

# Tracking Civic Space in Developing Countries with a High-Quality Corpus of Domestic Media and Transformer Models\*

Donald A. Moratz<sup>†,1,2</sup>      Jeremy Springman<sup>†,1,2</sup>      Erik Wibbels<sup>†,1,2</sup>  
Serkant Adiguzel<sup>3</sup>      Mateo Villamizar-Chaparro<sup>4</sup>      Zung-Ru Lin<sup>1</sup>  
Diego Romero<sup>5</sup>      Mahda Soltani<sup>6</sup>      Hanling Su<sup>1</sup>      Jitender Swami<sup>7</sup>

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Civic space - the fundamental freedoms necessary for citizens to influence politics - is under constant contestation. Despite the importance of day-to-day contestation over these rights, there is very little data allowing us to study the events and processes that constitute this struggle. We introduce new data that captures civic space activity across 65 developing countries from 2012 to 2024. Using an original corpus of over 120 million articles from nearly 350 high-quality domestic media outlets and 30 international and regional outlets, we use human-supervised web scraping and open-source computational tools to track monthly variation in media attention across 20 civic space events. Our approach yields three achievements: first, our corpus provides unprecedented coverage of reporting by developing country media outlets, addressing biases in other media event data; second, the resulting monthly event data set covers a wide range of new civic space activities; and third, we demonstrate the utility of this data for identifying and forecasting major political events and discuss applications for research on regime dynamics during a time of democratic backsliding.

<sup>†</sup> These authors contributed equally to this work.

<sup>1</sup> PDRI-DevLab, University of Pennsylvania

<sup>2</sup> Department of Political Science, University of Pennsylvania

<sup>3</sup> Sabanci University, Turkiye

<sup>4</sup> Universidad Católica del Uruguay, Uruguay

<sup>5</sup> University of Texas

<sup>6</sup> Stanford University

<sup>7</sup> Temple University

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## 1. Introduction

In 2016, 3.5 billion people lived under autocracy; by 2021, this number surged to over 5.4 billion (Boese-Schlosser et al. 2022). Concentrated in the global south, this “third wave of autocratization” is constricting civic space and limiting the ability of citizens to advocate for better governance (Lührmann and Lindberg 2019; Waldner and Lust 2018).<sup>1</sup> Nevertheless, citizens around the world continue to challenge these authoritarian movements.

Despite the importance of this day-to-day push-and-pull over political liberties and state control, data to study the events and processes that constitute this struggle is limited. Existing measures of civic space come largely from annual, expert-coded indicators classifying the nature of political regimes (Coppedge et al. 2023; U.S. Agency for International Development 2022; World Justice Project 2024). While these regime indices have opened-up new domains of research to rigorous investigation, they are not designed to provide insight into the quotidian politics where battles over civic space take place.

This article introduces the Machine Learning for Peace (*ML4P*) dataset, which provides monthly data on 20 civic space events across 65 developing countries from January 2012 through December 2024. *ML4P* measures civic space activity by capturing monthly variation in levels of media attention across 20 civic events, providing a dynamic view of where and when civic space events are happening and their level of political salience. *ML4P* represents a major advance in our ability to understand civic space dynamics by providing a higher-frequency measure of a broad range of events bearing on civic space.

*ML4P* is constructed from articles collected by the High-Quality Media from Aid Receiving Countries (*HQMARC*) corpus, an original collection of articles scraped from 348 prominent *domestic* media outlets based across our sample of 65 countries and publishing in 36 languages. We supplement these domestic outlets with content scraped from 12 regional and 15 global outlets (henceforth, we refer to the combination of regional and global outlets as “international”). In sharp contrast to many other sources of event data, more than 95% of the articles in *HQMARC* are scraped from domestic media outlets based in the countries covered by our dataset.

*HQMARC* employs a human-supervised, source-specific scraping methodology that prioritizes data quality and comprehensiveness over the broad but shallow coverage typical of automated web crawlers. This process proves particularly valuable for domestic news sources, whose websites are less stable than international outlets. Our efforts yield significant advantages over both “big data” media repositories like GDELT, Internet Archive, and Common Crawl and expensive commercial databases like Factive and LexisNexis, delivering a stable corpus composition with superior linguistic diversity and coverage of high-quality developing-country sources. However, *HQMARC*’s size and linguistic diversity makes human classification prohibitively expensive. To produce *ML4P*’s structured data on civic space events, we apply free, open-source computational tools to translate and extract information from each article, identifying the main event being reported on and the country in which the event occurs.

This paper proceeds in six parts. In the next section, we discuss how *ML4P* complements existing data on regimes and opens up new avenues for research. Thereafter, we describe the data production process and the advantages of our approach. We compare the coverage of *HQMARC* to other major

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<sup>1</sup>Following Brechenmacher and Carothers (2019), we define civic space as the fundamental freedoms that allow people to gather, communicate, and take part in groups to influence society and politics.

media repositories, showing superior accuracy and stability compared to alternatives. The following validation section presents results from exploratory analyses and validation exercises. First, we compare event coverage from international and regional sources to that of domestic sources, finding systematic differences in the types of events being covered and documenting the frequency with which significant events are ignored by non-domestic sources. Our findings have implications for event data that is generated from predominantly international or regional media outlets, a common practice in the social sciences. Second, we conduct an AI-assisted qualitative audit of major events detected across six developing countries. We confirm that events detected by *ML4P* correspond to real events in the world; this assesses *ML4P*'s ability to identify true positives. Finally, we assess false negatives by conducting a series of case studies to identify major political events in recent years, demonstrating that *ML4P* consistently captures these major events.

Thereafter, we provide a use case, documenting how civic space events are predictive of independently measured instances of severe political instability. We focus on predicting US State Department travel advisories, which capture a broad range of security, health, and civic threats, and show that several of *ML4P*'s measures of civic space contribution important substantive insights. The final two sections discuss limitations of *ML4P* and why, despite those limitations, it represents a valuable new resource with multiple applications for research on democratic backsliding, political accountability and contentious politics, media behavior, crisis response, and program evaluation.

## 2. Democratic Erosion, Annual Indices, and the Need for Civic Space Data

The “third wave of autocratization” has brought renewed attention to the study of regime type, political transitions, and democratic backsliding (Lührmann and Lindberg 2019). This attention has been accompanied by a proliferation of measures of regime type, including the Varieties of Democracy project (Coppedge et al. 2023), the Civil Society Organization Sustainability Index (U.S. Agency for International Development 2022) and the World Justice Project’s Rule of Law Index (World Justice Project 2024), among many others. These indices are designed to provide information about levels of democracy over time and space and to capture distinct features of regimes, ranging from freedom of the press, rule of law, the ease of civic organizing and beyond. Though VDEM, in particular, has helped make annual indices more rigorous, they are not designed to provide insight into the quotidian politics where battles over civic space take place.

Ultimately, these annual changes in the nature of regimes are the result of specific actions and events occurring at specific moments in time. Existing measures attempt to capture the cumulative impact of these actions and events over 12-month periods. Our project complements those efforts by tracking the events – often occurring over days or weeks – that contribute to broad, prolonged processes of changes captured by annual indices. Take, for instance, Hungary’s systematic dismantling of democratic institutions since 2010. Each stage of this process involved a host of important events: the 2010 media law that brought most outlets under government control, the 2011 constitutional changes that packed the Constitutional Court, the 2012 electoral law that gerrymandered districts, the 2017 targeting of Central European University, and the 2018 “Stop Soros” laws criminalizing aid to asylum seekers. While each of these individual events was meaningful for Hungary’s democratic trajectory, annual democracy indices smooth over these discrete moments of institutional change, obscuring the specific mechanisms and timing through which democratic

backsliding has occurred. *ML4P* is designed to shift analytical focus toward the fast-paced civic space events underlying broader changes in political regimes.

Several existing event data projects produce high-quality data bearing on civic space. Among the most notable are the Armed Conflict Location Event Data Project (ACLED; Raleigh et al. (2010)), the Uppsala Conflict Data Project Georeferenced Event Dataset (UCDP GED; Sundberg and Melander (2013)), the Political Event Classification, Attributes, and Types (POLECAT; Halterman et al. (2023)) dataset (formerly the Integrated Crisis Early Warning System dataset; Boschee, Natarajan, and Weischedel (2012)), and the Global Database of Events, Language, and Tone (GDELT; Leetaru and Schrodt (2013)). While each of these datasets have advanced social science research, each is limited in their ability to drive research on civic space.

ACLED and UCDP are focused on violence and protest, and thus cover only a modest, contentious slice of struggles over civic space. Neither covers the legal changes, civic activism, press restrictions, corruption or election irregularities that regularly rock civil society. Alternatively, GDELT relies on the Conflict and Mediation Event Observations (CAMEO) coding ontology and covers a broad range of events, but it focuses on inter-state disputes and strategic interactions (P. A. Schrodt, Gerner, and Yilmaz 2012), classifies events using a complex, rigid system, and relies on limited and often dated actor dictionaries. POLECAT, on the other hand, relies on the powerful, flexible PLOVER ontology, but it too is designed largely to capture inter-state and strategic international interactions (Halterman et al. 2023).

*ML4P* is the first event data source focused specifically on events that bear on civic space. While we have a rich body of theory about ‘regimes’, the literature on ‘civic space’ and ‘civil society’ is spread across varied bodies of work on protest, social capital, legal studies, and election studies. Our solution is to collect data on a broad range of events that expand, contract, or contest civic space. In consultation with academic research and policy practitioners, we define 20 civic space event types, ranging from political arrests and censorship to corruption, legal actions, and legal changes (see Table 1 for a complete list of event categories). We also code articles reporting on disasters and election activity, given the propensity of aspiring autocrats to use these events as justification for restricting civil society. While some of the events we cover, such as protests and lethal violence, are subject to systematic data collection elsewhere, *ML4P* produces the first systematic data on most of the event types.

Together, these event types provide a rich picture of the monthly contest over civic space and offer the potential for new research on regime dynamics. By capturing 20 distinct civic space events at monthly frequency across 65 countries, *ML4P* enables researchers to study both the outcomes of democratic backsliding in new detail and the specific mechanisms and temporal dynamics through which regimes change. Broad academic applications aside, our approach also allows researchers to measure the salience of different kinds of events in domestic media and is flexible enough to quickly apply future changes to coding criteria and/or add entirely new event types to the entire corpus.

### 3. Constructing *ML4P*

Social scientists rely heavily on media reports to produce event data (P. Schrodt and Yonamine 2013). While the shortcomings of this approach are well documented (Daphi et al. 2025; Earl et al. 2004), monitoring media reports remains the best means available to track the occurrence of many events across a wide range of national contexts. Evidence suggests that access to traditional

media effectively increases citizen knowledge of major events and government behavior, even in repressive political environments (Besley and Burgess 2002; Arendt 2024). While platforms like radio and social media are important, they often rely on content originally produced by traditional news outlets (Quartey et al. 2023; Study of Journalism 2019), which are generally more trusted (Fotopoulos 2023; Bridges 2019) and provide more comprehensive coverage of political events (Lee, Diehl, and Valenzuela 2022; Schäfer and Schemer 2024).

Historically, efforts to create event data from media have faced two persistent challenges. First, extracting information from unstructured text has traditionally required human coders fluent in the relevant languages, which limited the volume of material that could be processed and often introduced lags between an event’s occurrence and its inclusion in datasets. This manual approach also made it expensive to revise category definitions or coding procedures in a way that maintains backward compatibility of the data (ACLED 2023). To maintain backward compatibility, any significant changes to what or how information is extracted from text would require a human to re-code every previously classified article. Fortunately, recent advances in machine learning have made it possible to automate coding quickly and cheaply while maintaining accuracy. While the debate around the relative accuracy of human and machine coding are ongoing, many teams have reported accuracy levels that rival or exceed that of humans across diverse domains Mueller and Rauh (2018).

Second, reliable repositories of high-quality media reports are surprisingly difficult to create and remain extremely rare. Many prominent political event datasets rely heavily on data sourced from international and regional rather than country-specific domestic sources, which is reflected in their limited linguistic diversity (Raleigh, Kishi, and Linke 2023). Furthermore, this sourcing is often done by private media aggregators, such as Factiva and LexisNexis, that provide limited information about how they select sources, collect data, or identify which news articles are politically relevant. For example, POLECAT uses Factiva to source politically relevant news stories from over 1,000 sources, but these sources publish in only seven languages and there is no human curation of which sources to include (Haltermann et al. 2023). Similarly, our analysis of all sources available from the Lexis Nexis University archive shows that for six *ML4P* countries, Lexis Nexis has zero local sources, and across the *ML4P* countries where Lexis Nexis has at least one local source, their sources publish in 17 languages compared to *ML4P*’s 34. As we show in Section 6, the relative emphasis on different types of events covered by international and regional outlets is systematically different than that of domestic outlets when reporting on the same country.

Alternatively, “big data” media repositories like GDELT, Internet Archive, and Common Crawl use automated crawlers to collect news articles from huge numbers of sources with impressive linguistic diversity, but fail to achieve comprehensive or consistent capture from many of the most important news sources. For example, while GDELT sources data by crawling a massive number of sources publishing in more than 100 languages, this approach means that the list of sources they pull from changes constantly and new sources are included without human oversight (Raleigh, Kishi, and Linke 2023). In Section , we show that the large-scale, indiscriminate crawling by GDELT, Internet Archive, and Common Crawl all capture only a fraction of the total articles being published by most sources. Even when these disparate big data corpora are combined, the coverage of prominent, high-quality domestic outlets in developing countries is extremely sparse. We further document that, due to their use of general scrapers and parsers to extract article metadata, these repositories are plagued by widespread inaccuracies in critical fields, such as the date on which articles are published.

ACLED stands alone in maintaining human review of sources while achieving broad coverage, employing more than 200 local human researchers to monitor more than 13,600 sources in over 100 languages. However, they rely on humans to manually monitor each source and pick-out reporting on relevant events. Given the huge volume of sources and the relatively small number of humans, it is likely that many of the articles published by these sources are never reviewed by ACLED’s coders. Alternatively, UCDP does not provide specific information about the number of sources or languages they publish in, but they rely primarily on human monitoring of news collected by media aggregators such as Lexis Nexis (Raleigh, Kishi, and Linke 2023).

Importantly, none of these datasets or media repositories allow researchers to understand how coverage of events relate to the broader media environment. This is an important limitation because dynamics in media salience are directly tied to citizen beliefs and attitudes (Djerf-Pierre, Shehata, and Johansson 2025). Projects that source relevant articles from media aggregators (POLECAT, UGDP) and those that rely on human monitoring of news (ACLED) do not document or retain articles that are *not* relevant to their particular coding interest. For example, projects that code violent events do not provide insight into the salience of any particular event relative to other things going on in a country. Similarly, the crawler-based big data repositories rarely capture all articles published by the sources they crawl. Consequently, researchers cannot calculate how much attention source devote to coverage of any particular event relative to other events and topics in the news.<sup>2</sup>

While the vastness of the crawler-based repositories are appealing for researchers looking to report large samples and broad coverage, they also add and drop sources indiscriminately. Adding or dropping sources introduces the possibility that trends in the volume of reporting dedicated to specific events are artifacts of changes in source material rather than true changes in the frequency or salience of these events. Private media aggregators also face this challenge due to frequent and erratic changes in licensing agreements that researchers can rarely account for when reporting an increase in the number or salience of events reported over time. ACLED acknowledges this challenge in their methodology, requiring that new sources are only added when resources are available to have humans scour the source’s historical archives and code events for the entire time period over which ACLED’s existing sources have been coded.<sup>3</sup>

To address these issues, *ML4P* combines recent advances in automated text analysis with *HQMARC*’s curated corpus of news scraped directed from high-quality domestic outlets. The core of *HQMARC*’s approach is to identify a curated list of critical domestic sources for each country and then design a customized harvesting workflow that can achieve comprehensive capture of everything published by those sources. This targeted “medium data” approach enables comprehensive capture from each source, allowing researchers to calculate the share of all articles published by a given source that were covering a specific type of event. Critically, *HQMARC*’s human-supervised scraping results in a corpus with a more stable, well-understood composition than the widely-used alternatives. As a result, this corpus can be used to measure the salience of topics or events in a source’s coverage at any given moment.

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<sup>2</sup>Crawler-based repositories also leave researchers blind about why some articles published by a specific source are captured while other articles are not.

<sup>3</sup>ACLED’s documentation notes that “... the addition of such a source in an ad hoc fashion risks the integrity of historical trends as it will introduce an ‘artificial spike’ in the data. This refers to the phenomenon where if that same source was first back-coded before being introduced into the data, the ‘spike’ that its inclusion introduces in the data would be gone (or minimized) — suggesting that the spike does not reflect a ‘true spike’ in disorder on the ground” (ACLED 2023).

This process ensures that we capture a broad range of high-quality media from countries that often go underreported in the international press. The result is a highly flexible research infrastructure that balances breadth of coverage, source quality, and processing scalability. Figure 1 provides a graphic representation of the *ML4P* data production pipeline. In the remainder of this section, we describe each step in the pipeline.

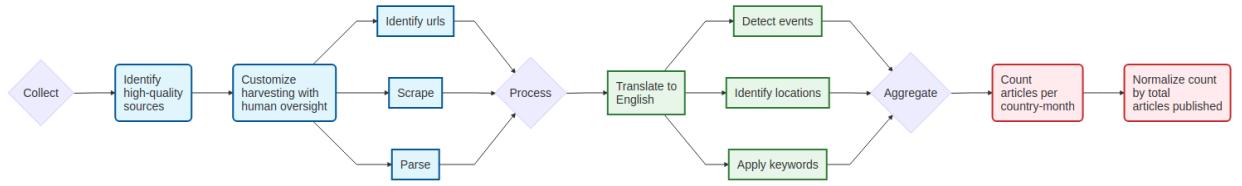


Figure 1: ML4P data production pipeline. Blue nodes capture steps in the construction of the *HQMARC* media corpus. Green and Red notes capture the data processing and aggregation steps, respectively, in the construction of the *ML4P* event data.

## Building the *HQMARC* Corpus

*ML4P* is constructed by processing articles from the *HQMARC* corpus. A key advantage of *HQMARC* is its unprecedented accuracy and granularity in capturing the publication history of critical domestic media outlets. To overcome the composition challenges discussed above, we developed a data-collection infrastructure designed to (1) comprehensively capture local sources’ full publication history and (2) maintain accurate metadata. This process involves three main steps:

1. **Identify High-Quality Local News Sources:** We begin by compiling a list of local news sources with machine-scrapable websites. We consult publicly available directories of each country’s media market (e.g., university library guides, Reporters Without Borders) as well as partners working in international NGOs, USAID country offices, and local civil society organizations to identify reputable publications that produce and publish original news content. We conduct a detailed desk review of each source’s partisan affiliation by consulting reports on media ownership and press freedom in the outlet’s country (see Appendix A Section 4). In very repressive countries, we occasionally include newspapers based outside their home countries if they remain a leading voice on domestic affairs. For example, we include *El Faro*, a Salvadoran independent media outlet that relocated its headquarters to Costa Rica due to government persecution.

From this initial list, we select newspapers whose online archives extend as far back as possible, preferably to 2012. We aim for at least 3–5 local sources per country, collectively yielding several thousand articles per month. In cases where a source’s publication volume declines drastically or ceases entirely, we follow standardized replacement procedures. We then supplement these local outlets with articles from international and regional sources to ensure comprehensive coverage.

2. **URL Discovery:** Second, we identify urls for all articles published by a source by looking for a structured entry-point. Typically, this is a public sitemap. If the sitemap is incomplete or missing, we switch to site-specific search strategies (pagination through section indexes,

keyword queries, RSS feeds, etc.). Only when those programmatic methods fail do we fall back on more intensive tools, such as simulated infinite clicking/scrolling with Selenium. Even in these cases, the goal is to retrieve clean article links, not to crawl arbitrary pages. In order to avoid storing the same article multiple times, we de-duplicate based on URL and title similarity for articles published in the same month.

3. **Develop Custom Scrapers and Parsers:** Next, we create tailored scrapers and parsers for each website’s unique structure and publishing practices. These tools can bypass common barriers such as robot blockers (e.g., Cloudflare), which affect roughly 15% of our sources. By designing source-specific scrapers, we minimize data loss and ensure accurate capture of critical metadata (e.g., publication date, author, section).
4. **Monitor and Update Quarterly:** Finally, we evaluate scraper and parser performance every 90 days, adapting to changes in website architecture or operational status. This regular monitoring helps us detect when a source reduces its publication frequency, alters its website architecture, or shuts down entirely.

Appendix A provides comprehensive documentation of the media sources and linguistic diversity underlying the *HQMARC* corpus. Section 1 documents the geographic distribution of domestic and regional media outlets across our sample, presenting visualizations of source counts by country and temporal patterns of source activity over the 2012-2024 period. Section 2 catalogs the linguistic diversity of the corpus, documenting the languages published by media outlets in each country using ISO language codes. Section 3 provides the complete inventory of digital news sources included in *HQMARC* by country, offering full transparency about the specific media outlets that comprise our dataset.

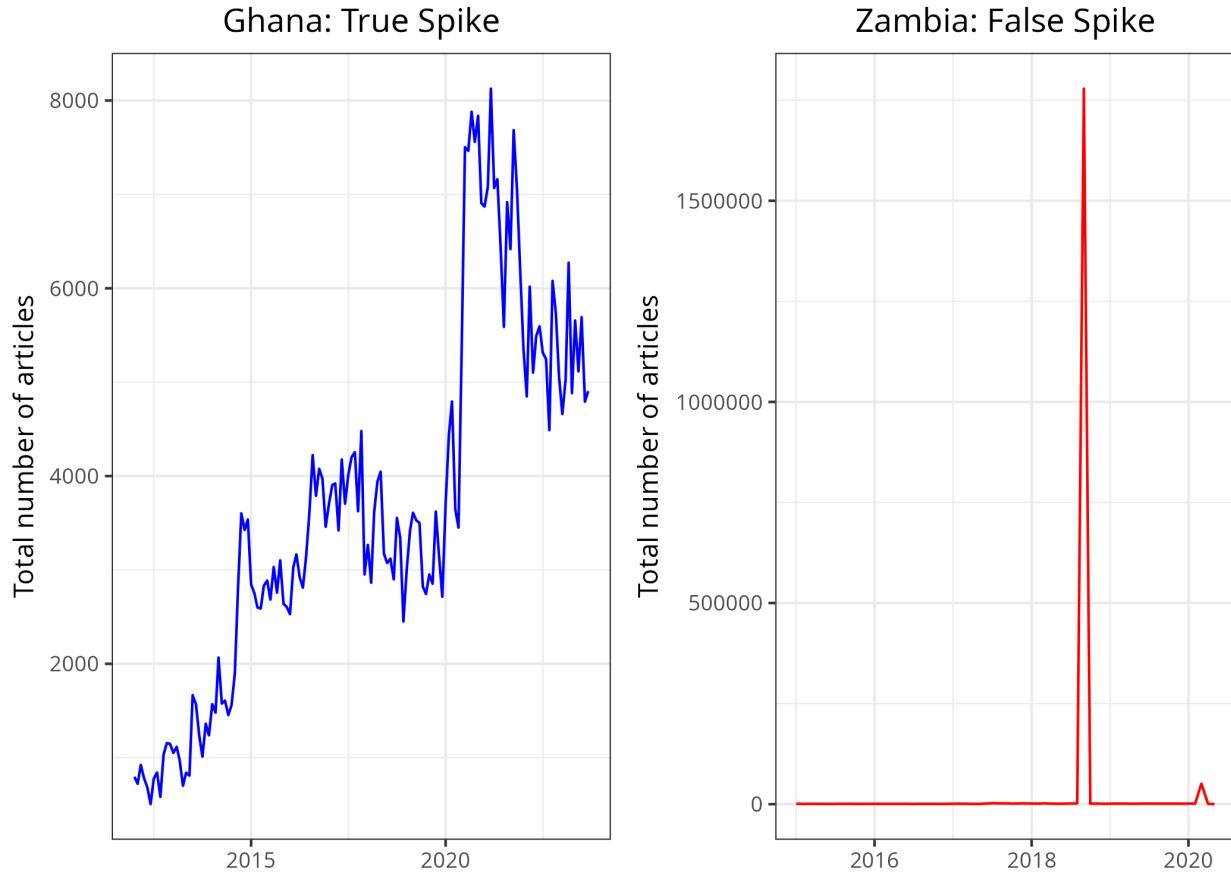
To demonstrate the importance of our custom harvesting workflows, we conduct a case study comparing *HQMARC*’s coverage with that of several “big data” media corpora, demonstrating that *HQMARC* captures a significantly larger share of articles from high-quality domestic news outlets. We then demonstrate the pitfalls of relying on generalized scraping and parsing tools without human oversight, showing how our customized harvesting workflow with human oversight mitigates data-reliability issues that affect automated mass crawlers.

To demonstrate that relying on crawler-based big data archives results in poor coverage from critical sources in developing countries, we compare *HQMARC*’s coverage of three prominent Bangladeshi news outlets to that of GDELT and Internet Archive. We focused our case study on Bangladesh for three reasons. First, Bangladeshi outlets publish a high volume of articles relative to other countries, making them more likely to attract and be captured by automated crawlers. Second, the website architecture for each outlet is relatively straightforward, maximizing the likelihood that crawlers, combined with generalized scrapers and parsers, should be able to accurately retrieve articles. Website architecture varies widely across sources. For Bangladeshi outlets, relatively minimal customization was necessary for *HQMARC*’s scrapers and parsers, implying that general, large-scale crawlers should achieve good coverage. Third, many Bangladeshi sources publish primarily in English, reducing the additional hurdles of multilingual parsing. As a result, we regard these outlets as a “best-case scenario” for large-scale media repositories.

Despite favorable conditions, we find notable differences between the results achieved by *HQMARC*’s curated approach and those of GDELT and Internet Archive. *HQMARC*’s coverage begins in 2013 for one source and in 2015 for the other two. However, GDELT does not have any articles published before 2019 for any of the three sources. Even within the overlapping years beginning

2019, GDELT captured many fewer articles than *HQMARC*. For the source with the smallest disparity between *HQMARC* and GDELT, GDELT retrieves an average of 2,100 articles per month, compared to 2,500 in *HQMARC*. GDELT also includes numerous broken links, redirects, duplicate articles, and advertisements that were flagged by *HQMARC*'s human review and removed. In addition, GDELT enforces a five-second delay per query, making it extremely time-consuming to scrape a full historical archive of this size. Across these three sources, Internet Archive achieved coverage similar to that of *HQMARC*, but more than half of these urls were broken and no longer pointed to the a webpage that contained the article text. Furthermore, collecting URLs from Internet Archive for 2019–2023 required roughly two weeks from a single source and returned many irrelevant and duplicate links not contained in *HQMARC*.

Yet the advantages of *HQMARC* extend beyond coverage. Once urls are collected, information must be extracted from these urls with scrapers and parsers. When scraping many thousands of sources, big data media repositories must rely on generalized scraping and parsing tools without human oversight. **?@fig-true\_false\_spike** highlights one of the many ways that this can introduce errors and the necessity of human oversight in mitigating data-reliability issues. When scraping articles without human oversight, we see a large spike in the volume of articles being published by major outlets in Ghana and Zambia. On the left, this spike captures a genuine increase in articles published by [ghanaweb.com](http://ghanaweb.com) (Ghana), which was triggered by a grant from Google that enabled the outlet to expand its reporting capacity. On the right, we see an artificial spike in the number of articles published by [lusakatimes.com](http://lusakatimes.com) (Zambia) driven by a single article being hosted at more than 1.5 million *unique* urls on the source's website, making the duplication difficult to detect. In both cases, we noticed a suspicious spike in publication volume and investigated the cause. Our human-in-the-loop approach effectively guards against such errors, enhancing the overall reliability and quality of *HQMARC*. Importantly, such errors can be caused by a wide range of scraping and parsing failures, including dates that are incorrectly formatted or incorrect dates or other tags accidentally embedded in an articles html.



## ## Capturing Civic Space Events in ML4P

To generate the *ML4P* data tracking civic space events, we use open-source computation tools to extract and classify the text of articles stored in the *HQMARC* corpus. We describe each step in this process, including translating article text, identifying the primary locations, classifying articles into relevant events, ensuring the political relevance of events, measuring the salience of events at the country-month level, and detecting months with high levels of activity across event-types.

### Translating Non-English Text

It is well-documented that reporting by international and regional media outlets on political events in developing countries contains significant biases that can affect data quality (Baum and Zhukov 2015), even when covering relatively uncontroversial topics like natural disasters (Brimicombe 2022). To address this, *HQMARC* focuses on collecting data from a curated list of 348 prominent *domestic* media outlets publishing in 36 languages. In fact, more than 95% of the articles in *HQMARC* are scraped from domestic media outlets based in the countries covered by our dataset.

After scraping the text of each article, we translate the first 600 characters of all non-English articles into English using neural machine translations (NMT) through Hugging Face or OpenNMT.<sup>4</sup>. To

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<sup>4</sup>While multilingual transformer models capable of classifying events directly in multiple languages exist, these models are not currently able to support the diversity of languages present in *HQMARC*. However, once more capable open-source models become available, *ML4P*'s flexible infrastructure will allow us to quickly apply these models to the entire *HQMARC* corpus.

select a translation model, we test the efficacy of all models by extracting sample text from articles published in each language and running the text through all available translation models on the Hugging Face open database. We then assess whether the translations are sufficiently clear to identify the main event being reported on. If multiple models produce satisfactory results, we select the model that yields the clearest sentence-to-sentence translations, comparing results to that of Google translate to assess whether there is a significant loss of contextual detail. In rare cases, we test commercial translation services accessible through the `deep-translator` Python package. For every language in our corpus, we were able to find translation models that generate translations clear enough for humans and our event classifier to identify the key event being reported.<sup>5</sup>

## Identifying Locations

Both international and domestic outlets report on events taking place across a broad range of countries. To ensure that the events we capture events in the country of interest, we identify all locations mentioned in the first 600 characters of text. If no country is found in the text, we assign the article to the country in which the publishing outlet is based. For international and regional outlets, articles are only assigned to a country if they explicitly mention a location within that country in the first 600 characters.

To locate events and identify those happening within a target country, we use the CLIFF-CLAVIN geoparser<sup>6</sup> with the GeoNames ontological gazetteer to identify geographic entities (e.g., states, cities, towns) mentioned in the text. CLIFF-CLAVIN integrates the [GeoNames](#) database, which is a free, online directory containing over 12 million place names across 250 countries (D'Ignazio et al. 2014). GeoNames is one of the most comprehensive and actively maintained sources of geographic data, making it an ideal reference for matching entity mentions to specific global coordinates. For each location, we use the CLIFF API to retrieve the location's country code and assign the article to that country. We implement several corrections to the underlying CLIFF system, including overriding an error that assigns mentions of "West Africa" to Angola and the assignment of "Gaza" to locations named "Ghaza" in Algeria and Pakistan.

## Classifying Civic Space Events

To identify articles reporting on one of our 20 civic space event categories, we fine-tuned an open source, transformer-based RoBERTa language model (Liu et al. 2019).<sup>7</sup> To fine-tune the model, we constructed a double human-coded training dataset consisting of 6,475 newspaper articles (4,982 reporting on one of our 20 events and 1,493 reporting on irrelevant events) originally published in both English and non-English languages. As reported in Table 1 average out-of-sample classification accuracy is 82%,<sup>8</sup> with many misses coming from the presence of multiple events in a single article or from partially overlapping event categories. Column-specific metrics (precision, recall, F1) are

<sup>5</sup>Tetum is the only language for which we could not initially find an acceptable translation model. After waiting several months, an open-source model became available.

<sup>6</sup>For technical details on CLIFF, see: [CLIFF Annotator](#)

<sup>7</sup>Recent research has shown that costly, closed-source LLMs only perform moderately better at even complicated tasks relative to models like RoBERTa, and usually require more costly fine-tuning [@deandrade2024]. Moreover, RoBERTa performs well for most common applications in Political Science [@timoneda2024roberta].

<sup>8</sup>This is comparable to intercoder reliability. During model training, we adopted an iterative approach: after each training round, we gathered new examples for categories with lower accuracy, retrained the model, and repeated until performance stabilized.

provided for each event category. See Appendix B Section 1 for a definition and examples for each event category. To reduce noise associated with background and contextual content, we apply this classification to the article title and first 600 characters of main text.<sup>9</sup>

Table 1: Performance metrics for fine-tuned RoBERTa classification model. -999

Event Category	Precision	Recall	F1
<b>Arrest</b>	0.91	0.88	0.89
<b>Protest</b>	0.85	0.98	0.91
<b>Legal action</b>	0.77	0.75	0.76
<b>Disaster</b>	0.87	0.86	0.86
<b>Censor</b>	0.76	0.95	0.84
<b>Election activity</b>	0.78	0.84	0.81
<b>Election irregularities</b>	0.72	0.68	0.70
<b>Activism</b>	0.95	0.83	0.88
<b>State of Emergency</b>	0.92	0.90	0.91
<b>Cooperate</b>	0.50	0.67	0.57
<b>Coup</b>	0.68	0.83	0.75
<b>Non-lethal violence</b>	0.79	0.81	0.80
<b>Lethal violence</b>	0.90	0.82	0.86
<b>Corruption</b>	0.74	0.71	0.73
<b>Legal change</b>	0.84	0.80	0.82
<b>Security mobilization</b>	0.83	0.77	0.80
<b>Purge</b>	0.91	0.86	0.88
<b>Threats</b>	1.00	0.78	0.88
<b>Raid</b>	1.00	0.83	0.91
<b>Irrelevant events</b>	0.81	0.79	0.80

To address articles containing multiple overlapping events, we permit dual classifications for a small number of event types. For example, events such as corruption often occur concurrently with arrests or legal proceedings. For several categories, we further apply a targeted keyword filter to eliminate common false-positives. See Appendix B Section 2 for a description of keyword filtering used during classification.

### Distinguishing Politically Relevant Events

In addition to our event classification model, we deploy an additional classifier to exclude articles reporting on events that match one of our event categories but are not politically or socially relevant. For example, our ‘Arrest’ category seeks to identify politically relevant arrests, such as the arrest of a politically relevant figure. However, our first model also classifies articles reporting on arrests for apolitical criminal activity that do not meet our category definition. We built this political relevance classifier using transfer learning from our fine-tuned RoBERTa model and fine-tuned it using a double human-coded training dataset of 2,938 articles; the model achieves an overall

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<sup>9</sup>Typically, this corresponds to the article title plus the first 2-3 sentences of text. Extensive testing suggests that providing addition text from articles decreases classifier performance by including irrelevant contextual information that reduces the model’s ability to identify the main event.

accuracy of 0.87. For each article the main classifier flags as an event, this secondary model provides a binary (0/1) output indicating its civic relevance.

## Measuring Event Salience

Finally, we aggregate these data to the country-month level, normalizing the count of articles reporting on each event by the total number of articles published in that country-month. The final *ML4P* measures correspond to the monthly share of all news reporting on a country that cover each *ML4P* event category. Importantly, this is made possible by *HQMARC*'s custom scraping to capture outlets' full publication history, which allows us to measure the true number of articles published by each source. This ratio tells us how frequently each *ML4P* event type is reported on relative to the total volume of news in a given month. While this method does not directly code individual *ML4P* events, since important events receive coverage in many articles, it does provide information on the *relative importance* of each event-category in a given month. This approach also enhances the ability to assess trends over time by avoiding the risk that increases or decreases in our raw event counts are artifacts of changes in the volume of overall reporting driven by sources entering or leaving the *HQMARC* database or changes in the publication volume of sources over time (ACLED 2023).

## Detecting Major Event Shocks

We supplement the measures described above by identifying months in which major civic space events occurred. To detect months with major events, we developed an ensemble algorithm to detect sharp increases in the share of reporting dedicated to each event category. We refer to these sharp increases as *shocks*.

Our approach begins with winsorization of the data, which curbs the influence of extreme outliers by replacing values beyond a specified percentile threshold with the nearest boundary value. Next, we apply a 25-month rolling window to smooth the normalized event counts and perform a grid search to tune various parameters. These include the multipliers for weighted means and weighted standard deviations, as well as the binning weights and decay functions that govern how observations in the window are weighted. To capture shocks accurately, we employ two distinct weighting schemes for the historical (left-hand side, LHS) and future (right-hand side, RHS) segments of the rolling window. For the LHS window, we use a non-linear decay weighting that places progressively less emphasis on more distant historical months, enabling the detection of rapid changes in recent data. For the RHS window, we apply binning weights that decay linearly over time, preventing overestimation of peaks when the underlying data structure shifts. Combining winsorization with context-sensitive decay and binning weights enables monthly detection of significant increases in each civic space event type.

Next, we trained a neural network model to detect spikes in a human-labeled dataset covering the full time-series for 30 country-event pairs. We conducted human-labeling by asking humans to identify months with visually distinct, sharp increases in our event measures. Human labelers were instructed to identify no more than 15% of overall months as shocks, ensuring that peaks are not overly frequent in highly variable data while still capturing meaningful shifts in lower-variance event types. When either the statistical or neural network model detect a shock, we label that month as a shock in the data.

## 4. Data Description and Validation

In this section, we present the data, show the importance of *HQMARC*'s reliance on domestic news sources for a rich portrayal of civic activity in countries, and results from two data validation exercises. Figure 2 and Figure 3 show cross-national variation in the data across four annual snapshots. Figure 2 measures the share of all articles classified as one of our 20 civic space events across four years. For example, the share of Ukraine's coverage dedicated to civic space events jumped from 10% in 2012 to 30% in 2024,. Complementing this, Figure 3 examines the most frequently reported-on civic space event type across countries. Several temporal shifts are evident: in 2020, Natural Disasters dominated coverage in most coverage, driven by coverage of COVID-19, while in 2024, several countries with high-profile national elections see Election Activity coverage dominate. Maps showing annual averages for all years in the data appear in Appendix C.

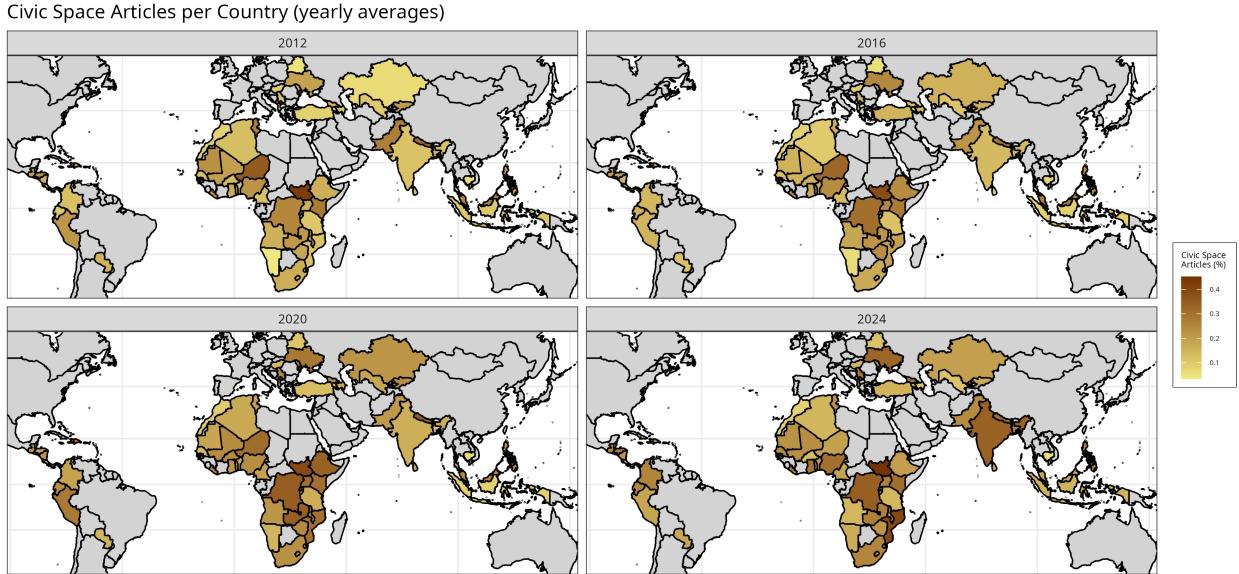


Figure 2: Civic space articles as percentage of total coverage by country-year for 2012, 2016, 2020, 2024. Countries are colored according to the proportion of their total news coverage dedicated to civic space events. Darker values show larger percentages, revealing significant variation in civic space reporting intensity both across countries and over time.

### Comparing International and Local Media

While the previous section demonstrates how *ML4P* provides data on civic space dynamics, we now show that this data relies heavily on the domestic sources targeted by *HQMARC*. Compare domestic and international news coverage of civic space events across our sample of developing countries, we demonstrate that relying solely on international media often yields an incomplete and likely biased view of civic space.

For all articles in *HQMARC* reporting on a each event category, Figure 4 presents the proportion of those articles coming from domestic versus international sources averaging across countries in our sample. The stacked bars show the percentage of total articles about each civic event type that

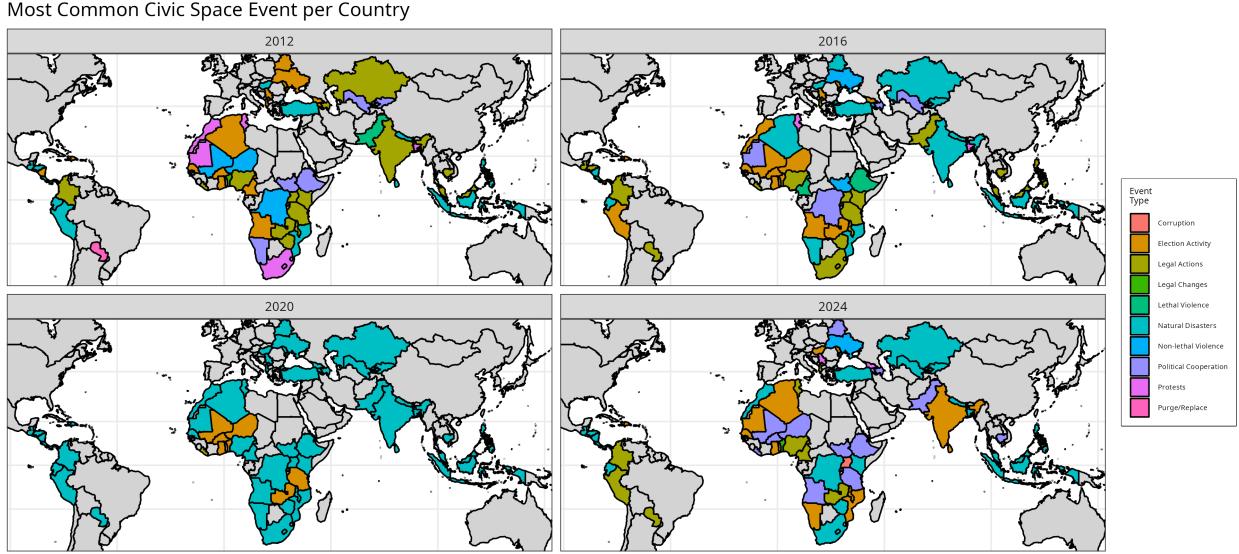


Figure 3: Most frequently reported civic event type per country-year for 2012, 2016, 2020, 2024. Countries are colored according to the civic event category with the highest reporting frequency in each year, showing the diversity of civic space concerns across different national contexts and revealing temporal shifts in civic space priorities.

come from domestic (blue) versus international (green) sources; for most event types, domestic sources provide well over 80% of the data and in many specific countries, the share is much higher. The red points label the correlation coefficient between domestic and international reporting for each civic space event category in countries and over time. If domestic and international sources were covering the same events at the same times, there would be a high correlation between them. Yet the correlation in reporting is consistently weak or moderate across our 20 event categories. Furthermore, this correlation is not consistently higher for categories that receive more international attention, such as Lethal Violence and Security Raids.

This correlation in coverage between international and domestic sources does increase as countries receive more international media attention. Rather than reporting the average correlation within event categories across countries, Figure 5 shows the correlation within countries and across event categories. Figure 5 plots a country’s volume of international articles (x-axis) against the correlation in civic space event coverage between international and national sources (y-axis). Although the correlation increases substantially for countries that receive more international coverage, the correlation remains low in nearly all cases. For example, Turkey and India receive substantial international attention yet exhibit domestic-international correlation values below 0.5.

We see similar variation when considering where international and domestic outlets focus their attention. Figure 6 investigates how intensely domestic and international sources focus on each event category. Overlapping bars show the rate at which each source type covers different civic events (expressed as articles per 10,000 total articles). Consistently higher bars for international sources suggest that international sources devote a larger share of their total articles to civic space events, relative to domestic outlets, whose coverage includes a greater share of articles reporting on events that do not fall into one of our 20 event categories. This is not surprising since domestic

### Coverage by domestic and international sources is weakly correlated

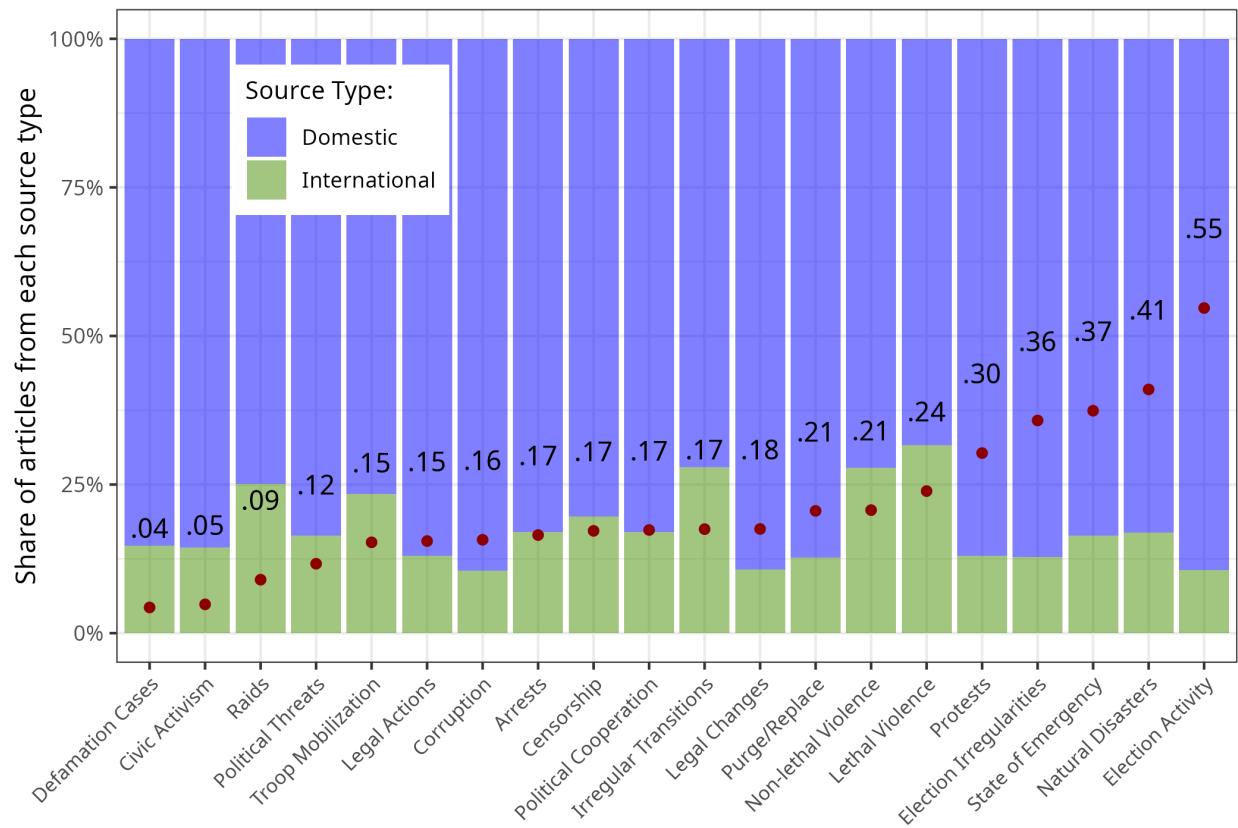


Figure 4: Proportional distribution of civic event coverage between domestic and international sources. Stacked bars show the percentage of total articles about each civic event type that come from domestic (blue) versus international (green) sources. Events are ordered by correlation strength between domestic and international coverage (red points labeled with correlation coefficient). Domestic and international sources show weak correlations in their coverage patterns, regardless of the share of articles coming from international sources. Example: Of all Arrest articles, 83% come from domestic sources and 17% from international sources. The correlation between domestic and international reporting on arrests is 0.17.

Correlation between domestic and international coverage is higher in countries with more international coverage

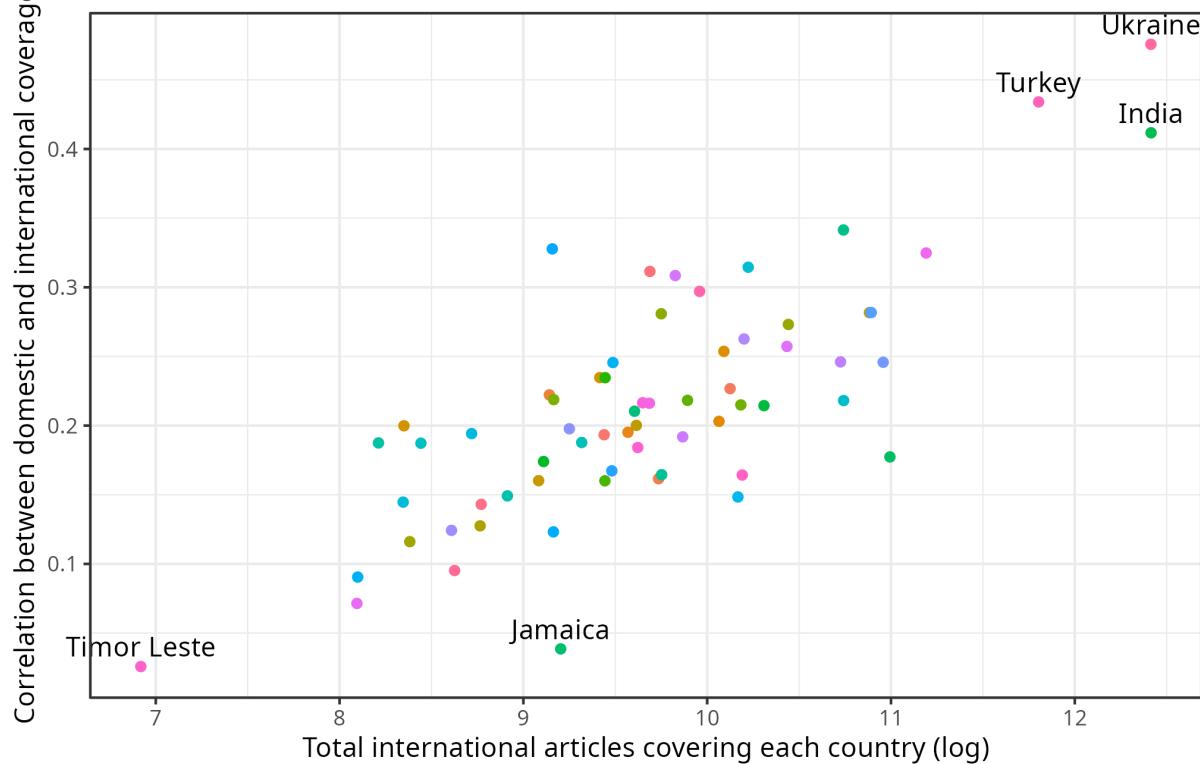


Figure 5: Relationship between international media attention and domestic-international coverage correlation. Each point represents one country, plotting the correlation between domestic and international civic event coverage (y-axis) against the total volume of international articles about that country (x-axis, log scale). Countries with higher international media attention tend to show stronger positive correlations between domestic and international coverage patterns, suggesting that sustained international focus may lead to more synchronized reporting priorities. Selected countries are labeled to illustrate this pattern: Ukraine, Turkey, and India (high international attention, strong positive correlation) versus Timor Leste and Jamaica (low international attention, weak correlation). Even for high-attention countries, this correlation is surprisingly weak.

sources often cover issues of social and cultural import in addition to ‘hard’ news. We also see, however, that domestic and international sources differ in their relative focus on different civic space events. For instance, while international sources exhibit higher relative focus on Lethal and Non-lethal Violence, domestic sources exhibit higher relative focus on event types like Election Activity and Corruption. These patterns reflect different editorial priorities of international versus domestic media.

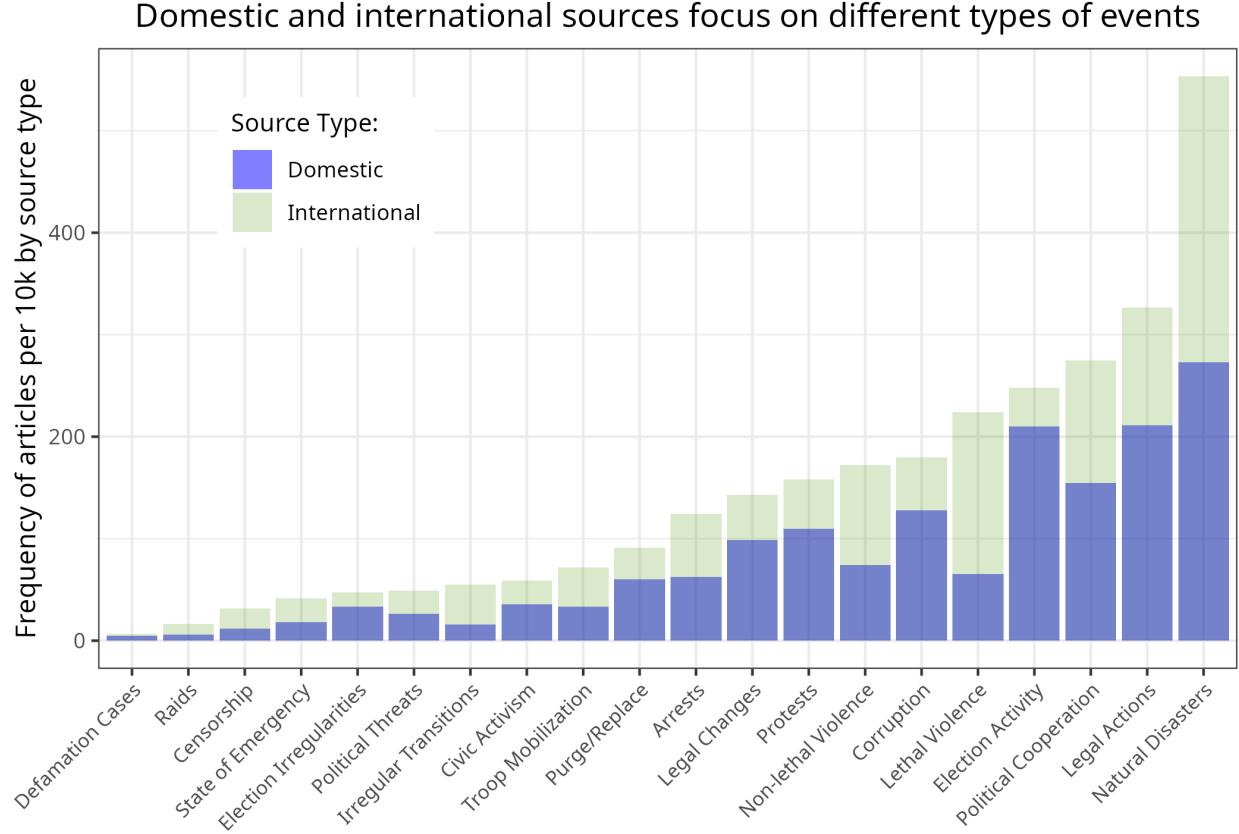


Figure 6: Frequency of civic event coverage within domestic versus international source portfolios. Overlapping bars show the rate at which each source type covers different civic events, expressed as articles per 10,000 total articles published by that source type. Events are ordered by international coverage frequency (lowest to highest). International sources (green) show more intense focus across all civic event types, suggesting their International sources exhibit higher relative focus on Lethal and Non-lethal Violence, while domestic sources (blue) exhibit higher relative focus on Election Activity. These patterns reflect different editorial priorities of international versus domestic media. Data normalized by total articles within each source type per country-month. Example: Domestic sources publish 65 lethal violence articles per 10,000 articles, while international sources publish 326 lethal violence articles per 10,000 articles.

We illustrate the broader point with a case study of reporting on corruption in Indonesia. Between March and November, a series of major corruption scandals broke out, including the PT Timah state enterprise corruption case in March, the Tom Lembong sugar import case and the Sahbirin Noor South Kalimantan Governor case in October, and the Rohidin Mersyah electoral case in November.

In May 2024 alone, domestic outlets published over 970 articles covering corruption revelations and 107 articles covering political arrests, many related to the PT Timah state enterprise case. Despite the gravity of these events, our regional and international sources carried *zero* relevant articles. This discrepancy suggests that a reliance on international sources not only provides an incomplete view of the salience of different events in many country’s domestic political environments, but may even entirely overlook key events. Across our dataset, we identified 59 cases across 23 countries where we detected large civic ‘shocks’ but found zero articles published in regional or international sources.

## Major Event Validation

To validate the ability of our data to detect major political events, we adopt two approaches. First, focusing on months designated by our model as containing major events (shocks), we examine whether observed spikes in coverage correspond to real-world developments (i.e. true positives). We randomly selected five countries from our database—Kosovo, Morocco, Angola, Mauritania, and Ukraine—which together span three regions (North Africa, Sub-Saharan Africa, and Eastern Europe) and four languages (Serbian, Albanian, French, and Ukrainian). Focusing on the three most recent months of data available at the time of the analysis (April–June 2024), there were 300 total possible event-months (3 months × 5 countries × 20 events) that our shock detection model could have detected. Of these 300 possible event-months, our model flagged 40 as exhibiting a shocks.

For each of the 40 country-event-month combinations, we retrieve all relevant articles published by domestic outlets in the *HQMARC* corpus to determine whether these shocks are true or false positives. Because some of these 40 country-event-months with shocks contained hundreds of articles<sup>10</sup>, we used GPT-4o<sup>11</sup> to generate brief summaries of the five most important events reported on in the sample of articles. A research assistant then reviewed both (a) the original articles (or a random subset of 50, if more than 50 were available) and (b) the GPT-4o summaries. They evaluated each of the top five summarized events on four dimensions:

- How many summarized events are accurately described by GPT-4o (i.e., factually correct)?
- How many summarized events are indeed the most important events, according to the underlying articles?
- How many occurred in the assigned country?
- How many match the assigned event category?

In 34 out of 40 country-months (85%), *all* top-five events identified by GPT-4o occurred in the correct country, and in 38 out of 40 (95%), *all* top-five events belonged to the correct event category. Overall, out of 200 summarized events, 181 were true positives. These findings strongly suggest that our measure reliably detects months with major political developments.

Our second approach begins by identifying major events in the world that we would expect to generate measurable shocks in the *ML4P* data and assessing whether these events are captured as shocks in the data (avoiding false negatives). We apply this approach in three ways: (1) identifying a single historical event likely to generate media attention on one of our *ML4P* event categories

<sup>10</sup>Across detected events, the number of relevant domestic articles ranged from 1 to 1,002. For rare event categories (e.g., *Defamation Case*), a single article can define an event.

<sup>11</sup>The full GPT-4o prompts, GPT-4o generated summaries, human-coding instructions, and validation results can be found in the **shock-validation** subfolder of the Git repository. GPT-4o was accessed through the OpenAI API.

across multiple countries, (2) assessing our ability to detect both frequent and rare political events through spikes in relevant *ML4P* event categories, and (3) analyzing events within a single country that are expected to trigger shocks across multiple *ML4P* event categories.

We first examine the onset of the COVID-19 pandemic and government responses to it, particularly the widespread implementation of social confinement measures, such as lockdowns. These measures often included school closures, curfews, and restrictions on non-essential businesses and government services (Cheng et al. 2020). These lockdown measures should be associated with shocks in the State of Emergency event category. As shown in Appendix D, we detect shocks in State of Emergency counts across all countries in our dataset starting in March 2020.

Next, we analyze the detection of key political events across multiple countries, focusing on a relatively frequent event—elections and electoral activities—and a rare event—coup d'état. To do so, we identify the most recent electoral event (e.g., general, parliamentary, or presidential election) for each country in our dataset. Figure 7 demonstrates that our shock detection models detect periods of heightened electoral activity in the months immediately preceding these elections in all 10 Latin American and Caribbean countries we examined. Notably, our approach also detects electoral activity in electoral autocracies, such as Nicaragua under Daniel Ortega (Thaler and Mosinger 2022), highlighting its ability to track political events across different regime types.

We now focus our attention on coups d'état. We identify all nine countries in our sample—Burkina Faso, DR Congo, Ethiopia, Mali, Niger, Peru, Tunisia, Turkey, and Zimbabwe—where a coup or self-coup was attempted or succeeded in the past decade. We then assess whether these events correspond to shocks in the Irregular Transition event category. As Figure 8 illustrates, all 14 successful or attempted coups and self-coups across these nine countries are associated with a shock in the Irregular Transition event measure.

Finally, we examine events expected to generate shocks in multiple event categories. We focus on the 2023 Guatemalan general elections, where opposition candidate Bernardo Arévalo and his party, *Movimiento Semilla*, secured a surprise victory despite institutional attempts to undermine their candidacy. The electoral period ran from January to August 2023, concluding with the run-off election. As expected, the upper-left panel of Figure 9 shows that our shock detection model identifies a shock in the Election Activity measure during this period. Efforts to disqualify Arévalo intensified between the first-round election on June 25 and the run-off on August 20, followed immediately by attempts to prevent him from taking office once the vote count was finalized. The upper-right panel of Figure 9 captures these attempts, detecting shocks in Election Irregularities between the general and run-off elections, as well as in the post-election period leading up to the inauguration.

The lower-left panel of Figure 9 provides further validation of *ML4P*'s ability to capture critical events in Guatemala's political history. Between the run-off and the inauguration, we detect a shock to reporting on Legal Actions in September, corresponding with the Public Prosecutor's direct efforts to nullify the election results, and again in December 2023, when the Organization of American States (OAS) officially condemned the ongoing and intensifying power grab.<sup>12</sup> Finally, the lower-right panel of Figure 9 shows that we detect a shock in reporting on the massive protests that broke-out in October, led by indigenous groups and civil society organizations demanding the resignation of the Public Prosecutor and a peaceful transfer of power. Researchers have identified this civil society mobilization as a key factor in ensuring the eventual transfer of power (Schwartz

<sup>12</sup>The press release by the OAS can be found here: [https://www.oas.org/en/media\\_center/press\\_release.asp?Codigo=E-084/23](https://www.oas.org/en/media_center/press_release.asp?Codigo=E-084/23)

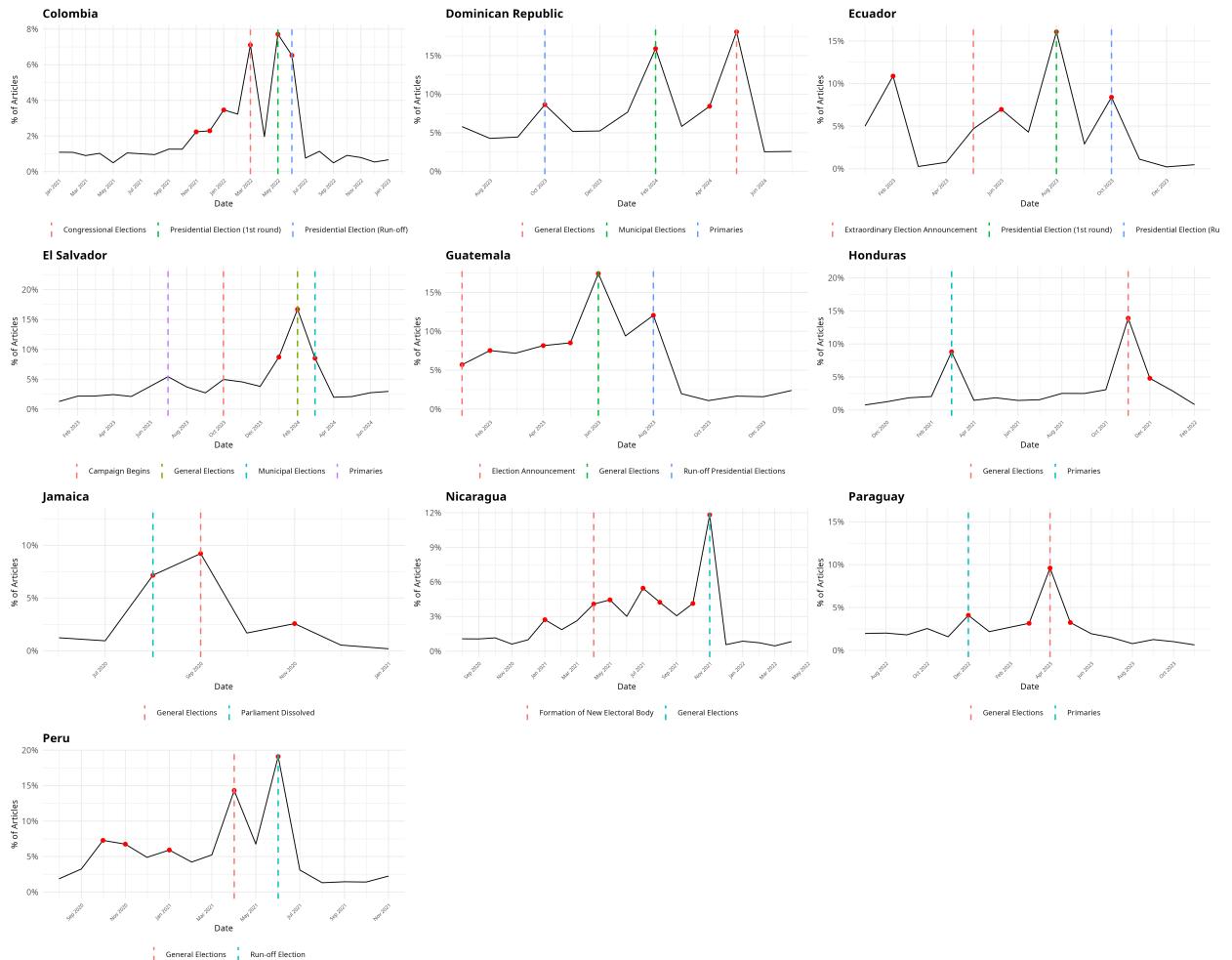


Figure 7: Elections and Electoral Activity (Latin America and the Caribbean). Notes: The vertical lines in each panel indicate key milestones in each country's electoral cycle, such as primary elections, congressional elections, or presidential elections.

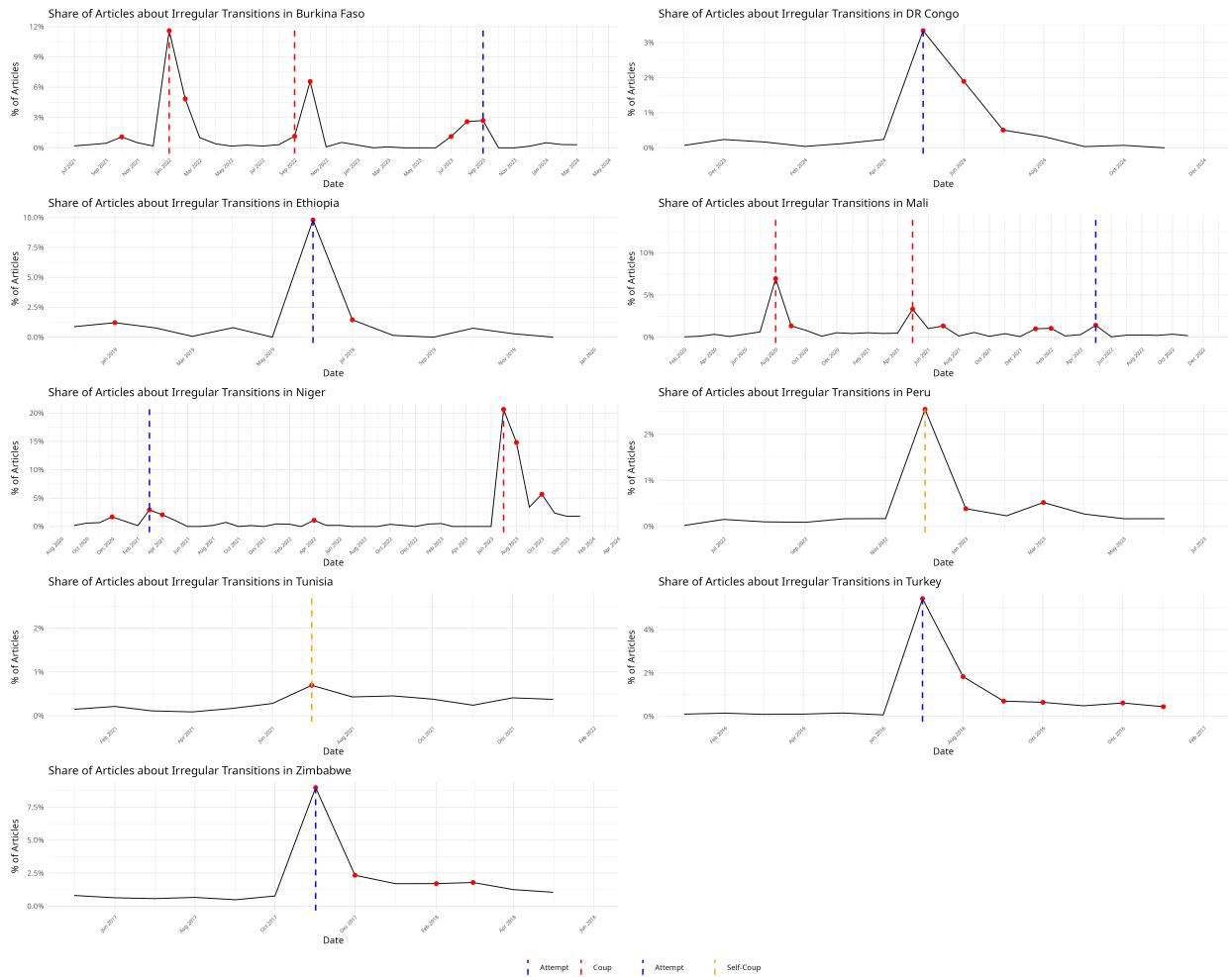


Figure 8: Coups and Self-Coups (Attempted and Successful). Notes: The vertical lines in each panel indicate the month in which a coup (successful or attempted) or a self-coup occurred in each country.

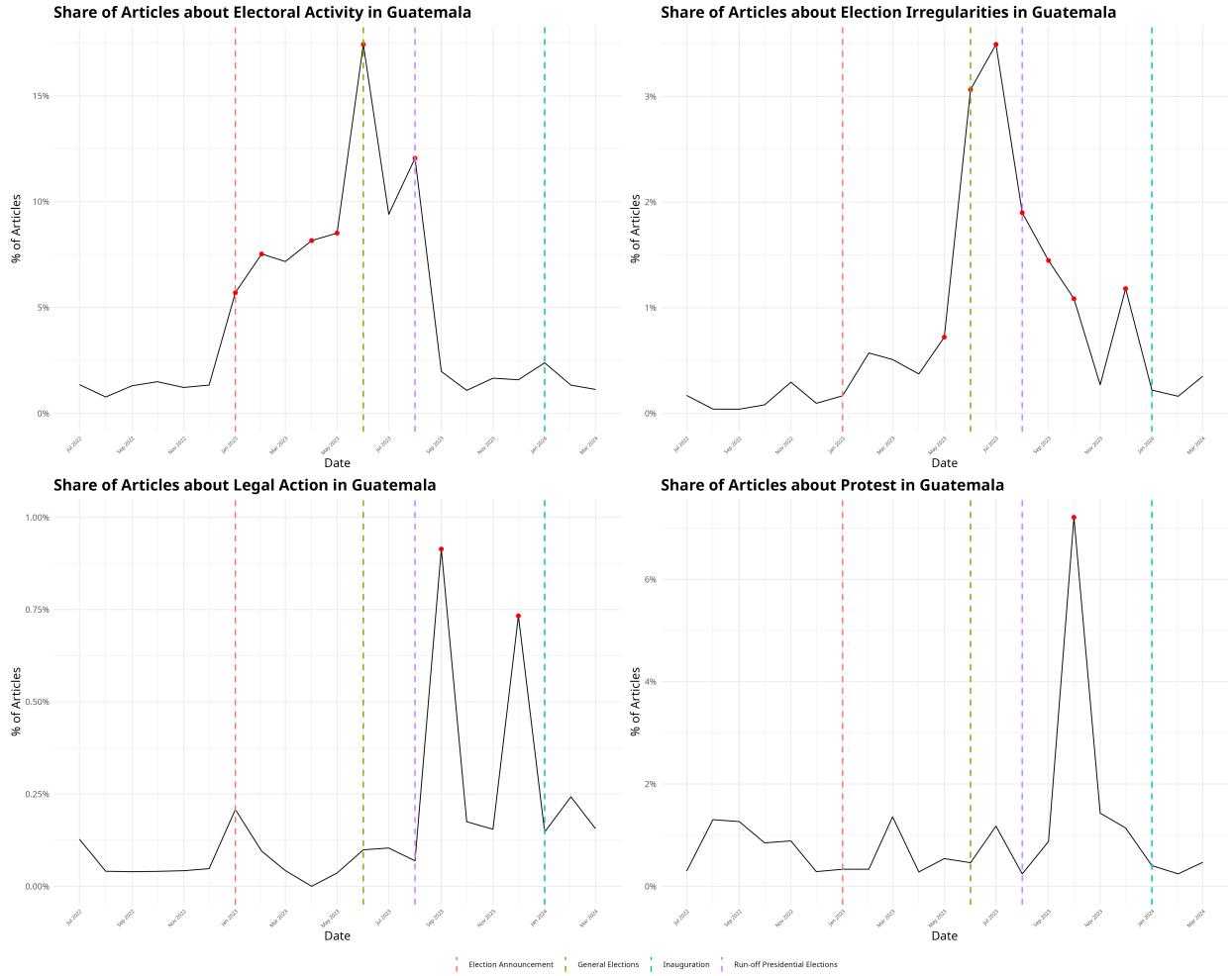


Figure 9: Elections in Guatemala 2023. Notes: The vertical lines in each panel represent key milestones in Guatemala's 2023 electoral cycle, beginning with the official election announcement in January 2023 and concluding with the presidential inauguration in January 2024. The general elections were held in June 2023, followed by the presidential runoff in August 2023.

and Isaacs 2023; Meléndez-Sánchez and Gamboa 2023; Romero 2024). Overall, this case provides compelling evidence of *ML4P*'s ability to capture the fast-paced civic space events underlying an attempted—and failed—autocratic turn in Guatemala.

## 5. Use Case: Forecasting Travel Advisory Onsets with *ML4P*

In this section, we demonstrate that *ML4P*'s ability to capture dynamic civic space dynamics contributes in a substantively important forecasting application. That high-frequency civic space indicators help predict the issuance of independent security assessments—U.S. Department of State (DOS) high-level travel advisories (HLTAs)—provides de facto validation that MLP's data captures meaningful underlying political conditions.

We construct a monthly panel dataset covering 60 developing countries from 2012 to 2023 and model the onset of Level 3 (“Reconsider Travel”) and Level 4 (“Do Not Travel”) travel advisories. These advisories serve as official DOS risk assessments and capture a diverse array of threats, including civil unrest, political repression, armed conflict, health emergencies, natural disasters, and crime waves. Beyond their significance as public warnings, these advisories drive critical operational responses, including embassy closures, staff relocations, and security escalations. This dataset provides a unique opportunity to evaluate whether high-frequency civic space indicators contain predictive signals of future security threats.

Although DOS issues advisories in real time, its historical archives are not systematically structured, thus complicating retrospective analysis. We reconstructed the series by scraping DOS pages and filling gaps with the Wayback Machine ([web.archive.org](http://web.archive.org)). We defined a binary onset indicator equal to 1 in the first country-month an advisory appears and 0 thereafter (i.e. we are not predicting ongoing travel advisories).

To forecast HLTA onsets, we incorporate monthly event counts from MLP across 20 political event categories, including protests, arrests of activists, media censorship, election irregularities, and emergency declarations. We also include a composite economic covariate calculated as a within-country z-score of available monthly Trading Economics indicators for each country. Given the importance of both gradual and sudden shifts in political conditions, we lag all features by up to 12 months, allowing the model to detect both long-term precursors (such as increasing government repression) and short-term triggers (such as post-election violence). We account for persistence by including an indicator distinguishing between new HLTA onsets and continued warnings, a country-specific Bayesian prior that adjusts for baseline differences in advisory issuance, and a COVID-19 indicator to control for the pandemic-driven shock in travel warnings in 2020.

HLTA onsets occur in only 1.42% of country-months; as a rare<sup>13</sup> event it is a challenging forecasting target. We train a LightGBM gradient-boosted tree model, which effectively handles class imbalance while capturing nonlinear interactions among political variables, and provide forecasts for 3- and 6-month horizons. To ensure that the model generalizes to unseen time periods, we implement rolling-origin temporor cross-validation, strictly limiting training data to historical observations and preventing information leakage (Rodolfa, Lamba, and Ghani 2021).<sup>14</sup> We evaluate

<sup>13</sup>For consistency over time, we include all advisories before 2018 and Levels 3-4 after the introduction for the four-level system in 2018. Consultation with DOS consular staff suggests that all pre-2018 advisories align closely with post-2018 Levels 3-4 in severity.

<sup>14</sup>See Soltani, Springman and Wibbels (2025) for further details on the data and models.

model performance using ROC-AUC, which measures ranking accuracy; AUPRC, which assesses precision-recall tradeoffs for rare-event classification; and the Brier score, which quantifies probability calibration.

Our models strongly predict HLTA issuance, confirming that MLP’s event data captures meaningful geopolitical risk indicators. For the 3-month prediction horizon, our model achieves a ROC-AUC of 0.87, AUC-PR of 0.26, and a Brier score of 0.14, compared to a dummy AUC-PR of 0.01. When we apply a rolling-window evaluation, where we count predictions as correct if an onset occurs within  $\pm 1$  month of the forecast, the performance improves to a ROC-AUC of 0.89, AUC-PR of 0.54, and Brier score of 0.12, with a slightly higher dummy AUC-PR of 0.02. For the 6-month horizon, our model yields a ROC-AUC of 0.87, AUC-PR of 0.31, and a Brier score of 0.14 (dummy AUC-PR = 0.01), while the rolling-window variant ( $\pm 1$  month) increases ROC-AUC to 0.90, AUC-PR to 0.57, and lowers the Brier score to 0.13, again with a dummy AUC-PR of 0.02.<sup>15</sup><sup>2</sup>

Feature importance analysis shows that for 3-month forecasts, recent declarations of martial law, especially those within the past two months, are the strongest predictors of HLTA onsets. Other influential short-horizon predictors include prior travel advisory levels, protest activity, natural disasters, and election irregularities. For 6-month forecasts, the most predictive variable is election-related activity occurring 11 months before an onset, followed by martial law declarations, censorship, and disaster events. Additional medium-horizon predictors include measures of government cooperation, arrests, and legal changes. These patterns suggest that while immediate security measures and unrest drive short-term risk, longer-horizon forecasts are shaped more by political processes, governance shifts, and gradual escalations in repression or instability.

## 6. Limitations and Cautions

Although *HQMARC*’s “medium-data” approach gives a much more reliable representation of domestic media markets, it has several limitations. First, courtesy of uneven archiving practices by media outlets, stories from more recent years are easier to collect than older stories. Thus, the total number of stories tends to trend up over time. Focusing on event salience, rather than the raw number of articles reporting on each event type, attempts to mitigate the influence of these trends on our measures of civic space activity.

Second, domestic sources that are more difficult to scrape are less likely to be included. Some high-quality sources in low-resource countries have extremely poor website architecture, making them extremely difficult to collect data from. Third, news organizations have their own biases. For example, their coverage is much stronger in cities than in more rural areas. Despite these limitations, *HQMARC*’s focus on domestic media paints a much richer picture than the even more biased view provided by international media of these countries.

Two cautions arise from *ML4P*’s reliance on media attention as a proxy for the importance of an event. First, media coverage is obviously influenced by editorial priorities, political pressures, and audience interests rather than any objective significance of an event. Some critical events may receive limited coverage due to competing news cycles, censorship, or media ownership structures, leading to under-representation in our dataset. Conversely, sensational or high-profile stories might be disproportionately amplified, skewing the perceived relevance of events in ways that do not

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<sup>15</sup>Following Brechenmacher and Carothers (2019), we define civic space as the fundamental freedoms that allow people to gather, communicate, and take part in groups to influence society and politics.

necessarily reflect their actual impact. Second, our normalization approach (dividing event counts by total coverage), forces competition between different event categories within any given month. As coverage of some event types go up, others necessarily go down. When an exceptionally large event dominates media coverage—e.g., a major political crisis or a natural disaster—other significant, but less dramatic, events will appear relatively less important in our data.

## 7. Conclusion

As democratic institutions face unprecedented challenges in the current era of autocratization, understanding the day-to-day dynamics of civic space has become critical for both academic research and policy intervention. This paper addresses a fundamental gap in our ability to study these dynamics by introducing the *ML4P* dataset—the first comprehensive, high-frequency measure of civic space events across developing countries.

Our contribution is both empirical and methodological. Empirically, *ML4P* provides monthly data on 20 civic space events across a large sample of developing countries from 2012 to 2024, constructed from over 120 million articles published by 348 hand-picked domestic media outlets publishing in 36 languages. This represents an unprecedented scale of coverage for civic space monitoring, with 95% of articles sourced from domestic rather than international outlets. Methodologically, we demonstrate that combining human-supervised web scraping with open-source transformer models can achieve both comprehensive coverage and high classification accuracy while maintaining cost-effectiveness and transparency.

Our validation exercises confirm that *ML4P* successfully captures real-world political dynamics, from COVID-19 lockdowns and electoral cycles to coups and democratic crises. Critically, we document systematic biases in international media coverage, finding that international sources exhibit weak correlation with domestic reporting and entirely miss major events. These findings have profound implications for existing event datasets that rely heavily on international sources. The predictive utility of our data is demonstrated through our travel advisory forecasting model. This validates that *ML4P* captures meaningful early warning signals of political instability rather than mere reporting artifacts.

This work opens several important avenues for future research. First, *ML4P* enables new studies of democratic backsliding mechanisms by providing the temporal granularity necessary to trace how specific events contribute to broader regime changes. Second, the dataset facilitates research on contentious politics, media behavior under authoritarianism, and the effectiveness of democracy support programs.

For policymakers, our findings underscore the critical importance of incorporating domestic media perspectives into intelligence and assessment processes. The systematic differences we document between international and domestic coverage suggest that relying on international sources alone can lead to fundamental misunderstandings of political conditions on the ground. Investment in human-supervised data collection infrastructures, as demonstrated by *HQMARC*, represents a crucial complement to automated systems.

Future research should expand *ML4P*’s geographic coverage and integrate *ML4P* with other high-frequency political indicators could enhance our understanding of how civic space dynamics interact with economic conditions, social movements, and international interventions. *ML4P* represents more than a new dataset—it provides a new lens for understanding how democracy erodes and

civic space contracts in real time. As authoritarian movements continue to challenge democratic institutions worldwide, tools like *ML4P* become essential for both documenting these processes and developing effective responses to defend civic space and democratic governance.

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# **Tracking Civic Space in Developing Countries with a High-Quality Corpus of Domestic Media and Transformer Models**

## **Supplemental Materials**

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## Appendix A: Data in HQMARC

The High-Quality Media from Aid Receiving Countries (*HQMARC*) corpus contains articles scraped from 348 prominent domestic media outlets based across our sample of 65 countries and publishing in 36 languages. We supplement these domestic outlets with content scraped from 12 regional and 15 international outlets. In sharp contrast to other sources of event data, more than 95% of the articles in *HQMARC* are scraped from domestic media outlets.

Using a customized harvesting workflow for each source domain, we achieve comprehensive or near-comprehensive capture of all relevant articles published by each source from 2012 through 2024 (or the earliest/latest publication date). Most large media data corpora run a blind, domain-wide crawler that follows every hyperlink it can find. Instead, we build a small, customized harvesting workflow for each source domain. The first step is URL discovery: we look for a structured entry-point, usually a public sitemap. If the sitemap is incomplete or missing, we switch to site-specific search strategies (pagination through section indexes, keyword queries, RSS feeds, etc.). Only when those programmatic methods fail do we fall back on heavier tools such as Selenium, and even then the goal is to retrieve clean article links, not to crawl arbitrary pages. Once a domain's URL list is assembled, we scrape those URLs directly. The scraper for each source knows exactly where the title, date, main text and other structured elements live in that site's HTML, so the resulting data land in a uniform, column-ready format. If a field doesn't parse correctly on the first pass (e.g., a date embedded in a non-standard tag, the parser not able to extract the correct text), we apply a post-scrape fixer for that column; we do not launch another crawl. Because the URLs are pre-vetted and the parsers are domain-specific, the pipeline yields cleaner, more consistent articles than a generic crawler would.

### Section 1: Domestic and Regional Sources in HQMARC

We divide our countries into five geographic regions. Each region has dedicated regional sources that cover all countries within that geographic region. Figure 1 shows the number of domestic and regional sources for each country. Figure 2 shows the number of *active* domestic sources for each country-month. Not all sources yield data for every month in our sample. Some sources only start publishing articles after the beginning of our coverage period in January 2012 or cease publishing before the end of our coverage period in December 2024. Other sources have incomplete archives or deploy blocking, which restricts our ability to capture articles at the beginning or end of the time series, respectively. We provide data on the months for which articles are actively scraped from each source in the [Source Coverage](#) section in our github repository.

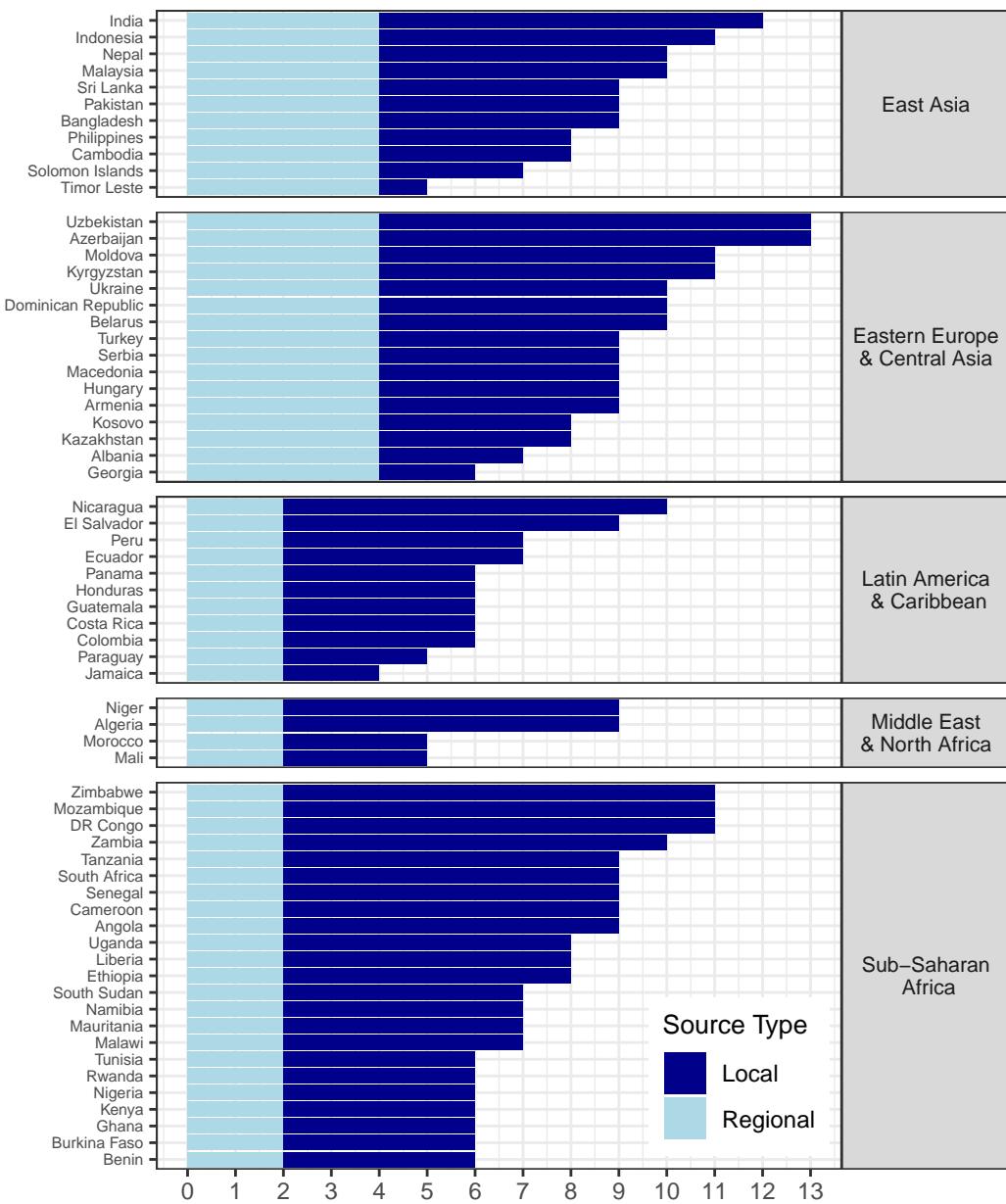


Figure 1: Number of domestic and regional media outlets in the HQMARC corpus by country

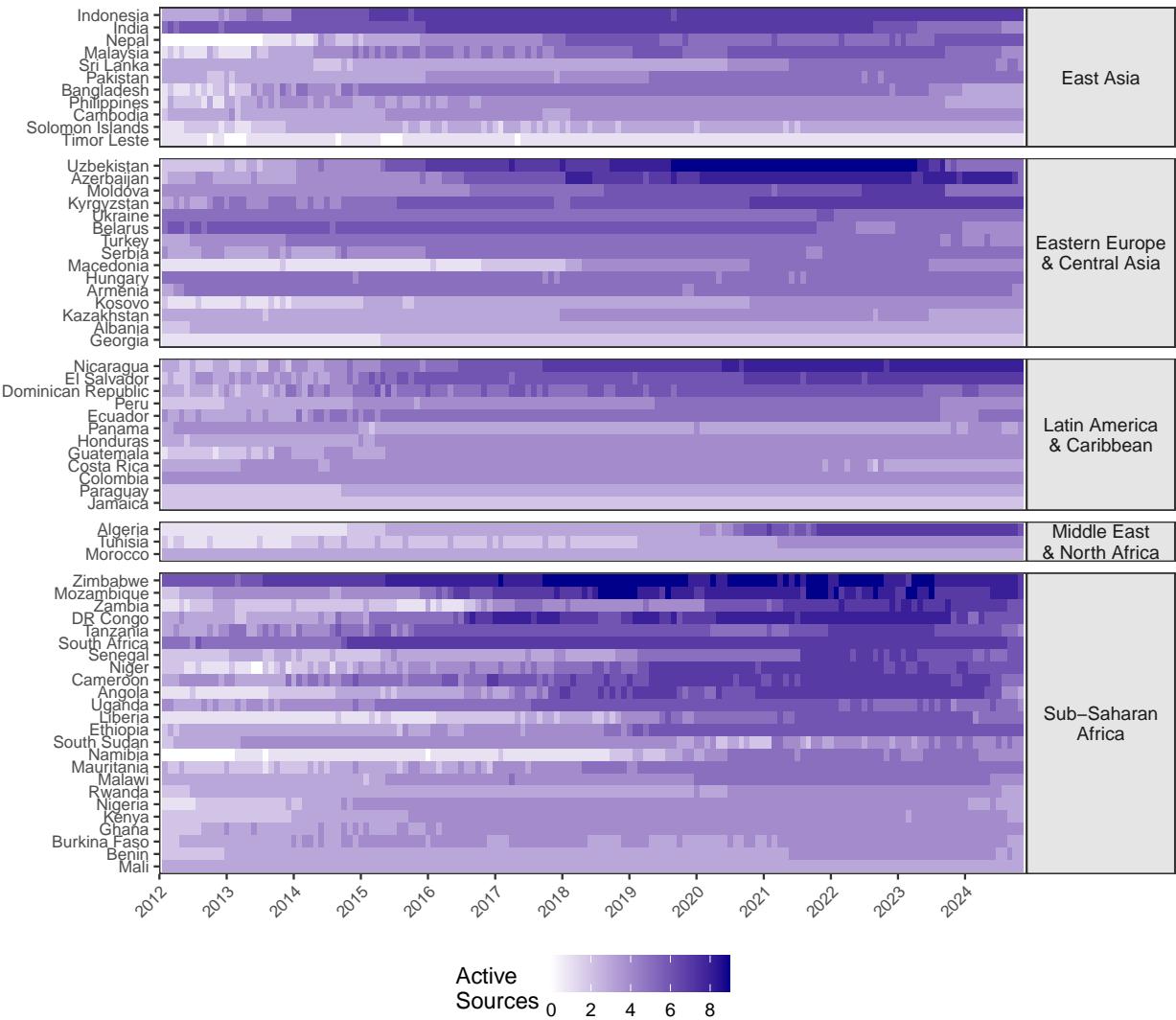


Figure 2: Number of Active Domestic Sources by Country-Month

## Section 2: Languages in HQMARC

The *HQMARC* corpus includes domestic media outlets publishing in 36 languages. These languages include Afrikaans, Albanian, Amharic, Arabic, Armenian, Azerbaijani, Belarusian, Bengali, Chinese, English, French, Georgian, Hindi, Hungarian, Indonesian, Kazakh, Central Khmer, Kinyarwanda, Kongo, Macedonian, Malay, Nepali, Portuguese, Romanian, Russian, Sinhala, Spanish, Serbian, Swahili, Tagalog, Turkish, Ukrainian, Urdu, Uzbek, Zulu. Below, we provide the languages associated with media outlets in each country using the language ISO codes.

Table 1: Eastern Europe & Central Asia

Country	Languages
Albania	sq, en
Armenia	hy, ru
Azerbaijan	en, az, ru
Belarus	be, ru
Georgia	ka, en
Hungary	hu
Kazakhstan	kk, ru, en
Kosovo	sq
Kyrgyzstan	en, ru, kg
Macedonia	sq, en, mk
Moldova	ro, ru, en
Serbia	sr
Turkey	tr
Ukraine	uk, ru, en
Uzbekistan	en, ru, uz

Table 2: Middle East & North Africa

Country	Languages
Algeria	fr, ar
Morocco	ar, fr
Tunisia	fr, ar

Table 3: Latin America & Caribbean

Country	Languages
Colombia	es
Costa Rica	es, en
Dominican Republic	es
Ecuador	es
El Salvador	es, en
Guatemala	es
Honduras	es, en
Jamaica	en
Nicaragua	es
Panama	es
Paraguay	es
Peru	es

Table 4: East Asia

Country	Languages
Bangladesh	bn
Cambodia	km, en
India	en, hi
Indonesia	en, id
Malaysia	en, ms, zh
Nepal	ne, en
Pakistan	ur, en
Philippines	en, tl
Solomon Islands	en
Sri Lanka	en, si
Timor Leste	tet, pt

Table 5: Sub-Saharan Africa

Country	Languages
Angola	pt
Benin	fr
Burkina Faso	fr
Cameroon	fr
DR Congo	fr
Ethiopia	en, am
Ghana	en
Kenya	en
Liberia	en
Malawi	en
Mali	fr
Mauritania	fr, ar
Mozambique	pt, en
Namibia	en
Niger	fr
Nigeria	en
Rwanda	en, fr, rw
Senegal	fr
South Africa	af, en, zu
South Sudan	en, ar
Tanzania	en, sw
Uganda	en
Zambia	en
Zimbabwe	en

## **Section 3: Digital News Sources**

In this section, we list the individual sources included in *HQMARC*. First, we list our international sources and regional sources. Second, we list the sources associated with each country, organized by region.

### **International Sources**

- aljazeera.com
- bbc.com
- csmonitor.com
- france24.com
- nytimes.com
- reuters.com
- scmp.com
- theguardian.com
- themoscowtimes.com
- washingtonpost.com
- wsj.com
- lemonde.fr
- liberation.fr
- elpais.com
- lefigaro.fr

### **Eastern Europe & Central Asia Regional Sources**

- balkaninsight.com
- euronews.com
- iwpr.net
- neweasterneurope.eu

### **Middle East & North Africa Regional Sources**

- africanews.com
- theeast-african.co.ke

### **Latin America & Caribbean Regional Sources**

- cnnespanol.cnn.com
- telemundo.com

## **East Asia Regional Sources**

- asia.nikkei.com
- asiatimes.com
- indiatimes.com
- timesofindia.indiatimes.com

## **Sub-Saharan Africa Regional Sources**

- africanews.com
- theeast-african.co.ke

## **Eastern Europe & Central Asia Local Sources**

Albania :

- gazetatemra.net
- panorama.com.al
- telegraf.al

Armenia :

- azatutyun.am
- aravot.am
- 168.am
- 1in.am
- golosarmenii.am

Azerbaijan :

- azeritimes.com
- azadliq.info
- abzas.org
- turan.az
- zerkalo.az
- mikroskopmedia.com
- xalqcehhesi.az
- musavat.com
- ru.echo.az

Belarus :

- nashaniva.by
- novychas.by
- nv-online.info
- belgazeta.by
- zviazda.by
- sb.by

Georgia :

- ambebi.ge
- georgiatoday.ge

Hungary :

- index.hu
- 24.hu
- 168.hu
- hvg.hu
- demokrata.hu

Kazakhstan :

- caravan.kz
- diapazon.kz
- kaztag.kz
- rus.azattyq.org

Kosovo :

- kosova-sot.info
- balkaninsight.com
- prishtinainsight.com
- botasot.info

Kyrgyzstan :

- akipress.com
- 24.kg
- kloop.kg
- super.kg
- vb.kg
- kaktus.kg
- kaktus.media

Macedonia :

- koha.mk
- slobodenpecat.mk
- makfax.com.mk
- skopjediem.com
- novamakedonija.com.mk

Moldova :

- timpul.md
- tribuna.md
- unimedia.info
- voceabasarabiei.md

- publika.md
- ipn.md
- zdg.md

Serbia :

- rs.n1info.com
- juznevesti.com
- insajder.net
- danas.rs
- balkaninsight.com

Turkey :

- diken.com.tr
- t24.com.tr
- sozcu.com.tr
- posta.com.tr
- sabah.com.tr

Ukraine :

- delo.ua
- interfax.com.ua
- kp.ua
- pravda.com.ua
- kyivpost.com
- kyivindependent.com

Uzbekistan :

- fergana.ru
- kun.uz
- gazeta.uz
- podrobno.uz
- batafsil.uz
- sof.uz
- anhor.uz
- asiaterra.info
- daryo.uz

## Middle East & North Africa Local Sources

Algeria :

- twala.info
- 24hdz.com
- echoroukonline.com
- elkhabar.com
- el-massa.com

- elwatan-dz.com
- echaab.dz

Morocco :

- leconomiste.com
- lematin.ma
- assabah.ma

Tunisia :

- assarih.com
- babnet.net
- jomhouria.com
- lapresse.tn

### **Latin America & Caribbean Local Sources**

Colombia :

- elcolombiano.com
- elespectador.com
- elheraldo.co
- eltiempo.com

Costa Rica :

- larepublica.net
- news.co.cr
- ticotimes.net
- diarioextra.com

Dominican Republic :

- diariolibre.com
- listindiario.com
- elnacional.com.do
- hoy.com.do
- elcaribe.com.do
- elviajero.com.do

Ecuador :

- elcomercio.com
- eldiario.ec
- elnorte.ec
- eluniverso.com
- metroecuador.com.ec

El Salvador :

- laprensagrafica.com
- elfaro.net
- elsalvador.com
- diario.elmundo.sv
- diarioelsalvador.com
- revistafactum.com
- gatoencerrado.news

Guatemala :

- prensalibre.com
- republica.gt
- lahora.gt
- soy502.com

Honduras :

- elheraldo.hn
- laprensa.hn
- proceso.hn
- tiempo.hn

Jamaica :

- jamaica-gleaner.com
- jamaicaobserver.com

Nicaragua :

- confidencial.com.ni
- laprensani.com
- nuevaya.com.ni
- articulo66.com
- laverdadnicaragua.com
- ondalocalni.com
- canal2tv.com
- lajornadanet.com

Panama :

- elsiglo.com.pa
- critica.com.pa
- panamaamerica.com.pa
- newsroompanama.com

Paraguay :

- abc.com.py
- lanacion.com.py
- ultimahora.com

Peru :

- elcomercio.pe
- gestion.pe
- larepublica.pe
- ojo-publico.com
- idl-reporteros.pe

### **East Asia Local Sources**

Bangladesh :

- prothomalo.com
- bd-pratidin.com
- kalerkantho.com
- jugantor.com
- dailyjanakantha.com

Cambodia :

- kohsantepheapdaily.com.kh
- moneaksekar.com
- phnompenhpost.com
- cambodiadaily.com

India :

- amarujala.com
- indianexpress.com
- thehindu.com
- hindustantimes.com
- deccanherald.com
- firstpost.com
- indiatimes.com
- timesofindia.indiatimes.com

Indonesia :

- thejakartapost.com
- jawapos.com
- kompas.com
- mediaindonesia.com
- sindonews.com
- beritasatu.com
- hariansib.com

Malaysia :

- malaymail.com
- nst.com.my

- thestar.com.my
- utusan.com.my
- thesun.my
- malaysiakini.com

Nepal :

- onlinekhabar.com
- english.onlinekhabar.com
- en.setopati.com
- thehimalayantimes.com
- kathmandupost.com
- nepalitimes.com

Pakistan :

- jang.com.pk
- nation.com.pk
- dailytimes.com.pk
- pakobserver.net
- tribune.com.pk

Philippines :

- mb.com.ph
- manilastandard.net
- inquirer.net
- manilatimes.net

Solomon Islands :

- solomonstarnews.com
- solomontimes.com
- sibconline.com.sb

Sri Lanka :

- dailymirror.lk
- island.lk
- divaina.lk
- adaderana.lk
- lankadeepa.lk

Timor Leste :

- thediliweekly.com

## **Sub-Saharan Africa Local Sources**

Angola :

- opais.co.ao
- jornalf8.net
- angola24horas.com
- portaldeangola.com
- angola-online.net
- vozdeangola.com
- jornaldeangola.ao

Benin :

- lanouvelletribune.info
- news.acotonou.com
- lematinal.media
- evenementprecis.com

Burkina Faso :

- lefaso.net
- burkina24.com
- evenement-bf.net
- laborpresse.net

Cameroon :

- journalducameroun.com
- camerounweb.com
- 237actu.com
- 237online.com
- cameroonvoice.com
- lebledparle.com
- thesunnewspaper.cm

DR Congo :

- radiookapi.net
- lessoftonline.net
- acpcongo.com
- lephareonline.net
- groupelavenir.org
- matininfos.net
- cas-info.ca
- actualite.cd
- 7sur7.cd

Ethiopia :

- addisfortune.news

- addisstandard.com
- capitalethiopia.com
- thereporterethiopia.com
- ethiopianmonitor.com
- addisadmassnews.com

Ghana :

- dailyguidenetwork.com
- ghanaweb.com
- graphic.com.gh
- newsghana.com.gh

Kenya :

- kbc.co.ke
- citizen.digital
- nation.africa
- theeastafriican.co.ke

Liberia :

- thenewdawnliberia.com
- liberianobserver.com
- analystliberiaonline.com
- frontpageafricaonline.com
- inquirernewspaper.com
- thenewsnewspaper.online

Malawi :

- mwnation.com
- nyasatimes.com
- times.mw
- faceofmalawi.com
- malawivoice.com

Mali :

- maliweb.net
- malijet.com
- news.abamako.com

Mauritania :

- alwiam.info
- lecalame.info
- journaltahalil.com
- alakhbar.info
- saharamedias.net

Mozambique :

- correiodabeiraserra.com
- canal.co.mz
- mmo.co.mz
- cartamz.com
- verdade.co.mz
- clubofmozambique.com
- portalmoznews.com
- jornaldomingo.co.mz
- tvm.co.mz

Namibia :

- namibian.com.na
- confidentenamibia.com
- thevillager.com.na
- observer24.com.na
- informante.web.na

Niger :

- actuniger.com
- nigerinter.com
- lesahel.org
- tamtaminfo.com
- airinfoagadez.com
- nigerexpress.info
- journalduniger.com

Nigeria :

- guardian.ng
- thenewsnigeria.com.ng
- vanguardngr.com
- thenationonlineng.net

Rwanda :

- newtimes.co.rw
- therwandan.com
- kigalitoday.com
- umuseke.rw

Senegal :

- xalimasn.com
- lesoleil.sn
- enquêteplus.com
- lasnews.sn
- ferloo.com

- nouvelobs.com
- sudquotidien.sn

South Africa :

- timeslive.co.za
- news24.com
- dailysun.co.za
- sowetanlive.co.za
- isolezwe.co.za
- iol.co.za
- son.co.za

South Sudan :

- radiotamazuj.org
- sudantribune.com
- paanhuwel.com
- onecitizendaily.com
- eyeradio.org

Tanzania :

- ippmedia.com
- dailynews.co.tz
- habarileo.co.tz
- thecitizen.co.tz
- mtanzania.co.tz
- jamhurimedia.co.tz
- mzalendo.co.tz

Uganda :

- monitor.co.ug
- observer.ug
- newvision.co.ug
- nilepost.co.ug
- sunrise.ug
- eagle.co.ug

Zambia :

- lusakatimes.com
- mwebantu.com
- diggers.news
- openzambia.com
- lusakavoice.com
- dailynationzambia.com
- zambianewsnetwork.com
- zambianobserver.com

Zimbabwe :

- thestandard.co.zw
- theindependent.co.zw
- herald.co.zw
- chronicle.co.zw
- newsday.co.zw
- thezimbabwean.co
- zimbabwesituation.com
- newzimbabwevision.com
- zimlive.com

## Section 4: Assessing Outlet Independence

To ensure data quality, *HQMARC* aims to capture news from the most trustworthy media outlets available for each country. During the construction of *HQMARC*, our team scraped each source every three months to capture new articles published since the last scrape. For countries ranked outside of the top 100 for media freedom by Reporters Without Borders, we consider their media environments restrictive. For all sources in countries with restrictive media environments, we investigate potential sources of bias for all our sources at a three-month frequency. These frequent bias checks are due to changes in coverage of sources and changes in ownership of sources over times.

For countries with restrictive media environments, we aim to source at least half of the articles from sources that are coded politically independent. For countries where less than half of the articles are collected from independent sources, we encourage users to apply weighting.

Human coders follow detailed coding instructions to assess each outlet according to Ideology (5-point scale from Right to Left), Independence from the regime or opposition (Pro-regime, Opposition, or Independent), and Ownership (Government owned or non-government owned). Coders begin by consulting a list of public resources and performing a subjective review of a sample of published articles. Coding instructions and source-level bias data are available on our github at [mlp-data-intro/source\\_metadata/](https://github.com/mlp-data/intro/source_metadata/).

## Appendix B: Civic Space Definitions and Keywords

### Section 1: Event Definitions

- Activism
  - Any activity by individuals, community organizations, or NGOs that involve some amount of lobbying, raising awareness, or collective action beyond just the donation of money. Importantly, this does not include protests or activities related to election campaigns.

– **Example:** “Retired soldiers make up subsidiary of Just Cause. A group of retired soldiers met yesterday morning in a restaurant in the city of San Miguel to learn about the work of the Association Causa Justa, in order to organize a branch in the eastern part of the country. Jaime García, vice president of Causa Justa, explained that this association has been working for a couple of years to defend the interests of retired soldiers, and since then they have organized a branch in San Ana and now they intend to have another group.”

- Arrests

- An institution within the government-controlled security apparatus –i.e. the police, the military, or other– apprehends people or groups of people who are part of an opposition movement or party, a civil society organization, a media organization, or a protest.
- **Example:** “The Police in Abia on Wednesday arrested 51 persons suspected to be members of the proscribed Indigenous People of Biafra, claiming they ‘operate as members of Judaism,’ in Umuahia.”

- Censor

- The government actively prevents free speech by individuals in the media, in public or online. This includes banning certain content from individual speech or news stories, dictating how certain concepts or people can be referred to in public speech, or directly dictating agenda setting for media organizations. This category also includes the government censoring internet websites, internet shutdowns, fines on independent media, limitations on foreign ownership of media outlets, and political actors gaining influence within media organizations. Magnitude is a scale (see below; try to determine the importance of the target with information given).
- **Example:** “The Tanzanian government has suspended newspaper The Citizen for seven days after the publication ran a story on the falling value of the Tanzanian shilling.”

- Cooperation

- Domestic political, social, or business actors collaborate on one or a range of issues or demonstrate an intent to do so. This does not include intragovernmental cooperation, except for local and federal cooperation. Cooperation indicates a willingness for domestic actors to work together to resolve important issues. Cooperation involving international actors is not a civic space event, but is an RAI event.
- **Example:** “Opposition movement NJPE has pledged to work together with President Muhammad to reduce rampant poverty in the capital’s outskirts.”

- Corruption

- The abuse of entrusted power for private gain. This includes street-level corruption (for instance, bribes to police), high-level corruption (in public contracting, for instance), and legal actions around corruptions.
- **Example:** “Ex-President Sarkozy gets Jail Sentence for Corruption in France”

- Coup

- Changes in government or persistence of government that are not in the rules of succession or transition. Coups, refusing to cede power, or a power grab after an unfair election are examples of this event type. Peaceful government transitions are nonviolent transfers of power or legitimate continuity of government elected by democratic means and accepted by a majority of political forces. Code peaceful change as ‘1’ in the direction column. Speech is the pledge to accept the result of an election (a threat of a coup falls under ‘political threat’).
  - **Example:** “Forces loyal to Turkey’s president quashed a coup attempt in a night of explosions, air battles and gunfire that left at least 161 people dead and 1,440 wounded, yesterday. President Recep Tayyip Erdogan vowed that those responsible “will pay a heavy price for their treason”.
- Defamation Case
  - Cases in which an individual or a group related to an opposition movement or party, current or former government officials, a civil society organization, a media organization, a business leader, a member of a minority group, or a protest are accused, usually by a government official, of: directly defaming/libeling/slanderizing the government or one or some of its members. Alternatively, these are: strategic lawsuits against civic actors to intimidate public participation. This category is a subset of the ‘Legal Action’ event type (see below).
  - **Example:** “A Phnom Penh court on Friday found veteran opposition chief Sam Rainsy guilty of defaming Prime Minister Hun Sen and ordered him to pay damages of \$1 million, the latest blow to an opposition crippled by legal cases this year.”
- Disaster
  - This category includes: (1) natural disasters such as earthquakes, hurricanes, floods, famines or food crises or any catastrophic event that results or may result in serious damage, loss of life, and/or political implications; (2) infrastructural accidents that can endanger the population –a dam or pipe bursting, the sinking of a ferry, etc.) The goal is to focus on the types of events that might reflect on government accountability and civic space, not minor events like traffic accidents. Note: this includes deaths or economic strife caused by disasters, including reports on deaths/infections caused by COVID-19.
  - **Example:** ROMBO district residents in Kilimanjaro region are in danger of facing food shortage if concerted efforts to control wildlife in consuming crops are not employed.
- Election Activity
  - Reporting on regular electoral activities including the introduction of candidacies, the conduct of campaigns, the announcement of results, and the formal transfer of power for public office. This includes situations where the incumbent party/candidate retains power. Normal election results are an example of this event type. Specifically, this includes peaceful government transitions that are nonviolent transfers of power or legitimate continuity of government but does not include coups, which are accounted for separately.
  - **Example:** “The President of the Executive Board of the Serbian Progressive Party, Darko Glisic, said that the SNS won a convincing victory with 60.2 percent of the votes, based on the processed 221 out of 231 polling stations where the voting for the parliamentary elections in Serbia was repeated.”

- Election Irregularities
  - The altering or attempted altering through legal or extra-legal manipulation of the conduct, rules or results of elections or electoral processes. This could include rescheduling/postponing/cancelling regularly-scheduled elections, calling irregular elections or constitutional referenda, hampering the work of independent election observers, eroding the autonomy/authority of the electoral commission, as well as any other institutional change that directly affects the electoral process. This additionally could include the cancellation of party lists and the boycott of elections by opposition, as well as calls for recounts or other forms of contesting elections. Finally, this includes vote-buying, intimidation, or vote-rigging. This does not include standard election proceedings.
  - **Example:** “Nigeria’s electoral authority has delayed presidential and national assembly elections by one week amidst protests from the two main opposition parties. The government alleged logistical problems with ballot delivery to justify the delay.”
- Legal Action
  - Legal action refers to the prosecution or investigation of criminal activity or disputes over government authority, as well as the trials, convictions or dismissals that result. This event is related to civic space if the targeted people are part of an opposition movement or party, current and former government officials, a civil society organization, an NGO, a media organization or member, a (legal or illegal) business leader, member of minority group, or a protest. This specifically does not include arrests, which are defined as its own event type. Defamation cases are a subset of ‘Legal Action’ (see above).
  - **Example:** “Kosovo President is Indicted for War Crimes for Role in War with Serbia.”
- Legal Change
  - Legal change refers to any changes or proposed changes in the laws of a nation in such a way as to affect civic space. This includes legal restrictions on speech, political groups, NGOs, and the changing of constitutions as well as changing of the powers of the government. This also includes some restrictions on assembly, but does not include curfews and other martial law declarations, which are specifically covered by other event categories.
  - **Example:** “Venezuela’s constituent assembly yesterday unanimously passed a law that mandates punishment including a prison sentence of up to 20 years for anyone who instigates hate or violence on the radio, television or via social media.”
- Cooperation
  - Domestic political, social, or business actors collaborate on one or a range of issues or demonstrate an intent to do so. This does not include intragovernmental cooperation, except for local and federal cooperation. Cooperation indicates a willingness for domestic actors to work together to resolve important issues. Cooperation involving international actors is not a civic space event, but is an RAI event.
  - **Example:**
- Lethal Violence
  - Any action of aggression by a government entity, organized group or individual that results in the death of one or more people, excluding crimes of passion.

- **Example:** “The Kaduna state government, Friday evening, disclosed that 33 women and children were killed by rebels in Kajuru local government of Kaduna state, less than twenty-four hours to the conduct of the presidential and parliamentary elections.”
- Martial Law
  - The executive branch declares a state of emergency or suspends, temporarily or indefinitely, the ability of citizens to gather or protest against the order.
  - **Example:** “On Wednesday, President Duterte approved the extension of martial law in the country’s volatile south by a year due to continuing threats by Islamic State group-linked militants and communist insurgents.”
- Mobilize Security Forces
  - An event in which the government mobilizes police forces, military troops or government-affiliated militias.
  - **Example:** “More than 500 security personnel have been mobilised for Saturday’s governorship election in Sokoto State, says the state commissioner of police (CP), Alhaji Adisa Bolanta.”
- Non-Lethal Violence
  - Any action of aggression by a government entity, organized group or individual that physically harms one or more people or property but does NOT result in death, excluding crimes of passion.
  - **Example:** “At least four persons were injured at Oruk Anam Local Government Area of Akwa Ibom State on during yesterday’s national election. Reports claim that unknown assailants attempted to snatch ballot boxes while voting was still ongoing.”
- Protest
  - Planned or spontaneous public mobilization of a large group of people. Labor strikes, political rallies and riots are also included in this category. When protest events involve deaths, they are coded as lethal violence, but this does not apply for non-lethal violence incidents.
  - **Example:** “A reported two thousand people took to the streets yesterday in Nairobi to protest rising fuel prices, which have doubled since the beginning of the year.”
- Purge/Replace
  - Purge/replace refers to the removal, firing or resignation of individuals from a government position or the replacement of previously removed individuals, including when the removals/firings themselves are not directly mentioned in the article. This includes the resignation of the chief executive. This description applies to purging of targets such as the bureaucracy, courts, military, police, state-owned companies, or members of political parties, among others.
  - **Example:** “Poland’s government carried out a sweeping purge of the Supreme Court on Tuesday night, eroding the judiciary’s independence, escalating a confrontation with the European Union over the rule of law and further dividing this nation.”
- Raid

- Individuals or organizations are assaulted or aggressively coerced. Their property may be encroached or damaged as a result. Examples include a raid on newspaper offices. Victims themselves suffer no physical harm. This category also includes the government shutting down opposition organizations, NGOs, etc.
- **Example:** “A Vanguard newspaper office located on Bassey Duke Street was, yesterday afternoon, raided by hoodlums, who carted away large sums of money and destroyed computers and other equipment.”
- Threats
  - A statement of a clear and explicit intention to inflict pain, injury, damage, or other hostile action on an individual or organization. Our targets and actors of interest are part of an opposition movement, the media, a political party, government, or a civil society organization.
  - **Example 1:** “A top Kenyan newspaper published a fake death notice of a prominent opposition financier on Wednesday, a bizarre error that rights groups interpreted as another sign of an anti-democratic slide. The Daily Nation apologized by mid-morning for publishing the funeral announcement for businessman Jimi Wanjigi, whose picture, history and family details were used but whose name was slightly altered. The paper said the ad was published in error and it was working with police to uncover who placed it. After a week of arrests of opposition politicians and a crackdown on independent media, a prominent rights campaigner said the announcement amounted to a death threat to Wanjigi, who funded opposition leader Raila Odinga’s election campaign last year and whose house was raided by police in October.”
  - **Example 2:** “Nigeria’s main labor unions threatened a nationwide strike over recent increases in gas prices.”

## Section 2 Keywords and Their Use

This document lists the categories where keywords are currently being deployed as well as a brief explanation for their use.

### Legal Action

- Keyword lists
  - Keyword list one: case | lawsuit | sue | suit | trial | court | charge | rule | sentence | judge
  - Keyword list two: defamation | defame | libel | slander | insult | disparage | lese majeste | lese-majeste | lese majesty | reputation
- Purpose of Keywords
  - The purpose of these keywords is to move articles from legal action that are actually defamation case to the appropriate category. There is no longer a defamation case category, it is now entirely a subset of legal action. The first set of keywords filter out any instances where there are accusations of defamation/libel/slander that are not actual cases, but merely statements. The second set of keywords ensures that the cases are actually related to defamation, since we found that oftentimes, non-defamation cases where being assigned to this event category. The process is two-fold, requiring a key word from both lists.

- If keyword from both lists are not present, the article is left as legal action

## Censor

- Keyword list: Freedom | assembly | association | movement | independent | independence | succession | demonstrate | demonstration | repression | repressive | crackdown | draconian | intimidate | censoring | controversial | censor | muzzle | restrictive | restrict | authoritarian | non-governmental organizations | NGOs | media | parties | civil society | opposition | critics | opponents | human rights groups | arbitrary | stifling | ban | strict | boycott | protests | dissent | demonstrators | journal.\* | newspaper | media | outlet | censor | reporter | broadcast.\* | correspondent | press | magazine | paper | black out | blacklist | suppress | speaking | false news | fake news | radio | commentator | blogger | opposition voice | voice of the opposition | speech | broadcast | publish | limit.\* | independ.\* | repress.\* | journalist | newspaper | reporter | internet | telecommunications | magazine | shut down | broadcast | radio
- Purpose of Keywords
  - The purpose of these keywords is to filter out instances where restrictions are applied that are not censorship. This was created primarily in response to closings of schools, businesses, and government offices in relation to COVID-19, which were frequently classified as censorship.
  - If one of the keywords is not present in the article, it is reclassified as -999

## Legal Action/Purge/Arrest

- Keyword list
  - embezzle | embezzled | embezzling | embezzlement | bribe | bribes | bribed | bribing | gift | gifts | gifted | fraud | fraudulent | corrupt | corruption | procure | procured | procurement | budget | assets | irregularities | graft | enrich | enriched | enrichment | laundering | fraudulent.
- Purpose of Keywords
  - The purpose of these keywords is to assign a second event category to those articles in arrest, purge, and legal action that also feature corruption. Articles in those categories that feature these words are double counted as both corruption and the original category.

## Corruption

- Keyword lists
  - For arrest: arrest; detain; apprehend; capture; custody; imprison; jail
  - For legal action: legal process; case; *investigate*; appeal; charged; prosecute\*; case; lawsuit; sue; suit; trial; court; charge; rule; sentence; judge
  - For purge: resign; *fire*; dismiss; sack; replace; quit.
- Purpose of Keywords
  - The purpose of these keywords is to assign a second event category to those articles in corruption that also feature arrests, legal action, and purges. Articles in those categories that feature these words are double counted as both corruption and the original category.

## Appendix C: Descriptive Maps

These temporal world maps provide a comprehensive overview of civic space coverage patterns across all 65 developing countries in the HQMARC corpus from 2012 to 2024. The maps reveal significant variation in both the intensity of civic space reporting and the types of events that dominate coverage across countries and over time. Geographic clustering is evident, with certain regions showing consistently higher civic space article rates and distinct event profiles that reflect regional political and social dynamics. The temporal dimension captures important shifts corresponding to major political events, democratic transitions, and periods of civic space restriction across the developing world.

### Civic Space Coverage Intensity

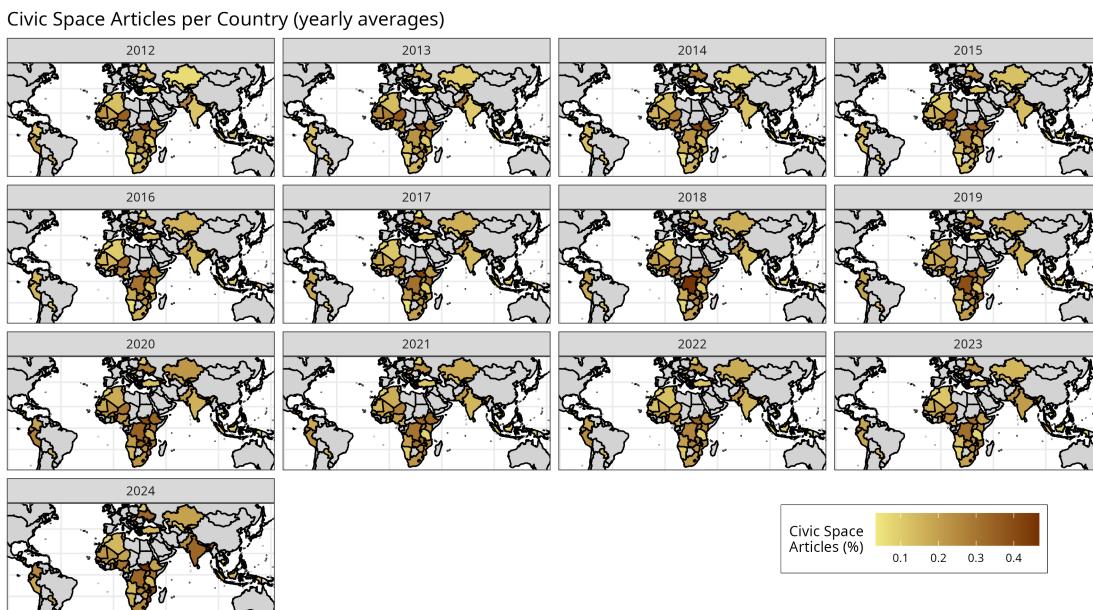


Figure 3: Civic space articles as percentage of total coverage by country-year. Countries are colored according to the proportion of their total news coverage dedicated to civic space events, providing insight into the relative salience of civic space issues across different national contexts. Light gray areas indicate countries without data coverage. The maps show temporal evolution from 2012 through 2024, revealing significant variation in civic space reporting intensity both across countries and over time.

### Dominant Civic Events by Country

## Appendix D: Validation Figures

These validation figures demonstrate the effectiveness of ML4P's event detection methodology by examining State of Emergency declarations across different regions during the COVID-19 pandemic. The vertical dashed red line at March 2020 marks the onset of the global pandemic, when countries

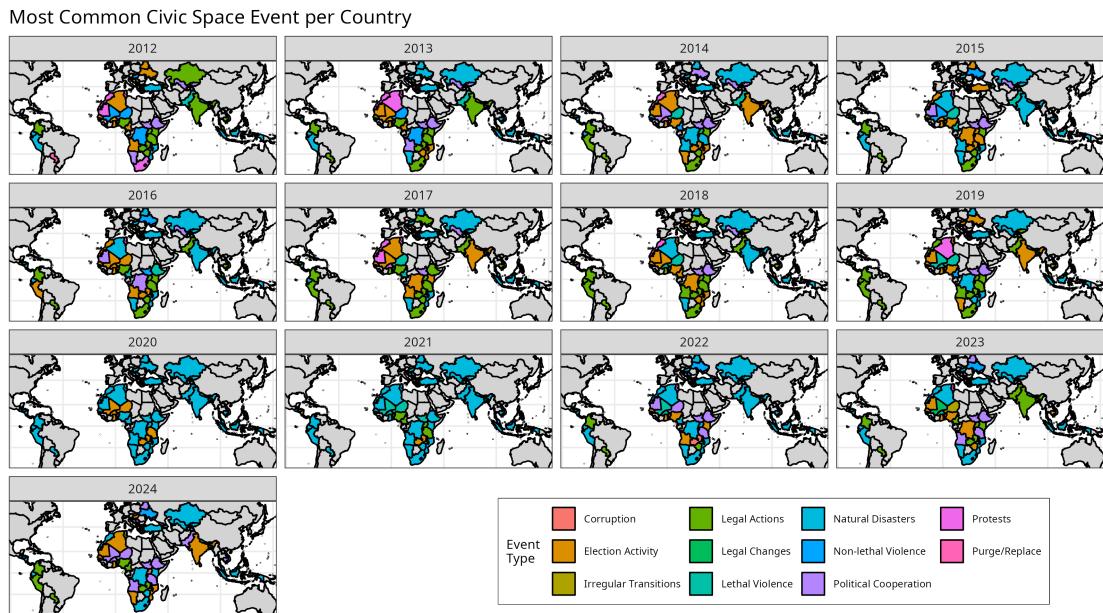


Figure 4: Most frequently reported civic event type per country-year. Countries are colored according to the civic event category with the highest reporting frequency in each year, showing the diversity of civic space concerns across different national contexts. The maps reveal regional patterns in dominant event types and temporal shifts in civic space priorities, from electoral activities to protests, corruption reporting, and other civic engagement forms.

worldwide implemented emergency measures including lockdowns, curfews, and restrictions on civil liberties. These plots validate our approach by showing systematic spikes in State of Emergency reporting across all regions coinciding with known policy responses to the pandemic.

## State of Emergency Detection by Region

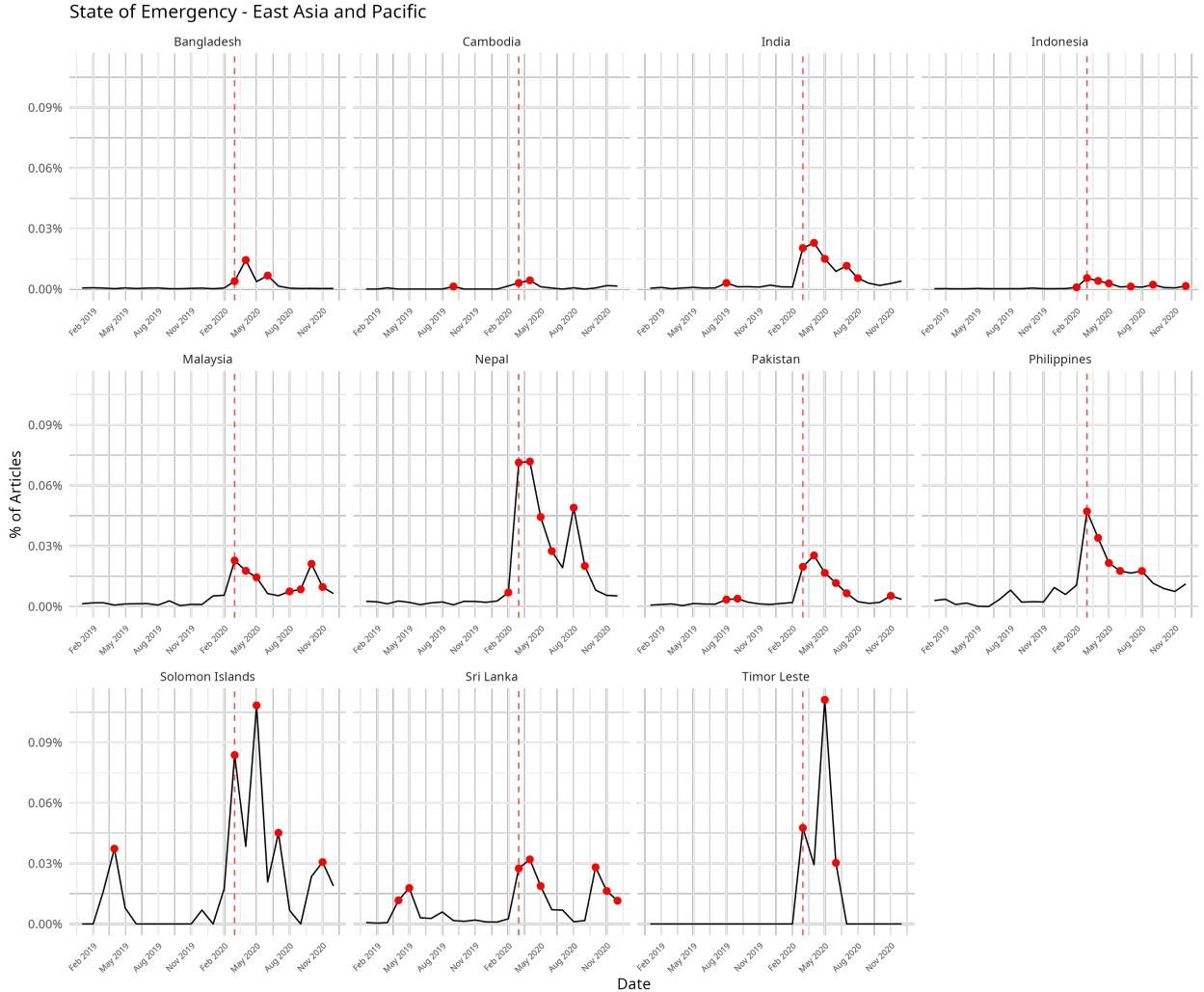


Figure 5: State of Emergency events detection in East Asia and Pacific countries from 2019-2020.

The plot shows the percentage of articles devoted to State of Emergency coverage over time, with red points indicating detected shock events. The vertical dashed red line marks March 2020, the beginning of the COVID-19 pandemic. Clear spikes are visible across multiple countries starting in March 2020, corresponding to the implementation of emergency measures and lockdowns in response to the pandemic.

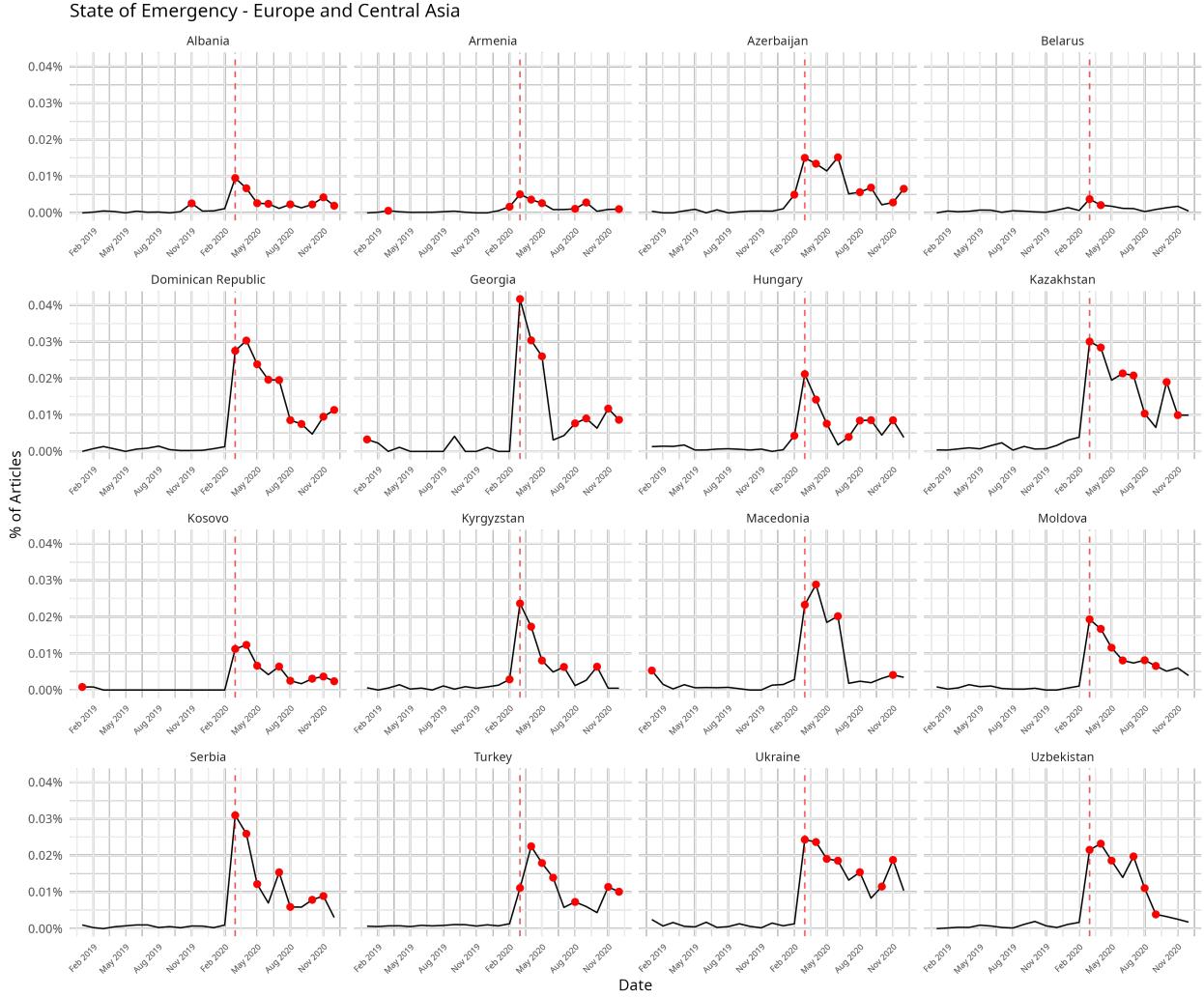


Figure 6: State of Emergency events detection in Europe and Central Asia countries from 2019-2020.

The plot shows the percentage of articles devoted to State of Emergency coverage over time, with red points indicating detected shock events. The vertical dashed red line marks March 2020, the beginning of the COVID-19 pandemic. Pronounced spikes are evident across the region starting in March 2020, reflecting the widespread implementation of emergency measures in response to the pandemic.

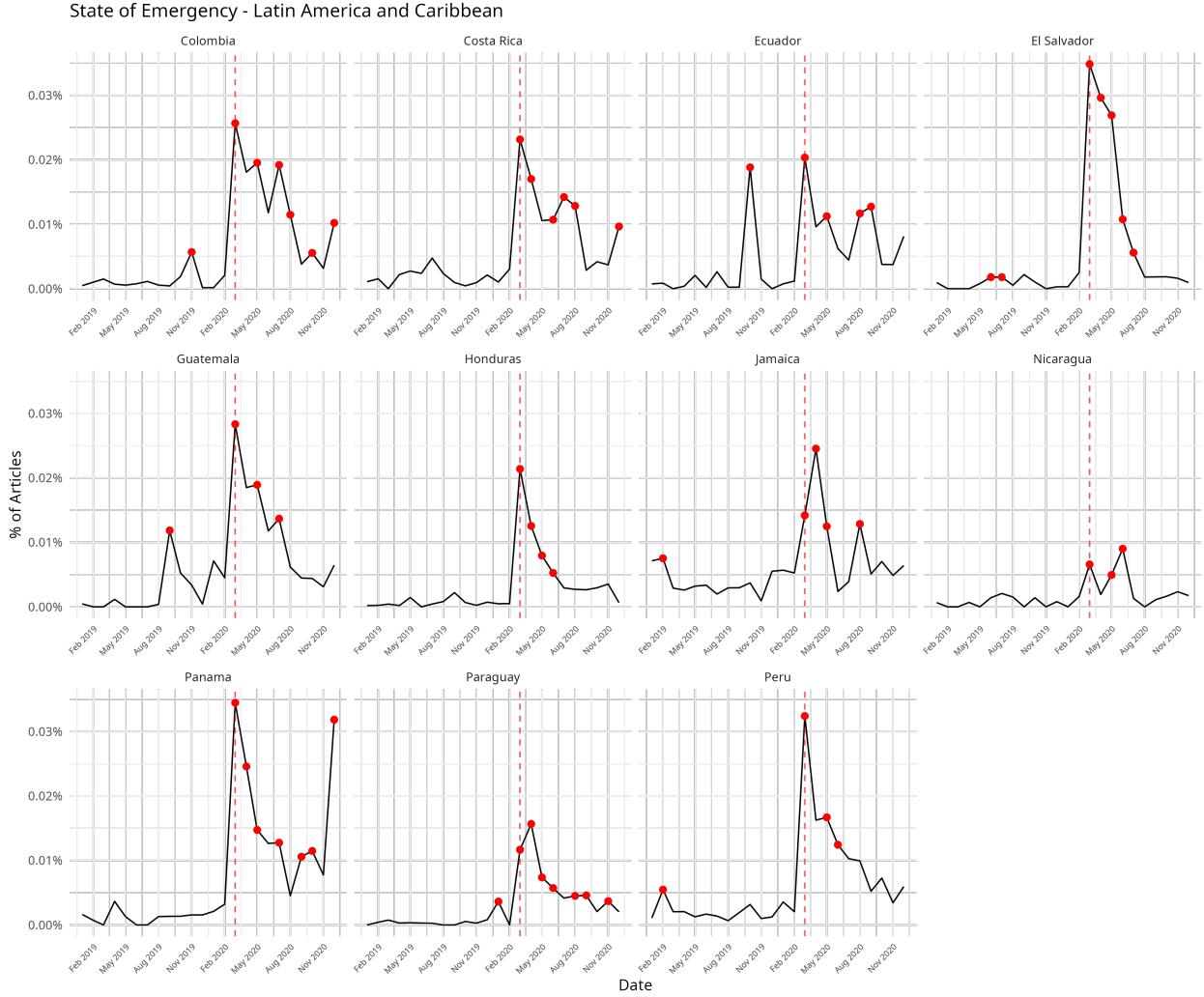


Figure 7: State of Emergency events detection in Latin America and Caribbean countries from 2019-2020. The plot shows the percentage of articles devoted to State of Emergency coverage over time, with red points indicating detected shock events. The vertical dashed red line marks March 2020, the beginning of the COVID-19 pandemic. Significant increases in State of Emergency reporting are visible across the region starting in March 2020, corresponding to the implementation of pandemic-related emergency measures.

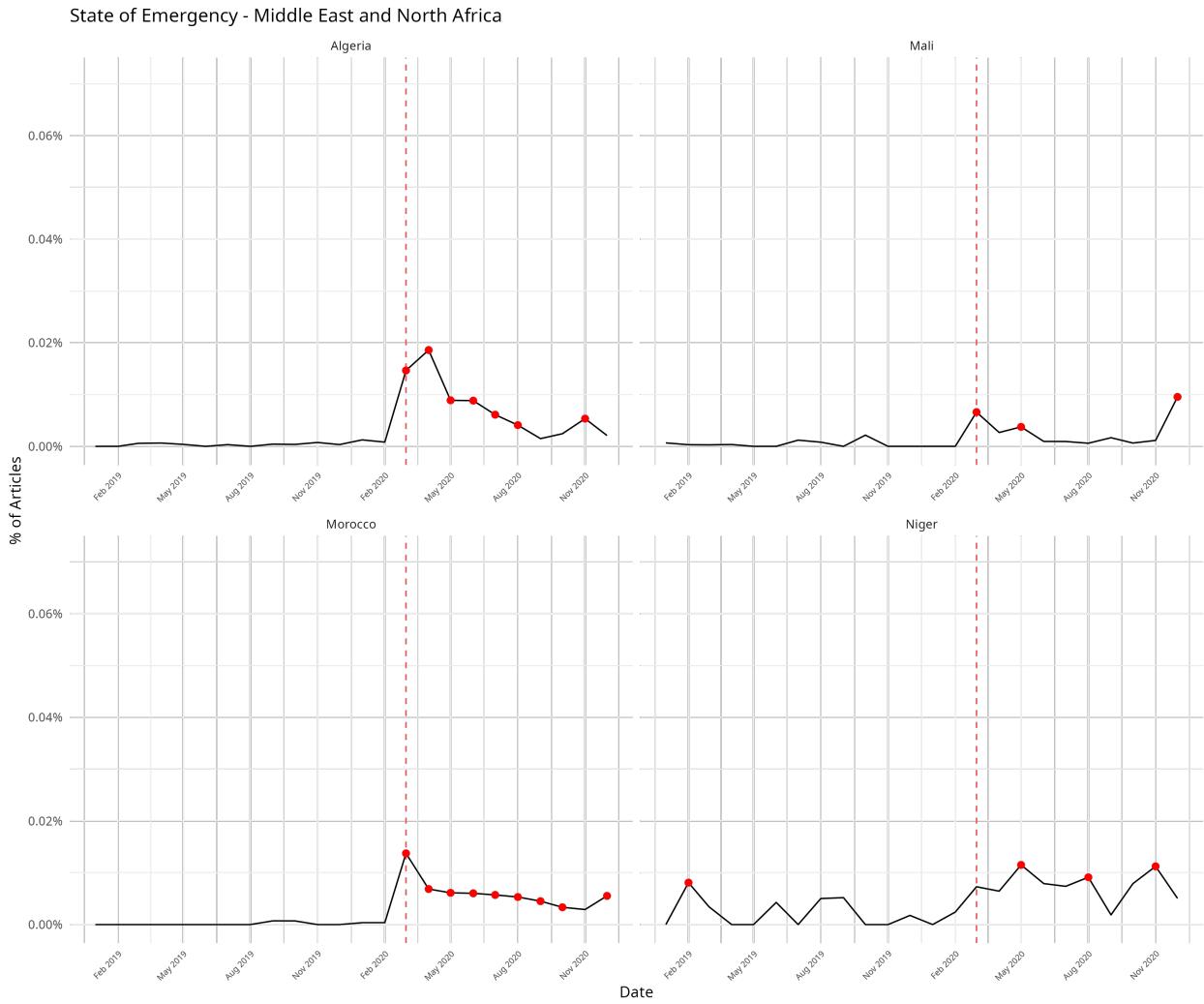


Figure 8: State of Emergency events detection in Middle East and North Africa countries from 2019-2020. The plot shows the percentage of articles devoted to State of Emergency coverage over time, with red points indicating detected shock events. The vertical dashed red line marks March 2020, the beginning of the COVID-19 pandemic. Clear spikes in State of Emergency reporting are visible across countries in the region starting in March 2020, reflecting the implementation of emergency measures in response to the pandemic.

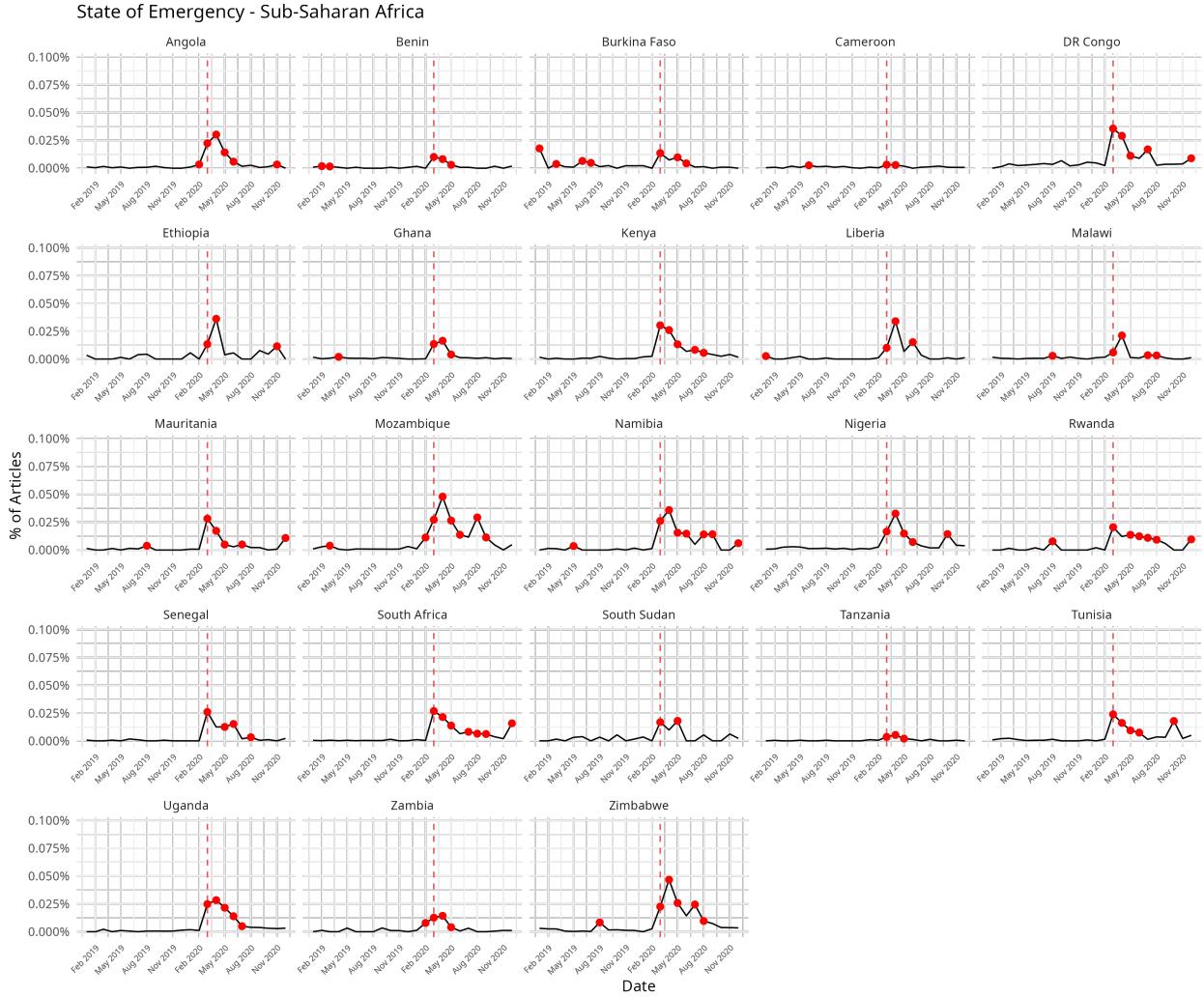


Figure 9: State of Emergency events detection in Sub-Saharan Africa countries from 2019-2020.

The plot shows the percentage of articles devoted to State of Emergency coverage over time, with red points indicating detected shock events. The vertical dashed red line marks March 2020, the beginning of the COVID-19 pandemic. Systematic increases in State of Emergency reporting are evident across multiple countries starting in March 2020, corresponding to the implementation of pandemic-related emergency measures and lockdowns.