Humanitarian Logistics: A Disaster Relief Operations Framework During Pandemic Covid-19 in Achieving Healthy Communities

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Abstract

High levels of coordination, cooperation, and collaboration between involved aid providers are needed for efficient logistics processes. In the immediate response phase, coordination, cooperation, and collaboration are firstly required when non-governmental organizations (NGOs) assess the beneficiaries' needs by sending field assessment and coordination teams into the disaster area. This research explores the Malaysian scenario of humanitarian logistics as well as the challenges in collaborations between government agencies and NGOs during disaster relief operations in Malaysia to achieve healthy communities during pandemic Covid-19. Thus, this study used past literature to propose a conceptual framework and identified two factors namely, trust and coordination as the key factors in the successful humanitarian logistics framework. In addition, the role of NGOs during a disaster is also important to reduce the burden on government agencies in managing the humanitarian aid distribution process. Collaboration between government and NGOs is pursued in the mitigation and long-term recovery phases, where decisions are taken with caution, and NGOs strategies are adjusted to others without time pressure. The most important driver for successful collaboration is trust. Coordination provisions will increase trust between agencies involved in disaster relief operations. Therefore, building trust between parties involved in certain tasks in disaster relief activities can be enhanced by adding up a contract agreement to ensure both parties will work efficiently and coordinate with the job and minimize the risk that could occur.

Keywords: Humanitarian Logistics, Non-Governmental Organizations, Collaborations, Coordination, Trust

1.0 Introduction

1.1 Background

The World Health Organization (WHO) defines a 'disaster' as an occurrence that causes damage, destruction, ecological loss, human loss and suffering, and deterioration of health. Most of the disaster is also striking without prediction and lead to limited time for mitigation's preparation. Humanitarian logistics is defined as "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 to alleviate the suffering of vulnerable people. The function encompasses a range of activities, including preparedness, planning, procurement, transport, warehousing, tracking, and tracing, customs, and clearance.

In Malaysia, The National Security Council (NSC) coordinates disaster management following Directive No. 20, the "Policy and Mechanism on National Disaster Relief and Management."

The Council facilitates activities that are implemented by the Disaster Management and Relief Committee, which comprises various agencies at federal, state, and local levels. (National Security Council of Malaysia, 1997). Disaster management has consistently been a focus of Malaysia's development policy. Malaysia's National Platform for Disaster Risk Reduction (DRR) was formalized in 2013, which involved various stakeholders from the whole of government, as well as the private sector. This is evident by the number of resources provided to minimize risk factors and facilitate sustainable development. Malaysia's 11th version of the Five-Year Plan (2016-2020) focuses on strengthening disaster risk management across five phases: *prevention, mitigation, preparedness, response, and recovery*. Malaysia continues to develop its disaster management structure and policies to meet emerging and chronic disaster risks, as well as enhance its evolving role as Humanitarian Assistance and Disaster Relief (HADR) leader in the region.

High levels of coordination, cooperation, and collaboration between agencies involved aid providers are needed for efficient logistics processes in items procurement, transport, and warehousing. In the immediate response phase, coordination, cooperation and collaboration are firstly required when non-governmental organizations (NGOs) assess the beneficiaries' needs by sending field assessment and coordination teams into the disaster area (Kovács & Spens, 2007).

The collaborations between government and NGOs as well as public communities are needed in order to ensure sustainable healthy communities in Malaysia. Healthy communities have been defined as the ones that ''protect and improve the quality of life of their citizens, promote healthy behaviours and minimize hazards for their residents, and preserve the natural environment'' (Dannenberg et al., 2003). The collaboration activities, especially during disaster relief operations will encourage multi-players to support healthy communities by providing health support, logistics, disaster relief, and any related activities. The common focus of healthy community efforts was on the core concepts that defined the healthy communities process which allowed various groups to engage in various activities. Therefore, it is deeming for the stakeholders to have a successful framework and guidelines on disaster relief operations, especially during the pandemic Covid-19 scenario.

1.2 Problem Statement

Humanitarian logistics encompasses the process of mobilizing people, resources, skills, and knowledge to help the disaster's victim. In the humanitarian process, logistics is the central of all the mobilization activity as it served as the bridge between the disaster preparedness and response, procurement and distribution, and headquarters and the field. Moreover, it can be one of the most expensive parts in the relief operation. The effectiveness of the operation is always being monitored to minimize the operating cost to gain the maximum result's during the operation. Therefore, disaster management is a key factor that drives the successful execution of relief efforts (Tomasini & Van Wassenhove, 2009).

In today's environment, natural disaster seems to strike all corners of the world due to climate change, hence the importance of humanitarian logistics is undeniable. Much human loss and destruction of infrastructure could be avoided if the proper planning as well as precise execution is been conducted. At times, the adverse impact of the disaster may be so large. The government agencies and all other stakeholder groups may be overwhelmed by the scale of the disaster. This will lead the humanitarian assistance and response operations may be weak and ineffective. Therefore, different stakeholders must understand their roles in humanitarian

assistance and emergency response and take appropriate steps to respond effectively to reduce the adverse impact of the disaster on the disaster-affected community (Sahay et al., 2015).

1.3 Research Objectives

- To explore the scenario of humanitarian logistics during the disaster relief operations in Malaysia.
- To propose a successful framework for collaborations between government agencies and Non-Governmental Organizations (NGOs) during Covid-19 disaster relief operations in achieving healthy communities.

2.0 Literature Review

2.1 Humanitarian Logistics

Humanitarian logistics is part of supply chain management which needs to manage the operations effectively. The evolution of supply chain management in disaster relief may also involve private organizations (Tomasini & Van Wassenhove, 2009). One of the key success factors in humanitarian logistics operations is to understand operation management activities. Moreover, humanitarian logistics is a branch of logistics which specializes in organizing the delivery and warehousing of supplies during natural disasters or complex emergencies to the affected area and people. However, this definition focuses only on the physical flow of goods to final destinations, and in reality, humanitarian logistics is far more complicated and includes forecasting and optimizing resources, managing inventory, and exchanging information (Ni et al., 2015).

To date, humanitarian logistics plays an integral role in disaster relief for several reasons. First, humanitarian logistics contributes to mitigating the negative impact of natural disasters in terms of loss of life and economic costs. Second, humanitarian logistics is considered the repository of data that can be analysed to provide post-event learning. Logistics data reflects all aspects, 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, it is critical to the performance of both current and future operations and programs. Organizing emergency response plans will help preparation and consequently mobilization in times of disasters (Gupta et al., 2019).

2.1.1 Malaysian Humanitarian Logistics

The Malaysian National Security Council, Directive 20 (2003) defines a disaster as ‘an emergency of some complexity that will cause the loss of lives, damage property, and the environment, and hamper local social and economic activities. Below is the chart for information channelling and communication in disaster and relief management as shown in Figure 1.

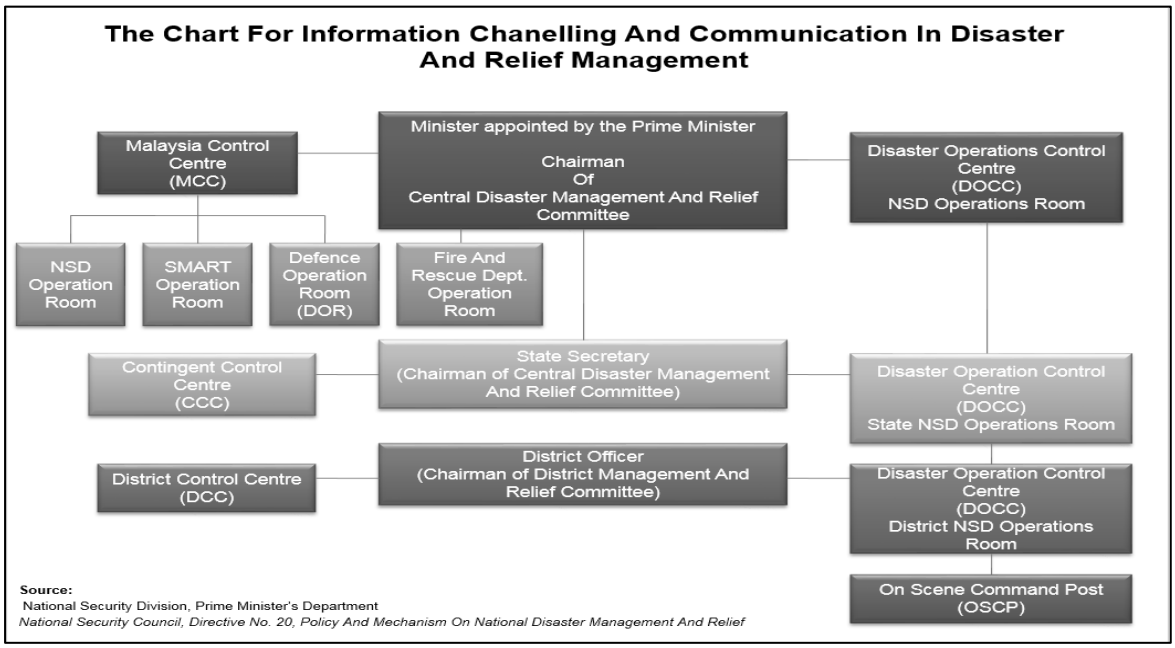

Figure 1: information channelling and communication in disaster and relief management

Figure 2: The Chart for the Role of Agencies Involved in Disaster Relief Management at the Scene of Incident

Disasters can be divided into three main categories which are naturally, man-made, and hybrid. The disaster aid programmed planned by the government is powered by the National Security Council (NSC). The effectiveness of the program being empowered by Directive No. 20 that provides a guideline for the agencies involved. The humanitarian activities during and after the disaster event are much dependent on the various logistics activities especially transportation and inventory management. Since humanitarian logistics are characterized by certain uncertainty and complexity, they need to be properly managed to implement better responses (National Security Council of Malaysia, 1997).

Disaster management in Malaysia is currently run by the National Disaster Management Agency (NADMA). NADMA is under the Prime Minister's Department monitoring, replacing the National Security Council (NSC) as the focal point for disaster management and consolidating the Disaster Management Division of the National Security Council (NSC), the Post Flood Recovery Unity of the Prime Minister's Department, and the Special Malaysia Disaster Assistance and Rescue Agency (SMART). Malaysia Civil Defence Forces (MCDF)

has been appointed as the Secretary for Disaster Management Committee at the state and district level and is responsible to enhance community resilience and preparedness towards disaster. MCDF set up a Disaster Management Secretariat Branch to regulate and coordinate the secretariat Disaster Management Committee activity at the state and district level (Khairul & Ismail, 2018).

The disaster management organization structure continues under three levels: federal, state, and district. Management of disaster risk is regulated by Directive No. 20. Directive No. 20 issues guidance on policy and mechanisms related to national disaster management and relief activities. It guides the integration of the various agencies on disaster management responsibilities and functions, and it regulates the management of disaster risks. Additionally, Directive No. 20 breaks down the disaster management cycle into four stages consisting of *prevention and mitigation, preparedness, response, and recovery* (National Security Council of Malaysia, 1997). In March 2012, the second edition of Directive No. 20 was released to include a comprehensive response and incorporation of international best practices. The Disaster Management and Relief Committee (DMRC) was formed to carry out the responsibilities of Directive No. 20 in the formation of various aspects of the 4 stages of the disaster management cycle as official national policies and strategies. The objective of Directive No. 20 is to provide a policy guideline on disaster management and rescue in accordance with the level of the disaster. It also provides a mechanism for managing the roles and responsibilities of agencies that are involved in combating disaster (Khairul & Ismail, 2018).

Malaysia has experienced several disasters in the last five years, including flood, earthquake, landslide, toxic pollution and, currently Malaysia is facing the global pandemic Covid-19.

Table 1: Several Disasters in The Last Five Years That Malaysia Experienced (author, 2020)

2015	***Earthquake***	An earthquake struck the Ranau district (Sabah Province) on 5 June 2015. It's damaged roads and buildings, including schools and a hospital. Several climbers on Malaysia's highest peak were hiking at the time of the earthquake, causing the death of 16 individuals. (World, 2015) (J. D. Martin, 2019)
2016	***Floods***	Heavy continuous rains caused flooding in the East Coast of Malaysia (Kelantan and Terengganu) in December 2016. In Kelantan, three main rivers, Sungai Golok, Sungai Galas, and Sungai Kelantan, flooded Bachok, Gua Musang, Jeli, Kota Bahru, Machang, Pasir Mas, Pasir Puteh, Tanah Merah, Tumpat, and Kuala Krai. Authorities evacuated communities from Terengganu, Sungai Besut, Sungai Terengganu, and Sungai Setiu. The floods temporarily displaced approximately 25,000 people and caused some villages to become inaccessible due to damaged bridges and blocked roads. (Davies, 2018)
2017	***Landslide***	On 21 October 2017, a landslide occurred in Tanjung Bungah, Pulau Pinang, Malaysia resulting in 11 deaths, 3 injured persons, and 4 missing persons. (J. D. Martin, 2019)
	Floods	Hours of torrential rain caused flash flooding in the northern state of Penang in November 2017. Flooding killed at least seven people and Malaysian military forces were deployed to assist in the rescue of thousands displaced in Penang. Nearly 80% of Penang was hit by typhoon-like winds and heavy rains. More than 3,500 were evacuated from their home to the evacuation centres. (J. D. Martin, 2019)
2018	***Floods***	Heavy rain in February caused flooding in parts of areas in Sarawak. Schools, hospitals, and as many as 4,859 people were evacuated from their homes and 25 evacuation centres were opened. (J. D. Martin, 2019)
2019	***Floods***	In the first week of December 2019, flooding has caused massive chaos and upheaval on the East Coast of Peninsular Malaysia. Thousands have been evacuated and more than 15,000 people were in relief centres in Kelantan and Terengganu on Dec 3. (*Malaysia_ Floods and Landslides - Nov 2019 _ ReliefWeb*, n.d.)

	Toxic Pollution	The Kim Kim River toxic pollution is a water pollution incident that occurred on 7 March 2019 caused by illegal chemical waste dumping at the Kim Kim River in Pasir Gudang, Johor. The illegal dumping released toxic waste, affecting 6,000 people and hospitalizing 2,775. Most of the victims were school students and 110 schools located near the river were subsequently closed. Through investigations, it was believed that the chemical wastes were dumped from a lorry tanker into the Kim Kim River. Agencies dispatched for the cleaning-up operation of the polluted river collected 2.43 tonnes of chemical waste on the day the incident was reported. (CNA, 2019)
2020	***Pandemic***	The virus was confirmed to have reached Malaysia in late January 2020, when it was detected on travellers from China arriving in Johor on 25th January, following the outbreak of Covid-19 in China. Reported cases remained relatively low at first and were largely confined to imported cases until localized clusters began to emerge in March; the largest cluster at that time was linked to a religious gathering held in Sri Petaling, Kuala Lumpur lead to massive spikes in local cases. Within a few weeks, Malaysia had recorded the largest cumulative number of confirmed COVID-19 infections in the region, breaching the 2,000 active cases mark by the end of March, from fewer than 30 cases at the beginning of the month. By 16th March, the virus was reported in every state in the country. (Director-General of Health Malaysia, 2020)Until October 2020, Malaysia the virus still spreading due to various clusters of cases from different occasions, a total of 36,457 cases, and yet, the government still tremendously working hard to minimize and flatten the positive Covid-19 cases. (Kementerian Kesihatan Malaysia, 2020)

According to (Mohd et al., 2018), five main factors contribute to ensuring that all disaster victims during the disaster occurrence are well managed in Malaysia. The factors are *information communication, collaboration, coordination, and cooperation*. These are the main success factors to manage humanitarian aid in disaster management:

1) Information

• ***Redundancy of information on the disaster*** – The information on the disaster could come from various sources or the same person and the same location in a short time. So, the disaster management team, especially the NGOs, might respond to an individual request at the same time (Gao et al., 2011).

• ***Data on the disaster might be fraudulent reports from malicious persons –*** Uncoordinated information could lead to fraudulent reports that could be retrieved by a malicious person for their intentions (Gao et al., 2011).

2) Communication

• ***Lack of communication tools to distribute disaster information*** - Failures of communication channels, whether conventional phone lines, cell phone systems or radio channels, can severely harm the emergency response (E. Martin et al., 2016).

3) Collaboration

• ***Lack of collaboration tools that can be used to manage disaster management information*** – Most of the disaster management team, especially the NGOs, do not know how and where to share and retrieve the disaster information with or from others (White et al., 2009).

• ***Lack of collaboration in providing knowledge-sharing on a disaster within the disaster management team*** – The disaster management team has its plan, SOP, or activities in managing the humanitarian aid distribution process (Gao et al., 2011) (Nazli et al., 2014).

4) Coordination

• ***Lack of coordination among the disaster management team*** – The current practices of disaster management is often unable to be harnessed effectively due to a lack of coordination

and efficient knowledge-sharing between the Government agencies and NGOs (Rodzi et al., 2016).

• ***Lack of coordination tools to manage real-time information on a disaster within the disaster management team*** – Real-time information is hard to deliver in a chaotic situation. There is a need for a tool that could coordinate disaster information despite the chaotic situation during a disaster occurrence (Gao et al., 2011).

5) Cooperation

• ***Lack of cooperation between the disaster management team and disaster victims*** – One of the challenging issues faced by Government agencies is to achieve cooperation with the disaster victims in terms of relocating them to the disaster-proof areas, especially in relocation phases (Joshi & Nishimura, 2016). Moreover, the main reason to cooperate with NGOs is to avoid program duplication, such as the reconstruction of a permanent housing program (E. Martin et al., 2016).

The issues discussed above have been identified as a major obstacle in managing the humanitarian aid distribution process during the disaster relief operation. These issues could not be ignored because they will lead to ineffectiveness and will disrupt the aid distribution process before, during, and after a disaster.

2.1.2 Pandemic Covid-19 in Malaysia

A novel coronavirus infectious disease (COVID-19) which is caused by SARS-CoV-2 has been announced by the World Health Organization as a fatal global pandemic (CDC, 2020). The epidemic of COVID- 19 started explosively in Wuhan and spread throughout China (Gallegos, 2020). As of April 4, 2020, the number of cases climbed above 1 million with a death toll of over 50 000 worldwide (CDC, 2020). The global impact and the public health threat of COVID-19 are the most serious seen in a respiratory virus since the 1918 influenza pandemic. Both COVID-19 and the 1918 influenza pandemic are associated with respiratory spread, a significant percentage of infected people with asymptomatic cases transmitting infection to others, and a high fatality rate (WHO, 2020).

While in Malaysia, according to Ministry of Health (2020), the virus was confirmed to have reached Malaysia in late January 2020, when it was detected on travellers from China arriving in Johor via Singapore on 25th January, following the outbreak of COVID-19 in China. Reported cases remained relatively low at first and were largely confined to imported cases until localised clusters began to emerge in March; the largest cluster at that time was linked to a religious gathering held in Sri Petaling, Kuala Lumpur lead to massive spikes in local cases. Within a few weeks, Malaysia had recorded the largest cumulative number of confirmed COVID-19 infections in the region, breaching the 2,000 active cases mark by the end of March, from fewer than 30 cases at the beginning of the month. By 16th March, the virus was reported in every state in the country (Ng, 2020).

The medical response to the outbreak is overseen by the Ministry of Health since the first cases reported in China. Preparations to stockpile facilities equipment, detect and monitor cases, manpower, and treat COVID-19 patients were reported to have been initiated as early as 6 January 2020, following a World Health Organization (WHO) report on a late-December 2019 outbreak of "pneumonia of unknown cause" in the city of Wuhan, China (Director-General of Health Malaysia, 2020). On 16th March 2020, a nationwide Movement Control Order (MCO),

intended to mitigate the spread of COVID-19 through social distancing was announced to be in effect between 18 and 31 March (Tashny Sukumaran, 2020).

The second cluster of Covid-19 had been reported in August 2020. The government of Malaysia under the Ministry of Health named it as PUI Sivagangga Cluster. This is due to the failure to remain under home quarantine after the patient returned to Malaysia from India on July 13th and initially tested negative when he landed at Kuala Lumpur International Airport but broke the home quarantine rules. The PUI Sivagangga cluster is from a super-spreader strain of Covid-19 D614G mutation of the Covid-19, the mutation is said to make the virus 10 times more infectious than the original strain as compared to the previous cluster on March 2020 (Kementerian Kesihatan Malaysia, 2020).

Malaysia being shocked again with the third cluster, after the State Election in Sabah on 26th September 2020. It started with The Benteng LD cluster, sparked by the arrest of two illegal migrants. Then the number of infected cases rapidly increasing from various areas in Sabah due to the election campaign all over the state (Kementerian Kesihatan Malaysia, 2020). In October 2020, all over Malaysia had positive covid19 cases. When the third cluster of Covid-19 cases being reported, the number of infectious cases is greater than the other biggest first and second cluster. These situations lead both government and non-governmental organizations (NGO) to take action in flattening the curve of Covid19 cases by working together in disaster relief, especially in Sabah, due to the high number of cases, as well as insufficient facilities, equipment, and manpower (Alhudzairi, 2020; Bahaudin, 2020).

2.1.3 Collaboration in Disaster Relief Operations

Collaboration is necessary not only among humanitarians but also with other players like the private sector and local communities. Humanitarian agencies are present to attend to the needs arising from a disaster. They may not have the resources or capabilities the private sector has to meet unanticipated needs. They also need to work with communities to ensure a substantial reduction of risk factors jeopardizing good recovery before they can exit the relief operation. Being a good corporate citizen is at the heart of most companies' humanitarian activities, whether this revolves around providing cash, goods, human resources, knowledge, and expertise, or a combination of these, each with its pros and cons (Tomasini & Van Wassenhove, 2009). Increasingly, companies are opting to design their social engagement through long-term programs or partnerships with humanitarian partners.

The role of NGOs during a disaster is also important to reduce the burden on government agencies in managing the humanitarian aid distribution process. The need for cooperation from NGOs as supporting teams is stated in Directive No. 20. However, the roles and responsibilities of NGOs in supporting Government agencies in providing humanitarian aid are not clearly defined under current legislation. The roles and responsibilities of NGOs are loosely defined under each service theme, which allowed the NGOs to make their own decisions in providing humanitarian aid in any disaster with limited information gained from social media. According to the National Disaster Management Agency (NADMA), there is a limited particular mechanism or tool to coordinate all NGOs and their various strengths and capacities. there was evidence of several cases of food redundancy, uneven distribution of food supply to disaster victims, food insecurity issues, and volunteers' redundancy during and post the 2014 Mega Flood disaster in Malaysia (Mohd et al., 2018)

The disaster management team have their plan, Standard Operation Process (SOP) or activities in managing the humanitarian aid distribution process (Gao et al., 2011). One of the challenging issues faced by Government agencies is to achieve cooperation with the disaster victims in terms of relocating them to the disaster-proof areas, especially in relocation phases (Gillespie et al., 2016). Apart from that, the main reason to cooperate with NGOs is to avoid program duplication, such as the reconstruction of a permanent housing program (Joshi & Nishimura, 2016; Martin et al., n.d.).

The diversity of actors operating along a relief chain is extremely high, depending on the magnitude and severity of disasters. For example, in the 2004 Asian tsunami, more than 700 different NGOs were involved in disaster relief operations. Investigating this high number of diverse actors in more detail reveals three main stakeholder groups that contribute most to Relief Supply Chain Management (RSCM) activities. They are represented by international agencies/NGOs, national agencies/NGOs, and companies from the private sector (Balcik, Burcu & Beamon, Benita & Krejci, Caroline & Muramatsu, Kyle & Ramirez, n.d.). To maximize RSCM performance, the different relief actors have to strive for high levels of coordination, cooperation, and collaboration during relief chain operations. Externalities, such as demand uncertainty, chaotic post-disaster environments, resource scarcity, and disaster unpredictability are impediments that negatively affect coordination, cooperation, and collaboration among relief chain stakeholders (Balcik, Burcu & Beamon, Benita & Krejci, Caroline & Muramatsu, Kyle & Ramirez, n.d.).

Collaboration between humanitarian stakeholders follows the intent to establish a close and intensive relationship (or alliance and coalition) between NGOs to jointly solve problems (Saab et al., 2013). Collaboration between government and NGOs is pursued in the mitigation and long-term recovery phases, where decisions are taken with particular caution, and NGOs' strategies are adjusted to others without time pressure (Li et al., 2019). The most important driver for successful collaboration is trust. It is more than just sharing information and interfacing with other NGOs because there is also the need to develop and prioritize trustful relations with other NGOs. Establishing trust between various partners leads to process integration and the interest to share benefits and costs. It is beyond doubt that trust is also important for coordination and cooperation but for long-term teamwork, i.e. collaboration, it is even more critical to trust other partners. Trust supports the pursuit of goals and specific output of relief chain operations, thus leading to the high performance of relief chains (Saab et al., 2013).

Aside from contributing skills and resources, NGOs have to share risks and costs from a long-term perspective (Maon et al., 2009). These attributes may also impact cooperation, but they constitute the real basis for successful collaboration and continuous improvement in the humanitarian context. In conclusion, collaboration in RSCM deals with establishing a close and intensive relationship between NGOs for jointly solving problems, where Government agencies and NGOs' internal standards, coordination, and rules are harmonized in accordance with others and trust is pervasive.

2.1.3.1 Trust in Collaboration

Trust can be defined as a function of the predictability and expectations of others' behaviours or a belief in others' competencies, which affects performance through activation of cooperation or other collaborative processes (Bond-Barnard et al., 2018). When there is trust, people ask for help, speak openly and honestly, take risks, accept new challenges, and carry

out their activities with less anxiety and stress (Carvalho, 2008). There are two dimensions of trust judgments: goodwill and competence. (Das & Teng, 2001). Perceptions of goodwill entail attributions regarding the intention of another party to behave in a trustworthy manner; perceptions of competence entail attributions regarding the other party's ability to behave or perform as expected (Nooteboom, 1996). Contracts, meanwhile, represent the alternative means by which parties can manage risk in exchange relationships, but in interfirm relationships, firms typically use contracts while simultaneously attempting to build trust (Poppo & Zenger, 2002).

In addition to serving a control function, contracts provide a means by which parties can coordinate their expectations and efforts (Mayer & Argyres, 2004). As a result, common knowledge structures such as shared language and routinized interactions emerge that make it easier for the parties to communicate their ability to meet each other's needs (Zollo, 2016). Trust is an essential component for team performance (Erdem & Ozen, 2003). If trust is not present, teams cannot work efficiently. As the aim of humanitarian logistics is to alleviate the suffering of disaster-affected people, highly performing and trusted teams are of utmost importance. Therefore, building trust between parties involved in certain tasks or disaster relief activities can be enhanced by adding up a contract agreement to ensure both parties will work efficiently and coordinate with the job and minimize the risk that could occur.

2.1.4 Coordination in Disaster Relief

High levels of coordination, cooperation, and collaboration between involved aid providers are needed for efficient logistics processes in items procurement, transport, and warehousing. In the immediate response phase, coordination, cooperation, and collaboration are firstly required when NGOs, assess the beneficiaries' needs by sending field assessment and coordination teams into the disaster area (Kovács & Spens, 2007). Coordination is the process of organizing people or groups so that they work together properly and well. No organization working alone can address the magnitude of the complexity of the needs associated with disaster preparedness and disaster response (Wankmüller & Reiner, 2019).

In addition to the Red Cross and Red Crescent (RC), there are government agencies, public service institutions (police, firemen, health workers), community groups such as farmers or youth groups, civic and religious organizations, NGOs, businesses, local leaders and local groups with roles and responsibilities in disaster preparedness and response. Effective coordination among these various responders is critical to successful preparation and response to disasters. At its best, coordination can eliminate gaps and duplication in service, determine an appropriate division of responsibility and establish a framework for information sharing, policy agreements, program collaboration, and joint planning (Interworks, 2000).

Disasters are characterized by overwhelming needs, competing priorities, destroyed or damaged communication and infrastructure, a rapid influx of humanitarian assistance organizations, and an outburst of mutual aid from local citizens and highly stressed local governmental and non-governmental institutions. In these environments, coordination takes extra effort, time, resources, and commitment. Coordination provisions will increase trust between agencies involved in disaster relief operations.

2.2 Proposed Framework

This research proposed a conceptual framework, which comprised the factors influencing the successful framework during disaster relief operation during pandemic Covid-19 in Malaysia in achieving healthy communities. The research is using a conceptual framework to illustrate the relationship between the independent variable and the dependent variable. Based on Mcgaghie et al., (2001), this conceptual framework has set the stage for the representation of objective that drives the investigation being reported based on the statement problem. These research problem statements present the description of an issue that caused the researcher to conduct the study. The researcher also using this conceptual framework to integrate between existing literature and the research objective (Haralambos & Holborn, 2008). The conceptual framework model for this study is shown in Figure 3.

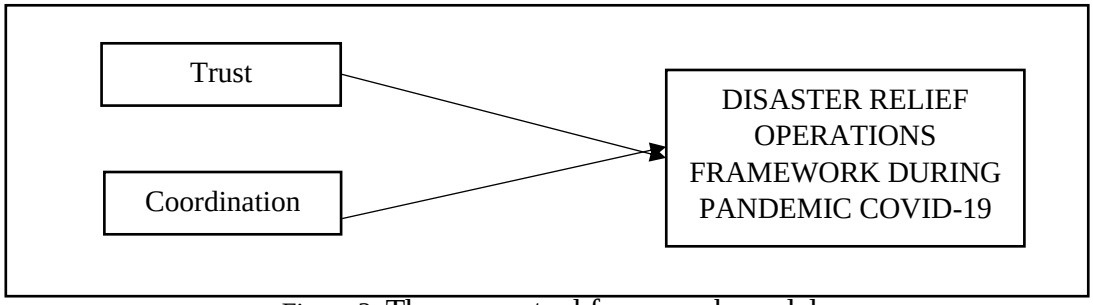

Figure 3: The conceptual framework model

3. Conclusion

From this chapter, the conceptual framework proposes for each element has been discussed. This study used a review of existing literature and found that two independent variables namely trust and coordination are the factors influencing the successful framework during disaster relief operation during pandemic Covid-19 in Malaysia in achieving healthy communities.

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