How regime type and governance quality affect policy responses to COVID-19: A preliminary analysis

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ABSTRACT

The coronavirus disease 2019 (COVID-19) pandemic has slowed down economies, upended societies, and tremendously affected the daily lives of ordinary people throughout the world. In the international context, various government responses have thus given rise to many political debates and discussions centered around the handling of these impacts and the novel coronavirus itself. Here, emphasis is often placed on how regime type (i.e., democratic or non-democratic) and governance quality influence policies aimed at responding to the ongoing crisis. By examining relevant scientific resources, including the COVID-19 Global Response Index (developed by FP Analytics), Worldwide Governance Indicators (WGI), and Bjørnskov-Rode regime data, this study found that regime type was indeed related to governmental policy responses to COVID-19. Results specifically showed that governance quality (especially effectiveness) had moderate impacts on how well these policies were implemented. Due to several limitations, however, these findings should be regarded as preliminary evidence.

1. Introduction

As a worldwide pandemic, coronavirus disease 2019 (COVID-19) had already caused more than one million deaths fewer than nine months after the outbreak was first reported in Wuhan, China. Still, the number of infections continues to increase at an unprecedented rate due to the dangerous transmission speed of the virus (Harb and Harb, 2020). As with many previous pandemics, scientific research has been pivotal in fighting COVID-19 through the development of drugs and other treatments. By contrast, political discourse has contributed very little to these life-saving measures, but has nonetheless resulted in the formation of targeted policy responses. However, little is currently known about how related political factors have impacted government responses to the pandemic.

Given this situation, Greer et al. (2020) called for synergistic collaboration between individuals working in comparative politics and scientific research. They further identified four variables that require continued investigation in order to explain how nations are responding to COVID-19, including (a) social policy, (b) regime type, (c) political institutions, and (d) state capacity (Greer et al., 2020). A variety of political science studies have addressed issues related to COVID-19 and past pandemics, particularly in regard to the debate on regime type, state responses, and how good governance affects outcomes.

Recent political science debates have focused on a possible link between regime type and national response to the COVID-19 crisis. Judging the timeliness of various government responses, Alon et al. (2020), Cepaluni et al. (2020), and Piazza and Stronko (2020) have argued that authoritarian regimes more promptly impose stringent public health measures, compared to democracies. Indeed, research has shown that nations with stronger democratic institutions tend to implement measures for combating coronavirus at a slower pace (Sebhatu et al., 2020). This tendency is also evident in historical events (Stasavage, 2020), such as the SARS outbreak of the early 2000s (Schwartz, 2012). In contrast, while authoritarian regimes can more rapidly impose stringent health measures, they may also exercise their power to devise cover-ups that turn local contagions into a global pandemic (Alon et al., 2020). Frey et al. (2020) provided a contrast to the abovementioned studies, contending that democracies mount more effective responses to control the spread of COVID-19 by reducing its geographic mobility.

Many recent studies have also focused on governance in the COVID-19 context. Using data reported by the Worldwide Governance Indicators (WGI) project, several have specifically examined the relationships...
between governance quality and COVID-19-related indices. For instance, Baris and Pelizzo (2020) reported that countries with better governance effectively confronted COVID-19 in a manner that reduced fatalities, while Chien and Lin (2020) found that better governance was generally associated with stronger national resilience to the pandemic. Meanwhile, studies by both Liang et al. (2020) and Serikbayeva et al. (2020) reported negative associations between the COVID-19 mortality rate and government effectiveness.

FP Analytics (2020b) released the COVID-19 Global Response Index (hereafter CovidGRI) in August 2020 with the aim of tracking and scoring government responses to the novel coronavirus outbreak. While available on a subscription basis, the data contained therein has provided many new opportunities for scientific investigation. To the best of our knowledge, at the time of writing this paper, there have been no political studies using the CovidGRI to examine the factors related to national policy responses to the pandemic. Hence, the need to address the gap in existing literature concerning the effects of politics on COVID-19 response. Keeping this in mind, this study addressed the following two questions:

- Does regime type influence how governments respond to the COVID-19 pandemic?
- Does governance quality affect COVID-19 policy responses at the national level?

2. Study design

2.1. Hypotheses

Given the considerations outlined above, we developed the following hypotheses:

H1. Regime type influences a nation’s COVID-19 policy response.

H2. Governance quality influences a nation’s COVID-19 policy response.

To test H1, we also considered the following null hypothesis:

H10. Regime type does not influence a nation’s COVID-19 policy response.

This was examined via the chi-squared test. All tests of H2 involved quantitative predictions, which allowed us to explicitly accept or reject its premise.

2.2. Data Sources

This study used data from public and commercial databases, but primarily relied on CovidGRI to analyze national policy responses to COVID-19 (FP Analytics, 2020b). The index was developed to score policies and actions by which governments attempt to mitigate the impacts of the COVID-19 outbreak. The core of this is the overall government response score (viz., the overall index score), which is calculated via composite indices, including the (a) COVID-19 public health directives score, (b) COVID-19 financial response score, and (c) COVID-19 fact-based communications and accountability score (hereafter referred to as public health directive scores, financial response scores, and fact-based communication scores, respectively).

We classified national regime types following the Bjørnskov-Rode regime data, which were updated to cover the period until 2020 (Bjørnskov and Rode, 2020). The last dataset we used was derived from Kaufmann and Kraay (2019) WGI project, which used six governance quality indicators to evaluate all countries covered in the FP Analytics Index, including (a) voice and accountability, (b) political stability and absence of violence, (c) government effectiveness, (d) regulatory quality, (e) rule of law, and (f) control of corruption.

2.3. Variables

In this study, the dependent variables were set as the overall index score and its composite indices. Variable descriptions are as follows:

- Overall government response scores capture each government’s pandemic policy responses in critical issue areas; namely, for public health, finance, and public communication.
- Public health directive scores capture each national public health measure implemented to handle the pandemic. For example, this may include emergency healthcare funding, testing policies and rates, and travel restrictions.
- Financial response scores capture the national financial policies implemented to mitigate the effects of COVID-19. This may include factors such as stimulus size relative to the national economy, income-support measures, and debt-forbearance policies.
- Fact-based communication scores capture how each nation publicly communicates science-based information related to the pandemic, leadership accountability, and the right of the media to report on the COVID-19 situation (FP Analytics, 2020b).

All scores were normalized via the min-max methodology and measured on a scale ranging from 0-100, with higher values indicating better outcomes. Overall government response scores were used as categorical variables when testing H10 (i.e., highest, medium-high, medium-low, and lowest levels), as reported on the Foreign Policy website (FP Analytics, 2020b). As of September 1, 2020, the CovidGRI only covered 36 countries identified as having noteworthy COVID-19 experiences, ranging from G20 nations to middle-income countries.

Independent variables were set as regime type and governance quality. Regime type was defined as a binary variable. Using the Bjørnskov-Rode data, regime attributes were coded in binary form (democracy = 0, non-democracy = 1), while governance quality was represented using the six WGI indicators listed in the Data Sources section, as follows:

- The voice and accountability indicator measures perceptions about the ability of citizens to participate in choosing their government in addition to whether rights are given to guarantee freedom of expression, association, and the press.
- The political stability and absence of violence indicator measures perceptions about the tendencies for political instability and/or politically driven violence.
- The government effectiveness indicator measures perceptions about the quality of civil and public services, political independence, public policy formulation and implementation quality, and the credibility of government policy commitments.
- The regulatory quality indicator measures perceptions about the governmental capacity to initiate and implement well-founded policies and regulations, which enable and encourage private sector development.
- The rule of law indicator measures perceptions about the extent to which agents have trust in and comply with the rules, especially in regard to the quality of property rights, contract enforcement, and law enforcement process.
- The control of corruption indicator measures perceptions about the degree to which public power is used for private gains and whether the country has been captured by elites for private benefits (Kaufmann and Kraay, 2019).

All national WGI scores used in this study were percentile ranked from 0-100, with higher values indicating better outcomes.
2.4. Data analysis methods

Analysis methods included (a) a cross-tabulation analysis with chi-squared test, (b) correlation analysis, and (c) linear regression analysis. All statistical analyses were conducted using the SPSS Statistics 20.0 software (IBM Corp, 2011). In this study, point-biserial correlations ($r_{pb}$) and adjusted determination coefficients ($R^2_{\text{adjusted}}$) were interpreted via Cohen (1988) criteria (small = .10-.29, medium = .30-.49, large $\geq .50$).

2.4.1. Cross-tabulation analysis with chi-squared test

A cross-tabulation analysis was conducted on the categorical variables, including regime type and overall government response levels, followed by a chi-squared test to reveal any associations between these variables. This enabled us to clearly accept or reject H1a.

2.4.2. Correlation analysis

A point-biserial correlation analysis was conducted to test for significant correlations between regime type and CovidGRI scores.

2.4.3. Linear regression analysis

The overall government response scores, public health directive scores, financial response scores, and fact-based communication scores were regressed on all six WGI indicators. Here, the goal was to determine to the extent to which the WGI indicators could explain governmental COVID-19 responses, thereby directly addressing H2.

3. Results

3.1. Simple cross-tabulation

A contingency table was constructed by cross-tabulating regime type and overall government response levels along with the chi-squared test statistics (Table 1). Next, a Pearson’s chi-squared test of independence was conducted to examine the relationship between these variables, thus revealing that overall government responses significantly differed based on regime type ($r = 12.30, p < 0.01, N = 36$). We therefore rejected H1a.

3.2. Point-biserial correlation analyses

Table 2 shows point biserial correlations for regime type and the CovidGRI indices. However, we only found negative relationships between regime type, overall government responses, and fact-based communication. Regime type was significantly and moderately correlated with overall government response scores ($r_{pb} = -.33, p < .05$), whereas it was significantly and strongly correlated with fact-based communication scores ($r_{pb} = -.50, p < .01$).

3.3. Multiple regression analyses

The six WGI indicators were implemented in a stepwise multiple regression analysis to predict the overall government response score, in which regard a stepwise multiple regression procedure was conducted to generate a prediction model (see Table 3 for results). The final prediction model contained two of the six predictors and was reached in two steps, with no variables removed. The model was found to be statistically significant ($F (2, 33) = 13.50, p < .001$), and accounted for approximately 42% of the variance of the overall government response score ($R^2 = .45, R^2_{\text{adjusted}} = .42$). We also found that “control of corruption” impacted the overall government response score ($\beta = 1.62, t (33) = 4.64, p < .001$), but the 95% CI crossed the no effect line. However, government effectiveness significantly predicted the score ($\beta = -1.20, t (33) = -3.44, p < .005$).

The same six indicators were then implemented in a stepwise multiple regression analysis to predict the public health directives score. We found that none of the predictors had statistically significant effects in this regard.

The financial response score was regressed on the same set of WGI indicators using the stepwise method (see Table 4 for results). The final prediction model contained two predictors and was reached in two steps, with no variables removed. The model was found to be statistically significant ($F (1, 34) = 18.18, p < 0.001$), and accounted for about 33% of the variance of the fact-based communication score ($R^2 = .35, R^2_{\text{adjusted}} = .33$). In addition, “voice and accountability” significantly predicted the fact-based communication score ($\beta = .59, t (34) = 4.26, p < .001$).

4. Discussion

The analyses conducted in this study clearly demonstrate that regime type influences how national governments handle issues related to the COVID-19 pandemic. More specifically, these effects are of medium importance to general national policy responses aimed at difficulties resulting from the outbreak. Although political regimes may not appear to be directly associated with public health or financial response measures, they are of great importance to the quality of governmental communication and accountability in the context of COVID-19. However, this should not be taken as evidence showing that democracies are better at coping with the impacts of the pandemic; our results simply make it clear that certain regime characteristics are influential in that regard. In fact, we found no relationship between regime type and any public health directives aimed at COVID-19, which may be explained by political factors related to regime legitimacy. Unlike financial responses to COVID-19, which are conditioned by many economic factors, all political regimes are

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**Table 1. Regime type and government response policy scores.**

| Regime type | Overall government response score | Total |
|-------------|----------------------------------|-------|
|             | Highest | Medium-high | Medium-low | Lowest |
| Democratic  | 7       | 8          | 9         | 3      | 27     |
|             | % of Total | 19.4% | 22.2% | 25.0% | 8.3% | 75.0% |
| Non-democratic | 2       | 1          | 0         | 6      | 9      |
|             | % of Total | 5.6% | 2.8% | 0.0% | 16.7% | 25.0% |
| Total       | 9       | 9          | 9         | 9      | 36     |
|             | % of Total | 25.0% | 25.0% | 25.0% | 25.0% | 100.0% |

*Note. Pearson chi-squared 12.296; 3 df; asym. Significance (two-sided): 0.006.*
functionally similar in regard to their relevant public health directives. This is not because governments are ultimately responsible for protecting human life, but is a result of the fact that regime legitimation is a \textit{sine qua non} for all national leaders regardless of how they come into power. In other words, the absence of sound public health interventions designed to combat the spread of COVID-19 results in many more deaths while also damaging government legitimacy (see Freedman, 2005; Petridou et al., 2020; Yang, 2018).

At a minimum, the practice of implementing public health interventions shows citizens that government executives are making real efforts to protect the population from a deadly virus (Hasmath et al., 2020). This is likely the case for non-democratic regimes, which are often legitimated through performance (Cassani, 2017; Ratigan, 2020). For example, China produced the lowest overall government response score according to the CovidGRI, but was ranked among the highest for its public health directives (FP Analytics, 2020a). There is also an historical precedent for this, as regime legitimacy remained highly important to the Chinese government during its handling of the SARS outbreak, which began in late 2002 (Freedman, 2005).

Our analysis also showed that some dimensions of national governance quality impacted the outcomes of policies aimed at COVID-19. Specifically, the factors of “control of corruption” and “government effectiveness” were found to have a combined medium effect. On the other hand, the impacts of “control of corruption” alone were uncertain. Further, while governance quality did not appear to impact national public health directives, the combination of “rule of law” and “regulatory quality” appeared to have a slight effect on national financial responses aimed at mitigating the consequences of the pandemic. Despite this, we did not produce conclusive findings about the effects of “rule of law” alone on specific government actions designed to ease any financial burdens thus imposed. Meanwhile, “voice and accountability” had a moderate effect on whether government leaders were committed to fact-based communication.

Overall, we found that several aspects of governance quality impacted how well nations grappled with COVID-19, with government effectiveness having a particularly noteworthy influence. Our results also support both Baris and Pelizzo (2020) and Chien and Lin (2020), whose WGI-based investigations found that good governance was an important factor for coping with COVID-19. In addition, our findings echo evidence reported by Liang et al. (2020) and Serikbayeva et al. (2020), in that government effectiveness was associated with national COVID-19 mortality rates. On the other hand, countries with greater government effectiveness did not necessarily have fewer coronavirus-related deaths, regardless of regime type. Indeed, the United States may provide the best example of this issue; despite the nation’s high level of government effectiveness, its COVID-19 death toll had reached 183,000 by early September 2020. Such a disastrous response to the pandemic was caused by the federal government’s limited communication of facts and science, lack of emergency health funds, and small number of debt-relief programs (FP Analytics, 2020c).

| Table 2. Point-biserial correlations with regime type. |
|---------------------------------|
| Regime type | Overall government response | Public health directives | Financial response | Fact-based communication |
|--------------|-----------------------------|--------------------------|-------------------|-------------------------|
| Point biserial correlation | -.328* | .172 | -.203 | -.504** |

\textbf{Note.} * = Correlation is significant at the 0.05 level (1-tailed); ** = Correlation is significant at the 0.01 level (1-tailed).

| Table 3. Stepwise multiple regression analysis for the government response policy score. |
|---------------------------------|
| Model | $R^2$ | $R^2_{\text{adj}}$ | F | p | SE | 95% CI |
| 1 | .253 | .231 | 11.487 | .002 |
| Predictors: | | | | | | |
| Control of corruption | 0.13 | [0.18, 0.71] |
| 2 | .450 | .417 | 13.504 | .000 |
| Predictors: | | | | | | |
| Control of corruption | 0.31 | [0.81, 2.07] |
| Government effectiveness | 0.38 | [-2.08, -0.54] |

| Table 4. Stepwise multiple regression analysis for the financial response score. |
|---------------------------------|
| Model | $R^2$ | $R^2_{\text{adj}}$ | F | p | SE | 95% CI |
| 1 | .273 | .252 | 12.769 | .001 |
| Predictors: | | | | | | |
| Rule of law | 0.14 | [0.21, 0.77] |
| 2 | .403 | .367 | 11.159 | .000 |
| Predictors: | | | | | | |
| Rule of law | 0.37 | [0.67, 2.18] |
| Regulatory quality | 0.37 | [-1.72, -0.24] |

| Table 5. Stepwise multiple regression analysis for the fact-based communication score. |
|---------------------------------|
| Model | $R^2$ | $R^2_{\text{adj}}$ | F | p | SE | 95% CI |
| 1 | .348 | .329 | 18.176 | .000 |
| Predictors: | | | | | | |
| Voice and accountability | 0.13 | [0.30, 0.84] |
Finally, we should mention how our hypotheses stand in the light of empirical analysis. The following conclusions can be drawn:

- There is a relationship between regime type and how governments respond to COVID-19.
- Governance quality may moderately affect how governments respond to COVID-19.

We also acknowledge some study limitations. Specifically, the small relative sample size diminishes reliability and limits generalizability. Further, using a single variable might put our analysis at risk of inferring a spurious relationship between regime type and a nation's COVID-19 policy response. Despite these, we contend that it is still necessary to do so, to better capture COVID-19 situations politically. For these reasons, all findings should be regarded as preliminary evidence.

5. Conclusion

COVID-19 has spurred an increasing amount of political science research throughout the world. Our analysis may prove useful in capturing how political factors shape national responses to the deadly pandemic at certain timepoints while highlighting important areas of future exploration. For now, the empirical findings presented in this paper lend support to oft-repeated arguments; that is, regime type and governance quality hold important influences on how major public-health events are handled at the national level, including the COVID-19 pandemic. More research will be needed as repercussions from the novel coronavirus continue to amplify. We argue that this should involve political science-based investigations into pandemic management issues. For example, one might focus on how decentralization and local governance processes, which vary across countries, impact governmental capacity to handle the COVID-19 situation. Evolving political science’s understanding of the novel coronavirus would help devise policies for coping with the crisis, and better prepare us for unforeseen pandemics in the future.

Declarations

Author contribution statement

P. Bunyavejchewin: Conceived and designed the experiments; Performed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper.
K. Sirichuanjun: Analyzed and interpreted the data.

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Data availability statement

Data associated with this study is available at World Bank's WGI, COVID-19 Global Response Index and the Bjørnskov-Rode regime data.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

References

Alon, I., Farrell, M., Li, S., 2020. Regime type and COVID-19 response. FIIB Busin. Rev. 9 (3), 152–160.

Analytic Strategy. FPI, 2020a. China. The COVID-19 Global Response Index. https://globalrespon
dindex.foreignpolicy.com/country/china?date=09/01/2020.

Analytic, F.P., 2020b. The COVID-19 Global Response Index [FP Special Report]. Foreign Policy. https://globalsponseindex.foreignpolicy.com/.

Analytic, F.P., 2020c. United States. The COVID-19 Global Response Index. https://glob
dalsponseindex.foreignpolicy.com/country/united-states?date=09/01/2020.

Baris, O.F., Pelizzo, R., 2020. Research note: governance indicators explain discrepancies in COVID-19 data. World Aff. 183 (3), 216–234.

Bjørnskov, C., Rode, M., 2020. Regime types and regime change: a new dataset on democracy, coups, and political institutions. Rev. Int. Org. 15 (2), 531–551.

Canani, A., 2017. Social services to claim legitimacy: comparing autocracies' performance. Contemp. Polit. 23 (3), 348–368.

Cepaluni, G., Dorsch, M., Branyiziki, R., 2020. Political Regimes and Deaths in the Early Stages of the COVID-19 Pandemic. Cambridge Open Engage.

Chen, L.-C., Lin, R.-T., 2020. COVID-19 outbreak, mitigation, and governance in high prevalent countries. Ann. Glob. Health 86 (1), 119–119.

Cohen, J., 1988. Statistical Power Analysis for the Behavioral Sciences, second ed. Lawrence Erlbaum Associates.

Credner, A., 2005. Sars and regime legitimacy in China. Asian Aff. 36 (2), 169–180.

Frey, C.B., Chen, C., Presidente, G., 2020. Democracy, Culture and Contagion: Political Regimes and Countries Responsiveness to Covid-19, pp. 1–20. https://www .oxfordmartin.ox.ac.uk/publications/democracy-culture-contagion-political-regimes-and-countries-responsiveness-to-covid-19/.

Greer, S.L., King, E.J., da Fonseca, E.M., Peralta-Santos, A., 2020. The comparative politics of COVID-19: the need to understand government responses. Global Publ. Health 15 (9), 1413–1416.

Harb, A.M., Harb, S.M., 2020. Corona COVID-19 spread - a nonlinear modeling and simulation [In press]. Comput. Electr. Eng. 88, 106884.

Hasmath, R., Hildebrandt, T., Teets, J.C., Hsu, J.Y.J., Hsu, C.L., 2020. Performance Legitimacy and COVID-19: what are Citizens’ Expectations for Crisis Management in an Authoritarian State? [Working paper]. SSRN.

IBM Corp, 2011. IBM SPSS statistics for windows. In: SPSS Statistics (Version 20.0) [Statistical Software]. IBM Corp, https://www.ibm.com/support/pages/ibm-spss-stat istics-200-release-notes.

Kauffmann, D., Kraay, A., 2019. Worldwide Governance Indicators, 2019 Update [Excel]. The Worldwide Governance Indicators (WGI) Project. http://info.worldbank.org/govern ance/wgi/.

Liang, L.-L., Tseng, C.-H., Ho, H.J., Wu, C.-Y., 2020. Covid-19 mortality is negatively associated with test number and government effectiveness. Sci. Rep. 10 (12567).

Petridou, E., Zahariadis, N., Ceccoli, S., 2020. Averting institutional disasters? Drawing lessons from China to inform the Cypriot response to the COVID-19 pandemic. Eur. J. Intern. Health 15 (9), 1413–1416.

Serikbayeva, B., Abdulla, K., Oskenbayev, Y., 2020. State Capacity in Responding to COVID-19. World Bank Group. http://openknowledge.worldbank.org/handle/10986/33959.

Schwartz, J., 2012. Compensating for the authoritarian advantage in crisis response: a comparative case study of SARS pandemic responses in China and Taiwan. J. Chin. Polit. Sci. 17 (3), 313–331.

Sebesta, A., Wejnberg, K., Ako-Ajounou, S., Lindberg, S.L., 2020. Explaining the homogenous diffusion of COVID-19 nonpharmaceutical interventions across heterogeneous countries. Proc. Natl. Acad. Sci. Unit. States Am. 117 (35), 21201–21206.

Sirethaya, B., Abdulla, K., Oskrovsk, C., 2020. State Capacity in Responding to COVID-19 [MPRA Paper](101511). Munich Personal RePEc Archive. https://mp ra.ub.uni-muenchen.de/101511/.

Stasavage, D., 2020. Democracy, autocracy, and emergency threats: lessons for COVID-19 from the last thousand years. Int. Organ. 74 (Supplement), 1–17.

Yang, S.-U., 2018. Effects of government dialogic competency: the MERS outbreak and public health crises and political legitimacy. Journal. Mass Commun. Q. 95 (4), 1011–1032.