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Dyadic Analysis of Fragile Middle Eastern States and Humanitarian Implications of Restrictive COVID-19 Policies

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Abstract

The COVID-19 pandemic has pressured governments to respond with restrictive and health resource-oriented policies to contain the spread of the virus. The aim of this paper is to assess differential policy implementation due to state fragility with a spatial scope of the Middle Eastern region. The policies implemented by the four strongest and six most fragile Middle Eastern countries were extracted from the CoronaNet Government Response Database and grouped into restrictive and resource-oriented categories. Clustering based on these categories informed dyadic analysis. Drawing from the Oxford Government Response Policy Tracker and COVID-19 World Symptom Survey, we found that fragile states tended to be characterized by a higher proportion of restrictive policies, lower government stringency, and lower compliance. The results identify sectors that would benefit most from humanitarian aid and raise the issue of whether restrictions are disproportionately implemented due to covert political agendas or lack of political and economic power.

Keywords

COVID-19 – Middle East – CoronaNet Government Response Database – Fragile States Index – policy – stringency – compliance – humanitarian aid

Introduction

Countries have attempted to curb the increasing number of Coronavirus 2019 (COVID-19) cases by instituting various containment measures. COVID-19 policies can be broadly grouped into two categories: resource-oriented and restrictive policies (Suppl. Tbl. 1). These categories are descriptive and non-normative: restrictive policies limit freedoms or typically permissible endeavors, such as movement, business, and education, while resource-oriented policies are characterized by the production or re-allocation of goods and services, such as health monitoring, testing, and public awareness.

The Middle East's response to COVID-19 is of particular interest due to its geopolitical significance, persistent regional conflicts, and inequalities in welfare and health provisions (Fawcett, 2021). The Middle East and North Africa (MENA) region reported its first cases in late January 2020 (OECD, 2020). Mounting an effective response can be more concerning for fragile and conflict-ridden states (Habib, 2020). Fragile states in the Middle East that lag behind their peers in implementing resource-oriented COVID-19 policies may do so in part due to a lack of public spending (Gray et al., 2013). Additionally,

it is more difficult for states like Lebanon grappling with political gridlock, hyperinflation, spillover from the Syrian civil war, and lack of health infrastructure to formulate resource-intensive, public health-driven COVID-19 responses (Global Conflict Tracker, 2021). The prevalent conflict, political infighting, and resulting monetary system destabilization exacerbate existing information asymmetries, lack of transparency, and deficiencies in economic systems, which might drive these states' tendencies toward restrictive policies (International Monetary Fund, 2004). In contrast, states like Kuwait and Qatar with more robust financial systems are better able to withstand significant shocks and deploy fiscal stimulus measures such as loans, deferrals, and liquidity guarantees in response to COVID-19 (International Monetary Fund, 2004).

Differential effectiveness in minimizing the spread of the virus is due to a myriad of factors, clearly not just population differences (Suppl. Fig. 1). To reveal these factors, this study primarily draws from the CoronaNet COVID-19 Government Response Database and Fragile States Index to assess the number of restrictive and resource-oriented policies implemented by the four strongest and six most fragile Middle Eastern states (Cheng et al., 2020; The Fund for Peace, 2019). Additionally, this study uses the Oxford COVID-19 Government Response Tracker (OxCGRT) and COVID-19 World Symptom Survey to assess policy enforcement and compliance respectively (Fan et al., 2020; Hale et al., 2021). This study utilizes multiple analysis methods: time-series analysis of policy implementation, dyadic analysis, and regressions for fragility, percentage of restrictive policies, and policy enforcement/compliance. If an association is found between policy implementation and state fragility, this might lay the groundwork for predicting how states would react in times of crisis. The purpose of this paper is not to determine causality but rather to establish a preliminary framework for studying state fragility and political decisions during pandemics. This leads to the question of, is there a relationship between state fragility and types of COVID-19 policies implemented within the Middle East? Specifically, are fragile states inherently inclined to enforce general restrictions over resource-oriented policies? We hypothesize that fragile Middle Eastern states implement a larger ratio of restrictive COVID-19 policies to total COVID-19 policies than their more stable counterparts.

Conceptual Framework

Defining State Fragility

Extensive scholarship has been published on topics of state stability (see: Carment, 2003; Di John, 2010; Fukuyama, 2004; Gros, 1996; Helman & Ratner, 1992; Osaghae, 2007; Rotberg, 2002; Sternehall, 2016). For Carment (2003),

fragility refers to a state's performance relative to that of other states regardless of regional placement and geopolitical influence. A fragile state fails to effectively (1) establish strong and effective institutions; (2) control and defend its territory; and (3) have a stable, loyal, and cohesive population over which the state (4) exercises sovereign and legitimate power. Osaghae (2007) attributes the characterization of "fragility" to states that lack the necessary capacity to discharge roles that are traditionally associated with them. He proposes that fragile states exhibit one or more of the following traits: crises of legitimacy, incapability of effective territorial jurisdiction, unstable or weakened political institutions, prevalent corruption and poverty, and low levels of economic development and growth. We utilize the well-established frameworks of Carment and Osaghae to base our conceptualization of a fragile state as a distressed internationally recognized political entity that does not possess essential elements of state stability.

Literature Review

The Conceptual Paradigm of Fragility

The term "fragile state" lacks neutrality and implies emotional, political, and financial repercussions. A state's ability to influence reality, accompanied by its diplomatic and military resources, is viewed as a testament of power within the international arena. The concept of a "fragile state" is a tactic through which states manipulate reality in accordance with their foreign policies. We bring this issue to light because present scholarship lacks the analysis and critique of the conceptualization of state fragility and how states utilize such terminology to aid their foreign policy ambitions within the security and development fields. We call on the discipline to help examine the conditions through which a state is categorized as "fragile" and how such classification impacts a state's emergency response to disease outbreaks.

Perspectives of Fragile Doxa

Through a problem-solving perspective (Bellamy, 2004), some scholars have investigated the classification of state "fragility" as a state-collapse predictor (Stewart & Brown, 2010; Ziaja & Fabra, 2010). Other scholars have focused on analyzing the critical role of traditional and non-traditional actors within the state-building process (Brinkerhoff, 2007; Lemay-Hébert, 2013; Wesley, 2008). Within both of these contexts, scholars have embraced a qualitative study of specific case studies of the mechanisms of state fragility (Brinkerhoff, 2007) and quantitative measurement of state fragility (Carment, 2003; Ikpe, 2007).

A more critical approach of “fragility” primarily involves two angles: criticizing the analytical validity of the fragility model itself (Hehir, 2007; Ziaja & Fabra, 2010) and examining norm manipulation by influential state actors (Bøås & Jennings, 2007).

Fragility Indices and Rankings

While many fragility ranking systems such as the OECD’s States of Fragility Report and the World Bank’s Harmonized List of Fragile Situations have appeared within the past decade (Broome & Quirk, 2015; Saeed, 2020), this article utilizes the Fragile State Index (FSI) issued by the Fund for Peace. Arguably the best-known ranking system of fragility, the FSI ranks 178 states based on political, economic, military, and social indicators (Saeed, 2020; The Fund for Peace, 2019). While criticized for its inability to predict important stability-related events (Young & Beehner, 2012), the FSI remains a common heuristic for academics and policymakers and has been deemed useful after some modifications for predicting critical global events. While we acknowledge the limitation in the empirical value of the FSI, we determine that the matter of predictive capacity is not a focal point of this paper.

Fragility and Pandemic Effects

Of recent pandemic-related scholarly work, only two papers can be found that attempt to draw attention to health systems’ responses to the COVID-19 pandemic in fragile states, and only one conducts an in-depth analysis of a case study’s response to the pandemic (AlKhaldi, Abuzerr, et al., 2020; AlKhaldi, Kaloti, et al., 2020). The pandemic response of Palestine, a fragile state, is closely observed through humanitarian, political, and policy lenses. Demographics, living conditions, hygiene availability, and the established national health system are examined for their effects on pandemic outcomes (AlKhaldi, Kaloti, et al., 2020). Literature on state fragility is abundant with identified exogenous elements and structural considerations that may increase the occurrence of fragility and subsequent failure (Betts, 2013; Nogueira, 2014).

Additionally, literature regarding the COVID-19 pandemic is rapidly growing, with a wide range of applied perspectives that provide interesting outlooks of the MENA region’s pandemic response. This wide array of perspectives includes topics like the exploration of Islam’s influence on the COVID-19 response and how Saudi Arabia led the effort in curbing mass gatherings while bringing together different Islamic sects (Thurston, 2020), the pandemic’s effect on national unity in the Gulf (Diwan, 2020), the securitization of the COVID-19 crisis and the finding that countries like Jordan and Israel tackled COVID-19 as a security threat and not a public health issue (Hoffman, 2020),

and the politics of ethnic identity during the pandemic (Eiran, 2020). This array of scholarship contextualizes this project's fragility perspective.

Two important considerations must be made when examining the parameters of our study. First, the role of religion in the pandemic prevention response is important to consider, especially when examining the MENA region. Among the various actors that had a hand in policy formulation are religious authorities and institutions. Present literature explores different impacts of religion on pandemic policies (see: Hidayaturrahman et al., 2021; Riexinger, 2021; Shabana, 2021). Saudi Arabia specifically led the religious response effort with its restrictions on the hajj pilgrimage season, mass worship frequency, places of worship, and funerary rights. Countless debates over the Islamic response to COVID-19 have been raised with pre-existing tensions between Islamists and authorities becoming inflamed and new tensions being generated. Second, present scholarship has found a sharp deterioration of economic capabilities and strained social relations as a result of the pandemic in the Middle East (see: Al Amri & Marey-Pérez, 2020) as well as other countries (see: Alozie et al., 2020; Sumarno et al., 2020; Verschuur et al., 2021). The consensus within the literature is that some countries like Libya, Egypt, and Algeria experienced greater economic suffering while the social relations were strained as a result of religiously-motivated restrictions (Al Amri & Marey-Pérez, 2020).

This paper sheds light on the insufficient capacity and resources available to some MENA nations in combating the COVID-19 pandemic. To that end, this paper posits that there is deficient research conducted on comprehending the implications of state fragility on state response to health outbreaks, and we endeavor to close this gap with the application of the current COVID-19 pandemic. Fragility matters because once a state falls into the confines of the categorization, escape is quite difficult (Saeed, 2020). Fragile states face a multitude of challenges such as weak state capacity and institutions, conflict vulnerability, and inadequate healthcare response systems. Fragile states not only pose a threat to their populace but also the international community. Therefore, establishing a link between state fragility, instability, and pandemic responses is imperative.

Methods

Data Collection and Categorization

The 10 Middle Eastern countries analyzed in detail were selected based on their FSI categorization (Suppl. Fig. 2): Afghanistan, Egypt, Iraq, Lebanon, Syria, and Yemen were labeled as fragile (high warning to very high alert, FSI = 80–120)

while Kuwait, Oman, Qatar, and the United Arab Emirates (UAE) were labeled as strong (more to less stable, FSI = 30–59.6), which was corroborated by literature (Kaplan, 2014). Cumulative COVID-19 cases and population by country as of August 30, 2020 were retrieved from the World Health Organization (WHO), and cumulative cases and cases as a percent of population were graphed (*Weekly Epidemiological Update*, 2021). Spreadsheets of implemented COVID-19 policies, their duration, and their policy type were collected from the CoronaNet Government Response Database (Cheng et al., 2020). The policies analyzed were dated up until August 31, 2020 because these policies were double-checked by a second CoronaNet verification team. Moreover, post-August data were unavailable for Oman and Syria, and CoronaNet reported that five countries each implemented fewer than 11 post-August policies as of November 2021. Policy types were grouped into restrictive and resource-oriented categories. Declarations of emergency and policies under the CoronaNet subtype of “other,” primarily economy-related, were categorized as “other.” We performed all of the following analyses either including or excluding policy updates, and similar results were found in each case. Policy updates might sometimes reflect inconsequential change, such as shortening or extending the duration of a policy by a week, so only new entries were ultimately included in the data analysis. Policies were categorized by CoronaNet into national-level and local-/provincial-level policies. All analysis was performed using both types combined to capture all policies implemented in each country, but national-level policies were also analyzed separately to determine any significant differences. To gain a more robust picture of policy restrictiveness, the potential restrictive impact should be considered in addition to restrictive intent. As such, the Oxford COVID-19 Government Response Tracker’s stringency index was used to operationalize the “restrictiveness” of closure and containment policies (Hale et al., 2021). Since minimizing contact with others limits the spread of the virus (CDC, 2020), the COVID-19 World Symptom Survey variable, percent of citizens who had contact outside of the home, was used to operationalize compliance, which was only available starting April 23, 2020 (Fan et al., 2020). Survey data for the UAE and Syria were unavailable.

Data Analysis

The policies in each country were totaled and graphed by restrictive, resource-oriented, and other categories. To conduct time-series analysis, the policies for the strong states were collated, grouped by week, and graphed over time by policy category. The number of policies was summed by policy type and divided by the total number of policies enacted by the four strong states. The same protocol was performed for policies of the six fragile states as well as each state individually, and the results were tabulated. The stringency index

and percent contact measures were also collated for strong and fragile states and graphed over time. Additionally, both datasets until August 31, 2020 were averaged for each MENA country.

Proportionality was defined as the fraction of policies in a certain category to all policies implemented by that particular state since the beginning of the pandemic to August 31st, controlling for differences in each state's total number of policies. Univariate and multivariate regressions controlling for COVID-19 cases and population were run for the FSI, proportion of each policy category, average percent contact, and average stringency. Both parametric (ordinary least squares or OLS) and nonparametric (permutation) tests were used to assess statistical significance. The original selection of 10 countries yielded statistically insignificant results due to the relatively low number of data points. Therefore, 12 additional countries comprising the Middle East and North Africa (MENA) were extracted.¹ The two ratios of restrictive and resource-oriented policies to total policies were calculated for regression analysis of the 22 countries. Freedom House and V-Dem data for the 22 MENA countries were retrieved and used to supplement explanations for the observed trends. In-depth analysis of the additional 12 countries is possible but beyond the scope of this study.

Data-Driven Dyad Selection

Cluster analysis was performed to inform dyad selection. The proportion of restrictions was graphed versus the proportion of resource-oriented policies, and the ratio of resource-oriented to restrictive policies was calculated for each country to visualize anchors and standardize the values for unit-free analysis (Suppl. Fig. 3). The Excel Solver analysis tool (mutation rate = 0.5) was used to find clusters that minimized the sum of squared distances. The z-scores of the resulting anchors represent a typical member of each cluster with a resource-oriented to restrictive policy ratio that is above-average (z-score = 1.106326789), average (z-score = 0.041381931), and below-average (z-score = -1.064900775). Points in the same cluster exhibit similar properties (Romesburg, 2004). While often relying on dyadic data, most international political theories fail to indicate specific case selections to analyze. We assume a small-N dyad-policy relationship with a limited number of observations within the temporal scope. We focus on conditions between two nation-states at a time and analyze their respective policy implementation trends. Each

¹ Algeria, Bahrain, Djibouti, Iran, Jordan, Libya, Mauritania, Morocco, Saudi Arabia, Somalia, Sudan, and Tunisia; Israel was not included because CoronaNet had separate measures for Israel and the West Bank while the FSI had a combined measure.

country that was labeled as fragile by the FSI and was in the cluster with a below-average resource-oriented to restrictive policy ratio was paired with a strong country in the opposite cluster. Additionally, the two countries in the intermediate cluster were grouped as a dyad. Three exceptions were noted: Kuwait (strong but in the below-average ratio cluster) as well as Egypt and Afghanistan (fragile but in the opposite cluster). Syria was not included in the dyadic analysis: too few official Syrian COVID-19 policies were recorded partially due to its current intra-state conflict, which posed a substantial obstacle to transparent COVID-19 policy reporting.

Results

Macro-Level Findings

Governments predominantly responded to the pandemic with restrictive rather than resource-oriented policies (Fig. 1). Restrictions and regulations of businesses were implemented the most within the restrictive policy category while health resource policies were implemented the most within the resource-oriented category (Tbl. 1). Although both strong and fragile states relied heavily on restrictions, fragile states implemented a higher proportion of restrictive policies (Suppl. Tbl. 2). The only restrictive policy type implemented substantially

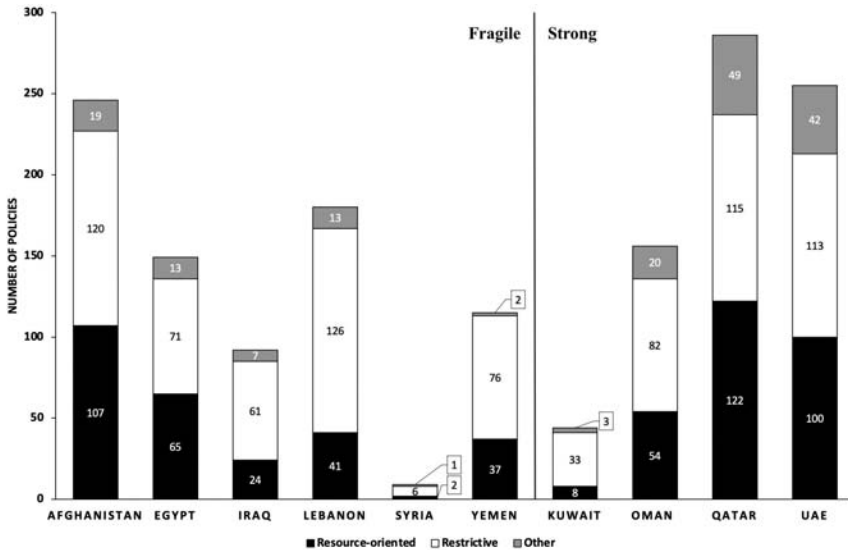


FIGURE 1 Total COVID-19 Policies Implemented in Each of the Six Fragile and Four Strong Middle Eastern States by Policy Category

TABLE 1 Percent of Each COVID-19 Policy Type Implemented in Six Fragile and Four Strong Middle Eastern States

Policy type	Fragile states	Strong states
Restrictive	58.15%	46.29%
Anti-Disinformation Measures	2.15%	1.08%
Closure and Regulation of Schools	4.17%	1.35%
Curfew	4.42%	2.70%
External Border Restrictions	8.22%	6.61%
Internal Border Restrictions	4.17%	3.24%
Lockdown	4.05%	1.89%
Quarantine	5.56%	3.24%
Restriction and Regulation of Businesses	9.61%	13.50%
Restriction and Regulation of Government Services	4.80%	5.26%
Restrictions of Mass Gatherings	8.72%	4.72%
Social Distancing	2.28%	2.70%
Resource-Oriented	34.89%	38.33%
Health Monitoring	2.02%	4.59%
Health Resources	13.27%	14.71%
Health Testing	5.44%	5.13%
Hygiene	5.82%	1.89%
New Task Force, Bureau, or Administrative Configuration	2.02%	3.24%
Public Awareness Measures	6.32%	8.77%
Other	6.95%	15.38%

more by strong states was restriction and regulation of businesses. The reason for a higher percentage of restrictions among fragile states can be partially elucidated by a time-series analysis (Fig. 2). Fragile states experienced two separate spikes in restriction implementation while strong states experienced only one moderate spike. Additionally, fragile states continued to implement restrictions through August 2020 while strong states implemented relatively few policies in the same timeframe. The two spikes might have resulted from inadequate resources, stringency, and compliance to minimize the curve of COVID-19 incidence, which required a second wave of restrictions to address.

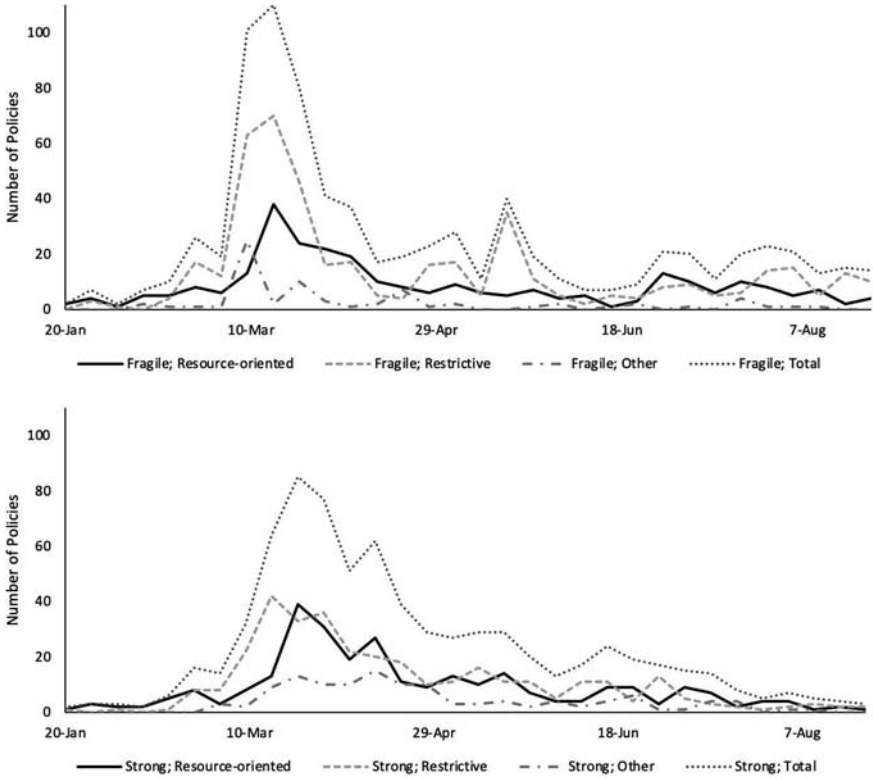


FIGURE 2 COVID-19 Policies Implemented per Day in Strong and Fragile Middle Eastern States by Policy Category

This is evidenced by the earlier spike in stringency at the pandemic’s onset and lower percent contact outside of the home among fragile states (Suppl. Fig. 4).

Compared to strong states, fragile states tended to be characterized by a higher proportion of restrictive policies, lower government stringency, and higher percent contact outside the home (i.e., lower compliance). Using univariate linear regression models for fragility, there was statistical significance at the 0.01 level for lower compliance, 0.05 level for higher proportion of restrictions, and 0.10 level for lower stringency. The inverse correlation between fragility and proportion of resource-oriented policies was not significant. This might be explained by strong states implementing a larger proportion of “other” policies, most of which were economic relief policies that could arguably be categorized as resource-oriented. Despite the sufficient robustness of the OLS regression model, non-parametric permutation tests were also performed on the Pearson correlation coefficients and found significance at identical levels, substantiating a convincing body of statistical

evidence for our findings. Additionally, multiple regression models controlled for covariates such as COVID-19 cases and population. Although these models were not necessary because we made no claims of causation, there was still significant evidence of our conjectured relationships for restrictive policies and compliance. The same correlations using only national-level policies were still significant, albeit at reduced levels. To check if our operationalization was valid, the inverse correlation between percent contact and stringency was significant as expected. In all, strong states were better able to match restrictions with resource-oriented policies, but the restrictions were more stringent and obeyed more closely, which is plausible since strong states had sufficient resources to implement resource-oriented policies and enforce their restrictive policies effectively.

Dyadic Analysis

Oman and Yemen

Oman and Yemen had similar approaches regarding quarantines. Quarantines were among the first policies implemented in both countries. Quarantines were aimed at containing the virus from the outset. Once the pandemic progressed into April 2020, however, Yemen used a variety of quarantines, curfews, and lockdowns, whereas Oman was more reluctant to restrict individuals.

As the pandemic stretched into April 2020, Oman became more vigilant about regulating businesses and government services, implementing 33 policies compared to Yemen's 17. Oman's business restrictions especially ramped up in April, sometimes consisting of three or four restrictions on the same day. Yemen implemented restrictions slightly earlier and were more spread out, rarely implementing more than two such policies on the same day.

Both Oman and Yemen were swift in implementing border restrictions. Of the first twelve policies in each country, five for Oman and eight for Yemen were external border restrictions. Over time, both countries did not implement as many new border restrictions, possibly because the many policies implemented early on remained in effect, with Oman and Yemen implementing 20 border restrictions each. Despite the size and context, both countries placed a high premium on preventing people who might be infected from entering.

Lebanon and Qatar

Lebanon and Qatar took different approaches to curfews and lockdowns. Lebanon was more proactive in its approach, implementing policies incrementally over the first few months. After implementing one quarantine policy early on, Lebanon moved to curfews and then lockdowns, totaling four and

eleven policies respectively, many of which were between March and May 2020 when cases surged in Lebanon. On the other hand, Qatar implemented no curfew or lockdown policies. While Qatar implemented many restrictions on business and government services that resembled curfews/lockdowns (i.e., closing or strictly limiting business hours and moving many services entirely online), Qatar hardly directed these regulations at citizens specifically (Tbl. 2). Similarly, Qatar implemented four quarantine policies, which were only targeted at groups who might have already been exposed while Lebanon was more proactive, implementing 12 quarantine policies, including ones that were targeted at the whole population, not just groups that might be at a higher risk of exposure. While the motive behind these patterns remains unclear, Lebanon (the more fragile state) implemented direct restrictions on citizens more proactively than Qatar (the stronger state).

Qatar implemented more business and government restrictions than Lebanon, and nearly the entire difference derived from business restrictions. As previously mentioned, Qatar's approach relied more heavily on restricting businesses and government services to control the flow of individuals. This makes sense in the context of Qatar's working population: compared to around 100,000 economically active citizens, Qatar is home to roughly two million economically active foreigners (Statista, 2020). Nevertheless, Lebanon still implemented 42 business restrictions. The number was initially low since one policy closed all private businesses. However, as the lockdown and curfew policies gradually expired, Lebanon began implementing more regulations to guide the reopening, which brought the number of Lebanese reopening policies close to the number Qatar implemented more so in March and April.

Lebanon implemented nearly twice as many border restrictions as Qatar, attributable to Lebanon's more incremental approach with the first notable policies beginning at the end of February 2020 and new ones continuing through October 2020. Qatar implemented more border restrictions upfront, especially external border restrictions, and was less specific about when these policies would end.

Iraq and The United Arab Emirates

Iraq and the UAE took similar incremental approaches toward implementing quarantines, lockdowns, and curfews by updating their policies every week as warranted. The most notable difference was the timetable on which each started rolling out these policies. The UAE started implementing quarantine policies near the end of February and continued updating them into May while Iraq waited until the middle of March 2020.

TABLE 2 Percent of Each COVID-19 Policy Type Implemented in Each of the Six Fragile and Four Strong Middle Eastern States

Policy type	Afghanistan	Egypt	Iraq	Lebanon	Syria	Yemen	Kuwait	Oman	Qatar	UAE
Restrictive	48.78%	47.65%	66.30%	70.00%	66.67%	66.09%	75.00%	52.56%	40.21%	44.31%
Anti-Disinformation	1.63%	6.71%	0.00%	1.11%	0.00%	0.87%	2.27%	2.56%	0.70%	0.39%
Measures										
Closure and Regulation of Schools	6.50%	2.68%	4.35%	2.78%	22.22%	1.74%	2.27%	1.28%	1.40%	1.18%
Curfew	4.88%	2.68%	8.70%	2.22%	0.00%	6.09%	6.82%	0.64%	0.00%	6.27%
External Border Restrictions	2.85%	9.40%	21.74%	6.11%	11.11%	10.43%	18.18%	9.62%	1.75%	8.24%
Internal Border Restrictions	3.25%	1.34%	6.52%	4.44%	11.11%	6.96%	2.27%	3.21%	1.75%	5.10%
Lockdown	4.88%	0.00%	4.35%	6.11%	0.00%	4.35%	9.09%	3.85%	0.00%	1.57%
Quarantine	5.28%	4.70%	8.70%	6.67%	0.00%	3.48%	11.36%	5.13%	1.40%	2.75%
Restriction and Regulation of Businesses	4.07%	4.03%	5.43%	23.33%	0.00%	11.30%	11.36%	13.46%	19.58%	7.06%
Restriction and Regulation of Government Services	4.07%	2.68%	2.17%	8.89%	22.22%	3.48%	4.55%	7.69%	5.24%	3.92%
Restrictions of Mass Gatherings	6.91%	12.08%	3.26%	6.11%	0.00%	17.39%	4.55%	1.28%	4.55%	7.06%
Social Distancing	4.47%	1.34%	1.09%	2.22%	0.00%	0.00%	2.27%	3.85%	3.85%	0.78%

TABLE 2 Percent of Each COVID-19 Policy Type Implemented in Each of the Six Fragile and Four Strong Middle Eastern States (cont.)

Policy type	Afghanistan	Egypt	Iraq	Lebanon	Syria	Yemen	Kuwait	Oman	Qatar	UAE
Resource-Oriented	43.50%	43.62%	26.09%	22.78%	22.22%	32.17%	18.18%	34.62%	42.66%	39.22%
Health Monitoring	3.25%	0.67%	0.00%	3.33%	0.00%	0.87%	0.00%	1.92%	5.24%	6.27%
Health Resources	15.45%	21.48%	14.13%	5.56%	11.11%	9.57%	13.64%	10.26%	12.94%	19.61%
Health Testing	8.94%	2.01%	2.17%	8.89%	0.00%	0.00%	0.00%	8.97%	3.15%	5.88%
Hygiene	6.10%	10.07%	2.17%	1.11%	0.00%	10.43%	2.27%	1.28%	2.45%	1.57%
New Task Force, Bureau, or Administrative Configuration	3.25%	2.01%	2.17%	0.00%	0.00%	2.61%	0.00%	2.56%	6.64%	0.39%
Public Awareness Measures	6.50%	7.38%	5.43%	3.89%	11.11%	8.70%	2.27%	9.62%	12.24%	5.49%
Other	7.72%	8.72%	7.61%	7.22%	11.11%	1.74%	6.82%	12.82%	17.13%	16.47%

The UAE placed a much greater emphasis on restricting/regulating businesses and governments than Iraq. The UAE's number of policies in this category was four times that of Iraq. A sizable portion of this discrepancy occurred in the initial stages of the pandemic. By this time, Iraq implemented just one business restriction. In contrast, the UAE implemented seven such policies, including both government and business restrictions. Whereas the UAE continued to implement policies incrementally through August 2020, Iraq experienced month-long periods without implementing any of these policies. The difference in the two approaches likely reflects the UAE being more concerned with regulating their businesses/government services than Iraq and Iraq implementing policies intended to last longer.

Although the UAE implemented more border policies, Iraq's border restrictions played a larger role in its response. Iraq proactively regulated its borders throughout the pandemic, comprising six of their first nine policies, many of which had no specified end date. The UAE implemented five border restrictions within a similar timeframe but also implemented other resource-oriented policies at the time, which diluted the UAE's reliance on border restrictions. Over time, the kind of border restrictions on which the two countries relied diverged notably. The UAE began complementing external border restrictions with a comparable number of internal border restrictions while Iraq relied almost entirely on external rather than internal border restrictions starting on March 25, 2020. While the UAE relied on a substantial number of border policies to ensure people did not travel internally and potentially spread the virus, Iraq protected its external borders from the virus entering the country in the first place.

Outliers

Despite being a strong state, Kuwait implemented the highest proportion of restrictive to total policies of the ten states analyzed in this paper. Whereas some strong states implemented at least 100 resource-oriented policies, CoronaNet reports only eight Kuwaiti resource-oriented policies. On the other hand, Egypt, despite its relative fragility, implemented a higher proportion of resource-oriented policies, many of which began in mid-March 2020. After Egypt's initial wave of restrictions intended to distance its citizens and slow the spread of the virus, Egypt turned to an assortment of resource-oriented policies aimed at individuals (e.g., health monitoring, health testing, hygiene). While Egypt eventually closed its borders, this was not until March 16, 2020 – much later than other countries. By this time, the state was implementing one blanket restriction with substantial external aid (US Aid, 2021), while other countries implemented multiple targeted restrictions early on. Similarly,

Afghanistan implemented a smaller proportion of restrictive policies than expected based on its fragility. Despite their 110 restrictive policies being second only to Lebanon among the six fragile states, Afghanistan often implemented restrictive and resource-oriented policies in clusters, differing slightly depending on context. Early on, these policy clusters often included health monitoring policies but in April focused more on resources/testing. Like Egypt, Afghanistan's ability to implement resource-oriented policies and not merely rely on restrictions shows that the correlation between fragility and reliance on restrictions is multi-faceted and warrants further investigation.

Discussion

Ethical Considerations

Policies should be seen as a vital part of a government's fulfillment of its responsibility to protect its citizens and ensure public welfare. Both restrictive and resource-oriented policies that fit within this definition are inherently ethical if they do not violate the inherent human dignity of citizens and are not merely the means of pushing a political agenda. While extensive restrictions may indicate a history of state repression (Barceló et al., 2020), this view disregards the basic principle that a nation ought to protect its citizens through the means it deems necessary. Restrictions that infringe upon rights are often accepted to reduce disease transmission (Powderly, 2016). It should also not be assumed that resource-oriented policies are the 'good' counterpart to 'bad' restrictive policies. Resources need to be allocated in times of crisis, but even this approach could harp on social hierarchies and inequalities in violation of human dignity. By engaging with on-the-ground actors such as the WHO and the Eastern Mediterranean Regional Office (EMRO), we find that both organizations recognize the necessity for the maintenance of the level of restrictions while increasing the resource-oriented policies to a similar level. Specifically, fragile countries like Egypt, Syria, and Yemen reported increased COVID-19 cases and deaths (WHO, 2021). Hence, a speedier vaccination process was recommended to curb case surges. A balance between restrictive and resource-oriented policies is key to effective governmental responses.

The consequences of policy implementation vary depending on the policy type as well. Resource allocation reinforced existing healthcare infrastructure and can be seen to have a positive effect on citizen health and health safety. In contrast, access to resources can have negative effects if allocation harps on existing asymmetries. While restrictive policies help curb the spread of disease, they can greatly reduce health safety. According to the WHO, stay-at-home

restrictions have caused a global 25% increase in domestic violence (UN Women, 2021). These effects are exacerbated in fragile settings as a result of inadequate access to healthcare, systemic inequality, and a higher chance of non-reporting (Vahedi et al., 2021). It is important to note that while there is an increased risk for gender-based violence in fragile states, it is present in every nation regardless of status, and the best measure of health security is not done through just the FSI but also an acute evaluation of existing health infrastructure as it relates to vulnerable populations.

Political Discussion

Kuwait's proportion of restrictive policies seems to violate the model established in this paper, but when viewed in waves, the swift restrictions allowed for more resource-oriented policies for later waves of infections. This is evidenced by the only post-August Kuwaiti policies reported by CoronaNet being two COVID-19 vaccine policies. As evidenced by a high V-Dem Liberal Component score (Suppl. Tbl. 3), Kuwait values citizens' freedom, which indicates the government's faith in citizens to have a greater onus placed on them for policy compliance. In contrast, Afghanistan and Egypt are both electoral autocracies, a type of hybrid regime where restrictions are expected to be favored, yet they implemented a higher rate of resource policies. Like Kuwait's response, Egypt's response follows the timeline of restrictions first and resources second; however, Egypt was faster to act in the allocation of resources. These outliers defied the model but followed a similar policy pathway.

Of the 22 MENA countries studied, Jordan has the third-highest percentage of restrictive policies (73.1%) despite having a lower FSI than the six fragile states studied. Since Jordan is a closed autocratic state, the government can easily impose restrictions without political consequence. While outside the primary ten countries and still in line with the overall trend of more fragile states implementing a higher proportion of restrictions, Jordan is a notable exception for two reasons. First, Jordan has a National Committee for Epidemics (Ben Mimoune, 2020), which helped Jordan craft restrictive policies based on experience from the pandemic's onset. Second, Jordan has a notoriously weak public health infrastructure (Abouzzohour, 2021). Hence, resource-oriented policy implementation might not have been as feasible as in countries with better public health infrastructure.

Hybrid regimes such as Lebanon are more susceptible to political instability, partially explaining why other electoral autocracies in the paper are also fragile states. Restrictions may be favored as a means to quell dissent present in times of crisis, especially when there is existing conflict. Internal and inter-regional conflict is part of the political ecosystem in this region that has added

to political instability and affected policy choice and implementation. This follows both the logic of fragile states having a higher proportion of restrictive policies than strong states and the assertion that states with political dissent are more likely to implement restrictions earlier and for a longer period. Restrictions may create a way to mitigate a collapse of the healthcare and political systems by avoiding an undue burden on the fragile infrastructure.

In addition to state-initiated responses, ongoing conflicts may allow neighboring powers to flex their political muscle through proxy wars waged to test the staying power of regional rivals. For instance, a coalition involving the UAE and Saudi Arabia has mounted a campaign in Yemen to support the reinstatement of president Abed Hadi (OCHA, 2018), while Irani government backing of the Houthis has made the insurgent group a formidable force capable of lobbing ballistic missiles at Riyadh (Stark, 2020). Contests for influence may even occur between allies, like in Syria where Iran and Russia compete to advance their interests after backing Bashar al-Assad (Dadouch, 2021); Iran notably extended three lines of credit to Syria worth over \$5.6 billion to bal- last the country's finances against economic instability (Karam & Fathollah-Nejad, 2020). External influences may have unseen effects on states' pandemic responses and would be arduous if not impossible to measure in their entirety.

Limitations

The scope of this exploratory project was too broad to establish causality. Our findings rely on the accuracy of human policy coders of CoronaNet, but the cutoff date of August 31, 2020 was chosen because records were verified by a second team and were mostly unavailable past this date. Additionally, the FSI might be more useful as a heuristic for overall categorizations as strong or fragile rather than an objective metric for making precise comparisons within each category. Strong is more easily understood as the counterpart to fragile, but strong states are simply more stable relatively and might not be considerably less fragile than other MENA countries. Summing policies for fragile and strong states may not be an accurate depiction since some countries implement far more policies than others, but we also study country-specific patterns. The ratios used in the regressions may have been skewed by countries with fewer documented policies, such as Syria, but a larger sample was taken to account for this.

Re-categorizing "other" policies, most of which were economic policies and hence arguably resource-oriented, would increase the proportion of resource-oriented policies implemented by strong states to a greater degree than that for fragile states and increase the significance of the resource-oriented regression. However, this does not address the fact that strong states

fell behind in certain resource-oriented categories, such as hygiene policies (Tbl. 1). This might be explained by the fact that basic sanitation of public places was worse in fragile states pre-pandemic and was in more dire need of being improved. Moreover, hygiene policies might be easier to implement and especially important where more advanced health monitoring measures (i.e., electronically tracking infected patients) are infeasible due to the inability to organize such a detail-oriented effort.

The number of restrictive policies might not be the best method for quantifying restrictiveness. Triangulating data from CoronaNet, Oxford, and the COVID-19 World Symptom Survey data not only bolsters a more comprehensive metric of policy restrictiveness but also addresses the lack of government transparency. Given the region's notorious ambiguity regarding government policies, economic issues, humanitarian needs, and human rights infractions, a lack of transparency regarding confirmed COVID-19 cases and policy implementation is guaranteed. Globally, actors are pressured to develop and instill proper measures against COVID-19. Given the nature of this global event, states' lack of transparency can threaten their management of and recovery from the pandemic. CoronaNet addresses this by not only relying on government reports but also popular news outlets, local postings, etc.

State Capacity, Enforcement, and Compliance

While tracking policy data by state fragility can conceptualize how governments respond in pandemics, the full extent of a government's response cannot be understood without considering how policies are enforced. The percent of people in contact with others can be used as a first approximation for how restrictive policies are in practice, but we only begin to tease out the subtleties between policy implementation and enforcement. For instance, compliance with restrictions is low in fragile states as evidenced by high contact percentages. Restrictive policies can be enforced and punished more easily than resource-oriented policies. Additionally, state enforcement is not done directly but rather in a way that relies on citizens monitoring themselves so that the state can focus more on resource allocation and resource-oriented policies. This results in the absence of "concerted responses" to the pandemic, which in turn yields deficits in monitoring capacity and enforcement (Fawcett, 2021). Future research should be aimed at verifying a robust metric for policy enforcement and compliance as well as examining the extent to which a state should be able to enforce policies.

Impact on Humanitarianism

The call for humanitarian aid is simple: one nation requires aid due to some crisis that highlights a gap in a government's ability to provide for its citizens.

Yemen, Afghanistan, Syria, and Iraq exhibit current humanitarian crises, with the first three ranked at 1, 2, and 3 as most at risk for humanitarian crises (International Rescue Committee, 2021; United Nations Office for the Coordination of Humanitarian Affairs, 2020). The data presented in this paper identify specific sectors in fragile states that would benefit from humanitarian assistance (Tbl. 2). Before the pandemic, humanitarian needs were largely driven by armed conflict fueled by political and economic tension, food insecurity, and climatic changes. For example, the conflict in Syria has caused 6.1 million citizens to be internally displaced with millions of others being refugees in neighboring nations; additionally, an estimated 80% of the Yemeni population needed humanitarian assistance or protection as one of the greatest humanitarian crises in history (International Rescue Committee, 2021). The pandemic will likely exacerbate existing humanitarian needs and social inequalities, leading to the question of how countries should treat non-citizens such as refugees, internally displaced people, or other groups excluded from the state.

Especially when relatively large compared to the national population, refugee and migrant populations tend to strongly feel the effects of restrictions. Given trends in previous epidemics, refugee populations are easy targets for repression via limitations on movement and healthcare access and are overlooked during resource allocation, but this trend primarily holds for nondemocracies (Braithwaite et al., 2021). Authoritarian and hybrid regimes can blame refugee and migrant populations for health problems and use them to justify heightened border restrictions without political repercussions. Furthermore, refugee populations are more vulnerable to communicable diseases due to the living conditions of refugee camps. The Syrian refugee population in Lebanon was at heightened risk for the Middle East Respiratory Syndrome Coronavirus (MERS-COV) in 2014 (Chulov & Boseley, 2014), and this has held true for the COVID-19 pandemic during which the death toll for refugees was higher than the national average (Shah & Karasapan, 2021).

Access remains a considerable obstacle to humanitarian aid. Active violence limits the potency of aid delivered, aid workers are not protected from attacks, and bureaucratic restrictions sometimes delay or deny aid (United Nations Office for the Coordination of Humanitarian Affairs, 2020). Even if humanitarian organizations recognize the need to aid specific populations as identified in this paper, restrictions on aid distribution and borders greatly hinder already limited access to aid. However, the disparity between strong and fragile states in terms of resource-oriented policies reveals country-specific gaps that humanitarian intergovernmental organizations (IGOs) or non-governmental organizations (NGOs) can fill. Despite nations being in need,

there is no guarantee that they will seek foreign assistance because obtaining this aid requires giving a nod to Western powers that could use this avenue to extend influence over the region. Therefore, it is important to acknowledge the political and social complexity that accompanies humanitarianism.

Conclusion

This paper has shown that fragile Middle Eastern states tend to exhibit a greater proportion of restrictive policies, lower effective government stringency, and lower compliance than their stronger counterparts in response to COVID-19. Although restrictions may be necessary to a certain degree, governments must not abuse power during a national emergency to pursue their political agendas. Governments from strong states should be cognizant of this potential downward spiral and facilitate the shift to resource-oriented policy implementation in states that lack the political and economic power to do so on their own. Not only would this benefit the fragile states in question but also contribute to the stability of the whole region. Additionally, policy analysis of the Middle East faces unique problems due to a lack of transparency and ongoing intra-state wars. If these roadblocks can be overcome, measuring policy enforcement may provide more accurate and unique insight into understanding policy effectiveness. Multi-faceted policy analysis would also better inform international aid efforts, such as the several hundred policies implemented by strong states to provide medical and financial support to the region's fragile states. This study begins to explore the political effects of COVID-19, but future research should draw out more nuanced explanations to establish causation and understand late-pandemic responses. The COVID-19 pandemic has poignantly shed light on state fragility and policy compliance issues that have been inadequately addressed by intranational and international actors. Solving these problems and further investigating country-specific patterns to pandemic responses can help predict and assist future response plans.

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Supplementary Material

Supplementary Material on the R Statistical Analysis is available online at:
<https://doi.org/10.6084/m9.figshare.19248256>

SUPPLEMENTAL TABLE 1 Categorization of COVID-19 Policy Types

Resource-oriented	Restrictive
Health Monitoring	Anti-Disinformation Measures
Health Resources	Closure and Regulation of Schools
Health Testing	Curfew/Lockdown/Quarantine
Hygiene	Internal/External Border Restrictions
New Task Force, Bureau, or Administrative Configuration	Restriction and Regulation of Businesses/Government Services
Public Awareness Measures	Restrictions of Mass Gatherings/ Social Distancing

SUPPLEMENTAL TABLE 2 Fragile States Index Category and Score, Policy Category Proportions of Total Policies, Ratio of Resource-oriented to Restrictive Policies, Average Percent Contact Outside the Home, Average Oxford Stringency Index, Cumulative Number of COVID-19 Cases and Deaths, and Population as of August 30, 2020 for the 22 MENA Countries

Country	ISO Alpha-2	FSI category	FSI score	Restrictive policies / total policies	Resource-oriented policies / total policies	Other policies / total policies	Resource-oriented / restrictive policies (%)	Average stringency index	Cumulative COVID-19 cases	Cumulative COVID-19 deaths	Population	
Yemen	YE	Very High Alert	112.4	0.66	0.32	0.02	0.49	53.83	36.07	1950	564	9375000
Syria	SY	Very High Alert	110.7	0.67	0.22	0.11	0.33	Unavailable	52.64	2628	106	17520000
Afghanistan	AF	High Alert	102.9	0.49	0.43	0.08	0.89	57.6	52.96	38143	1402	38921429
Iraq	IQ	Alert	95.9	0.66	0.26	0.08	0.39	48.14	68.06	227446	6891	40220336
Egypt	EG	High Warning	86	0.48	0.44	0.09	0.92	58.52	49.5	98497	5376	102281412
Lebanon	LB	High Warning	84.7	0.7	0.23	0.07	0.33	39.14	52.11	16275	155	6826762
Kuwait	KW	Less Stable	50.9	0.75	0.18	0.07	0.24	27.31	62.51	84224	528	4270561
Oman	OM	Stable	48	0.53	0.35	0.13	0.66	25.97	64.48	85005	650	5106632
Qatar	QA	Stable	43.7	0.4	0.43	0.17	1.06	28.06	59.07	118407	196	2881019
United Arab Emirates	AE	More Stable	38.1	0.44	0.39	0.16	0.88	Unavailable	49.73	69328	379	9889872
Somalia	SO	Very High Alert	110.9	0.77	0.15	0.08	0.2	Unavailable	32.14	3310	97	15913462

SUPPLEMENTAL TABLE 2 Fragile States Index Category and Score, Policy Category Proportions of Total Policies, Ratio of Resource-oriented to Restrictive Policies, Average Percent Contact Outside the Home, Average Oxford Stringency Index, Cumulative Number of COVID-19 Cases and Deaths, and Population as of August 30, 2020 for the 22 MENA Countries (cont.)

Country	ISO Alpha-2	FSI category	FSI score	Restrictive policies / total policies	Resource-oriented policies / total policies	Other policies / total restrictive policies (%)	Average resource-oriented restrictive contact policies (%)	Average stringency index	Cumulative COVID-19 cases	Cumulative COVID-19 deaths	Population	
Sudan	SD	High Alert	104.8	0.91	0.08	0.01	0.09	65.25	55.64	13189	823	43817276
Libya	LY	Alert	95.2	0.58	0.34	0.08	0.59	58.38	64.61	12958	231	6870626
Mauritania	MR	High Warning	88.7	0.6	0.4	0	0.68	43.94	43.69	7012	158	4649867
Iran	IR	High Warning	83.4	0.6	0.2	0.2	0.33	Unavailable	39.13	371816	21359	83988254
Djibouti	DJ	High Warning	82.7	0.48	0.43	0.09	0.91	Unavailable	46.39	5385	60	988073
Jordan	JO	Warning	75.4	0.73	0.04	0.23	0.05	48.03	48.85	1893	15	1077749
Algeria	DZ	Warning	74.6	0.63	0.33	0.05	0.53	47.95	53.26	43782	1491	43869740
Morocco	MA	Warning	71.2	0.55	0.33	0.12	0.61	Unavailable	56.92	60056	1078	36912108
Saudi Arabia	SA	Low Warning	68.8	0.77	0.2	0.03	0.26	Unavailable	57.78	313911	3840	34813242
Tunisia	TN	Low Warning	68.1	0.52	0.43	0.05	0.82	48.82	39.45	3572	75	11827815
Bahrain	BH	Low Warning	63.9	0.47	0.47	0.05	1	Unavailable	54.26	51391	189	1701576

SUPPLEMENTAL TABLE 3 Freedom House and V-Dem Data on MENA Countries *

Country	Regime type by V-Dem	Freedom House political rights	Freedom House civil liberties	V-Dem pandemic Democratic violations index	V-Dem liberal Democracy ranking	V-Dem liberal Democracy score	V-Dem electoral Democracy score	V-Dem liberal Component score
Kuwait	Closed Autocracy (+)	14	23	0.20	106	0.295	0.316	0.743
Lebanon	Electoral Autocracy (+)	13	30	0.25	108	0.290	0.465	0.547
Iraq	Electoral Autocracy	16	13	0.15	120	0.240	0.398	0.504
Afghanistan	Electoral Autocracy	13	14	0.15	125	0.212	0.347	0.397
Oman	Closed Autocracy	6	17	0.35	142	0.143	0.185	0.424
Egypt	Electoral Autocracy	6	12	0.35	145	0.126	0.190	0.381
UAE	Closed Autocracy	5	12	0.15	158	0.091	0.101	0.301
Qatar	Closed Autocracy	7	18	0.35	164	0.086	0.091	0.307

SUPPLEMENTAL TABLE 3 Freedom House and V-Dem Data on MENA Countries* (cont.)

Country	Regime type by V-Dem	Freedom House political rights	Freedom House civil liberties	V-Dem pandemic Democratic violations index	V-Dem liberal Democracy ranking	V-Dem liberal Democracy score	V-Dem electoral Democracy score	V-Dem liberal Component score
Syria	Closed Autocracy	-3	4	Unavailable	175	0.043	0.145	0.113
Yemen	Closed Autocracy	1	10	Unavailable	176	0.042	0.123	0.122
Tunisia	Liberal Democracy (-)	32	39	0.35	41	0.655	0.723	0.909
Morocco	Closed Autocracy	13	24	0.30	115	0.256	0.290	0.683
Jordan	Closed Autocracy	11	23	0.40	118	0.254	0.276	0.717
Mauritania	Electoral Autocracy	14	21	0.35	136	0.161	0.368	0.329
Libya	Closed Autocracy	1	8	Unavailable	137	0.156	0.250	0.420
Iran	Electoral Autocracy	6	10	0.25	141	0.144	0.217	0.411
Djibouti	Electoral Autocracy	5	19	Unavailable	144	0.128	0.259	0.315

Algeria	Electoral Autocracy	10	22	0.30	148	0.119	0.300	0.248
Somalia	Closed Autocracy	1	6	0.40	152	0.102	0.161	0.321
Sudan	Closed Autocracy	2	15	0.35	162	0.087	0.213	0.242
Bahrain	Closed Autocracy	2	10	Unavailable	173	0.050	0.118	0.156
Saudi Arabia	Closed Autocracy	1	6	0.60	177	0.040	0.023	0.158

* Freedom House Scores award nations 0 to 4 points for each of 10 political rights indicators and 15 civil liberties indicators, which take the form of questions; a score of 0 represents the smallest degree of freedom and 4 the greatest degree of freedom. The highest overall score that can be awarded for political rights is 40 (or a score of 4 for each of the 10 questions). The highest overall score that can be awarded for civil liberties is 60 (or a score of 4 for each of the 15 questions).

-V Dem Pandemic Violations are defined as instances where a nation instituted a policy that violated a 'democratic norm' such as restrictions on media, abusive enforcement of policies, and limiting the legislature.

-V-Dem Liberal Democracy Ranking places 179 nations on a ranked scale based on the Liberal Democracy rating.

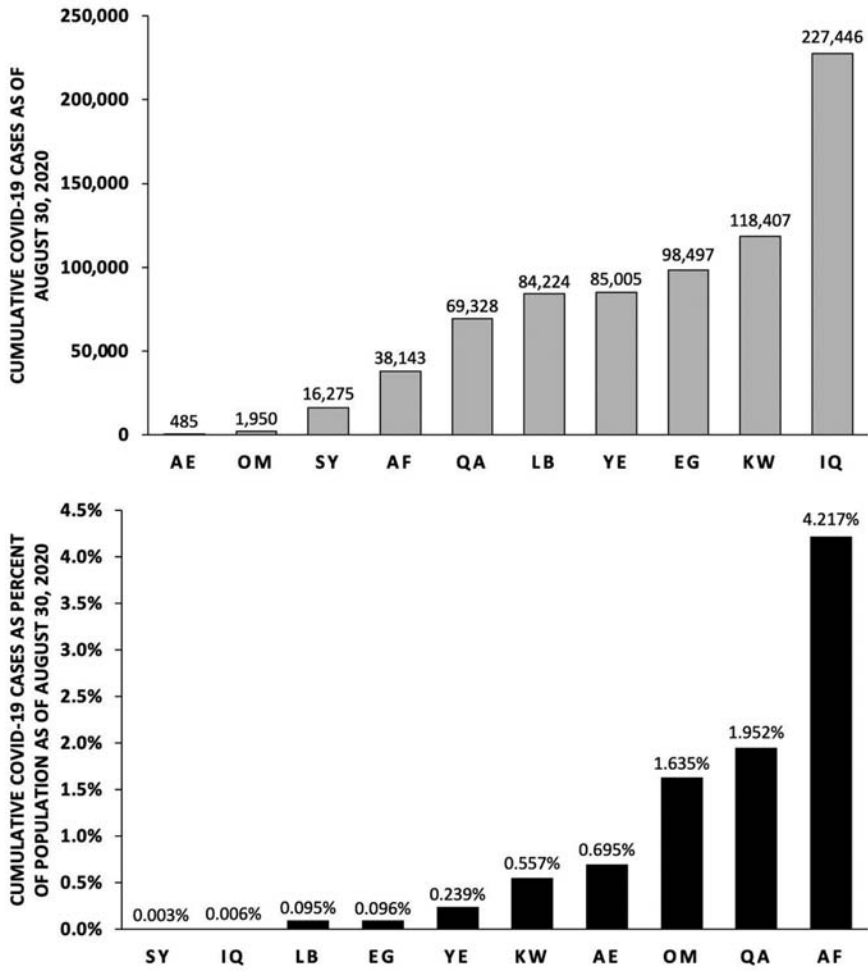
-V-Dem Liberal Democracy Score combines both the Electoral Democracy and Liberal Component as well as 3 other categories that make up aspects of a comprehensive definition of 'democracy'.

-V-Dem Electoral Democracy Score is based on a nation's freedom of expression, association, suffrage, and the overall status of elections on a scale of 0.0-1.0.

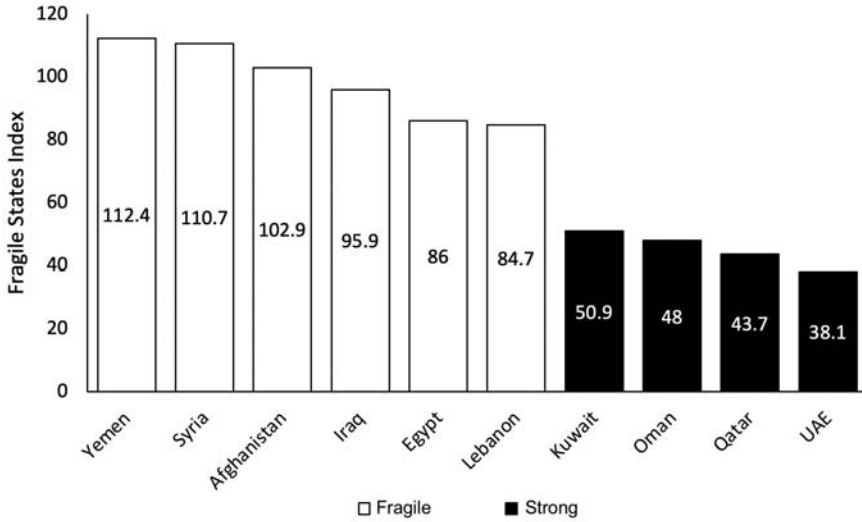
-V-Dem Liberal Component is based on equality under the law, individual liberty, and judicial/legislative constraints on the executive branch on a scale of 0.0-1.0.

-Regime Type is based on a scale of Liberal Democracy, Electoral Democracy, and Closed Autocracy. A type with '+' or '-' denotes that it could be considered close to the regime type 'above' or 'below' its categorization respectively.

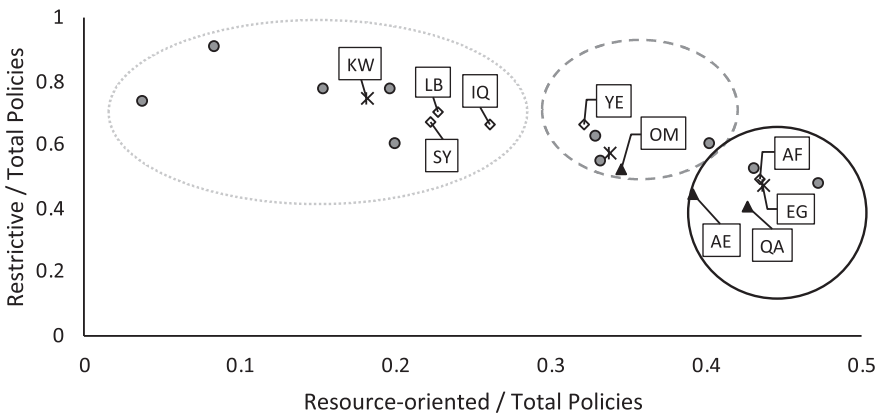
-V-Dem Democracy scores are based on the 2020 Annual Report.



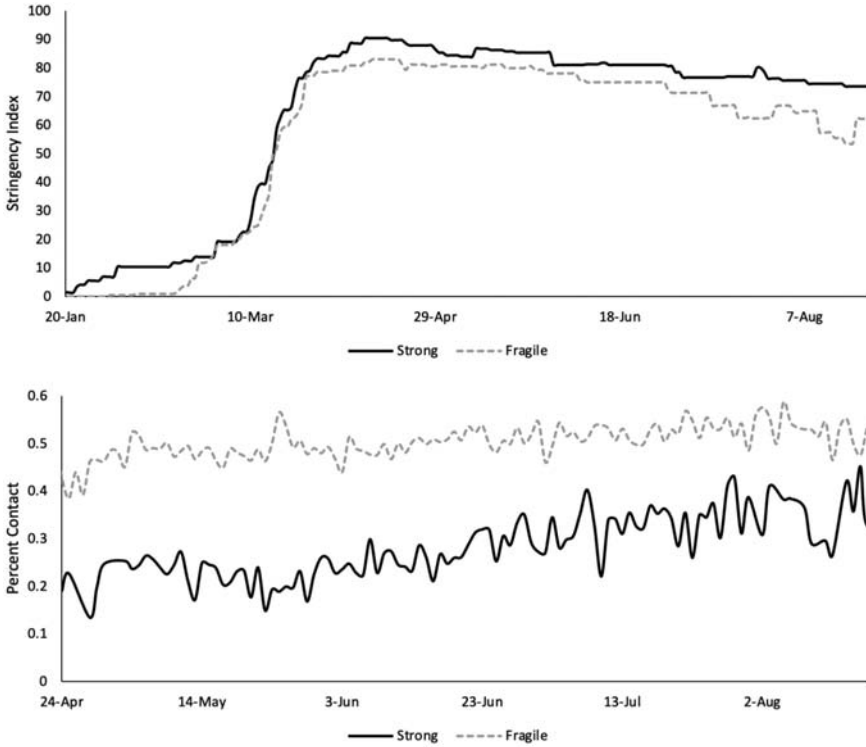
SUPPLEMENTAL FIGURE 1 Cumulative COVID-19 Cases by Country as of August 30, 2020



SUPPLEMENTAL FIGURE 2 Categorization of Middle Eastern States as Fragile or Strong by the 2020 Fragile States Index



SUPPLEMENTAL FIGURE 3 Cluster Analysis Based on Proportion of Restrictive Policies vs Proportion of Resource-oriented Policies for each MENA Country. The ten MENA countries central to this paper were labeled by their Alpha-2 codes. White diamonds denote the six fragile states, black triangles denote the four strong states, and grey circles denote the 12 additional MENA countries. The circles encompass clusters characterized by a below-average resource-oriented to restrictive policy ratio (dotted line), an average resource-oriented to restrictive policy ratio (dashed line), and an above-average resource-oriented to restrictive policy ratio (solid line). An asterisk denotes the anchor of each cluster.



SUPPLEMENTAL FIGURE 4 Stringency Index and Percent Contact Averaged per Day for Strong and Fragile Middle Eastern States

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