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Does an effective government lower COVID-19's health impact?

Evidence from Viet Nam

Duc Anh Dang[1] and Ngoc Anh Tran[2]

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Abstract: Government effectiveness has played an important role in tackling the crisis caused by the coronavirus (COVID-19) pandemic. This paper discusses the different aspects of government effectiveness in explaining the variation in the COVID-19 confirmed cases and death levels in Viet Nam. We use the Provincial Governance and Public Administration Performance Index in 2019 to measure the quality of government effectiveness at the local level. The findings show the importance of health system capacity in the battle against COVID-19. We find that increased government transparency is significantly associated with lower confirmed rates. For the impact of the level of participation, we find that provinces that have higher quality of village head elections or where people have more opportunities to participate tend to have lower infected cases, especially where people participate in the formal and informal association and have voted in the National Assembly election.

Key words: COVID-19, pandemic, government effectiveness, Viet Nam

JEL classification: I15, I18, H12, O57

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[1] Central Institute for Economic Management, Ha Noi, Viet Nam, dang.ducanh78@yahoo.com; [2] Paul H. O'Neill School of Public and Environmental Affairs, Indiana University, Bloomington, Indiana, USA, trananh@indiana.edu

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Information and requests: publications@wider.unu.edu

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1 Introduction

More developed countries could mitigate the adverse effects of a health crisis by better preparing for it through having adequate responses and preventive infrastructure. However, the appearance and evolution of the COVID-19 pandemic show that some developing countries with limited resources and inferior healthcare capacities could respond well and control the spread of the pandemic better than many developed countries with higher capacity. The natural question is: What aspects of a state, such as legitimacy and capacity, may contribute to these successes?

In theory, state legitimacy should encourage individuals to trust, support, and participate with the government, resulting in increased compliance with laws and regulations (UNDP et al. 2021). In the case of the COVID-19 pandemic, state legitimacy assists translating tight measures into efficient pandemic control (Mizrahi et al. 2021; Liang et al. 2020). Previous research has shown that state capacity has a favourable impact on development outcomes under a variety of regime types and that high state capacity can aid non-democratic regimes in succeeding and gaining legitimacy (Hanson 2015; Knutsen 2013). They also stress the importance of state capability in developing, adopting, and fulfilling state tasks and policies in the event of a pandemic (Persson and Povitkina 2017). The greater the state capacity to provide adequate health infrastructure to assess risks and health system resources to respond to a health crisis, the lower the rates of infection and mortality (Serikbayeva et al. 2021). In this context, we can use the terms state capacity and governance interchangeably, based on Fukuyama's (2013) definition of governance as 'a government's ability to make and enforce rules, and to deliver services, regardless of whether that government is democratic or not' (cited in Serikbayeva et al. 2021: 921–22). This relationship is more likely to exist in Viet Nam, an authoritarian country where the party-state dominates society (Shanks et al. 2004; Kleinen 2015).

The objective of this study is to examine the relationship between the effectiveness of the local government's and COVID-19's health impacts in Viet Nam. Viet Nam offers an attractive setting to study when it has limited resources but has low confirmed COVID-19 cases and deaths (Abuza 2021). By using the Provincial Governance and Public Administrative Performance index and COVID-19 data at provincial levels in 2019, this paper will describe the evolution of COVID-19 and the responses of the Vietnamese government in preparing and confronting the pandemic. It also examines the relationship between the effectiveness of local governments, especially in terms of their capacity in providing public healthcare services, citizen participation, transparency and accountability, and pandemic health outcomes (such as the number of confirmed cases and deaths).

The key findings of the study are as follows. Viet Nam has been able to weather the COVID-19 pandemic due to improved governance. The findings suggest that increased government effectiveness is significantly associated with decreased infected rates. Particularly, increased government transparency is significantly associated with lower confirmed rates.[1] For the impact of the level of participation, we find that provinces that have higher quality of village head elections, or where people have more opportunities for participation, especially participation in the formal and informal association, and have voted in the National Assembly election, tend to have lower

[1] This result is consonant with other previous studies such as Serikbayeva et al. (2021), who found that government effectiveness reduces the number of COVID-19 deaths.

infected cases. At the same time, they show the importance of health system capacity in the battle against COVID-19.

The remainder of the paper is structured as follows. Section 2 briefly describes the outbreak of COVID-19 in Viet Nam and the response of the Vietnamese government. This is followed by Section 3, which provides a more detailed discussion of the government's capacities that have facilitated their efforts to manage the COVID-19 pandemic and imperfections of current administrative decentralization and how these affected its COVID-19 policy responses. Section 4 discusses the data together with the descriptive analysis and then presents the empirical model. Section 5 provides the estimation results and robustness tests. Section 6 concludes.

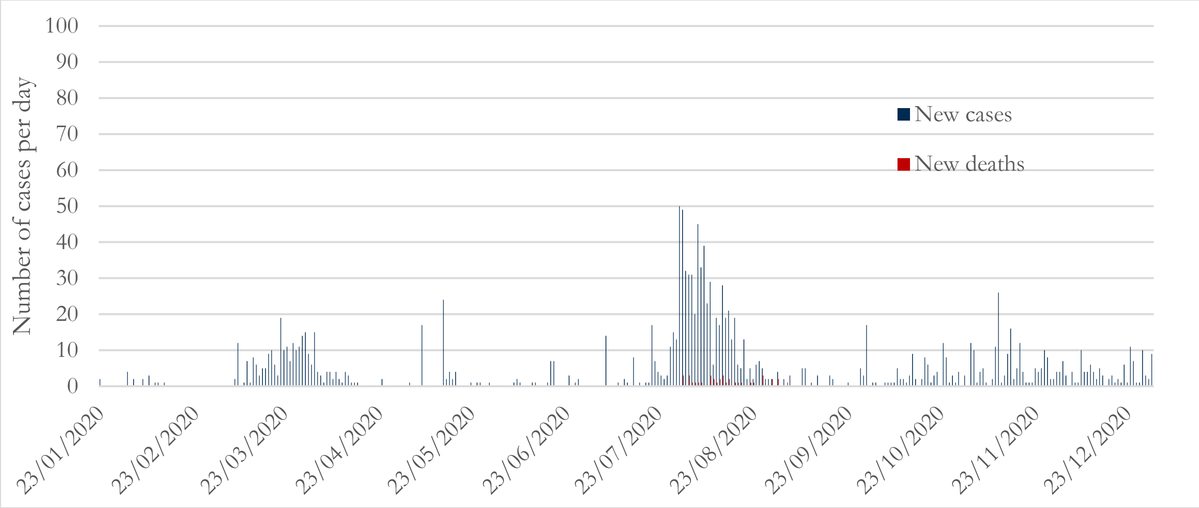
2 Overview of COVID-19 in Viet Nam and the government's responses

As a neighbouring country to China, Viet Nam has been extremely cautious and responded immediately after COVID-19 was discovered in China. When the first COVID-19 cases in Viet Nam were confirmed in January 2020, the government began to take preventive steps, such as tightening entry-screening procedures and extending the Lunar New Year break for schools (Dang 2022). In January 2020, the Vietnamese government immediately announced the first National Response Plan and formed the National Steering Committee (NSC) to implement this plan. The NSC is central to the governance and oversight of COVID-19's response, strengthening inter-provincial cooperation and delegating responsibility for the response elements to various central ministries (Hartley et al. 2021).

The NSC is chaired by Deputy Prime Minister Vu Duc Dam, and it manages four sub-committees in technical and logistical areas, with high-level involvement from 14 line ministries, the National Assembly, the media, and information technology businesses. Each ministry and level of government—central, provincial, district, and commune—has specific tasks and responsibilities outlined in the plan. The Prime Minister and Deputy Prime Minister were able to spearhead a whole-of-society strategy to combat COVID-19 thanks to the swift mobilization of financial and human resources, based on the idea of 'protecting people's health first' (WHO 2020).

As the number of cases could increase and the virus could spread further in Viet Nam, Viet Nam carried out a targeted three-week quarantine while developing a broader quarantine and quarantine policy to control COVID-19. The government knew it was important to limit viral transmission as quickly as possible to protect the country's economy when the first wave of the outbreak began in early March (Figure 1), thanks to an imported case from the United Kingdom. Viet Nam closed its borders and halted international flights from mainland China in February, gradually expanding this to the United Kingdom, Europe, the United States (US), and finally the rest of the world in March, imposing a 14-day mandatory quarantine on all visitors, including Vietnamese nationals. This allowed authorities to keep track of COVID-19 cases imported from other countries and prevent additional local transmission, which may have spread to the rest of the community. Even though there was never a nationwide lockdown, the country was subjected to stringent physical separation measures. On 1 April 2020, the Prime Minister issued a countrywide two-week physical distancing order, which was extended by a week in large cities and hotspots, advising people to stay at home, closing non-essential enterprises, and restricting public transit. After two weeks without a locally reported case, schools and businesses were permitted to resume operations, and individuals were able to return to their daily routines by early May (Malhotra 2020).

Figure 1: Evolution of COVID-19 confirmed cases and deaths in 2020



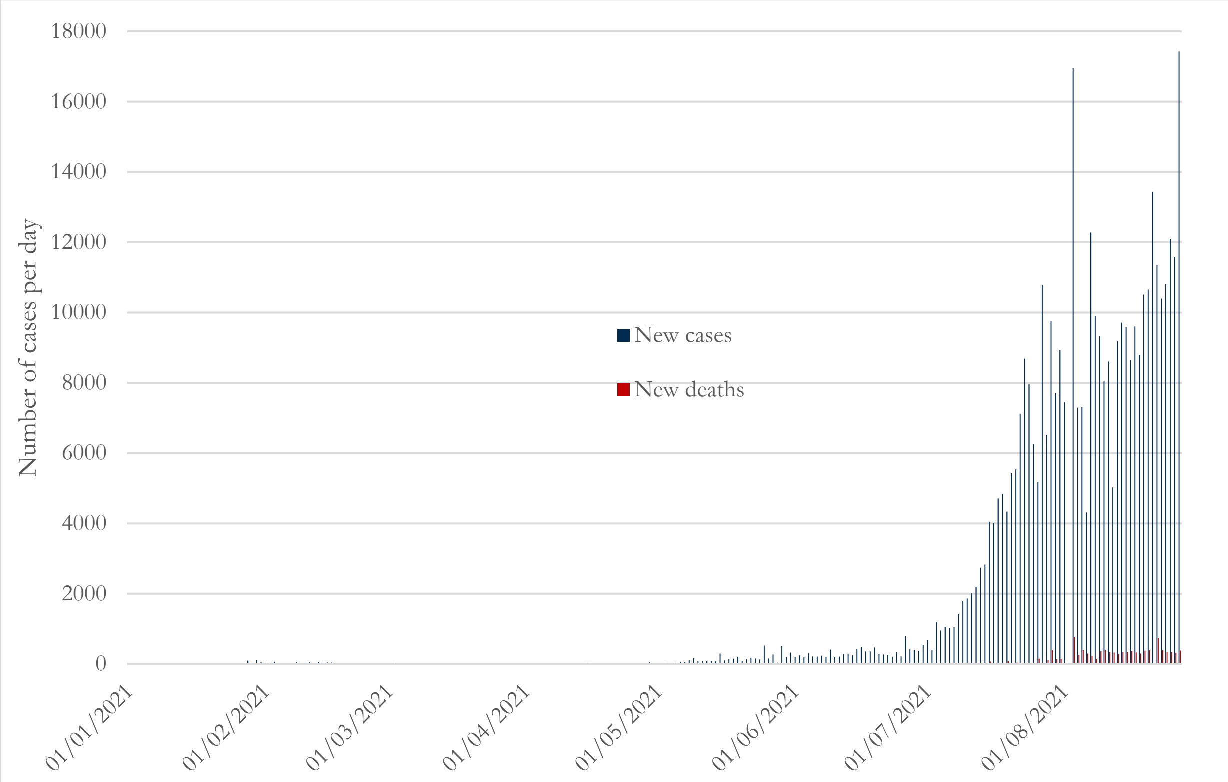
Note: COVID-19 = coronavirus disease.

Source: authors' compilation based on data from the COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University.

As of July 2020, there were no additional COVID-19 incidents in Viet Nam caused by local transmission for more than three months. The country entered its second wave of illness when the Ministry of Health announced additional cases in Da Nang. On 28 July, the city of Da Nang was shut down for 15 days. Hundreds of illnesses linked to Da Nang were recorded around the country, with the first death on 31 July. In less than two months, Viet Nam had successfully controlled the epidemic for the second time, employing the same strategies as in the previous outbreak, and had resumed practically all economic operations. People who were infected abroad and were quarantined by the authorities were the cases in late 2020 (Dang 2022).

The government's commitment had remained the same in 2021, and it made efforts to achieve dual objectives of disease control and economic development. However, the fourth COVID-19 epidemic, which began in May 2021, resulted in the greatest increase in locally transmitted infections since the start of the pandemic (Figure 2). By late May, new highly contagious coronavirus variants were causing hundreds of positive cases per day, a low incidence rate by international standards but the highest in Viet Nam's history. As a result, authorities in the affected areas, as well as those in the country's three major cities—Ho Chi Minh City, Hanoi, and Da Nang—imposed severe mobility restrictions. As a result of the outbreak, several companies and industrial zones in the Bac Giang and Bac Ninh provinces, two important industrial centres in Viet Nam's north, were forced to close (Ngoc 2021). As of 31 July, all-time total infections stood at 145,686 cases and 1,306 deaths.

Figure 2: Evolution of COVID-19 confirmed cases and deaths in 2021



Note: COVID-19 = coronavirus disease.

Source: authors' compilation based on data from the COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University.

3 The government's effectiveness in combating COVID-19

Because Viet Nam is a one-party state, all government institutions at all levels are subordinate to the Vietnamese Communist Party. Decisions that can be taken by a single agency tend to be implemented quickly. Vietnamese institutions have often demonstrated an impressive capacity to mobilize and achieve targets—strong government leadership with effective multi-sectoral collaboration and coordination and successful mobilization of national resources using a whole-of-society approach (Malesky et al. 2014). For example, Viet Nam acted quickly in early 2020 in response to the first signs of the coronavirus pandemic. National borders were closed, and a testing and quarantine system was immediately put in place. Under the strong leadership of the government and effective multi-sectoral coordination and collaboration, a strategic approach to controlling and detecting COVID-19 has been successfully and rapidly implemented. Recent examples in 2021 include the supply and distribution of vaccines, as well as the deployment of medical equipment and health workers from central hospitals and provinces to virus hotspots. These were decisions that did not necessitate the alignment of the authority structure's fragments. The government drew lessons from previous epidemics and pandemics and acted on scientific evidence and expert advice (Pincus 2021).

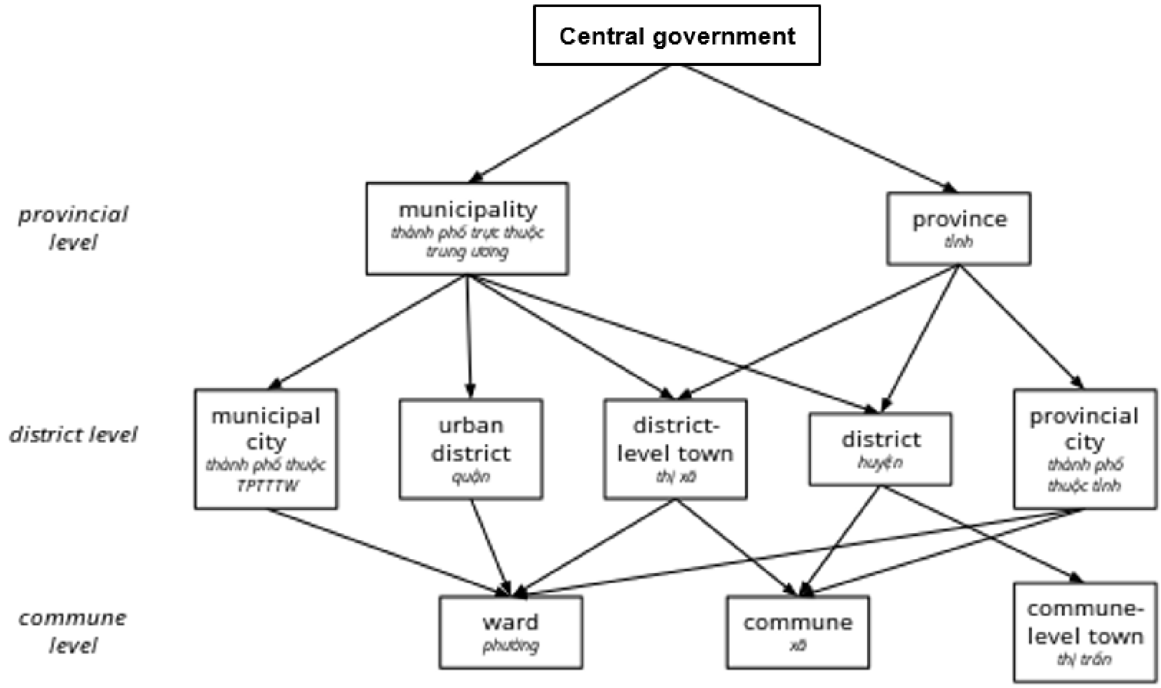
Given the pandemic's complexity and multiple consequences, governments had to adapt quickly and ensure adequate coordination capacity was in place. Although the central government's standards and rules governing isolation and movement between provinces are clear and consistently enforced, the ability to tailor the response to local conditions would be preferable. This could be seen in the first COVID-19 waves in 2020 and the first half of 2021 (Pincus 2021). The central government's clear vision of 'people's safety first', which was accepted as the national consensus, as well as its rules on quarantine, social distancing, and movement between provinces; free testing and treatment; and support for people in quarantine centres and affected by the pandemic were widely understood and followed by local governments and people. This helped Viet Nam contain the first waves of COVID-19 at relatively low levels of infection and made a robust economic recovery possible, building public trust in government. This high level of trust, in turn, made the government's responses more effective. More than 90 per cent of Vietnamese respondents between May 2020 and May 2021 believed the government was handling the situation 'very' or 'somewhat' well, according to the COVID-19 behaviour tracker, which was created by YouGov (2021), a British data analytics firm, and Imperial College London. Even when the worst wave of COVID-19 infections hit Viet Nam in May 2021, roughly 83 per cent of Vietnamese polled said they trusted the government's pandemic response, which was well above that of comparable data in Southeast Asia (Nguyen 2021).

Moreover, rather than controlling the flow of information, Vietnamese authorities chose to apply a more flexible strategy by prioritizing transparency and allowing information sharing. Viet Nam is a fully authoritarian state, a type of regime that is not always transparent. They are aware, however, that in matters of public health, transparency and communication are critical. And they gain legitimacy through their performance (Abuza 2020). Transparency efforts have also helped to alleviate scepticism about the COVID-19 state's reporting. Information on the COVID-19 pandemic, scenarios, and government policy interventions was disseminated in an open, diverse, and timely manner, followed by widespread policy consultation. The Ministry of Health has made all reported cases public, allowing for more in-depth analysis by data scientists and bloggers, as well as support from public health experts (Nguyen and Malesky 2020). Viet Nam was credited with turning the tide of public mistrust into firm confidence by handling the pandemic transparently and effectively. The transparency is to boost the trust of people and businesses in the fight against the pandemic, especially in policy responses, to achieve the dual goal of pandemic containment and economic recovery. This approach showed how Viet Nam combined democratic principles with authoritarian practices in a way that publicly promoted government legitimacy (Hartley et al. 2021).

However, the pandemic has also highlighted challenges in governance that call for reform in preparation for future crises. When the pandemic was out of control in July 2021, leading to a lockdown in many provinces, the decentralization system between the central and local governments showed weaknesses. The current local administration has two functions—organizing and ensuring the enforcement of the law in the community and determining local issues. It expresses a fundamental principle that policies and laws should be created by central agencies and that local governments are responsible for organizing their implementation under the supervision of higher government agencies.[2] In addition, the authority of local governments is determined on the basis of the division of authority between central and local government agencies and between different levels of local government. This provision aims to create a space for local initiatives and self-responsibility and the effective control of power (Vietnam Law and Legal Forum 2017). This means provinces may have policies that, to some extent, conflict with those issued by the central government.

[2] The structure of Vietnamese administration is illustrated in Figure 3.

Figure 3: Vietnamese administrative structure



Source: authors' compilation.

During the first waves, the system's shortcomings were exposed when several provinces implemented differing restrictions for mobility (travel and transportation), creating some supply-chain interruptions. The various COVID-19 policies are implemented by local governments, sometimes in defiance of central government or health ministry directives (Tran 2021). The expenses became more obvious in the fourth wave of the Delta variety, when the magnitude of new cases and deaths was substantially higher, putting the health system under strain. They are primarily the result of disagreements between different levels of government on how to combat the virus while also achieving economic growth. Local governments implemented a variety of social distancing, testing, and quarantine regimes, which were usually inconsistent and changed. People and businesses were perplexed by the shifts and disparities between locations. Despite the criteria for applying social distancing measures, local authorities quarantined entire villages in several cases where there were no active cases (Government of Vietnam 2021). Local authorities were cautious because they feared punishment for rising case levels—not for extreme control measures that violated central government rules.

Local authorities' conservatism was evident in local travel and transportation restrictions within and between provinces, as well as related testing and quarantine rules. Local governments issued inconsistent travel permit rules—rules that were frequently changed in unpredictable ways—and related test requirements. The increased number of checkpoints and roadblocks disrupted supply networks, especially those of critical products and export goods, as well as increasing testing costs for enterprises. Despite efforts to create 'green routes' or 'bubbles' or to apply standard requirements for air travellers (evidence of two vaccinations or a negative test and no symptoms, as well as following Ministry of Health quarantine requirements based on the risk level of departure locations), local authorities, fearful of being held responsible for the local case count, imposed harsher conditions that did not follow central government directives. Furthermore, the direction of the central government has been uncertain at times, and laws and regulations have been slowly disseminated, leaving room for interpretation and the implementation of tighter restrictions and requirements at the local level. The strategy shifted from 'zero COVID' to 'safe and flexible adaptation and effective control of the COVID-19 pandemic', but the 'new normal' precondition of vaccination rates approaching community immunity and safety standards and rules (such as for goods and passenger transportation or for businesses to operate safely in the new normal) were vague, complicated, or delayed. As a result, there was a race to the bottom that did not contribute to the national goals of COVID-19 control while safeguarding the economy and livelihoods (Pincus 2021).

4 Data description

The data set used in the study is created from multiple sources. Table 1 provides summary statistics for the main variables.

Table 1: Descriptive statistics

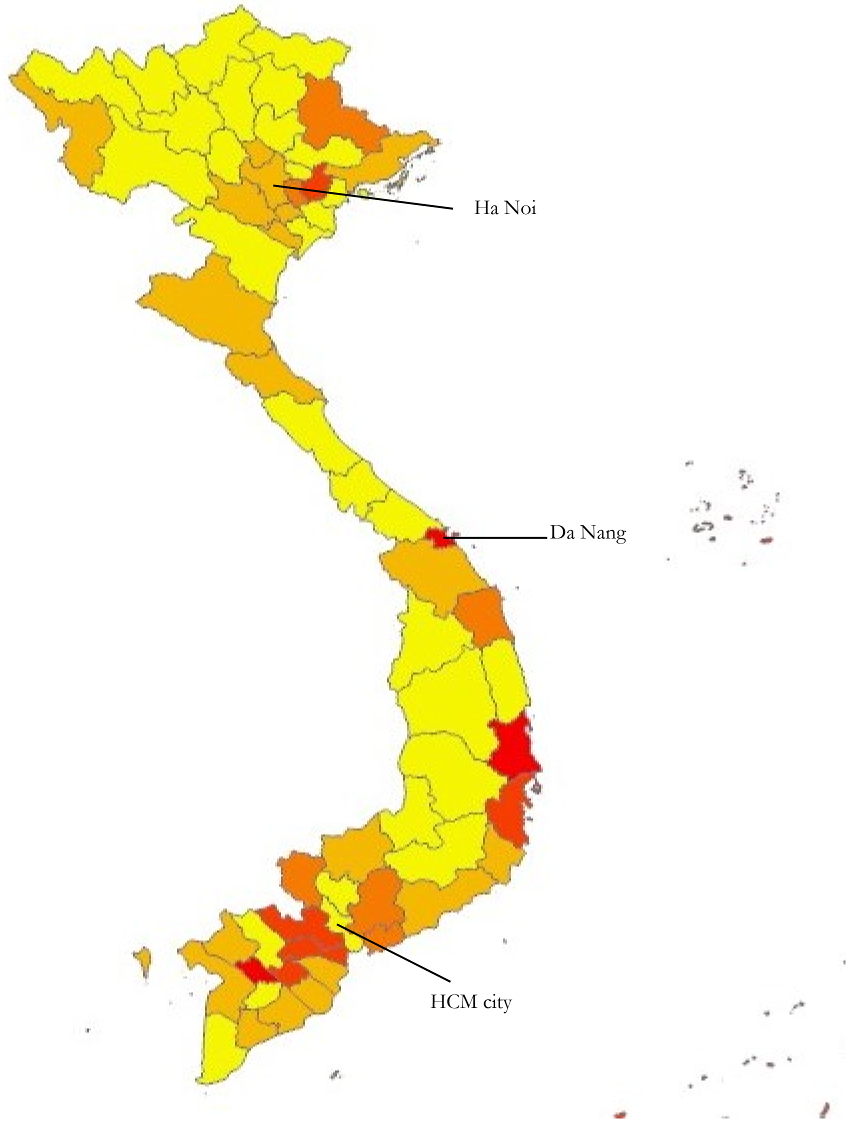
Variables	N	Mean	SD	Min	Max
Opportunities for participation in elections	63	1.44	0.13	1.17	1.81
Participated in formal associations	63	0.52	0.17	0.18	0.83
Participated in informal associations	63	0.17	0.08	0.01	0.39
Voted in People's Council election	63	0.53	0.08	0.34	0.74
Voted in last national assembly election	63	0.46	0.09	0.27	0.64
Village chief elected	63	0.85	0.07	0.68	0.97
Participated in election	63	0.63	0.07	0.44	0.84
Quality of village head elections	63	1.53	0.17	1.05	1.90
Invited to participate	63	0.60	0.16	0.23	0.93
Voted for winner	63	0.92	0.05	0.76	1.00
Access to information	63	0.83	0.07	0.69	1.04
Searched state policy and legislation	63	0.15	0.05	0.07	0.29
Received information of state policy	63	0.13	0.05	0.06	0.27
Information received useful	63	0.14	0.05	0.06	0.28
Information received reliable	63	0.14	0.05	0.05	0.27
Reasonable waiting time for information	63	1.00	0.01	0.98	1.00
Contacted People's Council	63	0.05	0.03	0.01	0.14
Contact People's Council successfully	63	0.91	0.14	0.34	1.00
Responsive to appeals	63	1.00	0.24	0.58	1.65
Actions taken by citizens	63	0.24	0.09	0.09	0.49
Successful actions of citizens	63	0.21	0.08	0.08	0.41
Quality of public healthcare	63	1.99	0.09	1.70	2.21
Log (deaths/mil. pop)	63	-8.27	1.62	-9.21	-3.54
Log (infected cases/100,000 pop)	63	-3.56	2.06	-9.21	-0.24
Log (population density)	63	5.72	1.00	3.93	8.39
Log (GRDP per capita)	63	3.94	0.43	3.03	5.04
Log (hospital beds/100,000 pop)	63	0.34	1.17	-3.51	1.88
Log (population over 60)	63	4.95	0.70	3.25	6.92

Source: authors' construction.

4.1 Measure of pandemic outcomes

We use some indicators that have been frequently employed in the literature to measure the health effects of the pandemic such as confirmed COVID-19 cases (i.e. infections) and deaths. This information has been published and updated daily by the Ministry of Health. Confirmed COVID-19 cases and deaths measure the total number of cases and deaths linked to COVID-19 as of 31 July 2021. We choose this cut-off date because it is before Viet Nam implemented widespread lockdowns in many provinces, especially in the South due to the spread of the Delta variant. We also normalized the cases and deaths by the local population to account for between-province differences in population. Figure 4 illustrates the spread of COVID-19 over the country in July 2021. We can observe that economic centres with a high population density, such as Da Nang, Hanoi, Ho Chi Minh City, and surrounding areas, tend to be more infected (adjusted by the population). Regions with a low population density, such as the Northern Midland and Mountains, the Central Coast, and the Central Highlands, have fewer infected cases.

Figure 4. Accumulated COVID-19 confirmed cases in provinces by 31 July 2021



Note: lighter colors mean a lower level of confirmed cases per 100,000 citizens.

Source: authors' illustration based on Viet Nam's Ministry of Health data. Map created using ArcGIS.

As mentioned in Gisselquist and Vaccaro (2021), the published numbers of confirmed cases may underestimate the actual numbers of infections due to incomplete testing and incomplete testing sensitivity. The number of confirmed deaths is also likely to be underestimated as there are deaths from other diseases not recorded as being caused by COVID-19. However, these measures are commonly used in many studies on COVID-19. For instance, Ferraresi et al. (2020) have used the number of confirmed cases as a measure of COVID-19 health outcomes. Similarly, this measure is used in the studies by Polo (2020) and Qiu et al. (2020). For the number of confirmed deaths, it has been used in Cheibub et al. (2020), Sebhatu et al. (2020), and Vadlamannati et al. (2021) as a measure of COVID-19 health outcomes.

4.2 Measures of effectiveness of local government

To measure the effectiveness of the local government, we used the Provincial Governance and Public Administration Performance Index (PAPI) in 2019. This index is created by surveying citizens' opinions on the quality of governance and public services at the local level. This survey has been annually implemented since 2010 by the United Nations Development Program and Viet Nam Fatherland Front (UNDP et al. 2012). The survey uses a clustered sampling approach to provide representative citizens' responses to the quality of governance in all levels of the Vietnamese government from the province level to the village. The sample includes all 63 provinces.[3]

Although PAPI is designed to measure overall provincial performance, it is first scored at the individual level and then an unweighted index is calculated by averaging respondent scores (with a score ranging from 10 to 60) and six individual sub-indices (with scores ranging from 1 to 10). The six sub-indices include the following: 1) participation, a measure of the citizens' knowledge, opportunities for participating in local elections, and quality of leaders; 2) transparency measures citizens' access to information such as local budget and land-use plans; 3) accountability measures the interaction level with local authorities, how local governments respond to citizens' appeals or access to justice services; 4) control of corruption measures the level of corruption in service delivery and other services by local governments and their willingness to fight it; 5) public administrative procedures measure the quality of providing certification services, land certificates, and construction permits; and 6) public services delivery measures the quality of social security, public health services, education, and infrastructure in the locality. In all sub-indices, a better score means a higher quality of local governance (Malesky et al. 2014).

Local government capacity

The measures of government capacity are based on the idea that the prompt policy responses to the health crisis will rely on the local governance capacity (Toshkov et al. 2021).[4] In order to take appropriate policy measures to address the health crisis, governments need to be able to provide adequate health infrastructure to assess the risks and responses to the health crisis. We take the sub-index of the quality of public healthcare and the number of hospital beds per million population as proxies for local government capacity.

Local government legitimacy

Legitimacy in the context of COVID-19 can be defined as 'the ability of leaders to win compliance with new public health orders because people share a widespread belief that everyone is complying'

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[3] CECODES et al. (2012). The Viet Nam Governance and Public Administration. Data available at http://www.papi.vn.

[4] Other studies, such as Christensen et al. (2016) and Capano et al. (2020), also discussed governance capacity during crises.

(Stuti 2020: 1). We use some potential PAPI dimensions that could impact compliance to assess whether the quality of local governance enhanced compliance. Performance in some PAPI categories by local governments could play an influence and is likely to boost citizen trust in local governments, potentially leading to more compliance with social distancing or lockdown regulations. For example, because of the familiarity of participation in local affairs and readiness to obey laws, good performance in Participation at Local Levels could boost citizen compliance. As citizens have a better understanding of local decision-making processes, they may have more faith in local governments. Accountability may also affect compliance because proof of better accountability by local officials may improve willingness to follow their rules (UNDP et al. 2021).

5 Relationship between local government effectiveness and COVID-19's health impacts

To assess the relationship between government effectiveness in these dimensions on health outcomes, we regress the 2019 provincial score for each of the above dimensions with health outcomes. The regression equation is as follows:

$$Cases_i = \alpha + \beta ELG_i + X_i + \varepsilon_i \qquad (1)$$

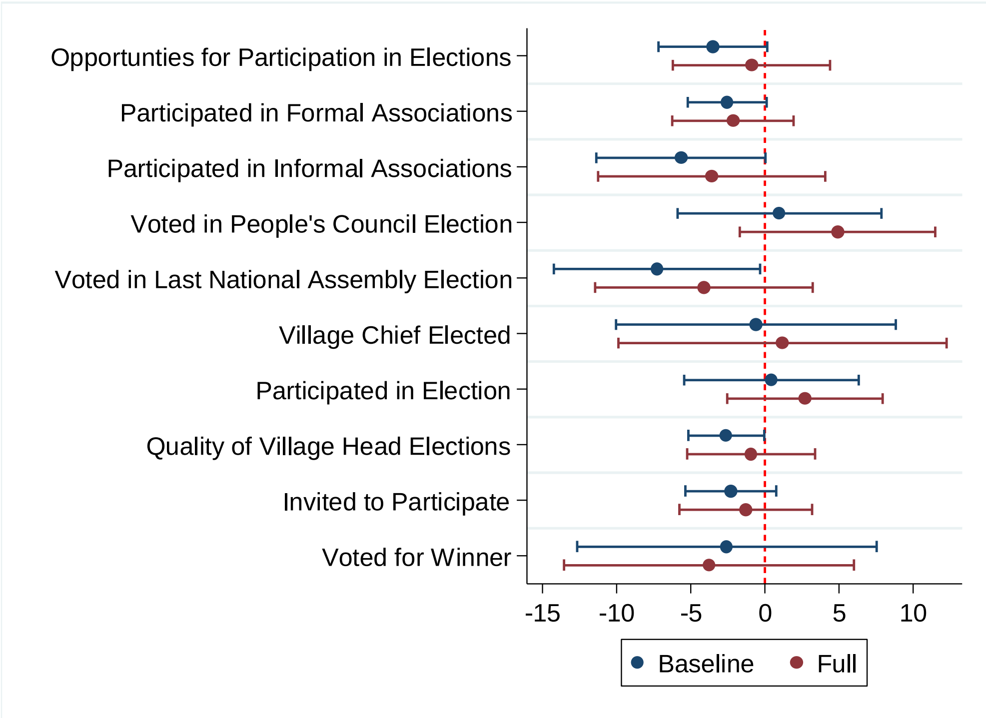
where $Case_i$ is the accumulative number of infected cases and deaths in province i in 2020–21. Our main variable, ELG_i, is the different proxies for local government effectiveness in province i in 2019. The main variable is lagged by one year to mitigate the problem of endogeneity. The coefficient of interest is β, capturing the relationship between local government effectiveness and health indicators. The provinces with better capacity in terms of health systems and efficiency in governance are expected to cope and control the spread of COVID-19 better.

X_i are provincial characteristics. They include province economic wealth, population density, and the age structure of a population. Uneven responses to COVID-19 could be mainly because of inadequate health infrastructure, which is proxied by ln(provincial GDP per capita). Despite the importance of health infrastructure in managing COVID-19 cases, the spread of COVID-19 is influenced by the interaction of other socio-economic variables at the local level, such as population density and the senior population. Therefore, we control for ln(population density) and log(population over 60) in the regression. In the full models, we also control for regional dummies.

Figure 5 shows the estimated regression coefficients. The dots in a coefficient plot reflect a predictor's point estimates, while the spikes represent its 90 per cent confidence intervals. In this figure, we investigate two specifications. The details of the specifications used in the regression model and results can be found in the Appendix. The first is a baseline specification, where the independent variables include different categories for the level of participation. Provincial characteristics such as the elderly population, gross domestic product (GDP) per capita, and population density have been added. These control variables allow us to explain the differences in the level of infected cases and death rates across provinces with varying degrees of governance quality (Serikbayeva et al. 2021). In the full specification, we additionally control for regional dummies, examining the possibility that policy measures may vary within a region.[5]

[5] Viet Nam has been divided into six regions: Northern Midland and Mountain, Red River Delta, Central Coast, Central Highlands, South East, and Mekong River Delta.

Figure 5: Relationship between participation and infected cases

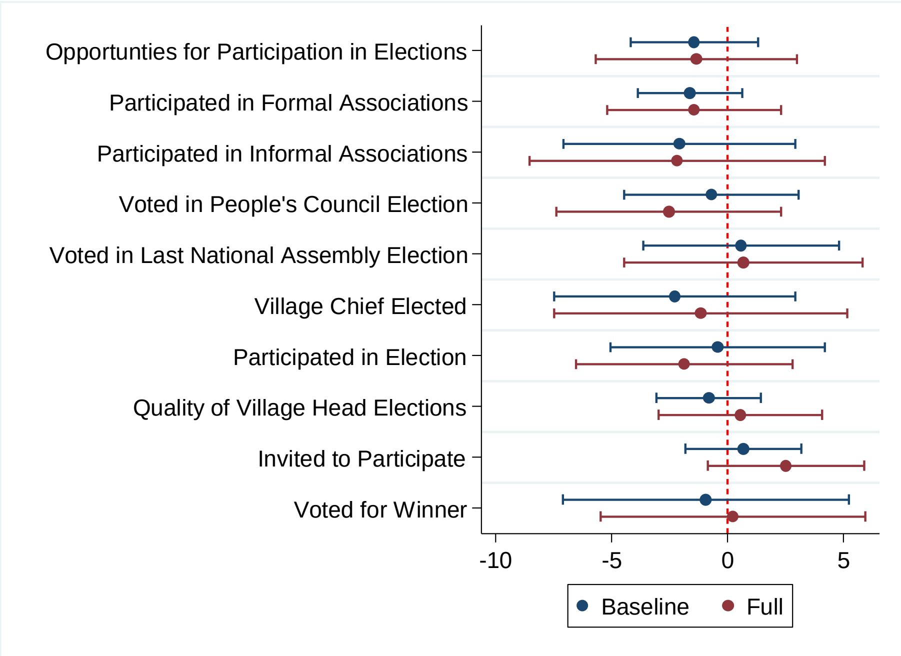


Note: see Tables A1 and A2 for the detailed regression results.

Source: authors' construction.

The results show that provinces where people have more opportunities for participation in elections tend to have lower infected cases. Since the outcome variable is the natural log of the confirmed COVID-19 cases, one standard deviation higher for opportunities for participation in elections will reduce roughly 44 per cent of the predicted number of infected cases over 100,000 people. Especially, the coefficients are significant for several sub-components, such as participation in the formal and informal association, and have been voting in the National Assembly election or quality of village head elections. The other coefficients are not statistically significant. In the full specification, we do not observe a significant relationship between different measures of participation on health indicators. This shows that the effects are not different across regions. However, we observe statistically insignificant associations between different participation measures with the number of deaths, as shown in Figure 6. The results in these regressions have the same specification as those in Figure 5. The findings suggest that better participation is not effective in reducing the number of deaths.

Figure 6: Relationship between participation and death cases

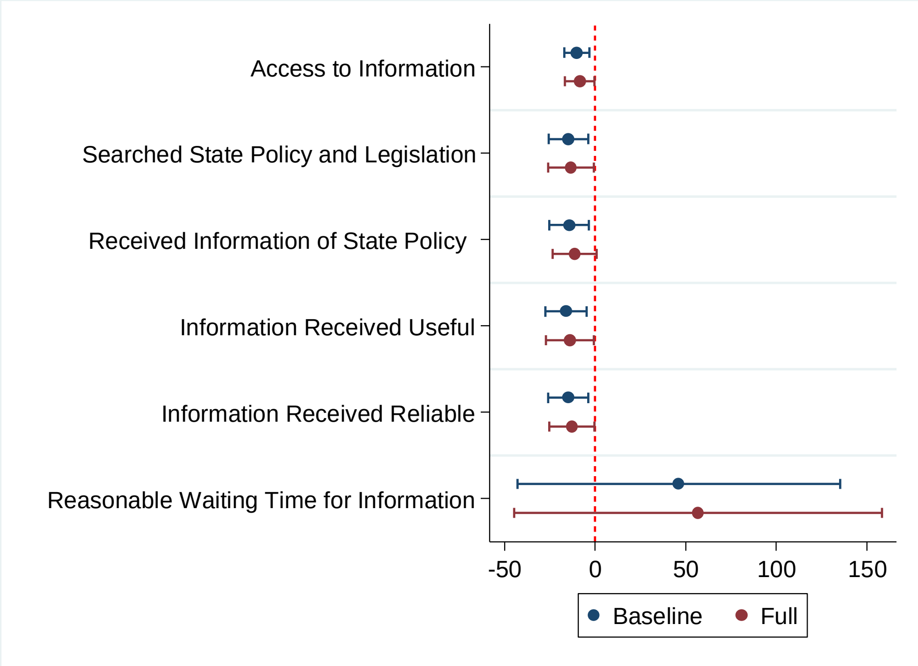


Note: see Tables A3 and A4 for the detailed regression results.

Source: authors' construction.

Figures 7 and 8 show the relationship between the 2019 provincial scores for each dimension on transparency with health outcomes. As seen, apart from the last sub-index, *waiting time for information*, each of the remaining five dimensions has a significant and negative relationship with the number of infected cases. For example, a one standard deviation increase in the score of access to information leads to about a 7 per cent lower number of confirmed cases over 100,000 citizens. For the dimension of information received useful, a one standard deviation increase in the score led to an 8 per cent decrease in the number of confirmed cases over 100,000 citizens. Similarly, a one standard deviation increase in the dimension of information received reliable leads to 7.3 per cent fewer infected cases over 100,000 citizens. All this fits with the notion that improvements in governance effectiveness lead to lower levels of health impacts. These findings are also consonant with the previous studies showing that transparency increases trust in local governments. For example, Vu (2021) demonstrates there is a link between public trust in government and policy compliance. Public trust in the government increases the likelihood that they will follow government policies and regulations during the COVID-19 epidemic, thereby reducing infections and deaths. However, when we control for regional dummies, the estimates are almost the same and statistically significant. We find relatively weak evidence of an inverse relationship between government transparency and COVID-19 deaths (Figure 8).

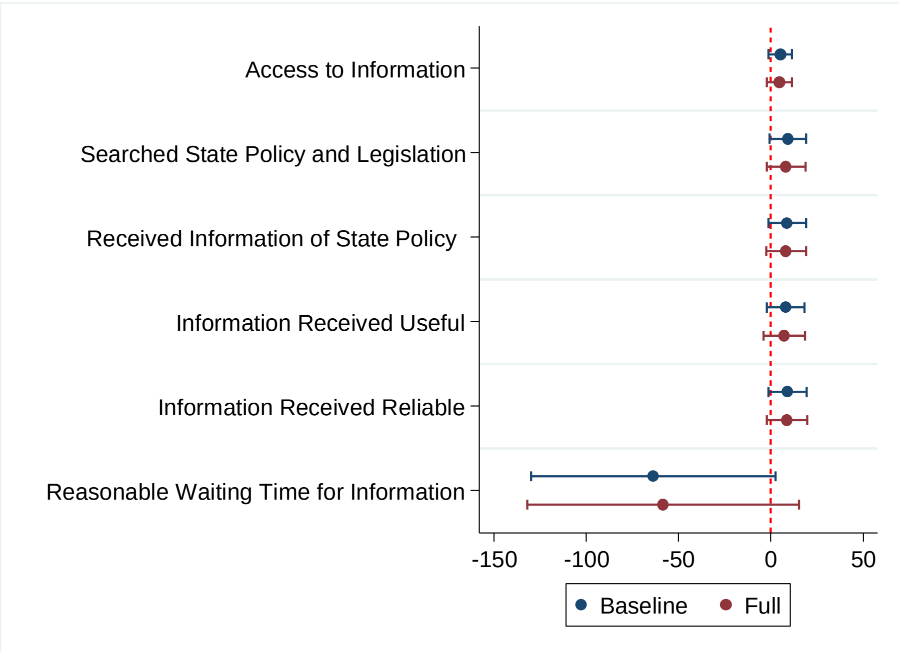
Figure 7: Relationship between transparency of local decision making and infected cases



Note: see Tables A5 and A6 for the detailed regression results.

Source: authors' construction.

Figure 8: Relationship between transparency of local decision making and death cases

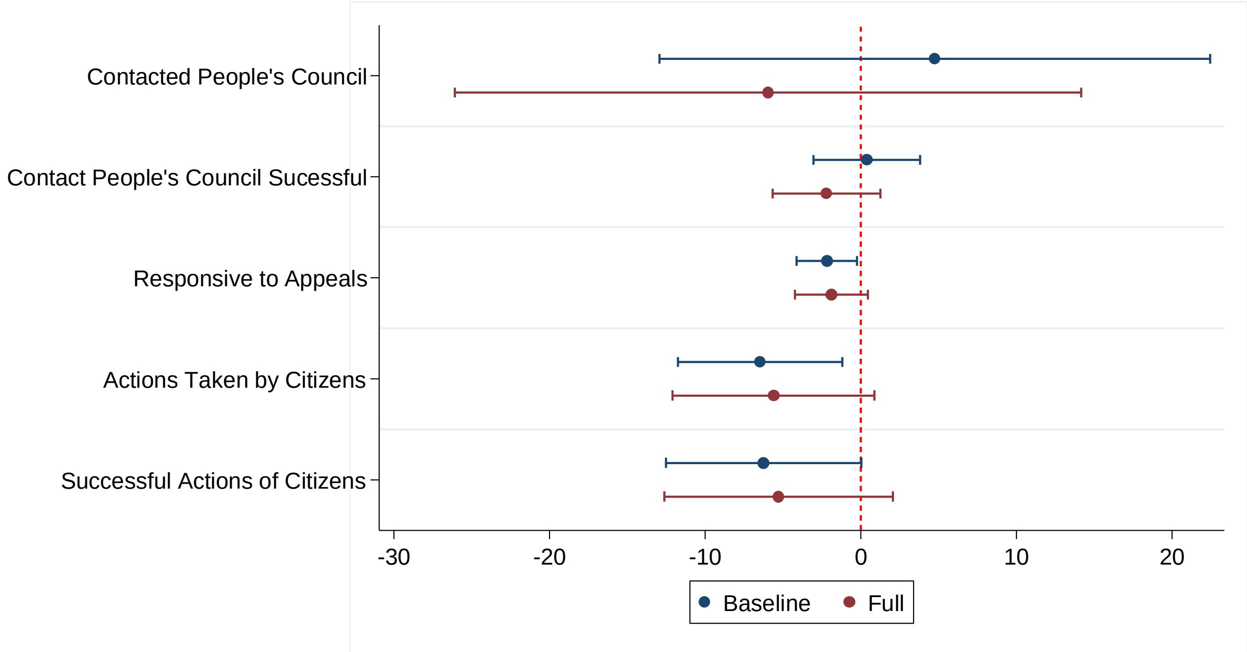


Note: see Tables A7 and A8 for the detailed regression results.

Source: authors' construction.

Figure 9 shows the relationship between different dimensions of accountability and infected cases. The estimates are significant in some dimensions such as responsive to appeals, actions taken by citizens, and successful actions of citizens. The results also indicate that improvement in those dimensions will reduce the number of infected cases. However, when we control for the regional dummies, the relationship becomes either inverse or non-significant, depending on the dimension of the accountability. At the same time, the regression estimates of the relationships between different dimensions of accountability and COVID-19 deaths show that all of them are not statistically significant, as shown in Figure 10.

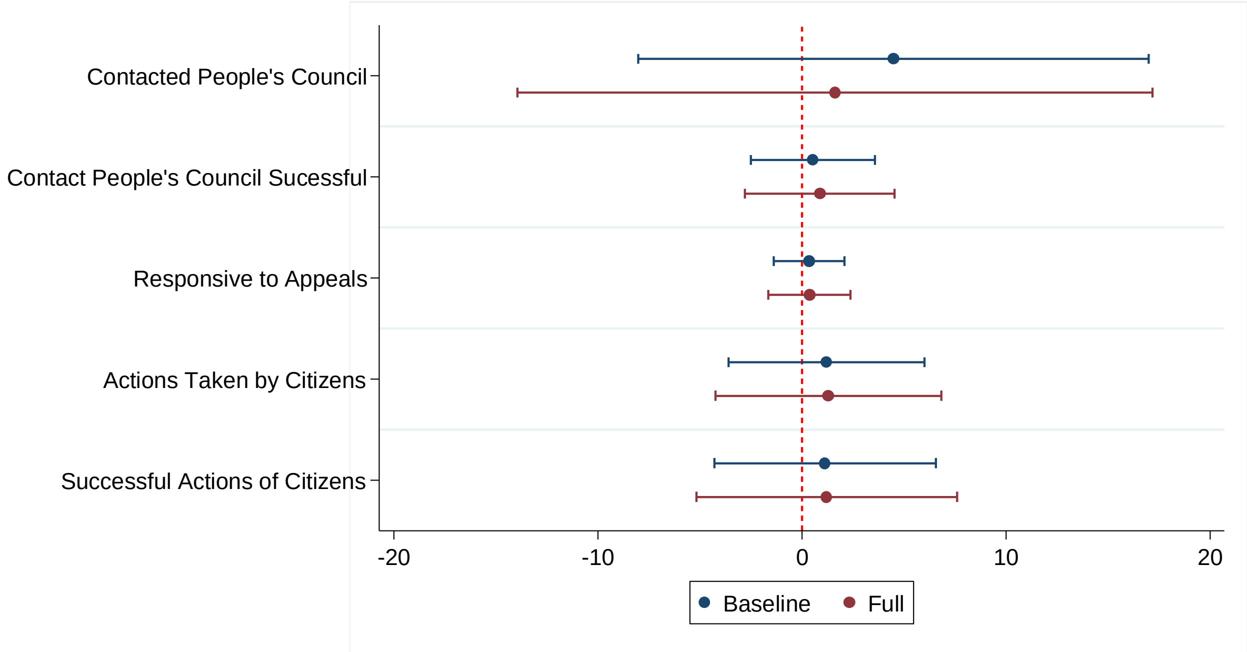
Figure 9: Relationship between accountability and infected cases



Note: see Tables A9 and A10 for the detailed regression results.

Source: authors' construction.

Figure 10: Relationship between accountability and death cases

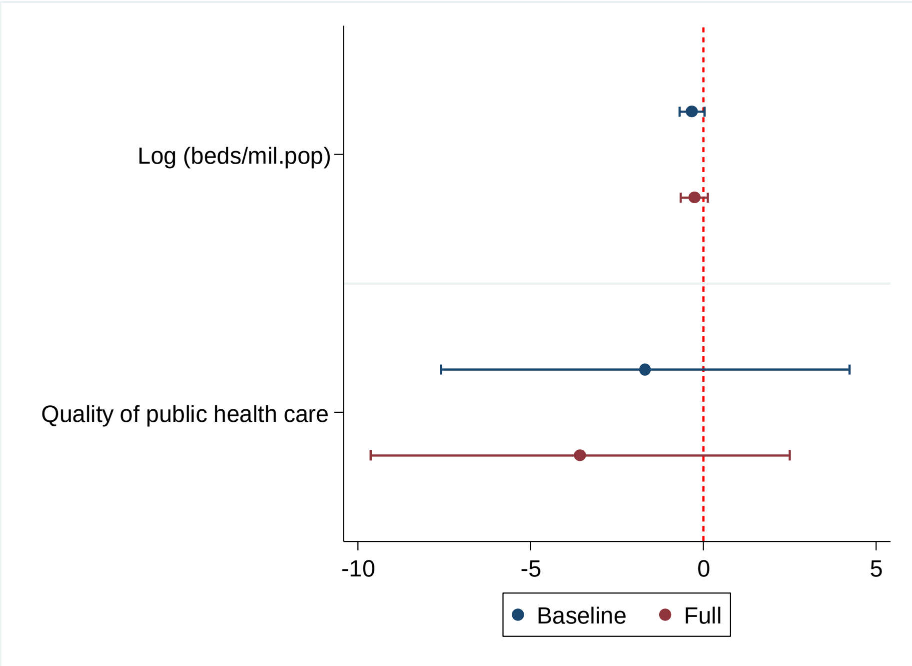


Note: see Tables A11 and A12 for the detailed regression results.

Source: authors' construction.

A strong and effective public health infrastructure is required to respond to any health crisis, such as pandemics. It is also needed to tackle ongoing concerns, such as the prevention and management of communicable and non-communicable diseases (Pandey et al. 2021). Nguyen and Malesky (2020) argued that the standard of care in Vietnamese hospitals has steadily improved. Vietnamese citizens therefore no longer must be concerned about the costs of COVID-19 tests (formal or informal), associated hospitalization, and centralized quarantine, which increased their willingness to comply with extensive contact tracing and strict quarantine measures. Figure 11 shows that the estimated coefficient on government capacity, which is proxied by log(number of hospital beds over 100,000 people), is statistically significant and negative, meaning that increased health infrastructure is significantly associated with decreased infected rates. The coefficient is also not significant while we control for regional dummies, but the magnitude is similar. The coefficients on quality of public healthcare are negative, appearing to suggest that the higher perception of citizens on the quality of public healthcare will lower COVID-19 confirmed cases, but the effects are statistically insignificant. For the association between government capacity and deaths from COVID-19, the coefficients are not statistically significant (Figure 12).

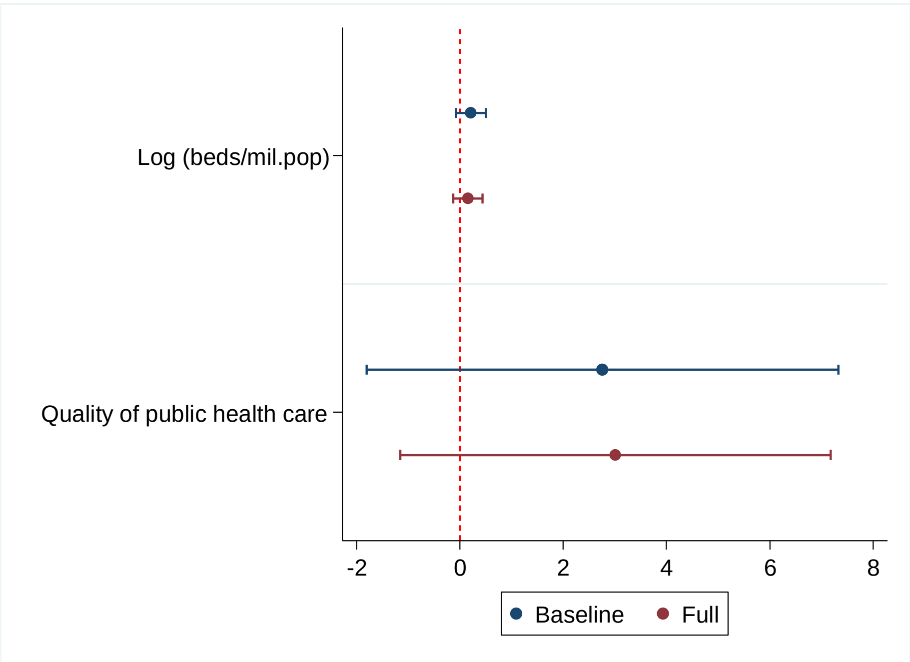
Figure 11: Relationship between capacity and infected cases



Note: see Table A13 for the detailed regression results.

Source: authors' construction.

Figure 12: Relationship between capacity and deaths



Note: see Table A14 for the detailed regression results.

Source: authors' construction.

6 Conclusion

In this study, we investigate the various aspects of government effectiveness in explaining the variation in COVID-19 confirmed cases and death levels in Viet Nam. We use the Provincial Governance and Public Administration Performance Index in 2019 to measure the effectiveness of the local government and examine its relationship with health outcomes such as confirmed cases and deaths. One of the major findings suggests that health system capacity is critical in the fight against COVID-19. The effect of government transparency, which is consistently negative and statistically significant across all model specifications, shows that increased government transparency is significantly associated with lower confirmed rates. For the impact of the level of participation, we find that provinces that have higher quality of village head elections or where people have more opportunities for participation tend to have lower infected cases, especially those where people participate in the formal and informal association and have voted in the National Assembly election. Although the results may not imply the causality, the statistical correlation between local government effectiveness and health indicators, controlling for other factors, provide evidence that good governance is importance in dealing with a crisis (UNDP et al. 2021).

The empirical findings of the study provide some implications. The first is to increase government effectiveness by increasing transparency and accountability at all levels. These characteristics are the result of a long-term investment in the quality and credibility of government institutions. The second is the importance of having a capable government. While policy implementation characteristics influence policy outcomes, it is critical to facilitate the accumulation of governance capacity. The COVID-19 experience emphasizes the need to strengthen the effective public health system with adequate investments in trained personnel and infrastructure (Serikbayeva et al. 2021). Gaps in healthcare infrastructure and resource distribution across jurisdictions should be evaluated and adjusted as needed. It is also necessary to create effective mechanisms for leveraging the private health sector's capacity.

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Appendix

Table A1: The relationship between infected cases and participation

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Dependent variable: ln(infected cases/thousand population)									
Opportunities for participation in elections	-3.391*									
	(1.870)									
Participated in formal associations		-2.493*								
		(1.317)								
Participated in informal associations			-5.566*							
			(2.784)							
Voted in People's Council election				1.357						
				(3.415)						
Voted in last National Assembly election					-6.968*					
					(3.527)					
Village chief elected						-0.345				
						(4.613)				
Participated in election							0.154			
							(2.810)			
Quality of village head elections								-2.417*		
								(1.220)		
Invited to participate									-2.202	
									(1.486)	
Voted for winner										-2.748
										(5.002)
Observations	63	63	63	63	63	63	63	63	63	63
R-squared	0.127	0.123	0.133	0.085	0.150	0.082	0.082	0.121	0.111	0.087

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita).

Source: authors’ calculations.

Table A2: The relationship between deaths and participation

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Dependent variable: ln(death cases/thousand population)									
Opportunties for participation in elections	-1.329									
	(1.374)									
Participated in formal associations		-1.566								
		(1.125)								
Participated in informal associations			-1.974							
			(2.527)							
Voted in People's Council election				-0.191						
				(1.850)						
Voted in last National Assembly election					0.849					
					(2.126)					
Village chief elected						-1.978				
						(2.638)				
Participated in election							-0.760			
							(2.311)			
Quality of village head elections								-0.618		
								(1.115)		
Invited to participate									0.775	
									(1.244)	
Voted for winner										-1.147
										(3.176)
Observations	63	63	63	63	63	63	63	63	63	63
R-squared	0.163	0.178	0.162	0.152	0.153	0.159	0.153	0.156	0.158	0.153

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita).

Source: authors’ calculations.

Table A3: The relationship between infected cases and participation; adding regional controls

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Dependent variable: ln(infected cases/thousand population)									
Opportunties for participation in elections	-0.894									
	(2.567)									
Participated in formal associations		-2.146								
		(1.998)								
Participated in informal associations			-3.562							
			(3.637)							
Voted in People's Council election				4.523						
				(3.052)						
Voted in last National Assembly election					-4.068					
					(3.607)					
Village chief elected						1.126				
						(5.389)				
Participated in election							2.696			
							(2.510)			
Quality of village head elections								-0.849		
								(1.961)		
Invited to participate									-1.269	
									(2.120)	
Voted for winner										-3.741
										(4.853)
Observations	63	63	63	63	63	63	63	63	63	63
R-squared	0.275	0.285	0.284	0.299	0.293	0.274	0.281	0.275	0.279	0.281

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), ln(GDP per capita), and regional dummies. Regional dummies include indicators for the Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong River Delta.

Source: authors' calculations.

Table A4: The relationship between deaths and participation; adding regional controls

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Dependent variable: ln(death cases/thousand population)									
Opportunties for participation in elections	-1.161									
	(2.084)									
Participated in formal associations		-1.376								
		(1.823)								
Participated in informal associations			-2.008							
			(3.106)							
Voted in People's Council election				-2.104						
				(2.243)						
Voted in last National Assembly election					0.802					
					(2.540)					
Village chief elected						-0.968				
						(3.168)				
Participated in election							-1.910			
							(2.331)			
Quality of village head elections								0.693		
								(1.606)		
Invited to participate									2.539	
									(1.625)	
Voted for winner										0.165
										(2.844)
Observations	63	63	63	63	63	63	63	63	63	63
R-squared	0.296	0.300	0.297	0.301	0.293	0.293	0.298	0.294	0.328	0.292

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), ln(GDP per capita), and regional dummies. Regional dummies include indicators for the Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong River Delta.

Source: authors' calculations.

Table A5: The relationship between infected cases and transparency

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: ln(infected cases/thousand population)					
Access to information	-10.11***					
	(3.383)					
Searched state policy and legislation		-14.60***				
		(5.391)				
Received information of state policy			-14.22**			
			(5.526)			
Information received useful				-15.83***		
				(5.608)		
Information received reliable					-14.62***	
					(5.396)	
Reasonable waiting time for information						45.07
						(44.94)
Observations	63	63	63	63	63	63
R-squared	0.201	0.201	0.192	0.180	0.197	0.180

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita).

Source: authors' calculations.

Table A6: The relationship between deaths and transparency

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: ln(deaths/thousand population)					
Access to information	3.890					
	(2.963)					
Searched state policy and legislation		7.277				
		(4.639)				
Received information of state policy			6.812			
			(4.784)			
Information received useful				6.101		
				(4.821)		
Information received reliable					6.985	
					(4.838)	
Reasonable waiting time for information						-64.81**
						(32.37)
Observations	63	63	63	63	63	63
R-squared	0.181	0.196	0.188	0.180	0.188	0.217

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita).

Source: authors' calculations.

Table A7: The relationship between infected cases and transparency; adding regional controls

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: ln(infected cases/thousand population)					
Access to information	-7.783*					
	(4.044)					
Searched state policy and legislation		-11.84*				
		(6.220)				
Received information of state policy			-10.21			
			(6.325)			
Information received useful				-12.60*		
				(6.660)		
Information received reliable					-11.40*	
					(6.251)	
Reasonable waiting time for information						56.79
						(50.09)
Observations	63	63	63	63	63	63
R-squared	0.332	0.333	0.315	0.333	0.323	0.302

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), ln(GDP per capita), and regional dummies.

Source: authors' calculations.

Table A8: The relationship between deaths and transparency; adding regional controls

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: ln(deaths/thousand population)					
Access to information	3.987					
	(3.264)					
Searched state policy and legislation		6.990				
		(4.873)				
Received information of state policy			7.040			
			(5.130)			
Information received useful				6.163		
				(5.297)		
Information received reliable					7.382	
					(5.181)	
Reasonable waiting time for information						-58.36
						(36.25)
Observations	63	63	63	63	63	63
R-squared	0.317	0.326	0.324	0.315	0.326	0.341

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), ln(GDP per capita), and regional dummies. Regional dummies include indicators for the Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong River Delta.

Source: authors' calculations.

Table A9: The relationship between infected cases and accountability

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Dependent variable: ln(infected cases/thousand population)				
Contacted People's Council	5.432				
	(8.849)				
Contact PC successful		0.441			
		(1.712)			
Responsive to appeals			-1.967*		
			(0.998)		
Actions taken by citizens				-5.915**	
				(2.722)	
Successful actions of citizens					-5.607*
					(3.199)
Observations	63	63	63	63	63
R-squared	0.088	0.083	0.132	0.140	0.123

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita).

Source: authors' calculations.

Table A10: The relationship between deaths and accountability

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Dependent variable: ln(deaths/thousand population)				
Contacted People's Council	5.316				
	(6.249)				
Contact PC successful		0.601			
		(1.528)			
Responsive to appeals			0.503		
			(0.845)		
Actions taken by citizens				1.588	
				(2.353)	
Successful actions of citizens					1.610
					(2.656)
Observations	63	63	63	63	63
R-squared	0.161	0.154	0.157	0.159	0.157

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita).

Source: authors' calculations.

Table A11: The relationship between infected cases and accountability; adding regional dummies

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Dependent variable: ln(infected cases/thousand population)				
Contacted People's Council	-5.948				
	(9.947)				
Contact PC successful		-2.171			
		(1.733)			
Responsive to appeals			-1.827		
			(1.135)		
Actions taken by citizens				-5.496*	
				(3.146)	
Successful actions of citizens					-5.126
					(3.548)
Observations	63	63	63	63	63
R-squared	0.279	0.289	0.311	0.317	0.303

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), ln(GDP per capita), and regional dummies. Regional dummies include indicators for the Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong River Delta.

Source: authors' calculations.

Table A12: The relationship between deaths and accountability; adding regional dummies

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Dependent variable: ln(deaths/thousand population)				
Contacted People's Council	1.630				
	(7.589)				
Contact PC successful		0.835			
		(1.831)			
Responsive to appeals			0.419		
			(0.974)		
Actions taken by citizens				1.400	
				(2.689)	
Successful actions of citizens					1.360
					(3.089)
Observations	63	63	63	63	63
R-squared	0.292	0.295	0.295	0.296	0.295

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), ln(GDP per capita), and regional dummies. Regional dummies include indicators for the Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong River Delta.

Source: authors' calculations.

Table A13: The relationship between infected cases and capacity

VARIABLES	(1)	(2)	(3)	(4)
	Dependent variable: ln(infected cases/thousand population)			
Ln(number of beds/mil. pop)	-0.328*		-0.255	
	(0.180)		(0.195)	
Quality of public healthcare		-1.680		-3.565
		(2.958)		(3.025)
Regional dummies	No	No	Yes	Yes
Observations	63	63	63	63
R-squared	0.130	0.095	0.295	0.295

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita). Regional dummies include indicators for the Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong River Delta.

Source: authors' calculations.

Table A14: The relationship between deaths and capacity

VARIABLES	(1)	(2)	(3)	(4)
	Dependent variable: ln(deaths/thousand population)			
Ln(number of beds/mil. pop)	0.213		0.155	
	(0.146)		(0.142)	
Quality of public healthcare		2.759		3.011
		(2.282)		(2.079)
Regional dummies	No	No	Yes	Yes
Observations	63	63	63	63
R-squared	0.196	0.192	0.307	0.319

Note: robust standard errors in parentheses; * p<0.10, ** p<0.05, ***p<0.01. Constant coefficient measured but not reported. Other variables include ln(population density), ln(population over 60), and ln(GDP per capita). Regional dummies include indicators for the Red River Delta, Central Coast, Central Highlands, Southeast, and Mekong River Delta.

Source: authors' calculations.