Singapore's COVID-19 crisis decision-making through centralization, legitimacy, and agility: an empirical analysis

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Summary

Background Decision-making during health crises differs from routine decision-making and is constrained by ambiguity about evolving epidemiological situations, urgency of response, lack of evidence, and fear. Recent analyses of governance and decision-making during COVID-19, focusing on leadership qualities, involvement of specific stakeholders, and effective resource management, do not adequately address a persisting gap in understanding the determinants of decision-making during health crises at the national level.

Methods We undertook a study to understand the processes and characteristics of decision-making during the COVID-19 pandemic in Singapore. We used a case study approach and collected empirical evidence about public health decision-making, using a combination of key informant interviews and focus group discussions with stakeholders from government, academia and civil society organizations.

Findings We argue that administrative centralization and political legitimacy played important roles in agile governance and decision-making during the pandemic in Singapore. We demonstrate the role of the Singapore government's centralization in creating a unified and coherent governance model for emergency response and the People's Action Party's (PAP) legitimacy in facilitating people's trust in the government. Health system resilience and financial reserves further facilitated an agile response, yet community participation and prioritization of vulnerable migrant populations were insufficient in the governance processes.

Interpretation Our analysis contributes to the theory and practice of crisis decision-making by highlighting the role of political and administrative determinants in agile crisis decision-making.

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Introduction

Public health decision-making during crises differs from routine decision-making as it is marked by uncertainty, urgency, fear, and politicization of the crisis.[7,8] While epistemic uncertainty poses a significant barrier to decision-making in a crisis,[9] moral ambiguity presents itself in the course of finding the right solutions and confronting ethical issues, such as prioritizing access to countermeasures for vulnerable populations. The relationship between politics and public health can further complicate the challenge by the politicization of public health crisis.[9] This can influence crisis decision-making as the fear of disease agents and consequences of (in)action on the economy, social cohesion, and political stability come into play.[10]

While there are many challenges in decision-making during a crisis, the practice of crisis management has

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Research in context

Evidence before this study

As part of a previous study, which has since been published,[1] we systematically searched peer-reviewed publications in three electronic databases, PubMed, Global Health, and EBSCO host Academic Search Premier, to identify empirical studies examining the process of decision-making during the COVID-19 pandemic globally. Most of the literature in this area is in the form of viewpoints and perspectives. Twenty-four empirical study publications analyzed governance and decision-making at national, sub-national, and community levels and by its aspects of process, determinants, and performance.[1] While this literature suggested different methodological approaches and analyses of governance and decision-making during the COVID-19 pandemic, focusing on leadership qualities,[2,3] involvement of specific stakeholders,[4,5] and effective management of resources.[6] The literature did not adequately capture country-specific empirical analyses focusing on the political and administrative determinants of governance, which led us to additional research focused at the country-level, including the present study on Singapore.

Added value of this study

Our study aimed to fill this gap through a country case study by examining the key characteristics and determinants of Singapore's response to the COVID-19 pandemic. This is an empirical analysis based on primary data collected through interviews and focus group discussions with key stakeholders, from government officials, academic experts, and civil society representatives. We present a theoretical framework highlighting the administrative and political determinants of decision-making during the health crisis. We describe the characteristics of public health decision-making using the concept of 'governance agility' and describe the determinants of public health decision-making by using the concepts of 'administrative centralization' and 'political legitimacy.'

Implications of all the available evidence

Our analysis contributes to the theory and practice of crisis decision-making by highlighting the role of political and administrative determinants in agile crisis decision-making. Through our theoretical framework, we present the determinants of political legitimacy and administrative centralization as more than simple inputs into the policy process but highlight their role in facilitating agility in governance during a crisis. Our findings and the existing evidence emphasize three key decision-making and policy determinants. We demonstrate the role of centralization in creating a unified and coherent governance and decision-making model for emergency response. We add to the evidence on the role of political legitimacy in facilitating people's trust in the government and adhering to the government's policies during emergency situations. Our study also highlights the existing gap and the need to consider the perspectives of civil society and vulnerable populations in decision-making and their implications for effective governance response, especially in crisis situations.

seen a shift from a mere reactive response to an anticipatory stance. This includes moving away from the traditional siloed and sectoral crisis management responses from governments towards more holistic multi-sectoral approaches steered from the national level.[10] More recently, the United Nations Office for Disaster Risk Reduction (UNDRR) endorsed the concept of 'resilience' to develop a common understanding of disaster risk reduction efforts of authorities, practitioners, and the public.[11]

Countries around the world have invested in building their resilience to health crises, but the response to the COVID-19 pandemic crisis was generally insufficient[12] marked by the overall socioeconomic and political context and specific governance characteristics in each country. Effective governance characteristics involve coordinating and strengthening public health, health systems, and socioeconomic measures. In contrast, poor governance is characterized by denial, devaluation, and distrust.[13] Other evidence stressed characteristics like regime type[14]; politico-administrative organization of pandemic preparedness[15]; efficiency in health resources management[16]; healthcare infrastructure and learning from past pandemics[6]; role of science[17]; and leaders' personality traits.[2] Though individual characteristics shaping the response to health crises have made substantial contributions to existing knowledge of decision-making during the pandemic, concerted efforts are needed to advance the theory and practice of decision-making during health crises.

In this context, we examined decision-making during the COVID-19 pandemic crisis in Singapore. Our analysis is focused primarily on understanding the process of decision-making rather than evaluating the response. We define governance as the process of decision-making and implementing.[18] We do not restrict this study to a particular phase of the pandemic or make distinctions between different waves of the spread of infection during the pandemic but study the COVID-19 pandemic as one crisis situation. Singapore was purposively chosen for this study for its distinctive characteristics including reportedly good performance during the pandemic,[19] its exceptional political context characterized by the dominance of one political party, and the economic context of an open and highly developed free-market economy. While Singapore presents a unique governance model in comparison to most other national governments, its handling of the COVID-19 pandemic provides valuable insights for improving decision-making during health emergencies.

Methods

Study design

We followed a case study approach[20] and, using Asthana et al.'s typology of governance,[1] we collected empirical evidence about the characteristics and determinants of public health decision-making. To study the characteristics of public health decision-making, we focused on the nature or type of decision-making, such as flexible, adaptive, and resilient. For the determinants of public health decision-making, we focused on the contextual factors and attributes of (effective) decision-making, such as leadership and political and economic environment.

Data collection

Methods of data collection

Key informant interviews (KII) and FGD with stakeholders from government, academia, and civil society organizations were the main sources of data collection for our study. We note the limitations of interview and discussion-based research methods, especially their potential narrow scope through providing insights from individual and small group perspectives.[21] Interviews and discussions with key stakeholders offered useful insights to our study in understanding complex processes like decision-making through the sharing of lived experiences, however, representation from especially vulnerable population groups, such as migrant workers, was limited by this model and constraints on civil society in Singapore.

Participants for KIIs and FGD were identified through desk review and were purposively sampled to represent a wide range of organizational affiliations, experiences, and views of the COVID-19 pandemic decision-making in Singapore. Twelve out of 24 invited stakeholders agreed to participate in a KII and three out of nine stakeholders agreed to participate in one FGD with academic experts. Out of the total fifteen participants, eight were government officials, six were academic experts and one represented civil society organizations.

KIIs and the FGD were conducted in person and via virtual settings through the Zoom platform in English between June and September 2022. Each interview took approximately 60 min, while the FGD took approximately 120 min. To maintain participant confidentiality, all respondents were kept anonymous and given a unique identifier using a numerical value followed by their affiliation as government officials, academic experts and representatives of civil society organizations.

Data analysis and theoretical framework

Virtual interviews were digitally recorded on Zoom, while in-person interviews were recorded via mobile device recorders. The recordings were transcribed through Otter.ai software (Mountain View, California) and transcripts were manually cleaned and coded by two independent coders. The draft manuscript was shared with all respondents individually to validate their respective anonymous quotes.

The central analytical approach for this study was inspired by grounded theory,[22] involving an iterative process and rounds of open, axial and selective coding.[23] The first round of coding involved open coding where data was broken up into smaller parts and categorized as description of the contents and process of decision-making. Following the open coding, we did axial coding to reassemble the codes of characteristics and determinants of decision-making as per the themes of administrative centralization, political legitimacy and governance agility. During this phase, we also made connections between the categories of centralization and legitimacy and their relationship with governance agility. This was followed by selective coding where we integrated these three categories and their connections into one cohesive theory of characteristics and determinants of decision-making during the pandemic. Our theoretical framework (Fig. 1) consists of three key concepts of administrative centralization, political legitimacy, and agile governance and their interrelations. We use 't Hart et al.'s.[24] conception of administrative centralization as the concentration of decision-making power with a small number of officials, Peter's[25] idea of political legitimacy as people's beliefs about political authority, and Moon's[26] conception of agility as a flexible organizational structure with efficient decision-making processes.

Ethics approval

Approval to conduct the study was provided via Georgetown University's Institutional Review Board (Ref: STUDY00005099; the study was determined to be exempt from full committee review). Verbal informed consent was obtained from all key informants and focus group participants.

Role of the funding source

The funders did not have any role in study design; in the collection, analysis, and interpretation of data; and in the decision to submit the paper for publication.

Results

In this section, we provide a brief overview of the COVID-19 pandemic health crisis in Singapore and explain the characteristics and determinants of public health crisis decision-making in Singapore.

Singapore and COVID-19 decision-making

Singapore is an independent, multi-ethnic, small island country with a population of approximately 5.7 million people.[27] Singapore's health system is ranked among the best in the world for its high performance, better health outcomes, and low cost of care.[28] Singapore performed

Fig. 1: Theoretical framework - characteristics & determinants of decision-making.

comparatively better than other countries concerning COVID-19 mortality[29] and earned an international reputation for its resilience until the outbreak in migrant populations living in the dormitories in April 2020.[30] Key public health decisions related to contact tracing, mask-wearing, travel bans, and financial relief proved to be effective in crisis management, along with targeted decisions for improving the living conditions of migrant workers.[29] A significant feature of Singapore's health system resilience is the semi-authoritarian political context of its development, marked by high levels of political centralization.[31,32] Despite having around 36 registered political parties, the People's Action Party (PAP) has won every election since 1959,[33] and the elections have been arguably not entirely fair.[34] This context of undisputed dominance of the PAP and its close relationship with the state officials and administrative policy-making group has marked decision-making processes during the COVID-19 pandemic in Singapore.

In the following sections, we discuss this political and administrative context and its implications on public health governance and decision-making during the COVID-19 pandemic.

Administrative centralization

According to 't Hart et al.,[24] centralization in the context of crisis management refers to three different yet interconnected phenomena. Firstly, the concentration of power with a small number of officials; Secondly, the concentration of decision-making power with the central government, not shared equally with the local governance structures; and thirdly, a tendency to look for strong leadership and adapt to one or the other model of crisis governance. Altering the routine bureaucracy and democratic processes of decision-making to concentrate decision-making powers with the central government and in the hands of a few selected executives was seen in many countries during the pandemic.[35] Such centralization and specialist expertise involvement, on the one hand, enables agile response and policy rationality, yet on the other hand, neglects assessments of public values.[36] The absence of local governance structures, combined with the dominance of PAP, has given the

Singaporean government the ability to enact policies unilaterally.[37]

Our findings reveal that during the pandemic in Singapore, public health decisions were centralized at the national level and were vested within a small number of officials organized in various executive groups and task forces. The existing Homefront Crisis Executive Group (HCEG), which provides a multi-sector response to all emergent crises, was among the first of these groups convened by the government for COVID-19 management and was activated on 22 January 2020. Simultaneously, the Multi-Ministry Task Force (MTF) was set up on 21 January 2020 and was conferred the power of decision-making related to the pandemic. "As we activated the HCEG, the Prime Minister made a decision with the cabinet that we should also track developments and activate [a] multi-ministry task force … within a 36-48-h period, both HCEG and MTF were raised and in quick succession" (Government Official, 11).

Concerning the process of decision-making, the power of decision-making in Singapore was centralized at the national level among different hierarchies of decision-making bodies based on the magnitude of the impact of the decisions. Only a handful of state officials contributed expertise and opinions to the decisions.

> The key people who gave technical input [are] normally confined [to] about 10 or 20. We present data related to policy options and then when decisions are made, it is chaired by the highest civil servant, the Permanent Secretary. It is important to note that for non-technical decisions, especially those affecting people's lives, the politicians bear the responsibility for decisions (Government Official, 13).

With one political party in power, the key decision-makers had unified and non-conflicting views. "I think because we have a very strong political system, where during the crisis, the ruling party, and all [other] parties realized that, this is not something to be bickering or to be politicizing over … it helped us to really push through the measures that we needed to do" (Government Official, 5).

While most decisions were centralized and taken at the national level, the process of decision-making involved negotiations and deliberations among the state officials. The scope of the deliberations for making decisions was impacted by the wide spectrum of importance, potential impact, and range of disagreements. "It really had a bit of a range … There were some [decisions] which were a lot smaller in scope … and others that impacted the trade and industry and survival of the country. When these were more heavy decisions, there had been more deliberations behind them" (Government Official, 21). These deliberations were seen as a strength of decision-making among the involved stakeholders. For decisions that fell outside the remit of the Ministry of Health and had economic and political repercussions, deliberations took place at the HCEG and MTF levels.

> First, within HCEG we deliberate, and put together what we think is a workable plan based on health inputs, economics inputs, and based on the border agencies inputs, and then we present the plans to the MTF who then give the political guidance. And, because it's a multi-agency structure with different views from all the different stakeholders … this requires a fair bit of discussions and inputs across different agencies before we can put together something that we think is coherent and can be implemented on the ground effectively (Government Official, 19).

Though deliberative, the process of decision-making was centralized in terms of inadequately including the non-state actors, especially in the initial phase of the pandemic. Respondents alluded to civil society organizations (CSOs') participation along the spectrum of complete absence to the partnerships with preferred non-government organizations (NGOs) working with specific vulnerable populations. "Civil society in Singapore is, the right word here is relatively undeveloped. That's probably the polite word. The government has not been particularly open to the appearance of lots of civil society organizations, and NGOs" (Academic Expert, 23). Academics supported the sentiment of not involving citizens in the decision-making process. "I am actually quite totalitarian. I'm okay if the government makes its decisions in the best interest of the public and the public doesn't get any say in it. Because if you're looking at the alternative during a period of crisis … you end up with something like the US or the UK" (Academic Expert, 7).

In parallel, a NGO working with migrant workers expressed that their partnership with the government evolved as a response to their demands for the protection of migrant workers during the pandemic. They further stressed that this partnership was not equal as they were not involved in decision-making and their role was limited "to help the ministries and government to push out messages, whether it is about government helpline or government health advisory" (Civil Society Representative, 3).

In the case of academia, specific institutions like the School of Medicine at the National University of Singapore and Nanyang Technological University were sought for volunteer response work to generate evidence to inform decisions. Individual academicians with perceived expertise and benefit to policy decisions were included in the government by giving formal appointments.

> We do not include academics in policy decisions. Having said so, throughout the course of the

> pandemic, select key people from academia and from hospitals, who we see are key to decision-making, are offered part-time appointments [in the government] ... by formally appointing them to the ministry, they have access to government data and communications like email, and can be involved in the decision-making discussions (Government Official, 13).

With regards to the for-profit private sector, research institutions, private hospitals, the airline and hospitality industry were engaged in response efforts ranging from service delivery to quarantine measures. Similar to the CSOs, the private sector was also not adequately involved in decision-making. However, the participation of the for-profit private sector needs to be seen in the broader context of the blurring of the public and private sectors in Singapore, which positions the private sector to be a part of the public sector.

> The private sector in Singapore is quite public because there are some big state-holding companies, which manage a lot of investments on behalf of Singaporeans. So, for example, some of the dorms are of one big company, owned by an investment company, and the chief of this company is the wife of the current prime minister (Academic Expert, 7).

Political legitimacy

Political legitimacy is defined as the creation of political authority and justification of the coercive power of existing political authority.[25] Political legitimacy may arise from, but must be differentiated from, party credibility, which mainly refers to the perceptions of political party's trustworthiness, competence, and professionalism.[38] Party credibility can be a predictor of electoral outcomes[38] but may or may not result in people feeling obligated to political authority. Whereas political legitimacy refers to a general belief and acceptance of the government's political authority to rule as well as people's political obligations to trust the political authority and adhere to its decisions.[25] Buchanan, while distinguishing between the concepts of political legitimacy, political authority, and authoritativeness, suggests that "an entity has political legitimacy if and only if it is *morally justified* in wielding political power.[39]"

Political legitimacy in Singapore has been argued to be embedded within the bureaucracy, that is with the key state officials and administrative groups in Singapore. In the words of Abdullah and Kim, bureaucracy in Singapore "has been shaped in the image of the ruling party, wielding its influence only as an arm of the party ... people tend to view the party as the state and the civil service as synonymous with the government of the day.[37]" During the pandemic, MTF represented this interlinkage between PAP and the bureaucracy and stressed its role in enforcing policies for the overall management of the crisis, especially concerning public health decisions.

> The political system in Singapore has been widely described as a comparative authoritarian state, or sometimes ... described as an illiberal democracy, which means that the manner in which the Singapore government has implemented stringent control during the pandemic is in [an] extremely top-down manner [which is] very consistent with Singapore's history and their socio-political culture (Academic Expert, 3).

Political legitimacy in Singapore has been described as "performance legitimacy" with the PAP government deriving its political authority and mandate to rule from its performance in providing better health systems, economic growth, and social stability in the country.[28,32] PAP's political victory since independence has demonstrated a steady approach to governance, which enabled the government to implement its belief of strong state intervention[40] and introduce policies without fear of political repercussions of unpopular choices.[28]

Our study respondents differentiated political legitimacy in Singapore from the mere political authority of PAP and alluded to people's trust in government and their adherence to government policies without question.

> I am trying to find the polite word here. 'Obedient' is one word and 'compliant' is the other word. They [people] are more than happy ... to follow what the government instructs them to do in terms of the various measures to reduce the spread of COVID-19, you know, wearing masks, social distancing et cetera. It is because they trust the government (Academic Expert, 23).

A survey of over 10,000 Singaporean adults found that 65% of respondents trusted the Singapore government's ability to navigate and lead Singapore after the pandemic, and 76% of respondents stated that they were satisfied with the government's overall handling of the COVID-19 pandemic.[41] Social trust was also found to have played a key role in helping Singapore and its citizens adapt to the 'new normal' of COVID-19 conditions.[41,42] However, people's satisfaction and trust in the government varied throughout the year. For instance, while satisfaction with Singapore's COVID-19 response was generally high in 2020, it temporarily declined by about ten percent from May to July. This drop was reportedly due to dissatisfaction with the government's treatment of vulnerable groups and foreign workers.[41]

At the same time, the government attempted to establish trust by sharing clear and accurate information and addressing misinformation about the COVID-19 pandemic through various channels. For example, the

Ministry of Health shared regular COVID-19 status updates through their website[43] and newsroom.[44] The government used WhatsApp for sharing COVID-19 updates, correcting misinformation, and sharing key announcements.[45] Additionally, in our study, trust in government was also indicated as engrained in the communal sentiments and values of the society. "There was a high solidarity here if you compare [it] to the West. There is really this communal theory here that we need to, as a society, protect the elderly … So, not wearing a mask here would be considered selfish" (Academic Expert, 10).

Additionally, the government sought to reinforce its legitimacy and trust during the pandemic by prioritizing the safety of the citizens through utilizing its economic reserves and resilient health systems established over the decades that PAP has been in power. "It's a very strong example of political will and political commitment. It is not just talking but putting money into the whole process. There was never any talk about oh, no, this is too expensive. Oh, no, this is not sustainable. Decision made, just do it. The money was always there" (Academic Expert, 23). The government of Singapore states that its financial reserves helped "to fund economic and social support to the people and roll out temporary assistance schemes like grocery vouchers, temporary relief funds, and COVID-19 support grants and initiatives.[29]

Similarly, the government sought to make concerted efforts during the pandemic to retain transparent communication with the people regarding the (lack of) evidence and rationale for making public health decisions. "They [the government] made a few mistakes. And they also admitted, for example, not recommending the mask wearing at the very beginning, but afterward, they reversed [this decision] and also explained reasons" (Academic Expert, 2). The government leadership has reportedly played a prominent role in maintaining public health communication and breaking down complex terminology and scientific concepts for the public. "Last week, when the minister made an announcement on the issue of herd immunity, I could see from his answers, that it meant a few days of furious emails among staff to present to him the supporting facts, and he communicated all that was needed to be understood by the population" (Government Official, 13).

However, the government's COVID-19 policies were initially reported to be limited to benefit only the citizens and permanent residents of the country, excluding the migrant population. Though the government gradually started support initiatives for students from other countries and migrant workers living in the dormitories, these initiatives were reported to be reactionary to the spread of the pandemic in the dormitories rather than recognition of the rights of non-citizens. The larger public sentiment underscoring the low priority of the migrant population was that the government's resources should be used to meet the needs of the citizens. "It is a very sensitive issue; our government believes that taxpayer money should go to taxpayers and citizens and not to non-citizens or non-locals. Although migrants themselves are taxpayers too" (Civil Society Representative, 3). In the absence of democratic or rights-based protections, the voices of vulnerable population groups, especially migrant workers, were limited in decision-making.

Governance agility

Agility in governance refers to a flexible organizational structure, increasing involvement of stakeholders and resources, and efficient decision-making processes for timely and transparent results.[26] In the context of policy formulation and design, policy scholars suggest policy agility be associated with improvisation, fast learning, and 'outside the box thinking', contributing to more robust policy outcomes.[46–48]

Singapore demonstrated agile governance by improvising its decision-making process by establishing MTF before the confirmation of the first case in the country and initiating border control measures for travelers from Wuhan in January 2020. It responded to the needs of the public for contact tracing and diagnostic testing by developing scientific and technological tools. "The Trace Together contact tracing app … commissioned by a Government Technology Agency known as Govtech … the first version of the app was designed immediately" (Academic Expert, 24), and an improved COVID-19 test kit called Resolute was promptly produced by Defence Science Organisation (DSO) and Agency for Science, Technology, and Research (A*Star), a statutory board under the Ministry of Trade and Industry of Singapore. "They wanted to scale very rapidly to 10s of 1000s of people to be tested every single day … the Ministry of Health kept saying, 'if you can't do it fast, you will end up with people infecting other people … we were most relieved that we managed to do it." (Government Official, 6).

Policy improvisation was also shown by the government in revising public health decisions as per the emerging evidence during the pandemic. "Initially, we thought we had to contact-trace and admit everybody [to hospitals]. And I think soon, the doctors … realized that if some patients are actually well, they don't even need ICU … So, we reviewed the scientific evidence, again, both from the viral shedding and clinical features … and decided that they can isolate [themselves] outside" (Government Official, 14). Though these agile actions resulted in prompt outcomes for facilitating rapid deployment of diagnostics and contact tracing, fast decision-making does not necessarily equate to "good" decisions being made. As such, the impact of these actions, including with respect to potential privacy breaches and inequities in care, requires further research.

Our study finds that Singapore's administrative centralization and political legitimacy facilitated agile decision-making and response by enabling coordination among stakeholders and expediting the administrative and bureaucratic processes. As stated by a key high-level official involved in decision-making during the pandemic, the centralized governance rapidly brought different ministries together and helped in quick and effective decision-making during the crisis "because they [health authorities, MTF, and HCEG] are integrated into the full crisis management structure, we were able to review quite quickly the effectiveness of what we have been doing … and [had] the ability to adjust and adapt quite quickly in our initial planning parameters" (Government Official, 19).

PAP's legitimacy and embeddedness with the bureaucracy facilitated the introduction of new mechanisms needed for pandemic preparedness and response with little resistance from key state officials. For example, Singapore's Health Sciences Authority (HSA) responded quickly to the COVID-19 pandemic by developing a new Pandemic Special Access Route (PSAR) that allows for interim authorization and early access to critical novel vaccines and medicines related to COVID-19. "We decided to create a special access route in a pandemic, and that's when PSAR was created in a very short six months. We planned it, we developed it, and we sought policy approval for it" (Government Official, 6).

Singapore's centralized approach to governance, its legitimacy created through building resilience health systems during prior epidemics, and the establishment of crisis management groups helped in the agile management of uncertainty during the pandemic. "Of course, there's the unknown factor about COVID-19. But in terms of the structure, composition, and membership [it] is not new to us. Even before COVID-19, the HCEG meets regularly for other types of crises to take the whole-of-government approach" (Government Official, 19). At the same time, existing research and technology expertise helped in creating more resilient systems and managing the ambiguity related to scientific advancements in COVID-19 diagnostics and treatments. "A big part of our ability developed serendipitously, maybe not specifically to deal with the novel COVID-19 virus. But our research strengths allowed us to actually deal with therapeutics, as well as the diagnostics" (Government Official, 8). Some of these institutions and capacities were created during the previous epidemics. For example," The [National Centre for Infectious Diseases] NCID was set up after the SARS epidemic to build health systems resilience for future pandemics … it was conceptualized to handle higher and ID [Infectious Diseases] emergencies in case you know, there are such things [in future] (Government Official, 14).

Discussion

In this paper, we set out to understand the key policy drivers of Singapore's response to COVID-19. Three variables were identified, namely political legitimacy, centralization, and agility. More than simply being inputs into the policy process, we found that political legitimacy and administrative centralization facilitated agility in governance, the latter of which in turn contributed to Singapore's ability to navigate and respond to the highly complex crisis in which it found itself during COVID-19.

The Singapore government played a critical role in this crisis management by following a unified approach to decision-making. While the political dominance of the PAP facilitated and shaped its decision-making processes, the health system resilience and financial reserves built up by the administration have further facilitated an agile response to the crisis. Yet despite international accolades for its proactive and agile decision-making and overall resilience to the pandemic, community participation and prioritization of vulnerable migrant populations were found to be insufficient, particularly in the initial phases of the pandemic.[27] Subsequent to initial decisions, Singapore managed to respond to these gaps through an agile redeployment of its considerable resources and capacities, particularly in terms of providing vaccines and healthcare to vulnerable populations.[32]

Based on work by 't Hart et al.[24] on centralization, we show that the concentration of decision-making power among key government officials under the MTF and HCEG enabled a unified response which facilitated science-based policy response and enhanced citizen's trust in the government. Our analysis agrees with Bekker et al.[36] that centralization enables agile response and policy rationality, although it neglects the assessments of public values. Civil society in Singapore shared the government's (initial) ignorance of issues of migrant workers living in the dormitories and the exclusion of civil society and academic stakeholders in the decision-making process. However, these perspectives are limited by the way civil society is constrained in Singapore, particularly regarding public dissent and the representation of vulnerable population perspectives.[49] Furthermore, the low participation of civil society representatives in our study severely limits our analysis to adequately include their perspectives on the crisis decision-making process.

According to Greer et al.,[50] centralization has two dimensions: within and between governments. Within government refers to the concentration of power within a small group of officials, and between governments refers to the sharing of power between the federal and provincial governments. While democratic countries were found to be more susceptible to the pandemic in the initial waves, the effectiveness of centralized versus

decentralized governance in pandemic management needs more empirical evidence post-pandemic.[51] Nonetheless, many governments centralized in the early phases of the pandemic to gain credit for actions but gradually decentralized to avoid blame.[50] Scholars argue that centralization often leads to the adoption of reactive strategies addressing more immediate problems rather than proactive strategies for early disease detection.[52] Others indicate the authoritative advantage enabling effective and agile decision-making.[53]

Our study shows that these dynamics play out differently in Singapore, as there was little opportunity for centralization between governments because of the absence of lower levels of governance structures. Additionally, we propose that the theory of 'credit and blame' needs to be further tested in contexts like Singapore, which is characterized by a unified government and the absence of an effective opposition.

We show the role of political legitimacy in facilitating people's trust in the government and adhering to the government's policies and decisions during the pandemic in Singapore. We build on the ideas of Woo[32] describing Singapore's political legitimacy as performance legitimacy, and Wong and Huang's[54] argument about Singapore's legitimacy resting on the provisioning of security by the government. We elaborate on Singapore's high performance,[28] demonstrated through required expenditure for crisis management and prioritization of population health over economic benefits.

We complement the analyses of Velasco-Guachalla et al.[55] on Bolivia, highlighting the role of legitimacy in facilitating a coordinated response and citizens' compliance, especially in severe political polarization. Our findings from Singapore present an opposite case of robust political legitimacy and its role in creating a unified response and high levels of compliance. We also lend support to Phương[56] on trust creation and political legitimacy and its inherent linkages with underlying cultural values in Vietnam during the COVID-19 pandemic. We support this argument by presenting the perspectives on the cultural values for protecting the elderly and adherence to policies like wearing face masks based on values of collectivism.

Our research can also be compared with other major cities worldwide, like the 276 Chinese cities[57] emphasizing the role of urban governance capacity in controlling the pandemic and Wuhan[58] highlighting the value of interactive relationships between multilevel entities of epidemic governance. Our findings align with the research from Shanghai and Los Angeles,[59] and Milan[60] highlighting key governance tension points of transparency, centralization, coproduction of pandemic solutions, and the role of adaptive leadership and anticipatory governance. Unlike the 103 large cities in Italy, where voter approval for politically aligned mayors declined, our results show high government satisfaction despite a temporary dip.[61] However, while cities are typically integrated into the national governance structure and priorities, Singapore remains autonomous with respect to decision-making, underscoring limitations in comparing it with other sub-national city settings.

With respect to governance agility, we relied on notions of agility by Moon[26] to show that Singapore's decision-making during the pandemic crisis was characterized by timely decision-making, flexibility in the organizational structure, rapid involvement of stakeholders and resources, and efficient decision-making processes. We show Singapore's agile decision-making through preemptive activation of the HCEG and establishment of the MTF, and the introduction of special mechanisms like the PSAR for improvising public health decisions. The agile actions taken during the pandemic were partly a result of pre-existing capabilities, governance structures, and mechanisms. For instance, the existing HCEG, research capacities, resilient health systems developed during previous pandemics, and the presence of economic reserves all played a part in pandemic preparedness and facilitated agile governance. However, further analysis is needed to understand the immediate and long-term impacts of these actions. It's important to integrate agility with responsiveness, fairness, and equity, as agility may result in variable outcomes if not assessed within a framework that incorporates the evaluation of decision impacts.

We further show the role of political legitimacy and administrative centralization in building resilience in health systems and agility in decision-making during the crisis through the demonstration of a unified approach and smooth coordination among stakeholders from different sectors and ministries. Our analysis of agility confirms the findings from Lai[62] regarding the role of agile-adaptive governance in effective pandemic response during earlier epidemics and also during COVID-19.[26,63]

We would like to note that our definition of governance and decision-making for this analysis is rather narrow as it focuses on what Greer et al. call as the desirable attributes of governance[64] and assumes the inclusion of other actors such as the private sector, people and civil society to be a responsibility of the government. Though we acknowledge the value of broader multi-layer, multi-sectoral and multi-stakeholder conceptions of governance, such as the co-production by diverse policy actors,[65] 'governance beyond government',[66] and 'policy networks',[67] our conception of governance as decision-making and implementation is suitable for our research question and the governance model in Singapore.

Additionally, we concur with de Graaff et al. that framing a situation as a crisis of a particular kind allows for specific problem definitions.[68] In our case, our framing of the COVID-19 pandemic as a single crisis situation constrained our study of governance and

decision-making as a holistic and continuous process and did not allow us to sufficiently examine the changing governance approaches and its associated problems along different waves of the pandemic. Further, we recognise that Singapore's rather unique demographic, economic, political and governance context makes it an exceptional case. Consequently, our findings from Singapore should be considered in relation to other countries after accounting for their political and socio-economic context. However, our framework on determinants and characteristics focusing on centralisation, legitimacy, and agility offers a useful analytical frame to study decision-making during a health crisis in varied contexts.

Finally, it is important to note that our research provides a basis for further research into, rather than a conclusive and comprehensive understanding of agility, legitimacy, or centralization in crisis decision-making. Specifically, there is a need to further delve into the concept of agility by DeSeve,[69] which differentiates between agile *government* that supports service delivery from agile *governance* focusing on multi-stakeholder involvement. This distinction would be useful to distinguish between what we propose as the characteristics and determinants of decision-making. We also recommend the development of operational standards to evaluate agility and related performance of governments during crises.[28,32,47,48]

Lastly and most importantly, our study cannot be detached from the overall context of the availability of human, material, and information resources and the social and economic context in which decisions were made. In our analysis, we alluded briefly to the special social context of underlying cultural values and the economic context of the open market and available financial resources. However, future research exploring the interlinkages between public health crisis decision-making and trust in government will significantly contribute to the theory and practice of crisis decision-making, along with study methodologies that may more readily extrapolate dissenting voices.

Contributors

SA, SM, ALP, JJW, and CJS conceptualized and designed the study. SA, SM, and CJS curated, analyzed and interpreted the data. SA wrote the first draft of the manuscript. JJW, CJS, SM, and ALP critically revised the manuscript for important intellectual content. All authors contributed and approved the manuscript content.

Data sharing statement

Data are available upon reasonable request. Deidentified original transcript data will be shared for academic use only. Please contact the corresponding author for reasonable data requests.

Declaration of interests

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