COVID-19 Lockdowns and Political Violence: An uneasy relationship

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Summary

2020 was characterised by COVID-19 and lockdowns, with implications for economies, governance and stability. This study investigates the relationship between lockdowns and political violence, specifically in terms of state violence against civilians (SVAC) and Non-State Armed Group (NSAG) activity. It finds relationships that differ by context. During lockdowns, several of the most severely conflict-affected contexts saw reductions in political violence, which may allow for aid provision and even mediation and reconciliation. Other unstable contexts saw escalating NSAG activity however, and many fragile contexts saw heightened state violence against civilians, often most significantly just as lockdowns loosened. In some contexts, however, the relationships between lockdowns and political violence were weak or insignificant. While these relationships do not prove causation nor act as a predictor of future activity, they suggest that COVID-19 does matter for political violence and underline the need for our analysis to rapidly adapt to new shocks and be context-specific. This study further demonstrates how data science can enhance conflict monitoring, analysis and early warning, acting as a valuable tool for analysts and advisers.

Introduction

The COVID-19 crisis is unprecedented in scale and geographic scope. In mitigating the health impacts, lockdowns, characterised by restrictions on freedom of movement, events and gatherings, and closures of business, schools and workplaces, have become a new global norm. Increasingly, attention is focussed on the secondary impacts of lockdowns, and while a spotlight is being shone on the economic impacts, there is significant concern around the impact on political violence, such as armed conflict[1], ceasefires[2], terrorism[3] and state violence against citizens[4].

This study attempts to untangle conjecture from fact, by empirically assessing two assumptions that have been prolific throughout the crisis:

1. **Lockdowns provide an enabling environment for non-state armed groups (NSAGs) to expand activity** for example, due to drawdown of state security services to police lockdowns. [5]
2. **Lockdowns are characterised by a rise in state violence against civilians (SVAC),** for example due to excessive enforcement during lockdown policing.[6]

This yields two hypotheses to test:

H1. The stringency of lockdowns is related to violence involving non-state armed groups.
H2. The stringency of lockdowns is related to state violence against civilians.

Methodology

Data sources and defining variables

Two key datasets were used, the first to measure and track lockdown stringency, the independent variable, and the second to measure and track political violence events, the dependent variable.

1. Independent Variable: Oxford Coronavirus Government Response Tracker (OxCGRT)

The OxCGRT tracks government responses to COVID-19 by containment, economic and health policies. For this study, the OxGCRT 'Stringency Index'[7] was used, which aggregates the indicators in table 1 to give a score of overall lockdown strictness. The Stringency Index gives a score for almost every country on a daily timescale (updated twice weekly) enabling comparative timeseries analysis. Stringency Index scores were used as the independent variable.

ID	Description
C1	School closing
C2	Workplace closing
C3	Cancel public events
C4	Restrictions on gathering size
C5	Close public transport
C6	Stay at home requirements
C7	Restrictions on internal movement
C8	Restrictions on international travel
H1	Public information campaign

Table 1: OxCGRT Stringency Index composition

2. Dependent Variables: ACLED - Armed Conflict Location and Event Data

ACLED produces political violence event data with near-global coverage. Each data point is a specific political violence event, with date, time, location, actors involved, actor definition, estimated fatalities and type of violence (e.g. protests, battles, remote violence). Two dependent variables were operationalised from ACLED data for each of the hypotheses.

Use of actor and event definitions
ACLED categorises eight types of actors (see Table 2), including state forces, several types of NSAGs, rioters, peaceful protestors, civilians, and external forces (such as foreign state actors). ACLED also provides definitions of 'event type', for example violence against civilians, remote violence or battles.

To explore H1 several definitions were combined to operationalise a new definition of 'Non-State Armed Groups' (NSAGs). Similar actors were sometimes in different categories: Islamist insurgents in Cabo Delgado (Mozambique) were defined as actor 3, but Islamic State of West Africa as actor 2**.** Thus, actor definitions 2-4 were used, and this study defines NSGAs as 'organised non-state groups engaging in violence with a political goal', with their organised nature differentiating them from e.g. rioters. For H1, all event types were considered.

To explore H2, ACLED the ACLED classifications of the State Forces actor and 'violence against civilians' event type were used.

Actor ID	Actor	Definition
1	State Forces	"Collective actors that are recognised to perform government functions, including military and police, over a given territory".
2	Rebel Groups	"Political organizations whose goal is to counter an established national governing regime by violent acts".
3	Political Militias	"A more diverse set of violent actors, who are often created for a specific purpose or during a specific time period (i.e. Janjaweed largely active in Sudan) and for the furtherance of a political purpose by violence".
4	Identity Militias	"Armed and violent groups organized around a collective, common feature including community, ethnicity, region, religion or, in exceptional cases, livelihood".
5	Rioters	"Individuals or 'mobs' who either engage in violence during demonstrations or in spontaneous acts of disorganised violence".
6	Protesters	"Peaceful, unarmed demonstrators".
7	Civilians	"Victims of violent acts within ACLED as they are, by definition, unarmed and, hence, vulnerable".
8	External/Other Forces	"International organisations, state forces active outside of their main country of operation, private security firms and their armed employees, and hired mercenaries acting independently".

Table 2: ACLED actor types, all definitions taken from ACLED Codebook.[8]

Event counts
From ACLED data we can use several indicators, the two most well-used are (i) number of events and (ii) number of fatalities. Fatalities data is less reliable than event, as multiple sources commonly quote different fatality numbers[9]. Thus, for this study, number of events (event count) was used as the dependent variable, with count of political violence events involving NSAGs for H1 and count of events involving SVAC for H2.

Weekly/monthly data points
ACLED provides event dates, enabling time-series analysis of these variables to a daily resolution. Over longer time series however, daily data points can create 'data noise' of too many data points, disabling trend analysis. To reduce 'data noise', weekly data points were used for statistical analysis over 2020, and monthly data points for data visualisation over the past five years (to allow for visual comparability to previous years).

Deasonalised data
Political violence can be seasonal in nature, following a distinct pattern over a year.[10] The data was deseasonalised, locating and removing seasonal patterns to reveal significant changes (see figure 1).

This process yielded a dependent variable for each hypothesis:

H1. *The stringency of lockdowns is related to violence involving non-state armed groups*:
Deseasonalised number of events of political violence involving NSAGs per week/month

H2. *The stringency of lockdowns is related to state violence against civilians.*
Deseasonalised number of events of violence against civilians involving State Forces per week/month
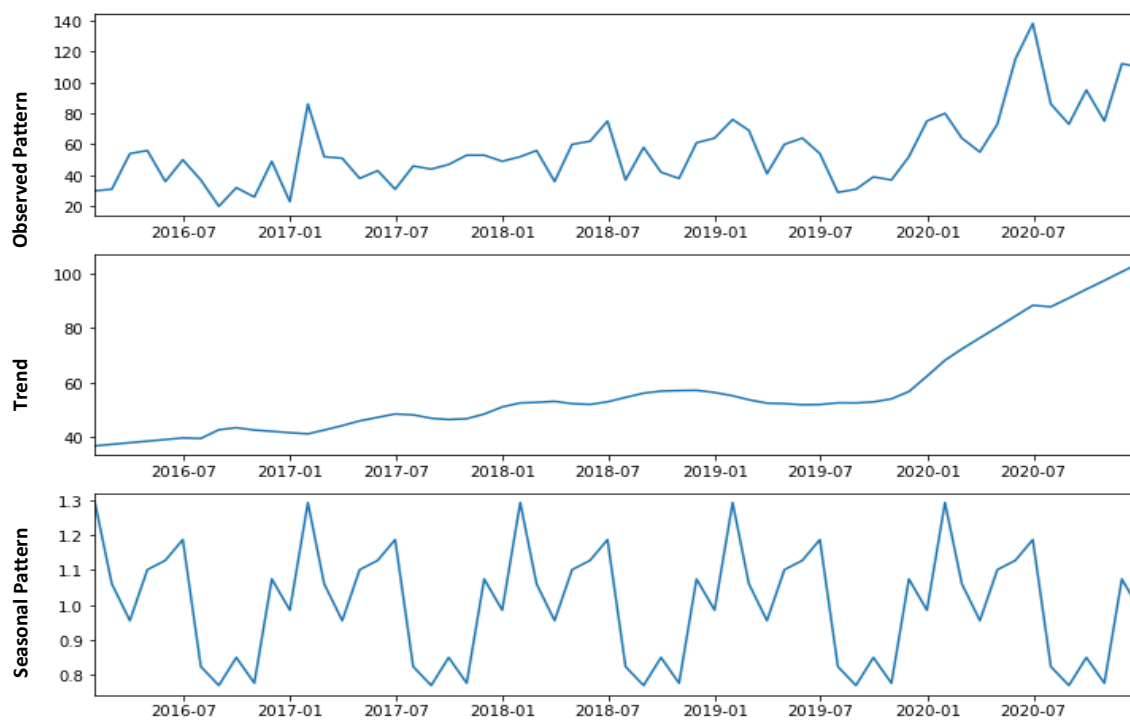
Figure 1. Nigeria NSAG violence seasonal event pattern located using multiplicative decomposition 2016-2020

Country Selection

It was beyond the scope of this study to conduct a global assessment. This study selected a sample of countries from across Africa, Asia and the Middle East, with different levels of fragility and economic income, and with good OxCGRT and ACLED data availability (see table 3).

Country	Region	OECD Fragility	Economy (WB classification)
Afghanistan	Central Asia	Highly Fragile	Low Income
DRC	Central Africa	Highly Fragile	Low Income
Ethiopia	East Africa & Horn	Fragile	Low Income
India	South Asia	N/A	Lower-Middle Income
Indonesia	South East Asia	N/A	Upper Middle Income
Iraq	Middle East & North Africa	Highly Fragile	Upper Middle Income
Mozambique	Southern Africa	Fragile	Low Income
Myanmar	South East Asia	Fragile	Lower-Middle Income
Nigeria	West Africa	Fragile	Lower-Middle Income
Philippines	South East Asia	N/A	Lower-Middle Income
Somalia	East Africa & Horn	Highly Fragile	Low Income
Syria	Middle East & North Africa	Highly Fragile	Low Income
Yemen	Middle East & North Africa	Highly Fragile	Low Income

Table 3: Countries selected for study

Analytical Methods

1. Exploratory Analysis with Data Visualisation

This study began with exploratory data analysis, comparing trends visually using line plots. This enabled an initial visual analysis of patterns and trends. Three types of plots were created:

- Observed violent events against Stringency Score over 5yrs and 1 yr
- Deseasonalised violence against Stringency Score over 5yrs and 1yr
- Deseasonalised violence against Stringency Subcomponents (see table 1) over 1yr

2. Identifying relationships with rolling correlation

While relationships can be inferred from visualisations, a statistical test adds a layer of robustness to the results. A Pearson's correlation test[1] was applied, to assess how far changes in political violence events in each week were correlated to changes in lockdown stringency in the same week. This also showed whether the relationships were positive or negative and to what strength (for example, as stringency increases, does violence increase or decrease?).

Conducting a correlation for data across the whole year was inappropriate, as it could be too generalised and fail to capture changing patterns over the course of the year. A rolling correlation method was applied, where the correlation was tested in a moving time window. A window of ten weeks was used, as this yielded enough data points to be reliable and enough iterations to capture patterns over the year. Results were interpreted as:

- $> \pm 0.7$ = Strong relationship
- $\pm 0.5 - 0.7$ = Moderate relationship
- $< \pm 0.5$ = Weak relationship

3. Identifying lagged relationships with Granger Causality

While useful, the rolling correlation alone was insufficient to test the relationship, as data visualisation suggested that in some cases, changes in political violence lagged changes in lockdown stringency. The Granger Causality Test is specifically designed for identifying relationships between time series data where there may be a lag effect (see figure 2). The relationship was tested against a maximum of 10 lags (weeks), upon the assumption that any effect would show in that time frame (and thus apparent correlation beyond 10 weeks could be spurious). The Granger Test was validated with an F-Test[11]. Where P-values were <0.05, the null hypothesis that there is no relationship between the two variables was rejected.
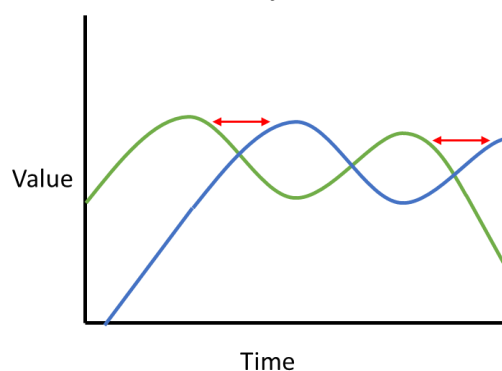

Figure 2. Granger test simplified

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[1] Data was tested for normalcy

Limitations

- **Geographic Granularity:** Conflict and political violence can be localised phenomena. ACLED data provides coordinates for subnational study, but OxCGRT provides almost exclusively national-level data. Thus, the effects of localised measures on local violence could not be studied. While study of subnational patterns of violence during national lockdowns is possible, it was not in scope for this study, but could be an avenue for future research.
- **External actors** several of the contexts studies experience substantial political violence involving foreign actors, notably in Syria, Yemen and Afghanistan. It was not in the research questions to study the activity of international actors, but future study of these actors' activity during lockdowns could add weight.
- **Data Stationarity:** Data is considered 'stationary' when patterns and trends over time are removed, which could otherwise lead to spurious results (e.g. apparent relationship, when a rise in political violence is explained by a regular pattern). Deseasonalising data controlled for this to an extent, and stationarity tests were conducted. In most cases, data was highly stationary – but in some cases stationarity levels were lower (DRC, Yemen, Nigeria, Somalia, Indonesia and Mozambique). Further stationising does not always improve results – long-term trends could be indicative of growing political tensions, which could be amplified in COVID-19. Finding optimal stationarity can require extensive work and it was not in scope for this study to stationise further.

Results

See Annex for full results

Exploratory Analysis with Data Visualisation

Relationships between lockdown stringency and political violence were identified, and they differed across contexts. While patterns were unique in each context, three broad 'types' could be identified based on observation:

Type 1: Positive relationship

In many contexts, there was a strong positive relationship, where increases in lockdown stringency were matched by increases in political violence. *For NSAG activity,* this was most apparent in **Nigeria** and **Mozambique,** where activity reached 5-year highs, mapping almost exactly onto lockdown stringency (figs 3 and 4); while NSAG was already rising in Mozambique through 2019, it spiked significantly exactly in-line with a rise in lockdown stringency. There was also a lagged trend in **Iraq,** where activity reached a 3-year high. **DRC** also saw an increase to a 5-year high, but this does follow a steady 3-year upward trend. *For SVAC,* trends were not as strong, but **Mozambique**, **Somalia** and **DRC** saw increases to 5-year highs during lockdown. There were also increases in **Ethiopia** and **Syria,** with the latter seeing a spike just as lockdown was implemented.
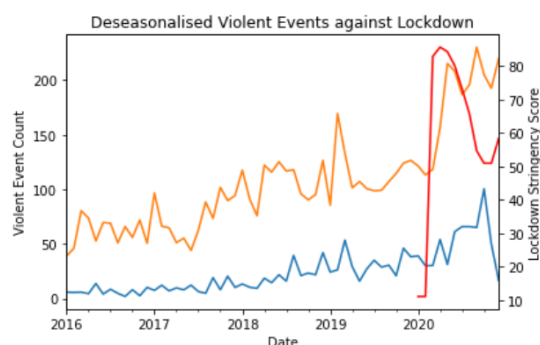

Figure 3: Nigeria – a positive relationship between lockdown and NSAG violence (and inverse lockdown – state violence relationship)
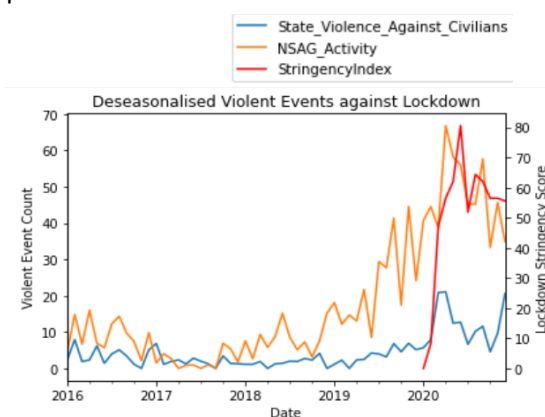
Figure 4: Mozambique – NSAG Activity reaches its highest peak in tandem with a rise in lockdown stringency

Type 2: Inverse relationship

In several contexts, there was an inverse relationship between lockdown stringency and political violence. In **Afghanistan**, when lockdown stringency increased, levels of political violence in both categories reduced (see fig 5) while **Yemen** saw a steady reduction in NSAG activity throughout lockdown. Equally, in some contexts, as lockdowns loosened, levels of political violence increased. **Somalia,** the **Philippines, India, Syria, Indonesia, Mozambique** and **Nigeria** all saw spikes in SVAC when lockdown restrictions loosened (see fig. 6), while **Syria** and the **Philippines** both saw spikes in NSAG activity as lockdowns loosened.
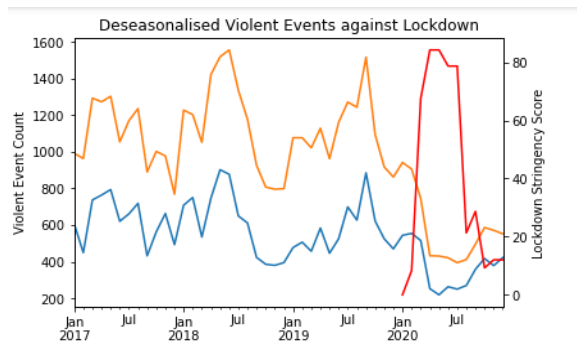

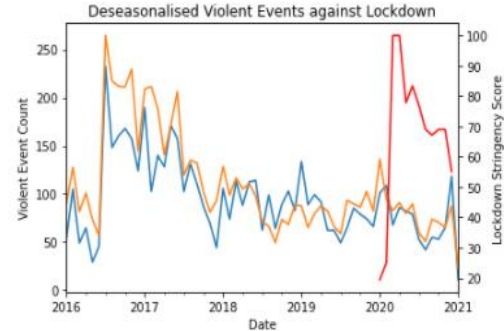Figure 5: Afghanistan– Political Violence suppressed during lockdown

Figure 6: Philippines– Deseasonalised data reveals a spike in state violence as lockdown lifts

Type 3: Little to no relationship

In some cases, patterns of political violence appeared unchanged or seemed to follow patterns far more consistent with past trends than bearing a relationship with lockdowns. For NSAG activity, these included **Somalia, India** and **Indonesia** (see fig 7) while for SVAC these included **Myanmar** and **Iraq** (see fig 8)**.**
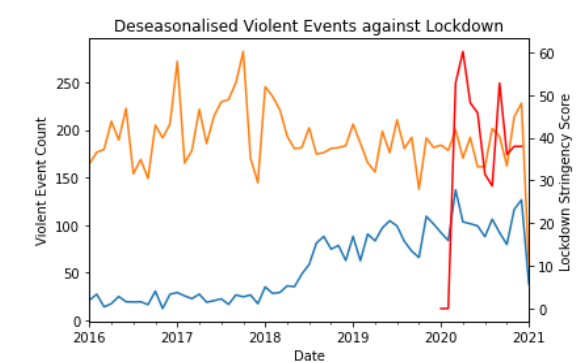

Figure 7: Somalia – NSAG activity follows past trends and does not follow a *clear* pattern against lockdown
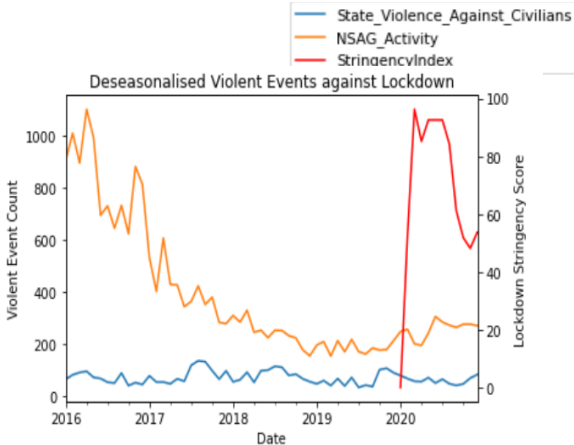

Figure 8: Iraq – State violence against civilians shows negligible change during lockdown

Rolling Correlation

The results of the rolling correlation are displayed in table 5. Overall, these confirm and add detail to the results from the data visualisation.

There are positive relationships between lockdown stringency and political violence events. For NSAG activity, contexts where strong or moderate positive relationships are apparent at some point in 2020 include DRC, Indonesia, Myanmar, Nigeria, Somalia and Syria. For SVAC, contexts include DRC, India, Nigeria, Philippines, Somalia and Yemen.

There are negative relationships between lockdown stringency and political violence events. For NSAG activity, all contexts showed a strong or moderate negative relationship at some point in 2020. For SVAC, contexts included Afghanistan, DRC, India, Indonesia, Iraq, Myanmar, Philippines, Somalia and Syria.

There are also weak relationships between lockdown stringency and political violence events. All contexts showed this at some point during 2020 for both categories.

Some contexts fall into distinct 'types'. Some contexts saw overwhelmingly negative relationships, including Ethiopia and India for NSAG activity, Iraq and Syria for SVAC and Afghanistan for both political violence types. Others saw more positive relationships, including Syria for NSAG activity, India and DRC for SVAC, and Nigeria for both political violence types. Some contexts however saw a mixture of positive and negative relationships including India, Syria and the Philippines

Some contexts showed temporal patterns between the two violence types. In some contexts, negative and positive relationships for both political violence types studied fell at the same time. This was true for negative relationships in Afghanistan and Iraq, and for positive relationships in Nigeria. In others, there was a clear shift from one relationship type to another over time. In Syria for example, there was a stark shift from positive to negative in NSAG activity.

Granger Test

In eight of thirteen countries studies, there was a lagged relationship between changes in lockdown stringency and changes in levels of political violence. Statistically significant relationships tended to fall between 1-3 weeks lag or 7-10 weeks lag, with none falling within 4-6 weeks. This suggests later lagged relationships *could* be spurious and may be the result of later changes in lockdown measures (or exogenous variables). The most common lag was 1 week, suggesting that changes in political violence can come relatively quickly following changes in lockdowns.

Country	Lockdown – NSAG activity	Lockdown – SVAC
Afghanistan	1, 8, 9 ,10	1, 8, 9
DRC	None	1, 2
Ethiopia	None	None
India	None	None
Indonesia	None	None
Iraq	None	1
Mozambique	None	None
Myanmar	1	None
Nigeria	1	1
Philippines	1	8, 9, 10
Somalia	None	None
Syria	None	1, 2, 3
Yemen	None	7, 8, 9, 10

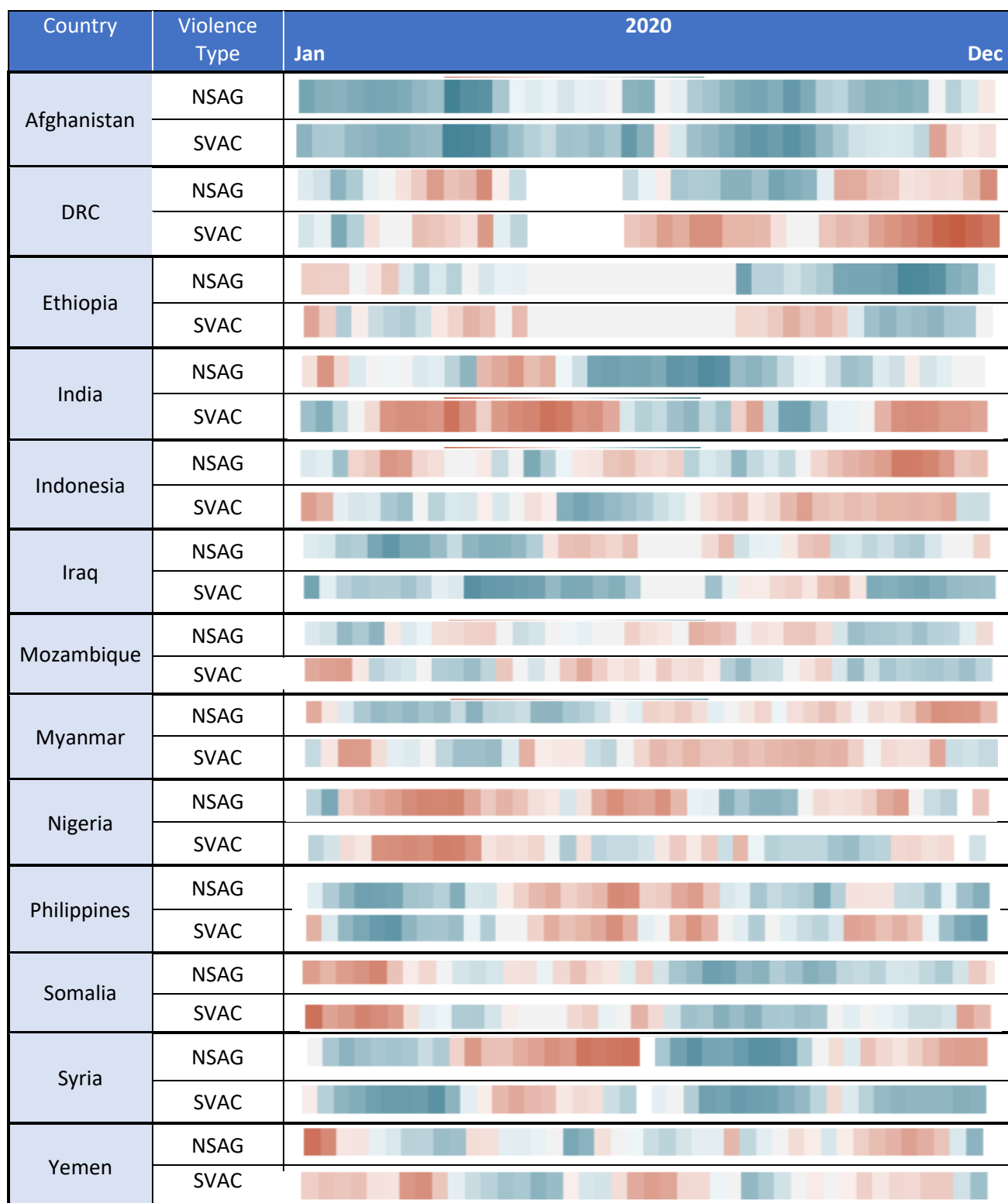*Table 4: Results of Granger Test, significant relationships at no. of weeks lag*
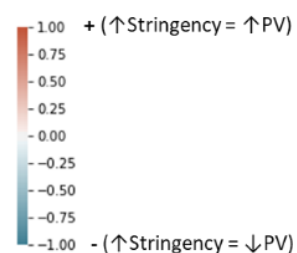
Table 5: Results of rolling correlation test. Darker orange indicates a more positive relationship (increase in lockdown stringency = increase in political violence events) and darker blue a more negative relationship. Reading left to right is the timescale for 2020, from January through to December.

Discussion

On Lockdowns and Political Violence

This study has two clear findings: (i) that relationships between lockdown stringency and political violence exist and (ii) they are not the same everywhere. We can however draw broad conclusions:

Two of the most violent and fragmented contexts saw political violence reduce with heightened lockdown stringency including Afghanistan for both violence types and Syria for SVAC. This is particularly interesting as neither of these conflicts have seen sustained ceasefires throughout the pandemic.[12] Ide (2021) suggests that reduced violence in Afghanistan is due to state capacity drawdown to manage the pandemic, restricting their ability to sustain military activity[13]. Equally, non-state actors such as the Taliban have led parallel COVID-19 responses, which may well have affected ability to engage militarily.[14] This suggests that in some conflict-affected contexts, <u>lockdowns can provide for breaks in violence which can allow for aid provision and even mediation and reconciliation.</u>

Some fragile contexts with significant insurgencies/VEO activity saw a strong relationship between increased NSAG activity and increased lockdown stringency. This was clear in Nigeria and Syria where there were strong positive correlations between lockdown stringency and NSAG activity, with Nigeria's NSAG activity rising to a sustained 5-year high. While correlations were weaker in Mozambique, visualisations suggest a relationship which may not have been identified by statistical tests as the deseasonalised data led to a spike which *slightly* pre-empted lockdown stringency. Visualisation also suggested a positive relationship to a lesser extent in Iraq, where there was an uptick in NSAG activity during lockdown – indeed, there has been an escalation in Daesh attacks in both Syria and Iraq during 2020.[15] For some of these contexts, reports suggest that activity has escalated in the extremities, and that violent extremist actors in particular have exploited state fragmentation in borderland areas during COVID-19.[16] <u>This study confirms that these contexts of significant insurgencies/VEO activity can be at high risk of increased NSAG violence during lockdown.</u>

Across several fragile contexts, there were higher levels of state violence against civilians during lockdowns than in the last five years, including Somalia, Mozambique and DRC. Overall, seven contexts saw a positive relationship between lockdown stringency and SVAC at some point in 2020. While there was often a sustained increase throughout lockdown, there were many spikes as lockdown stringency *changed,* either as it came into force (Syria, Myanmar) or, usually more significantly, when it loosened. Many spikes around loosening lockdowns also mapped onto large protests, including in DRC[17], Ethiopia[18], Nigeria[19] and Indonesia[20], suggesting that levels of state violence are likely associated with state responses to protests. <u>This suggests that fragile contexts are at high risk of escalating protests and a violent state response as they come out of lockdown.</u>

Political violence sometimes lagged lockdowns, but not by much. Given the judgement that lags of 7 weeks plus are likely spurious, it seems that changes in levels of violence will tend to follow lockdown within one week for NSAG activity and three for SVAC. The rolling correlation demonstrated that there were many strong positive relations between lockdown stringency and political violence *within the same week.* <u>This demonstrates that violence mitigation strategies must be ready *before* lockdown is implemented.</u>

The relationship between lockdowns and political violence can change over time. This was most clear in Syria around NSAG activity, which shifted from a strong positive to a strong negative relationship suddenly. This demonstrates that prior experience does not provide certainty of the future, and <u>we must maintain a live picture of the context as it develops to keep our analysis up to date and relevant.</u>

Conclusion

There are relationships between lockdown stringency and political violence, but they differ across contexts. In some of the most severely conflict-affected contexts studied for this paper, lockdowns are often related to reduced violence, perhaps due to state/competing non-state actors' capacity drawdown. In some contexts affected by insurgencies, non-state actors can, and do, escalate activity during lockdowns. Across many fragile contexts, state violence increases during lockdown, and there are high risks associated with the loosening of lockdowns. In some contexts however, there were weak or no observable relationships between lockdown stringency and political violence, which underlines the need for context-specific analysis.

There are clear caveats for policy makers. Correlation does not prove causation, past experience is not a predictor of future events and, in each case, patterns were context specific. This study evidences however that there are clear risks and opportunities around political violence during lockdown, and that it is well worth analysing the relationship in each context to better prepare for future lockdowns. The COVID-19 crisis is far from over, lockdowns will continue, and the policy of lockdowns may well recur in response to future crises – preparing for the implications around political violence is imperative. Moreover, exploring this issue also allows us to understand broader dynamics of political violence, for example on how NSAGs may respond to crises or how states can use violence to govern in a crisis.

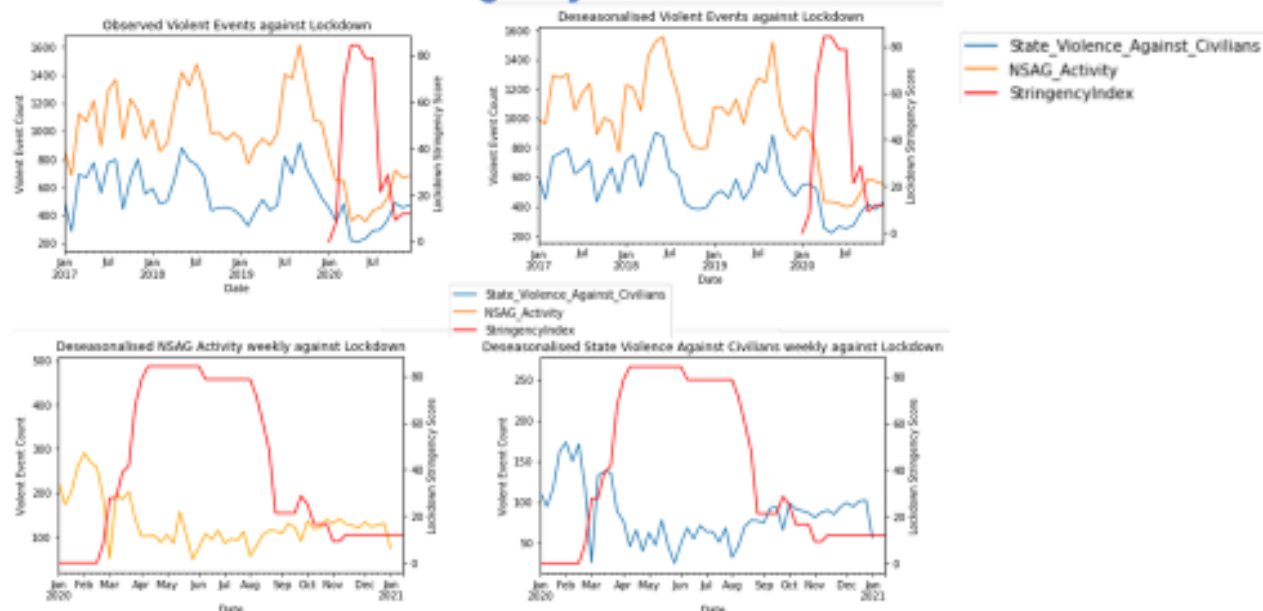## Epilogue: On data science for conflict monitoring, analysis and early warning

This study has demonstrated the value of data science in conflict monitoring, analysis and early warning. For analysts, it can illuminate patterns and trends for further study and dissection. For policy advisers, it can provide a robust evidence base to support recommendations. For decision makers, it can provide the critical information needed to make informed judgements.

Data science will never replace the need for good intelligence and expert analysis. Rather, it is a valuable tool that can be employed to enhance monitoring and analysis in order to identify patterns, risks and opportunities, and make informed decisions.

Annex: Country Results

Country Results - Afghanistan

Trends – Lockdown Stringency and Political Violence

Observed Violent Events against Lockdown

Deseasonalised Violent Events against Lockdown

- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Deseasonalised NSAG Activity weekly against Lockdown

Deseasonalised State Violence Against Civilians weekly against Lockdown

- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Lockdown – PV Correlation

Granger Test: Lockdown – PV lagged change significance

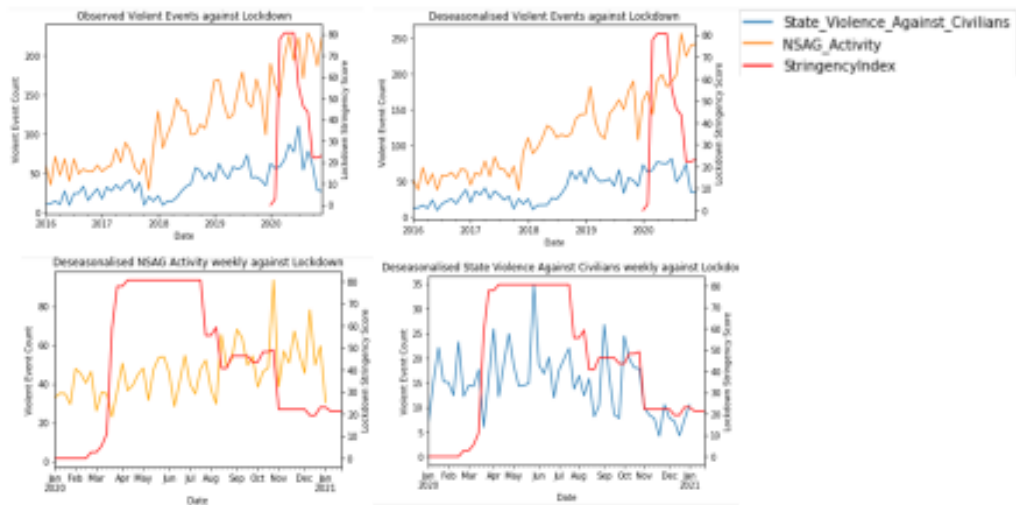| Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	Significance	Strong significance
2	No significance	Significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	Significance
8	Strong Significance	Strong significance
9	Strong Significance	Strong significance
10	Strong Significance	No significance

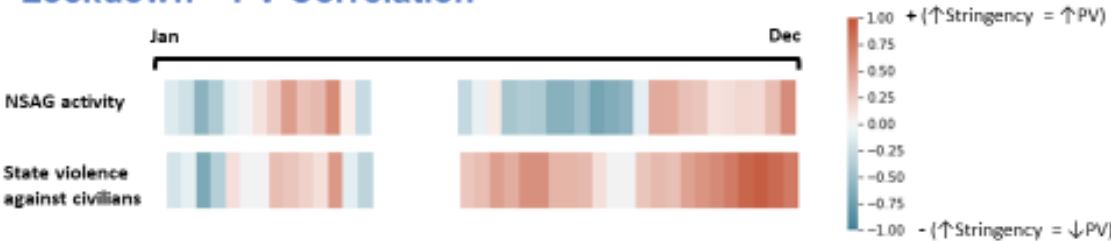| Significance Definitions |
|---|
| Strong = P-value <0.01 |
| Significance = P-value <0.05 |
| No significance = P-value >0.05 |

Country Results – DRC

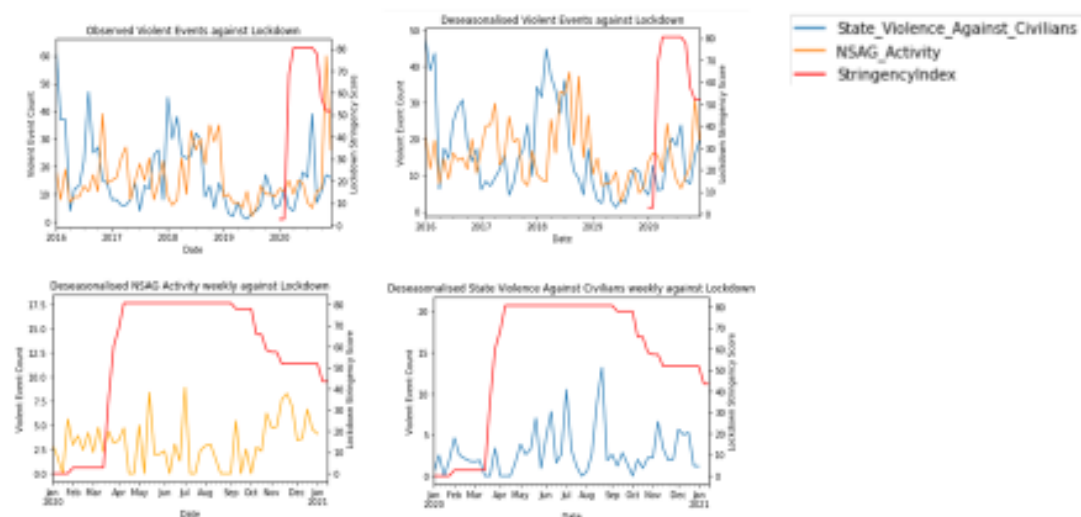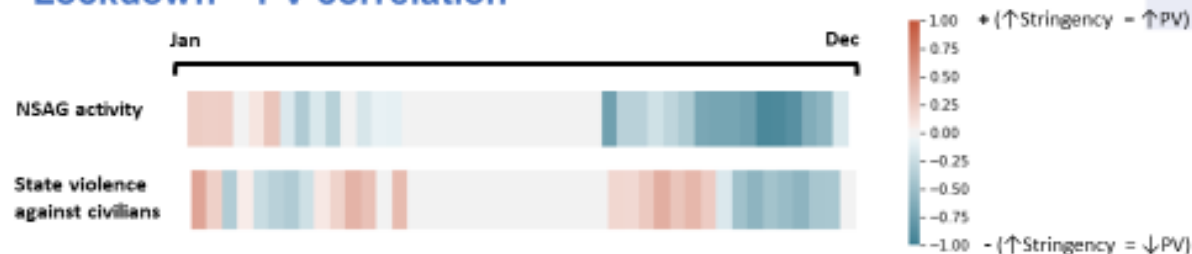## Trends – Lockdown Stringency and Political Violence

Granger Test

Weeks from change in lockdown stringency	Correlated change in NSAG activity	Correlated change in state violence against citizens
1	No significance	Significance
2	No significance	Significance
3	No significance	Significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	Strong significance
9	No significance	Strong significance
10	No significance	Strong significance

Significance Definitions
Strong = P-value <0.01
Significance = P-value <0.05
No significance = P-value >0.05

Lockdown – PV Correlation

Country Results - Ethiopia

Trends – Lockdown Stringency and Political Violence

- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

Significance Definitions
Strong = P-value <0.01
Significance = P-value <0.05
No significance = P-value >0.05

Lockdown – PV correlation

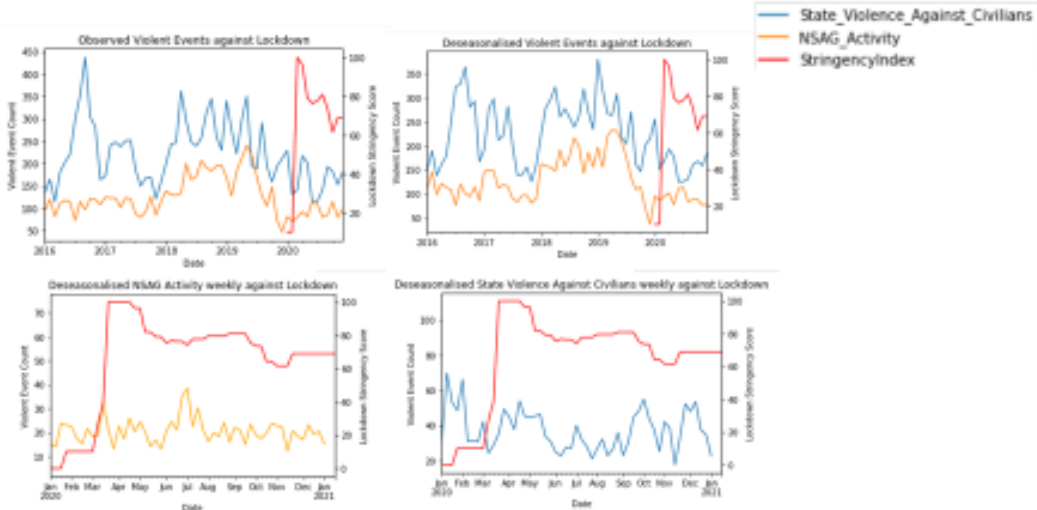$+ (\uparrow Stringency = \uparrow PV)$

$- (\uparrow Stringency = \downarrow PV)$

Country Results - India

Trends – Lockdown Stringency and Political Violence

Lockdown – PV correlation

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

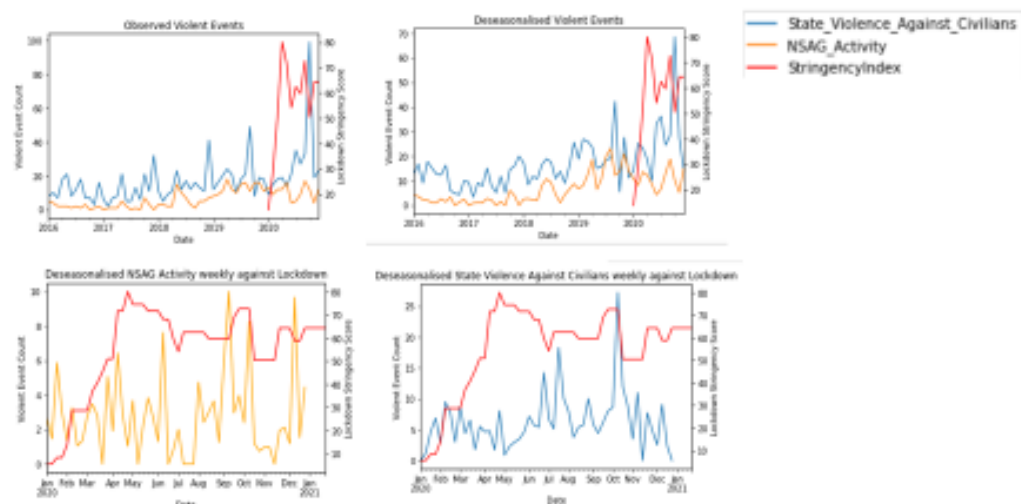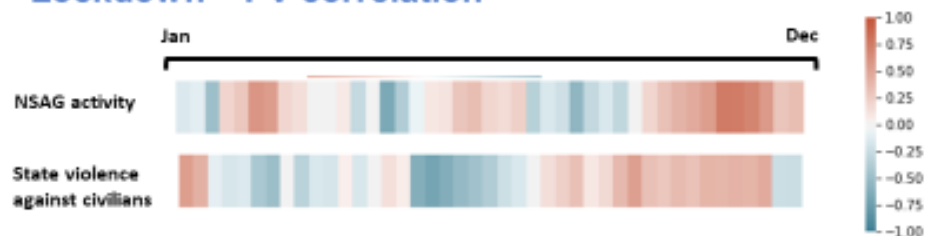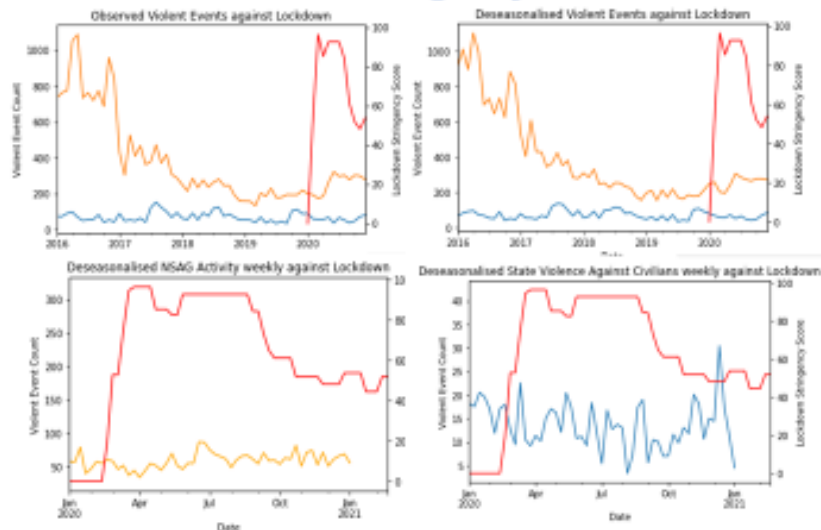| Significance Definitions |
|---|
| Strong = P-value <0.01 |
| Significance = P-value <0.05 |
| No significance = P-value >0.05 |

Country Results - Indonesia

Trends – Lockdown Stringency and Political Violence

Lockdown – PV correlation

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

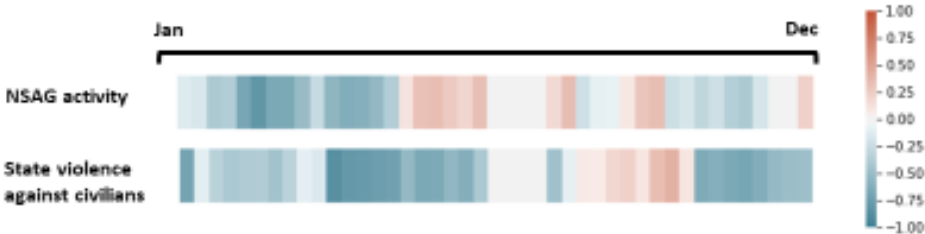| Significance Definitions |
|---|
| Strong = P-value <0.01 |
| Significance = P-value <0.05 |
| No significance = P-value >0.05 |

Country Results - Iraq

Trends – Lockdown Stringency and Political Violence

Granger Test

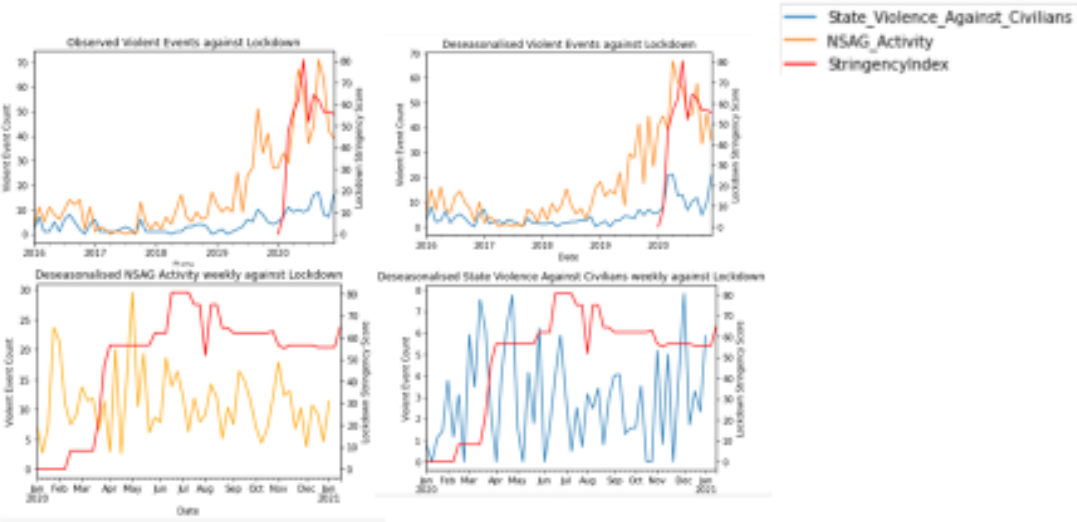| Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	Significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

Lockdown – PV correlation

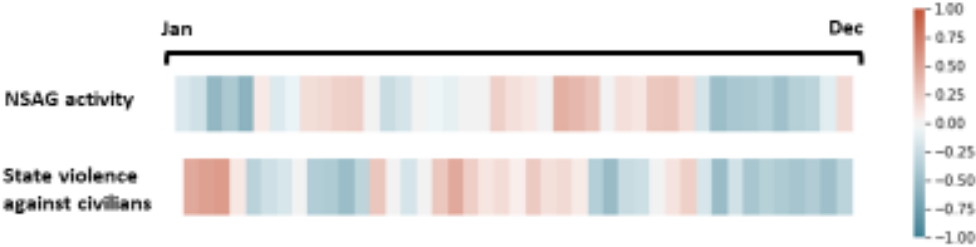| Significance Definitions |
|---|
| Strong = P-value <0.01 |
| Significance = P-value <0.05 |
| No significance = P-value >0.05 |

Country Results – Mozambique

Trends – Lockdown Stringency and Political Violence

Legend:
- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Observed Violent Events against Lockdown

Deseasonalised Violent Events against Lockdown

Deseasonalised NSAG Activity weekly against Lockdown

Deseasonalised State Violence Against Civilians weekly against Lockdown

Lockdown – PV correlation

Jan — Dec

NSAG activity

State violence against civilians

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

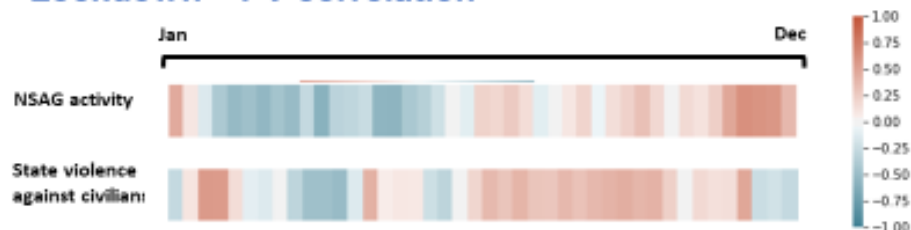| Significance Definitions |
|---|
| Strong = P-value <0.01 |
| Significance = P-value <0.05 |
| No significance = P-value >0.05 |

Country Results - Myanmar

Trends – Lockdown Stringency and Political Violence

Legend:
- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Lockdown – PV correlation

Granger Test

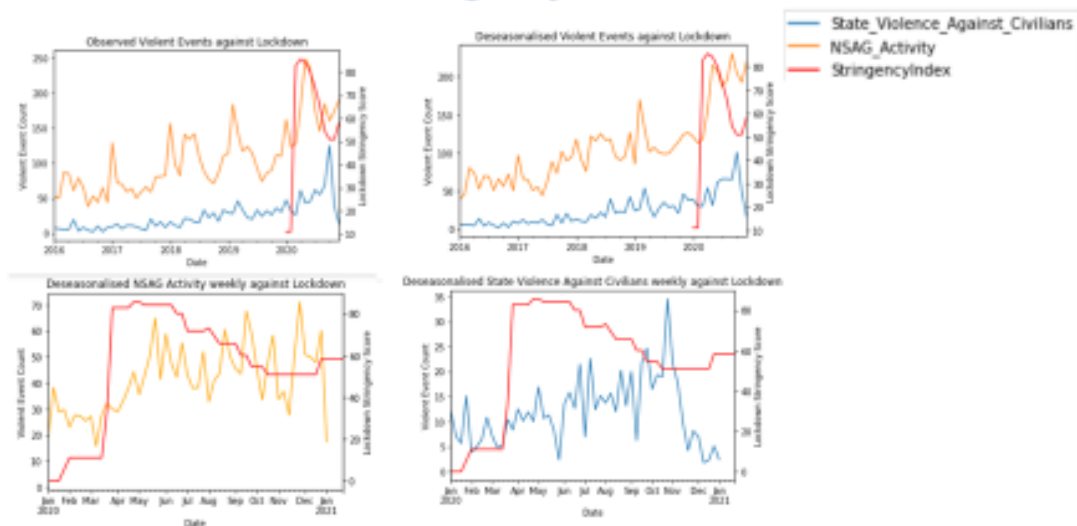| Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	Significant	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

Significance Definitions
Strong = P-value <0.01
Significance = P-value <0.05
No significance = P-value >0.05

Country Results – Nigeria

Trends – Lockdown Stringency and Political Violence
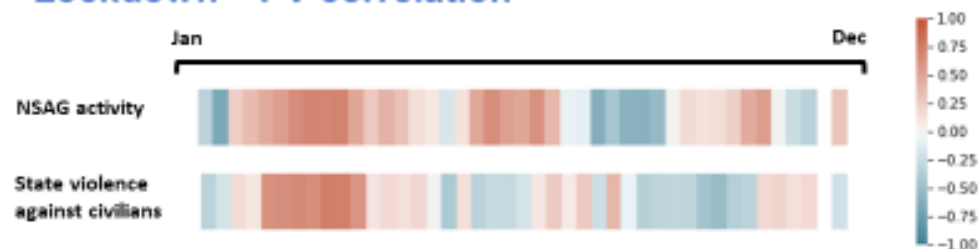
Legend:
- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Lockdown – PV correlation

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	Significance	Significance
2	Significance	No Significance
3	No Significance	No Significance
4	No Significance	No Significance
5	No Significance	No Significance
6	No Significance	No Significance
7	No Significance	No Significance
8	No Significance	No Significance
9	No Significance	No Significance
10	No Significance	No Significance

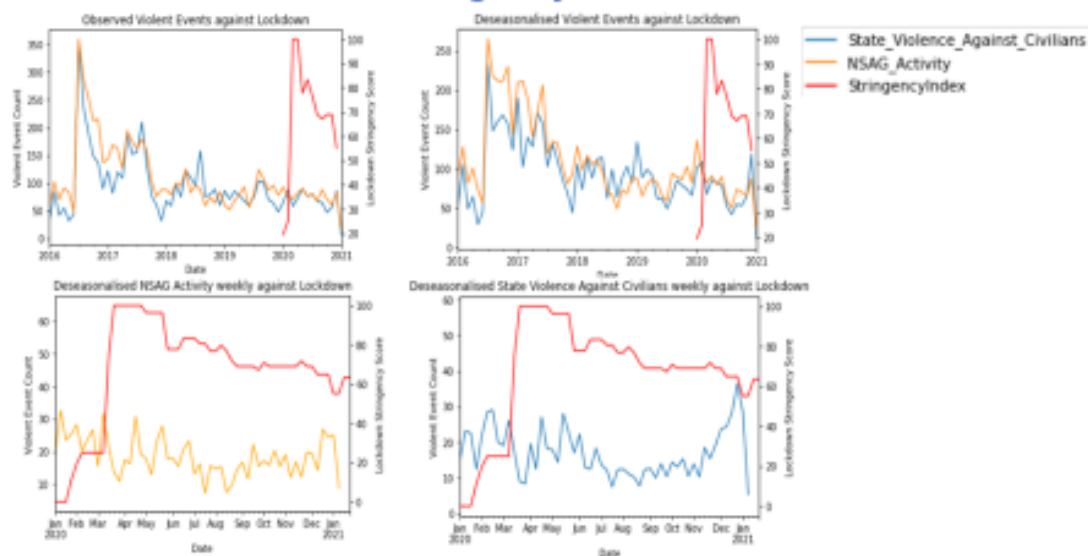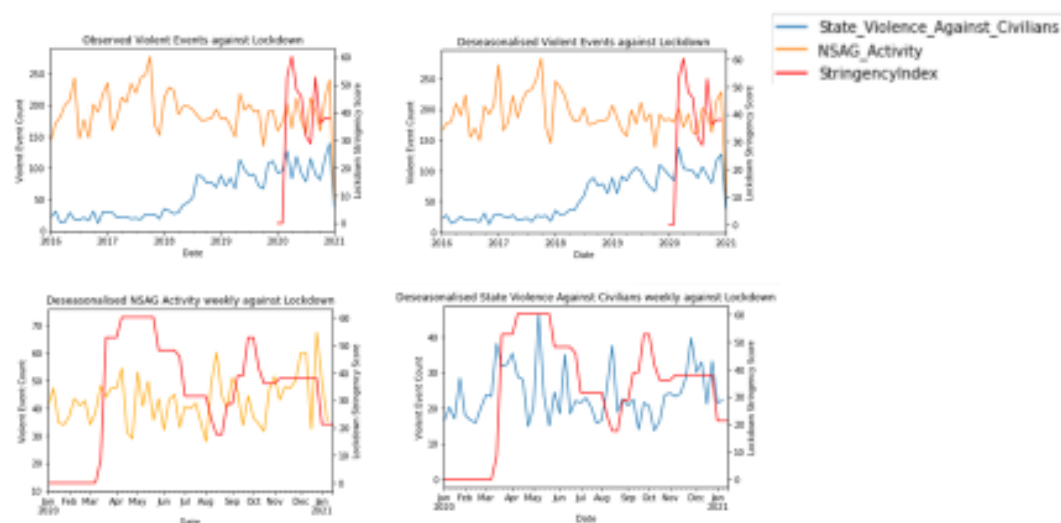| Significance Definitions |
|---|
| Strong = P-value <0.01 |
| Significance = P-value <0.05 |
| No significance = P-value >0.05 |

Country Results - Philippines

Trends – Lockdown Stringency and Political Violence

Lockdown – PV correlation

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	Significance	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	Significance
9	No significance	Significance
10	No significance	Strong Significance

Significance Definitions
Strong = P-value <0.01
Significance = P-value <0.05
No significance = P-value >0.05

Country Results - Somalia

Trends – Lockdown Stringency and Political Violence

Legend:
- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Lockdown – PV correlation

Granger Test

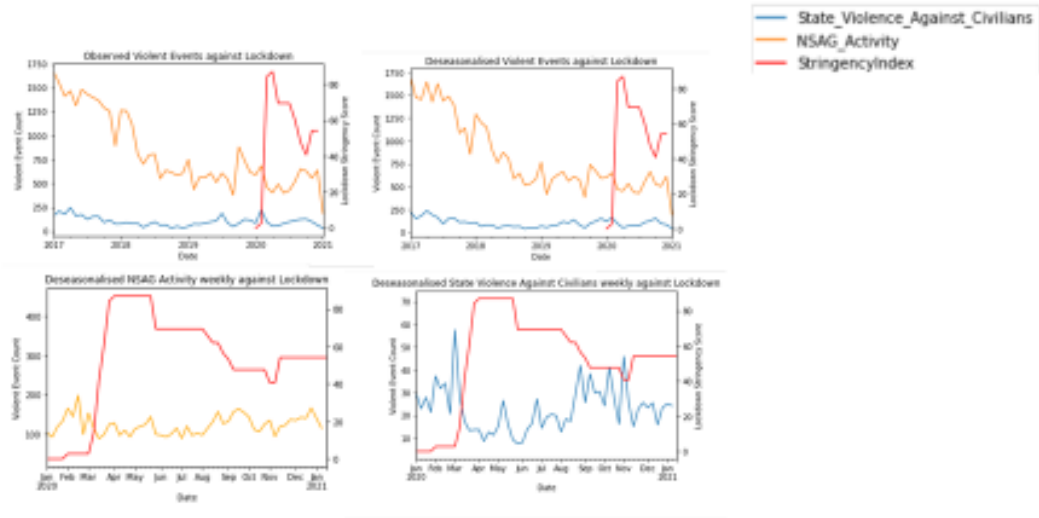| Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

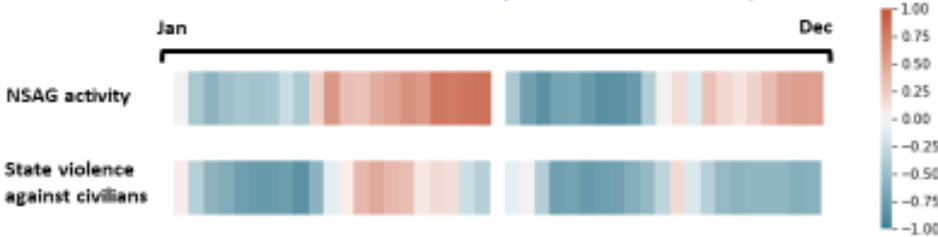| Significance Definitions |
|---|
| Strong = P-value <0.01 |
| Significance = P-value <0.05 |
| No significance = P-value >0.05 |

Country Results - Syria

Trends – Lockdown Stringency and Political Violence

Legend:
- State_Violence_Against_Civilians
- NSAG_Activity
- StringencyIndex

Lockdown – PV correlation (in same month)
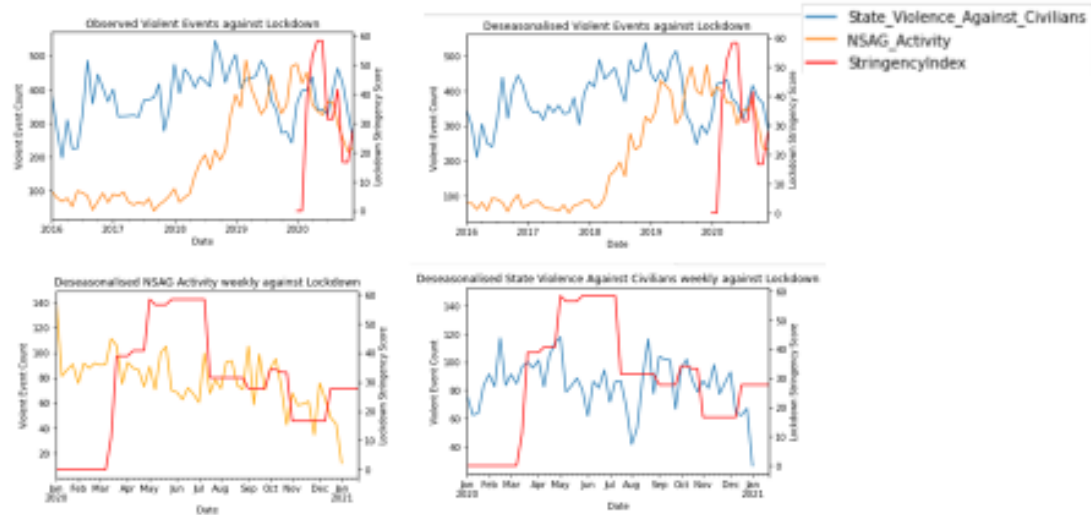

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	Significance
2	No significance	Significance
3	No significance	Significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	No significance
8	No significance	No significance
9	No significance	No significance
10	No significance	No significance

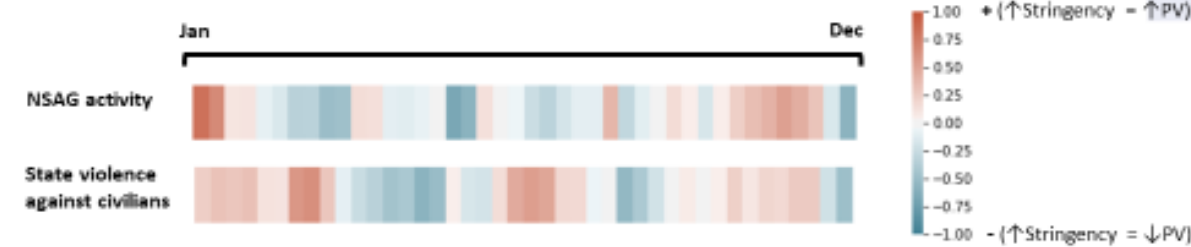### Significance Definitions

Strong = P-value <0.01
Significance = P-value <0.05
No significance = P-value >0.05

Country Results – Yemen

Trends – Lockdown Stringency and Political Violence

Observed Violent Events against Lockdown

Deseasonalised Violent Events against Lockdown

— State_Violence_Against_Civilians
— NSAG_Activity
— StringencyIndex

Deseasonalised NSAG Activity weekly against Lockdown

Deseasonalised State Violence Against Civilians weekly against Lockdown

Lockdown – PV correlation

Jan   Dec

NSAG activity

State violence against civilians

+ (↑Stringency = ↑PV)

- 1.00
- 0.75
- 0.50
- 0.25
- 0.00
- −0.25
- −0.50
- −0.75
- −1.00

- (↑Stringency = ↓PV)

Granger Test

Lags (weeks) from lockdown stringency change	NSAG activity change	State violence against citizens change
1	No significance	No significance
2	No significance	No significance
3	No significance	No significance
4	No significance	No significance
5	No significance	No significance
6	No significance	No significance
7	No significance	Strong Significance
8	No significance	Strong Significance
9	No significance	Strong Significance
10	No significance	Significance

Significance Definitions
Strong = P-value <0.01
Significance = P-value <0.05
No significance = P-value >0.05

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