

Governance Structure and Challenges in COVID-19 Response Management by Public Authorities, Malaysia: A Case Study

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Abstract

Crisis response management to non-conventional transboundary threats, such as COVID-19, necessitated a robust governance structure due to its unprecedented nature, marked by uncertainty and regarded as the worst global catastrophe since World War II. This health emergency not only caused immense human suffering but also triggered significant socioeconomic disruptions. As of May 6, 2023, approximately 687,968,896 individuals had been infected, with 6,894,694 reported deaths. In response, countries around the world were compelled to develop effective strategies to minimise infections and fatalities. A strong governance structure, particularly in public administration, is crucial for determining the success of response management, as emphasised by the Organisation for Economic Co-operation and Development (OECD). This study aimed to investigate the effective governance structure for managing COVID-19 responses in Malaysia and the challenges faced in ensuring an effective response. The analysis focused on four leading public authorities that were central to COVID-19 response management in Malaysia. Data were collected through semi-structured interviews using purposeful sampling, targeting top management representatives from the respective public authorities. Findings indicated that the current disaster response management necessitates a re-evaluation of existing governance structures or the development of a specific governance framework for non-conventional transboundary threats. It also highlighted the importance of embracing technology, enhancing data governance, improving communication, fostering community involvement, adopting flexible procurement procedures, and developing leadership skills to respond to such crises effectively.

Keywords: Governance Structure, Challenges in COVID-19 Response Management, Disaster Governance Framework, Crisis Response Management Effectiveness.

INTRODUCTION

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The governance structure plays a vital role in managing the COVID-19 response, particularly given the unprecedented nature of the crisis. As a non-conventional transboundary emergency, the pandemic posed extraordinary challenges to both global and national governance systems (Choi, 2020). Consequently, various aspects of governance had to be reassessed to develop a more effective response mechanism for an event unlike anything experienced before.

By May 6, 2023, COVID-19 had resulted in 687,968,896 infections and 6,894,694 deaths worldwide. In Malaysia, the virus has led to 2,758,086 confirmed cases and 31,462 fatalities (Worldometers.info). The World Health Organization (WHO) officially classified COVID-19 as a global pandemic on March 11, 2020 (Cucinotta & Vanelli, 2020), leading to unprecedented circumstances and experiences for individuals across the world (Martínez-Córdoba, 2021).

The OECD (2020) called on all governments to adopt comprehensive governance strategies, emphasising that public governance was crucial in addressing the pandemic's economic and social repercussions. A well-structured governance framework was essential for responding effectively to such crises, requiring urgent, adaptable, and strategic policymaking. This health emergency reinforced the need for robust public governance mechanisms (Tung, 2021). The objective of this paper is to examine the appropriate governance structures for COVID-19 response management and explore solutions to overcome challenges, ultimately enhancing effectiveness in crisis management that could potentially save countless lives and reduce government expenditures.

Malaysia's approach to managing COVID-19 involved adapting its existing disaster response governance framework. This strategy initially proved successful in handling the first wave of infections (Abdullah, 2021). However, governance missteps, such as the decision to proceed with the Sabah State Election in September 2020, have led to a sharp rise in cases and fatalities (Muhammad Nur Amir et al., 2021). Effectively addressing crises, particularly non-conventional transboundary threats like COVID-19, requires a well-structured governance system that sets clear operational guidelines (UNDP, 2013). The Centres of Government (CoGs) played a crucial role in establishing and executing pandemic response strategies, ultimately shaping the effectiveness of COVID-19 management (OECD, 2020). Public authorities were responsible for crafting systematic policies and implementing resilient response mechanisms. It highlighted how robust governance structures were instrumental in ensuring that crisis management operated efficiently and effectively. Traditional governance methods were often inadequate for addressing non-conventional threats like COVID-19. Instead, a more adaptive and resilient framework was necessary. Ansell et al. (2010) proposed the need for "extreme adaptation and unprecedented cooperation," a view supported by Boin (2020), who argued that overcoming existing procedural limitations through the right governance model could have saved numerous lives and significant government expenditures.

LITERATURE REVIEW

A crisis is broadly understood as a perceived existential threat (Boin et al., 2018; Rosenthal et al., 2001). It arises when a group, organisation, or community confronts a profound disruption to core structures, values, or norms that require urgent, high-stakes decision-making under severe time pressure and uncertainty (Boin et al., 2018; Rosenthal et al., 1989). Within the framework of crisis governance, such events reshape the urgency and scope of institutional responses, often triggering financial volatility and misalignment with organisational goals (Adebola, 2021; Boubaker & Nguyen, 2018; Janssen & Van Der Voort, 2020; McMullin & Raggo, 2020; Shadmi et al., 2020).

Governance capacity works as a fundamental element in managing crises. Governments possessing high administrative capacity tend to adopt proactive measures in response to COVID-19, effectively mobilising and coordinating national resources, and utilising a broad spectrum of policy instruments across selected policy event types (Yen et al., 2022). The capacity serves as a critical institutional determinant of a government's effectiveness in tackling complex policy challenges, including public health crises (Christensen et al., 2016; Christensen & Lægheid, 2020; Greer et al., 2020).

Establishing the right governance structure enhances a nation's ability to respond effectively, requiring coordinated efforts in governance, communication, and crisis response networks (Scott & Nowell, 2020). According to Scott and Nowell (2020), governance structures outline mechanisms for communication, collaboration, and operational coordination.

Beyond immediate crisis responses, governments must implement structured and continuous reforms to tackle systemic weaknesses that hinder their ability to manage emergencies effectively (Etienne et al., 2020). Capano et al. (2020) emphasised that governmental effectiveness in decision-making and implementation is directly linked to state capacity, which ultimately influences the success of crisis response. Fukuyama (2020) emphasised that strong state capacity is essential for swift and effective pandemic control, enabling governments to curb the spread of viruses. Christensen et al. (2016) defined governance capacity through structural and procedural elements, resource allocation, and practical implementation, linking it to both instrumental and structural factors (Christensen & Ma, 2018).

Examining every dimension of COVID-19 management, including governance structures, is essential for refining global responses. Bontempi et al. (2020) stressed the importance of interdisciplinary research in analysing the pandemic from multiple perspectives. They argued that a holistic approach goes beyond healthcare considerations, would improve policy evaluation.

Studies suggest that resilient nations tend to exhibit stronger governance frameworks (Chien & Lin, 2020). Countries that navigated COVID-19 most successfully were those marked by robust governance structures and widespread public support (Huston et al., 2020). Martínez-Córdoba et al. (2021) supported the idea by noting that governance quality significantly influenced pandemic management outcomes. Baris and Pelizzo (2020) found that countries with well-functioning governance systems experienced lower mortality rates from COVID-19. Liang et al. (2020) and Serikbayeva et al. (2020) further substantiated this conclusion, demonstrating a clear link between government effectiveness and national fatality rates.

Malaysia's initial COVID-19 response was shaped by its centralised public healthcare infrastructure, enabling swift implementation of containment measures such as testing, quarantine, and treatment under the Movement Control Order (MCO), which was enforced through legal instruments like the Prevention and Control of Infectious Diseases Act 1988 (Por, 2023; Ng & Krishnan, 2022). While early efforts successfully flattened the curve, political instability under the then Perikatan Nasional coalition soon disrupted policy coherence. A few reckless decisions, among them allowing the Sabah state election to proceed, led to inconsistent implementation and eroded public trust, reflecting a broader shift from initial state strength to governance fatigue and declining coordination (Por, 2023).

MySejahtera was one of the widely used applications during COVID-19, which made efforts to modernise the public health response through digital tools such as the signalling a move toward integrated health crisis management. However, concerns over data privacy, irregular digital access, and technical reliability limited its effectiveness, particularly when compared to more robust digital governance models in Taiwan and South Korea (Tayeb & Por, 2021). Malaysia's case illustrates the concern between centralised bureaucratic authority and adaptive responsiveness, offering a nuanced lens for comparative analysis across Asia-Pacific governance systems.

Table 1 shows a comparative analysis of governance structures used by South Korea, Japan, Taiwan, Vietnam, and New Zealand in managing the COVID-19 pandemic. The analysis highlights institutional configurations, coordination mechanisms, and civil society engagement. The findings reveal that all five countries adopted centralised leadership at critical junctures; however, their governance models diverged in legal authority, decentralisation, and public trust strategies. South Korea and Taiwan employed hybrid technocratic models, characterised by robust legal frameworks and digital integration, which enabled agile responses through centralised command centres and real-time data systems (Kim, 2020; Wang et al., 2020). In contrast, Japan's decentralised approach relied on voluntary compliance and scientific advisory panels, reflecting a preference for soft law and regional autonomy (Shibuya et al., 2020). Vietnam's hierarchical model featured party-led coordination and local governance networks to enforce strict containment measures (Le et al., 2021). By comparison, New Zealand's all-of-government strategy emphasised transparent communication, indigenous engagement, and adaptive policy cycles (Wilson, 2020).

Table 1:

Comparison of Governance Structure in COVID-19 Management between Selected Asia-Pacific Countries

Country	Governance-Related Key Features
South Korea	▪ The Korea Disease Control and Prevention Agency (KDCA) led national coordination, supported by the Prime Minister's Office and Ministry of Health; local governments had autonomy with support ▪ Integrated whole-of-government and whole-of-society approach ▪ Strong collaboration with civil society, local leaders, and private sector ▪ Digital Surveillance & Data Integration (pioneered digital contact tracing) ▪ Domestic Vaccine Production & Supply Chain Management ▪ Apply responsive governance hybrid (blended hierarchical coordination, market mechanisms, and networked collaboration)
Japan	▪ Cabinet-led response with advisory input from scientific experts; Prime Minister's Office coordination ▪ Apply soft governance model, emphasizing voluntary compliance, decentralized execution, preservation of civil liberties, and cluster-based response ▪ Prefectures had significant autonomy; central government coordinated via task forces ▪ Avoided lockdowns; relied on public self-restraint and social pressure

	▪ Frequent updates; emphasis on expert-led messaging; less centralized communication
Taiwan	▪ Coordination by the Central Epidemic Command Center (CECC) joined by integrated health experts, and government agencies, enabling swift, science-based decision-making ▪ Avoided emergency powers; passed COVID-19 Special Act; strong transparency and digital tools ▪ Civil society engaged in mask production, misinformation countering, and service delivery ▪ Institutionalized adaptability; legal safeguards, technocratic agility, and civic engagement. ▪ Apply collaborative, adaptive, network governance (Adaptive policy, public-private collaboration, etc) ▪ Digital resilience, data orchestration, and tech-enabled governance (e.g.: merged data from immigration records, health insurance databases, and travel histories to identify high-risk individuals early)
Vietnam	▪ Centralized authoritarian; top-down command ▪ Adaptive within a rigid framework; Strong centralised decision-making with decentralized Implementation (collaborative and hierarchical steering mechanisms) ▪ Central Steering Committee led by Deputy Prime Minister; Neighbourhood governance and provincial coordination were vital ▪ Limited digital tracing; mobile monitoring for quarantine compliance
New Zealand	▪ Centralized “All-of-Government” response led by Prime Minister ▪ Ministry of Health led initially; later, multi-agency coordination with Civil Defence and Emergency Management (CDEM) groups ▪ Adapt centralized adaptive governance, with clear command structures and rapid policy shifts ▪ Creates COVID-19 Response Act; Civil Defence Emergency ▪ Management Act; use of emergency powers ▪ Elimination strategy early on; strict lockdowns and border closures ▪ Daily briefings; clear alert levels; high public trust

Despite structural differences, early border controls, clear risk communication, and integration of civil society actors were common success factors. The comparative lens underscores the importance of institutional adaptability, legal preparedness, and trust-building in crisis governance. These insights add to the evolving discourse on

pandemic resilience and offer policy lessons for future transboundary health emergencies.

The COVID-19 pandemic underscored the necessity of rethinking governance models (Sein, 2020), reinforcing the importance of well-structured governance arrangements (Uddin, 2021). However, no single country has established definitive best practices for pandemic response (Muhamad Khair et al., 2021).

METHODOLOGY

This study employed a qualitative case study approach, focusing on interviews to examine governance dimensions within Malaysia's COVID-19 response. Drawing on methodological principles from Stake (2000), Yin (2003), and Denzin & Lincoln (2005), it adopted a descriptive, narrative-driven design that enabled in-depth analysis of events situated in their real-world contexts (Lichtman, 2010; Creswell, 2003, 2009). Between 2021 and 2023, five top management of public officials from four key government bodies, which are the National Disaster Management Agency (NADMA), the Ministry of Health (MOH), the National Security Council (NSC), and the Prime Minister's Department (PMD), were interviewed, yielding nuanced insights into the structural and procedural mechanisms deployed during the crisis. Through semi-structured interviews, which are a common approach in qualitative social science research (Magaldi & Berler, 2018), the researcher engaged directly with respondents, aiming for a detailed understanding of their perspectives while uncovering new insights (Merriam, 2009), as maintaining high data quality was essential for ensuring a robust analysis (Richards, 2005). An interview protocol was developed, serving as a valuable tool for deeper discussions and high-quality data collection (Shoozan & Mohamad, 2024).

The informants, each with six to twenty-five years of experience in crisis management, including flood response, haze control, and public health emergencies, offered informed perspectives on the operational and governance challenges

encountered. Interview questions prompted participants to reflect on principles of good governance in pandemic response and to articulate specific barriers to effective implementation. The core interview question was:

- How does the top management perceive the governance structure at the early

stage in responding to COVID-19?

- Based on your professional experience, what do you consider the key challenges that hindered a successful COVID-19 response management?

Data collection involved individual interviews beginning with the agency that convened the first COVID-19 Special Meeting. Each session included transcription, member checking, initial coding, and follow-up clarification to ensure analytical depth. This protocol was uniformly applied across all five informants. Saturation was reached after the fourth interview, with the fifth confirming thematic closure. The consistency among participants with all experienced crisis managers likely contributed to the early emergence of saturation.

Case studies provide a robust framework for examining processes within specific social contexts, with their narrative richness contributing to the credibility of findings (Gustafsson, 2017). This study's data analysis followed a rigorous process of tagging, coding, and theming interview transcripts using ATLAS.ti, allowing for systematic integration of perspectives and the identification of key factors such as institutional climate and operational effectiveness that informed a framework for managing complex, transnational crises like COVID-19.

Research Design

Each interview session followed a standardised interview protocol comprising 12 primary questions divided into three sections. The first section gathered demographic data, including the informants' understanding of the topic, their years of experience in crisis response management, and their previous roles in handling crises. The second section examined the governance framework used to combat COVID-19, focusing on governance types, key committee members, structural components, strengths and weaknesses, decision-making processes, and lessons learned. The final section addressed the obstacles encountered in implementing response management.

Informants answered these questions with flexibility, allowing discussions to shift beyond the predefined sequence when necessary. The collected data was analysed qualitatively, with key themes identified from multiple interview transcripts. To ensure accuracy and eliminate bias, transcripts were returned to informants for validation.

Sample

The units of analysis for this study are key public authorities responsible for policy development and governmental decision-making in COVID-19 response management. Five informants representing four public service agencies participated, with representatives selected based on recommendations from an initial informant. All interviews were conducted in person at the informants' respective offices. The respondents included two female and three male officials, all holding at least grade 54 positions in public service and actively involved during the COVID-19 response management. Additionally, three informants had between 15 to 25 years of experience in crisis management, while two had between five and ten years of experience.

A purposeful sampling strategy was employed to intentionally select participants capable of offering deep, contextually grounded insights into the research problem (Creswell, 2013). As Miles and Huberman (1994) note, this method targets an individual's analysis of a bounded system, best suited to address the research questions, while Patton (2015) underscores the value of information-rich cases. Sampling was concentrated on a clearly defined unit of analysis: senior officials directly involved in Malaysia's COVID-19 response. The aim was not to generalise findings, but to generate a nuanced, interpretive understanding of the phenomenon (Maxwell, 2013), prioritising depth over representativeness. In line with Morse and Field (1995), the study emphasised appropriateness and adequacy in its sampling decisions.

Sample size in qualitative research is typically determined through expert judgment and contextual relevance (Sandelowski, 1995, p.183). Creswell (2013) recommends four to five participants for case study designs, aligning with this study's inclusion of five informants. Given the lack of rigid sample size criteria in purposeful sampling (Guest et al., 2006; Merriam, 2009; Hennink & Kaiser, 2022), data saturation was adopted as the guiding principle. Saturation was achieved when no new themes emerged, validating the adequacy of the sample.

RESULTS

The Governance Structure

The findings revealed that conventional governance structures were ineffective in managing non-conventional transboundary threats. The COVID-19 crisis

underscored the necessity for governance reform, providing an opportunity to strengthen crisis management frameworks. Kuhlmann (2021) highlighted that crises often serve as catalysts for political learning and institutional reform.

The government must reconsider its governance structure for crisis management, particularly regarding non-conventional transboundary threats, to enhance effectiveness. The governance framework developed should be comprehensive, adaptable, and flexible to accommodate the evolving challenges posed by any non-conventional transboundary threats. A focus on the governance structure is critical, amid a review of existing literature indicating that most studies focused on disaster management rather than its governance, with a predominant emphasis on flood management.

COVID-19 impacted every sector in Malaysia, necessitating the collective effort of all ministries and agencies. When informants were asked about the governance structure used in combating the pandemic, those from the Ministry of Health affirmed that their existing governance model, based on prior pandemic guidelines, was well-structured and functioned effectively (n=2).

"I think it's effective. ... Aaa... if let say we can still manage... we just need a little involvement... usually it will be coordinated by the regular (division)... who owns the program... if we can't cope, then we will involve agencies. We call it... Crisis Preparedness and Response Centre (CPRC) ... is the division name... that is in charge of disease control... Disease Control Division. If it's a small outbreak, the CPRC will handle it. If it's big, it really must cooperate with the National Security Council (NSC)."

"Eh...very solid... we have a very coordinated system...like we have a national, state, and district CPRC operational room. Even the hospital has its own operational rooms. The data (management) is all very coordinated...in the district Disaster Meeting Committee, the District Health Officer will be the representative for health matters. It means that... all hospital directors will forward information to the district health officer. So, all the actions will be well coordinated. Actually...(I think) Malaysia act quite fast when the cases escalate."

"Aaa... ok... our first similar crisis, in local set-up... Nipah (outbreak)... we did learn something from the Nipah outbreak, following that, we strengthened our

organisation, and we prepared many related guidelines to handle health crises. It's public health. So, when we have... aaa... Anthrax... the threat of Anthrax 2001, we already have a platform for the crisis. Later in 2004, we had another epidemic called... Avian influenza. MERS was in 2003... That was a pandemic, too. Aah... (however) It did not spread to every part of the country... We had only 5 active cases. Aaa... but at that time, it was not massive, only for a moment. Not as bad as the COVID, this COVID lasts a long time."

However, others noted that, in the early stages of response management, the current governance framework struggled to meet the demands of COVID-19 response efforts (n=3). Informants explained that COVID-19 is a totally different crisis, and no specific governance structure exists for response management. Still, they adapted existing disaster management frameworks due to the absence of alternative structures. Given the uncertainty at the onset of the crisis, disaster management guidelines provided the fundamental structure necessary for managing the pandemic response.

"That was a bit chaotic at first, because they coordinated three different meetings (concurrently) and acted as the secretary of the meeting as well. It's a bit messy ... at the MKN (NSC) level at that time. We have no idea what to do. That's why when I was at the Prime Minister Department (PMD), we assisted with the procurement matter, we helped, we sent our officers to do the procurement. Because this is unprecedented. We never went through... the beginning stage ... it's a bit chaotic."

"Ok, in terms of COVID (management), actually... we don't have a (specific) structure. Because this is an unprecedented experience in the whole world. Since this is a new experience, we don't have a 'template' that we can imitate from any country. So, there is no 'template', we do what we think of the quickest, and the best that allows us to overcome the problem at that moment. And there is no comparison that we can make for us to learn or even imitate to make it a basis in terms of disaster management. But previous pandemic experience and handling guide would help, it may only happen to certain states in Malaysia, but a similar handling experience helps a little bit."

"Totally different. Okay... coordination, communication. As I mentioned earlier, we have never encountered a similar situation to this previously. And at the same time, when the COVID happened, manufacturing sector in China was

closed. So, many necessary supplies such as face masks, ventilators... not available. And then, other producer countries were not willing to exports, like Europe... they don't export because they also in need."

"Yes, it is bigger because it happens all over the world. So, the only level 3 disaster in Malaysia is COVID because it involves the federal government."

The governance structures and practices employed by health agencies during the COVID-19 crisis demonstrated commendable effectiveness, drawing on prior experience to offer valuable operational guidance. However, at the central coordination level, notable shortcomings and structural gaps emerged, indicating a need for improvement to enhance future crisis response capabilities. Echoing this concern, the OECD (2020) emphasised the pivotal role of governance systems in enabling countries to respond rapidly and effectively to the pandemic. These findings underscore the importance of strategic attention from senior leadership within relevant public authorities to establish robust national-level response mechanisms, reducing reliance on foreign health products and strengthening domestic preparedness.

Challenges Faced in COVID-19 Response Management

Although Malaysia utilised its existing disaster management framework to respond to COVID-19, it was insufficient in meeting the crisis's demands. Informants admitted that a robust governance structure is vital, as well as the ability to overcome challenges faced in response management. Hence, several key challenges were identified that, if addressed, could significantly improve the response effectiveness.

First, three informants acknowledged difficulties in ensuring efficient crisis management due to the absence of a specialised framework tailored to the pandemic. The lack of collaborative guidelines, risk communication protocols, and clearly defined roles for ministries and agencies hindered coordination efforts.

Second, all informants (n=5) emphasised that indecisive leadership was a major obstacle. Poor leadership often led to unclear goals and visions for crisis response (van Diggele et al., 2020). Leaders bore the highest responsibility, particularly in crises, and their primary role was to make informed decisions based on available data and evolving circumstances, guiding their teams in implementing strategies effectively.

Third, ineffective communication posed another critical challenge (n=5). Prompt and accurate information sharing is essential for managing public anxiety and fostering appropriate behaviour (Sauer et al., 2021). Informants noted that some agencies lacked the foresight necessary to fulfil their responsibilities during the crisis. Regular government updates on the situation, implemented actions, and recommended public behaviours were crucial in preventing panic buying and food insecurity, especially during lockdowns. Misinformation could exacerbate challenges for vulnerable communities, making proactive communication essential (Setyaningsih et al., 2023).

Additionally, communication issues extended to inconsistent interpretations of enforcement policies, leading to confusion in implementing standard operating procedures (SOPs). For instance, during COVID-19, wearing masks outdoors was mandatory. One informant shared a case where a woman was fined for improper mask usage while alone, despite posing no immediate risk. The incident highlighted the consequences of unclear SOPs and enforcement discrepancies.

Fourth, informants pointed out weaknesses in information technology capacity, including outdated computer systems, inefficient software, and inadequate networking infrastructure. These deficiencies obstructed data processing and hindered effective governance. The manual operational systems in healthcare further exacerbated inefficiencies, reducing the ability to compile and analyse vast amounts of critical data for policymakers.

Fifth, all informants agreed that Malaysia was unprepared in terms of data governance. Effective decision-making relies on accurate data compilation, requiring a user-friendly and manageable system. One informant cited an instance where duplicate records of infected individuals across different health centres inflated official statistics, underscoring the necessity of a robust data management framework.

Beyond data governance, informants stressed the importance of science-based decision-making. Understanding the virus's characteristics, its contagiousness, vulnerable populations, and transmission-prevention strategies was essential for policymakers crafting effective response plans.

Sixth, informants highlighted the necessity of flexible procurement procedures to enhance governance efficiency. Procurement inflexibility limited access to essential health equipment, exacerbating supply shortages. Items such as personal protective

equipment (PPE), gloves, masks, and ventilators were in high demand globally (Ranney et al., 2020; Cook, 2020; Chand et al., 2021; Mahmood et al., 2020). Supply chain disruptions due to export bans, heightened global competition, and restricted transportation further complicated procurement. Despite these challenges, Malaysia needed urgent access to medical supplies to protect healthcare workers and the public while reducing infection rates.

However, bureaucratic delays impeded efficient procurement processes. Traditional bureaucratic structures, while functional in normal situations, were incompatible with crisis demands. A more agile approach was required to expedite decision-making, payments, and fund allocations. Government procurement policies, which typically required payment upon delivery, conflicted with new industry norms where manufacturers demanded upfront payment. Nations with financial readiness had an advantage in securing scarce supplies amidst intense global competition.

Lastly, informants (n=5) cited societal behaviour as a challenge to effective crisis management. A portion of the population disregarded Standard Operating Procedures (SOPs) during movement control orders (MCOs), contributing to increased infections. Public health recommendations encouraged social distancing, minimising gatherings, avoiding handshakes, and limiting recreational activities. Ensuring widespread compliance was crucial in preventing transmission. Studies demonstrated that adherence to preventive measures was as pivotal to managing COVID-19 as governance itself (Anderson et al., 2020).

In the final stage of the interview, informants were asked whether the existing governance framework sufficiently met COVID-19 response needs. Two of the informants stated that:

“Every agency has its own specific guidelines or policies, but they must be read together when COVID-19 happened. Running the process based on multiple different guidelines has led to confusion as the committee members may interpret the other agencies’ guidelines differently, and it may be with each other’s principles. Consequently, the agencies’ representatives would clash over roles and authority”

“Ok, in terms of COVID-19 (management), actually... we don't have a (specific) structure. Because this is an unprecedented experience in the whole world. Since

this is a new experience, we don't have a 'template' that... we can imitate from any country.”

Overcoming Challenges in COVID-19 Response Management Governance

This section examines how informants perceived the effectiveness of governance structures in managing the COVID-19 crisis, aiming to minimise its impact on Malaysian citizens. All participants acknowledged that the early response phase was chaotic, with committees uncertain about the appropriate governance framework, necessary steps, and key stakeholders. The Ministry of Health (MOH), recognising the pandemic as a national crisis, escalated the issue to the National Disaster Management Agency (NADMA), which is responsible for coordinating crisis responses. Initially, NADMA led the first COVID-19 meetings before handing over coordination responsibilities to the National Security Council (NSC) once the situation evolved into a national security concern. Subsequently, nearly all ministries and public agencies collaborated to devise appropriate solutions.

When asked about overcoming the absence of a predefined governance structure for the COVID-19 response, informants described adapting existing disaster management frameworks. These guidelines helped establish committees and designate leadership responsibilities. However, informants admitted that there was no formal framework outlining clear roles, communication protocols, collaboration mechanisms, or decision-making structures. Despite these shortcomings, professional conduct and strong teamwork ensured a functional response to protect lives and sustain livelihoods.

Regarding public cooperation, informants expressed frustration over non-compliance with stay-at-home orders, emphasising the limitations in enforcement personnel, which make it impossible for the personnel to be present at every location. Three of the informants stated:

“... in terms of coordination, all were okay. We came out with SOP. The COVID-19 SOP. So that becomes guidance for people to... for how to behave. Because the SOP is there. Whether they obey or not... aaa, it's mostly based on the public's reaction. Self-discipline. Because it's about the whole nation. We can't go check every... every person, every... building... every what...”

“Okay. For me lah. It’s about whether they obey or not. The information is, as usual, we should follow what we mentioned earlier, but it’s normal, sometimes people at the top ask through from the district... but on paper... that flow... that structure... is perfect...”

“When the government (in other countries like Hong Kong, Taiwan) came out with certain SOPs... they abide. In Malaysia, the government do the same thing... they fight against the SOPs... we open even for a moment, the case goes back up... why? Because many people do not obey the rules...”

For future similar crises, they recommended prioritising public education initiatives to encourage widespread compliance.

To address communication challenges, various ministries and agencies took proactive steps to disseminate crucial information across multiple platforms, ensuring public awareness of government actions and responsibilities. Ideally, communication-related agencies should serve as intermediaries between authorities and citizens. Informants proposed establishing clear guidelines to define the communication roles of each agency in future crises.

Informants also shared their struggles with analysing large volumes of data using outdated computers and slow internet connections. Producing daily reports with limited technology was exhausting but unavoidable. They emphasised the need for future investments in advanced computing systems and software to improve efficiency.

When discussing the role of data in decision-making, all informants agreed that accessible, reliable, and well-organised data was crucial in shaping outcomes. Essential information, such as available human resources, medical facilities, equipment stockpiles, scientific insights on the virus, and vaccine developments, was often delayed, affecting decision-making efficiency. Additionally, manual record-keeping hindered data accuracy and responsiveness.

Recognising these challenges, agencies were compelled to transition from manual to computerised records, despite the time-consuming nature of the process. Informants recommended digitising data management and implementing inter-agency sharing to enhance crisis response efficiency.

Another concern raised was the rigidity of procurement procedures. Standard bureaucratic processes, requiring multiple approvals and post-delivery payments, proved inefficient during the crisis. As medical suppliers prioritised countries capable of paying upfront, Malaysia relied on government-linked agencies to manage procurement. Informants suggested developing more flexible yet legally compliant procurement protocols to facilitate faster responses in future emergencies.

Finally, informants acknowledged leadership deficiencies as a major challenge, though difficult to address in the short term. They emphasised the need for training and exposure to crisis management for future leaders to improve decision-making under pressure.

Overall, informants agreed that a specific governance structure for non-conventional transboundary crisis management to be developed, given the unprecedented nature of COVID-19, deemed the most severe global crisis since World War II.

DISCUSSION

The governance framework and system for managing COVID-19 response efforts required reassessment and adaptation to strengthen governance capacity and enhance collaboration (Demiroz, 2017). Addressing non-conventional transboundary threats such as pandemics and cyber-attacks called for "extreme adaptation and unprecedented cooperation" (Ansell et al., 2010).

Governance structures are fundamental components of any organisation, defining the interconnected relationships between agencies, regulatory frameworks, and operational processes. In times of crisis, effective management depends on a well-established governance system, streamlined communication, and coordinated responses within incident management networks (Scott & Nowell, 2020). Governance mechanisms guide the efficiency of response networks by ensuring seamless information flow, inter-jurisdictional collaboration, and strategic operations. A well-designed structure enhances a nation's ability to handle complex crises effectively.

Organisations refine their strategies by analysing both internal decision-making outcomes and lessons learned from other nations' successes and failures. This reflective process allows them to improve existing systems and prepare for future challenges. The

rapid spread of COVID-19, compounded by uncertainty and limited scientific knowledge, forced leaders to make critical decisions with incomplete data. Although this approach carried risks of inaccuracies, adaptive governance embraced it as part of the learning curve.

This study explores the discrepancies within governance frameworks and the obstacles that hinder efficiency in crisis management. Governments must prioritise developing a comprehensive governance model specifically designed for non-traditional transboundary threats while finding practical solutions to overcome these challenges. Further research is needed to enhance our understanding of these threats and to improve governance structures for more effective response management. The findings of this study aim to provide valuable insights for policymakers, helping them formulate strategic responses to emerging crises and proactively tackle future challenges through a robust and resilient governance framework.

CONCLUSION AND RECOMMENDATIONS

Organisations often adapt strategies by learning from internal experiences and observing other countries' successes and failures. The rapid and unpredictable spread of COVID-19 forced leaders to make critical decisions with incomplete information, heightening the risk of errors. However, adaptive governance embraces uncertainty as an opportunity for growth.

This study analysed governance gaps and obstacles limiting crisis response efficiency. Governments should develop comprehensive governance frameworks tailored to non-conventional transboundary crisis while exploring solutions to potential challenges. Further research is needed to refine governance strategies for managing complex crises.

This study also contributes to understanding discrepancies in governance structures and barriers impeding governance efficiency. Figure 1 presents a proposed governance structure, incorporating supportive elements refined through the resolution of prior challenges. This model offers policymakers enriched analytical input for constructing a robust and comprehensive governance framework to address non-conventional transboundary crises, such as COVID-19.

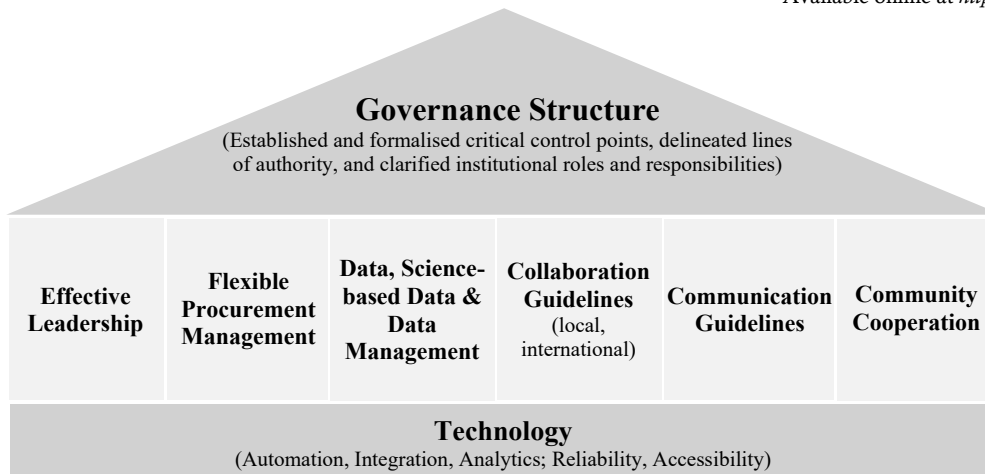


Figure 1: Proposed Governance Framework for Non-Conventional Transboundary Crisis Response Management

It is suggested that another study be conducted to further explore this phenomenon and establish the most effective governance structure mechanism for combating non-conventional transboundary crises in the future.

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Conflict of interest

I declare that I have no conflicts of interest related to this research.

References

Abdullah, R. (2021, February 1). Malaysia di kedudukan ke-16 dalam kecekapan menguruskan pandemik COVID-19. Astro Awani. <https://www.astroawani.com/berita-malaysia/Malaysia-di-kedudukan-ke16-dalam-kecekapan-menguruskan-pandemik-covid19-280713>

- Adebola, B. Y. (2021). Microfinance banks, small and medium scale enterprises and COVID-19 pandemic in Nigeria. *European Journal of Economics, Law and Politics*, 8(2),1–10.
- Anderson, R. M., Heesterbeek, H., Klinkenberg, D., & Hollingsworth, T. D. (2020). How will country-based mitigation measures influence the course of the COVID-19 epidemic?. *The lancet*, 395(10228), 931-934. [https://doi.org/10.1016/s0140-6736\(20\)30567-5](https://doi.org/10.1016/s0140-6736(20)30567-5)
- Ansell, C., Boin, A., & Keller, A. (2010). Managing transboundary crises: Identifying the building blocks of an effective response system. *Journal of Contingencies and Crisis Management*, 18(4), 195–207. <https://doi.org/10.1111/j.1468-5973.2010.00620.x>
- Baris, O. F., & Pelizzo, R. (2020). Research note: Governance indicators explain discrepancies in COVID-19 data. *World Affairs*, 183(3), 216–234. <https://doi.org/10.1177/0043820020945683>
- Boin, R. A., Hart, P. 't, & Kuipers, S. L. (2018). The Crisis Approach. In H. Rodriguez, W. Donner, & J. Trainor (Eds.), *The Handbook of Disaster Research* (pp. 23-38). Cham: Springer. doi:10.1007/978-3-319-63254-4_2
- Boin, A., Lodge, M., & Luesink, M. (2020). Learning from the COVID-19 crisis: an initial analysis of national responses. *Policy Design and Practice*, 3(3), 189–204. <https://doi.org/10.1080/25741292.2020.1823670>
- Bontempi, E., Vergalli, S., & Squazzoni, F. (2020). Understanding COVID-19 diffusion requires an interdisciplinary, multi-dimensional approach. *Environmental Research*, 188, 109814. <https://doi.org/10.1016/j.envres.2020.109814>
- Boubaker, S., & Nguyen, D. K. (2018). Governance issues in business and finance in the wake of the global financial crisis. *Journal of Management & Governance*, 22(1), 1–5.
- Capano, G., Howlett, M., Jarvis, D. S., Ramesh, M., & Goyal, N. (2020). Mobilizing policy (in) capacity to fight COVID-19: Understanding variations in state responses. *Policy and Society*, 39(3), 285-308.
- Chand, A. A., Lal, P. P., Prasad, K. A., & Mamun, K. A. (2021). Practice, benefits, and impact of personal protective equipment (PPE) during COVID-19 pandemic: Envisioning the UN sustainable development goals (SDGs) through the lens of clean water sanitation, life below water, and life on land in Fiji. *Annals of Medicine and Surgery*, 70, 102763. <https://doi.org/10.1016/j.amsu.2021.102763>

- Chien, L., & Lin, R. (2020). COVID-19 outbreak, mitigation, and governance in high prevalent countries. *Annals of Global Health*, 86(1), 119. <https://doi.org/10.5334/aogh.3011>
- Choi, Y. J. (2020). The power of collaborative governance: The case of South Korea responding to COVID-19 pandemic. *World Medical & Health Policy*, 12(4), 430–442. <https://doi.org/10.1002/wmh3.376>
- Christensen, T., & Lægreid, P. (2020). Balancing governance capacity and legitimacy: How the Norwegian government handled the Covid-19 crisis as a high performer. *Public Administration Review*, 80(5), 774–779. <https://doi.org/10.1111/puar.13241>
- Christensen, T., Lægreid, P., & Rykkja, L. H. (2016). Organizing for Crisis Management: Building governance capacity and legitimacy. *Public Administration Review*, 76(6), 887–897. <https://doi.org/10.1111/puar.12558>
- Christensen, T., & Ma, L. (2018). Coordination Structures and Mechanisms for Crisis Management in China: challenges of complexity. *Public Organization Review*, 20(1), 19–36. <https://doi.org/10.1007/s11115-018-0423-9>
- Cook, T. M. (2020). Personal protective equipment during the coronavirus disease (COVID) 2019 pandemic—a narrative review. *Anaesthesia*, 75(7), 920–927.
- Creswell, J.W. (2003) Research Design Qualitative Quantitative and Mixed Methods Approaches. Sage, Thousand Oaks, 3-26.
- Creswell, J. W. (2009). Research design: Qualitative, Quantitative and Mixed Methods Approaches. (3rd ed.). Sage Publications, Inc. https://www.ucg.ac.me/skladiste/blog_609332/objava_105202/fajlovi/Creswell.pdf
- Creswell, J. W. (2013). Qualitative inquiry and research design: Choosing among five approaches (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Cucinotta, D., & Vanelli, M. (2020). WHO declares COVID-19 a pandemic. *PubMed*, 91(1), 157–160. <https://doi.org/10.23750/abm.v91i1.9397>
- Demiroz, F. (2017). Governance in crisis management. In Springer eBooks (pp. 1–5). https://doi.org/10.1007/978-3-319-31816-5_2893-1
- Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The Discipline and Practice of Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 1–32). Sage Publications Ltd.
- Etienne, C. F., Fitzgerald, J., Almeida, G., Birmingham, M. E., Brana, M., Bascolo, E., Cid, C., & Pescetto, C. (2020). COVID-19: transformative actions for more equitable, resilient, sustainable societies and health systems in the Americas. *BMJ Global Health*, 5(8), e003509. <https://doi.org/10.1136/bmjgh-2020-003509>

- Fukuyama, F. (2020). The pandemic and political order: It takes a state. *Foreign Affairs*, 99(4), 26–32.
- Greer, S. L., King, E. J., Da Fonseca, E. M., & Peralta-Santos, A. (2020). The comparative politics of COVID-19: The need to understand government responses. *Global Public Health*, 15(9), 1413–1416. <https://doi.org/10.1080/17441692.2020.1783340>
- Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are enough? an Experiment with Data Saturation and Variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Gustafsson, J. (2017). Single Case Studies vs. Multiple Case Studies: A Comparative Study. Academy of Business, Engineering and Science, Halmstad University.
- Hennink, M., & Kaiser, B. N. (2022). Sample Sizes for Saturation in Qualitative Research: a Systematic Review of Empirical Tests. *Social Science & Medicine*, 292(1), 1–10. <https://doi.org/10.1016/j.socscimed.2021.114523>
- Huston, P., Campbell, J., Russell, G., Goodyear-Smith, F., Phillips, R. L., Van Weel, C., & Hogg, W. (2020). COVID-19 and primary care in six countries. *BJGP Open*, 4(4), bjgpopen20X101128. <https://doi.org/10.3399/bjgpopen20x101128>
- Janssen, M., & Van Der Voort, H. (2016). Adaptive governance: Towards a stable, accountable and responsive government. *Government Information Quarterly*, 33(1), 1–5. <https://doi.org/10.1016/j.giq.2016.02.003>
- Kim, S. (2020). South Korea's COVID-19 response: Flattening the curve through technology and transparency. *Journal of Asian Public Policy*, 13(3), 1–15.
- Kjær, A.M. (2004). Governance. Cambridge: Polity Press
- Kuhlmann, S., Hellström, M., Ramberg, U., & Reiter, R. (2021). Tracing divergence in crisis governance: responses to the COVID-19 pandemic in France, Germany and Sweden compared. *International Review of Administrative Sciences*, 87(3), 556–575. <https://doi.org/10.1177/0020852320979359>
- Le, T. T., Vu, H. T., & Nguyen, T. H. (2021). Governance and community engagement in Vietnam's COVID-19 response. *Asian Politics & Policy*, 13(4), 678–695.
- Liang, L.-L., Tseng, C.-H., Ho, H. J., & Wu, C.-Y. (2020). Covid-19 mortality is negatively associated with test number and government effectiveness. *Scientific Reports*, 10(1), 1–7. <https://doi.org/10.1038/s41598-020-68862-x>
- Lichtman, M. (2010). Understanding and evaluating qualitative educational research. In SAGE Publications, Inc. eBooks. <https://doi.org/10.4135/9781483349435>

- Magaldi D., Berler M. (2018) Semi-structured Interviews. In: Zeigler-Hill V., Shackelford T. (eds) *Encyclopedia of Personality and Individual Differences*. Springer, Cham. https://doi.org/10.1007/978-3-319-28099-8_857-1
- Mahmood, S. U., Crimbly, F., Khan, S., Choudry, E., & Mehwish, S. (2020). Strategies for Rational Use of Personal Protective Equipment (PPE) Among Healthcare Providers During the COVID-19 Crisis. *Cureus*, 12(5), e8248. <https://doi.org/10.7759/cureus.8248>
- Martínez-Córdoba, P. J., Benito, B., & García-Sánchez, I. M. (2021). Efficiency in the governance of the Covid-19 pandemic: Political and territorial factors. *Globalization and health*, 17, 1-13. <https://doi.org/10.1186/s12992-021-00759-4>
- Maxwell, J.A. (2013) *Qualitative Research Design: An Interactive Approach*. Sage, Thousand Oaks.
- McMullin, C., & Raggo, P. (2020). Leadership and governance in times of crisis: A balancing act for nonprofit boards. *Nonprofit and Voluntary Sector Quarterly*, 49(6), 1182–1190. <https://doi.org/10.1177/0899764020964582>
- Merriam, S. B. (2009). *Qualitative Research: a guide to design and implementation*. http://digitallib.pps.unj.ac.id/index.php?p=show_detail&id=27892&keywords=
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: an expanded Sourcebook*. *Journal of Environmental Psychology*, 14(4), 336–337. [https://doi.org/10.1016/s0272-4944\(05\)80231-2](https://doi.org/10.1016/s0272-4944(05)80231-2)
- Morse, M. and Field, A. (1995) *Qualitative Research Methods for Health Professionals*. Sage Publications, Thousand Oaks.
- Muhamad Khair, N. K., Lee, K. E., & Mokhtar, M. (2021). Community-based monitoring in the new normal: a strategy for tackling the COVID-19 pandemic in Malaysia. *International journal of environmental research and public health*, 18(13), 6712. <https://doi.org/10.3390/ijerph18136712>
- Muhammad Nur Amir, A. R., Binti Amer Nordin, A., Lim, Y. C., Binti Ahmad Shauki, N. I., & Binti Ibrahim, N. H. (2021). Workforce mobilization from the National Institutes of Health for the Ministry of Health Malaysia: a COVID-19 pandemic response. *Frontiers in Public Health*, 9, 574135. <https://doi.org/10.3389/fpubh.2021.574135>
- Ng, C. L., & Krishnan, A. (2022). The impact of COVID-19 and Corporate Governance: The Empirical study of Malaysia emerging market. *International Journal of Innovation and Business Strategy*, 16(1), 27–42.

- Organisation for Economic Co-operation and Development (OECD). (September 2, 2020). Building resilience to the Covid-19 pandemic: the role of centres of government. OECD Policy Responses to Coronavirus (COVID-19).
- Patton, Michael Quinn (2015). Qualitative research & evaluation methods: Integrating theory and practice (4th ed.). Thousand Oaks, CA: Sage.
- Por, H. H. (2023). Governing the COVID-19 Pandemic in Malaysia: Shifting Capacity under a Fragmented Political Leadership. *Pacific Affairs*, 96(3).
- Ranney, M. L., Griffeth, V., & Jha, A. K. (2020). Critical supply shortages—the need for ventilators and personal protective equipment during the Covid-19 pandemic. *New England Journal of Medicine*, 382(18), e41. <https://doi.org/10.1056/nejmp2006141>
- Richards, L. (2005). Handling Qualitative Data: A Practical Guide. <https://ci.nii.ac.jp/ncid/BB17343647>
- Rosenthal, U., Boin, A., & Comfort, L. K. (2001). Managing Crises: Threats, dilemmas, opportunities. <https://ci.nii.ac.jp/ncid/BA5745786X>
- Rosenthal, U., Charles, M. T., and 't Hart, P. (Eds.). (1989). Coping with Crisis: The Management of Disasters, Riots, and Terrorism. Springfield: Charles C. Thomas.
- Sandelowski, M. (1995). Sample Size in Qualitative Research. *Research in Nursing & Health*, 18(2), 179–183. <https://doi.org/10.1002/nur.4770180211>
- Sauer, M. A., Truelove, S., Gerste, A. K., & Limaye, R. J. (2021). A failure to communicate? How public messaging has strained the COVID-19 response in the United States. *Health security*, 19(1), 65-74. <https://doi.org/10.1089/hs.2020.0190>
- Scott, R., & Nowell, B. (2020, September 28). Networks and crisis management. *Oxford Research Encyclopedia of Politics*. <https://oxfordre.com/politics/view/10.1093/acrefore/9780190228637.001.0001/acrefore-9780190228637-e-1650>
- Sein, M. (2020). The serendipitous impact of COVID-19 pandemic: A rare opportunity for research and practice. *International Journal of Information Management*, 55, 102164 – 102164.
- Serikbayeva, B., Abdulla, K., Oskembayev, Y., 2020. State Capacity in Responding to COVID-19 [MPRA Paper](101511). *Munich Personal RePEc Archive*. <https://mp.ra.ub.uni-muenchen.de/101511/>

- Setyaningsih, T., Bastian, I., Arifa, C., & Rakhman, F. (2023). Pandemic Leadership: Is It Just a Matter of Good and Bad?. *Public Organization Review*, 23(2), 605-621. <https://doi.org/10.1007/s11115-023-00712-6>
- Shadmi, E., Chen, Y., Dourado, I., Faran-Perach, I., Furler, J., Hangoma, P., Hanvoravongchai, P., Obando, C., Petrosyan, V., & Rao, K. D. (2020). Health equity and COVID-19: Global perspectives. *International Journal for Equity in Health*, 19(1), 1–16. <https://doi.org/10.1186/s12939-020-01218-z>
- Shibuya, K., Kondo, T., & Hashimoto, H. (2020). Japan's response to COVID-19: Balancing public health and civil liberties. *The Lancet*, 395(10235), 1420.
- Shoozan, A., & Mohamad, M. (2024). Application of interview protocol Refinement framework in systematically developing and refining a semi-structured interview protocol. SHS Web of Conferences, 182, 04006. <https://doi.org/10.1051/shsconf/202418204006>
- Stake, R. E. (2010). Qualitative research: studying how things work. <https://ci.nii.ac.jp/ncid/BB01625242>
- Tayeb, A., & Por, H. H. (2021). Malaysia: Improvised pandemic policies and democratic regression. In Oxford University Press eBooks (pp. 321–334). <https://doi.org/10.1093/oso/9780197553831.003.0022>
- Tung, L. T. (2021). Success in combating a pandemic: Role of fast policy responses. *World Development Perspectives*, 21, 100285. <https://doi.org/10.1016/j.wdp.2020.100285>
- Uddin, K. F. (2021). COVID-19 pandemic is about more than health: A state of governance challenges in Bangladesh. *South Asian Survey*, 28(1), 72-91. <https://doi.org/10.1177/0971523121993344>
- United Nations Development Programme (UNDP). (2013). Final Evaluation Report Submitted by Hindowa B. Momoh PhD: Leadership Development and Institutional Capacity Building for Human Development and Poverty Reduction in Sierra Leone <https://erc.undp.org/evaluation/documents/download/7351>
- van Diggele, C., Burgess, A., Roberts, C., & Mellis, C. (2020). Leadership in Healthcare Education. *BMC Medical Education*, 20(S2), 456. <https://bmcmmededuc.biomedcentral.com/articles/10.1186/s12909-020-02288-x>
- Wang, C. J., Ng, C. Y., & Brook, R. H. (2020). Response to COVID-19 in Taiwan: Big data analytics, new technology, and proactive testing. *JAMA*, 323(14), 1341–1342.
- Wilson, S. (2020). Pandemic leadership: Lessons from New Zealand's approach to COVID-19. *Leadership*, 16(3), 279–292.

- Worldometers. (n.d.). COVID-19 Coronavirus Pandemic Tracker.
<https://www.worldometers.info/coronavirus/country/malaysia/>
- Yen, W., Liu, L., Won, E., & Testriono, N. (2022). The imperative of state capacity in public health crisis: Asia's early COVID-19 policy responses. *Governance*, 35(3), 777–798. <https://doi.org/10.1111/gove.12695>
- Yin, R.K. (2003). *Case Study Research: Design and Methods*. 3rd Edition, Sage, Thousand Oaks.