indeed a significant predictor of supply chain performance.

The findings in the current study are consistent with previous scholars Anjomshoae et al. (2022); Iqbal and Ahmad (2022); Harun (2021); Hilhorst et al. (2021); Awuku et al. (2020); Onyango (2016); Andrews (2014); Tirone (2012) and Ebrahim (2010) who contend that relief aid organisations can realize supply chain performance when they exhibit compliance, transparency and effectiveness. The findings from the current study established that there is a partial mediating effect of accountability in the association between managerial competencies and supply chain performance. Additionally, it was established that accountability is a mechanism through which the effect of managerial competencies on supply chain performance is experienced. This implies that staff with skills, knowledge, and attitudes are transparent, follow procedures, and are effective hence this leads to efficiency along the supply chain.

While there was limited literature on the mediating role of accountability in the aforementioned relationship, the stakeholder theory as advanced by Freeman (1984) demonstrates that when organizational staff has the desired skills, knowledge, and attitudes, they will abide by operational guidelines, they will be transparent and effective hence supply chain performance. Considering the deficiency in literature, the current study has therefore empirically tested and confirmed the mediation in the relationship between managerial competencies and supply chain performance.

7. CONCLUSION AND IMPLICATIONS

From the study findings and discussion, it is concluded that accountability is a partial mediator in the association between managerial competencies and supply chain performance of humanitarian organizations in western Uganda. The current study has contributed to the body of knowledge on supply chain performance in the context of a developing country. The contribution is vital given the deficiency in the literature on supply chain performance moreover, in the response phase of disaster management and specifically in the downstream of the supply chain. Theoretically, the study has strengthened the stakeholder theory's realm by empirically testing the mediating effect of accountability in the relationship between managerial competencies and supply chain performance. However, future studies could validate the current study findings by exploring the power of the findings and the model in a different context and industry. From a managerial perspective, the study has demonstrated that accountability is a strong predictor of supply chain performance. Besides, to realize accountability, organisations require employees that have ability, skills and knowledge to carry out relief operations. Hence humanitarian organisations in search of supply chain performance need to consider the quality of human resources alongside accountability mechanics to ensure operational success. Empirically the study has proved that good employees ensure accountability and in turn run efficient supply chains.

As a limitation to the study, considering that data was collected at a single point in time under a cross-sectional research design hence the accountability systems and competencies of staff of the humanitarian organisations vary over time. Additionally, the deficiency of literature in context of a developing country and moreover in the downstream of the supply chain deprives the current study findings a chance of comparability. Finally, considering that the study investigated association and not causal explanations to the phenomena under study, the study findings should be cautiously interpreted.

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