

Alignment, Fractures, and Alternating Leadership in the Global Media Coverage of the Ukraine War

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ABSTRACT

We analyzed arguably the largest English-language news corpus on the Ukraine war to date – 190,864 Facebook news posts published by 112 outlets across five continents over three and a half years – offering a comprehensive and systematic account of how global media covered the conflict. Using an integrated pipeline that combines network analysis, topic modeling, framing lexicons, agency grammar, sourcing and verification indicators, and audience engagement modeling, we identified 23 recurring topics and compared patterns across four media blocs: the United States, allied countries, adversaries, and other countries. The network analysis showed that global media were fractured along geopolitical blocs yet remained interconnected through shared attention to a handful of central actors. Topic and framing analyses revealed broad alignment whenever the agenda was dominated by exogenous shocks such as battlefield developments, weapons deliveries, nuclear risk, or accountability milestones, which produced synchronized spikes across blocs. The fractures appeared in how these issues were framed: U.S. outlets prioritized sanctions design and financial enforcement, European allies emphasized supply and energy security, adversary outlets highlighted costs and contestation, and “other” countries amplified portable frames such as diplomacy, food security, and shipping risks. Within the Western bloc, leadership alternated depending on issue salience, with U.S. outlets often shaping the agenda during funding debates and allies taking the lead on governance, oversight, and cohesion, producing complementary but at times competing narratives. Audience-engagement models added a complementary dimension by showing that the same frames that synchronized coverage globally also concentrated attention, though resonance differed across blocs: allied audiences engaged most with governance and capability stories, U.S. audiences narrowly with weapons pipelines, adversary audiences with operations and logistics, and “other” audiences with diplomacy and mediation. Together, these findings illuminate how alignment, fractures, and alternating leadership structure global media narratives of war, and support a novel model of *Alliance-Linked Narrative Dynamics (ALND)*, in which domestic institutions, alliance ties, and platform logics condition not only how conflict is narrated but also how publics interpret costs, responsibilities, and diplomatic options.

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INTRODUCTION

Russia's full-scale invasion of Ukraine began on 24 February 2022, rapidly expanding a conflict that started with the annexation of Crimea in 2014. In the first months, Russia's multi-axis advance was met by unexpected Ukrainian resistance and a swift Western sanctions regime alongside large-scale military assistance. The summer and autumn of 2022 brought seesawing territorial control, with Ukrainian counteroffensives around Kharkiv and Kherson. Through 2023 and into 2024–2025 the war settled into a high-intensity, attritional fight marked by long-range strikes, air-defense duels, and continued disruption to energy and grain corridors. Across this period, diplomacy ebbed and flowed around summitry, prisoner exchanges, and nuclear risk signaling, while accountability efforts moved forward via atrocity documentation and court actions. This study examines how those evolving events were selected, framed, and amplified by the global, English-language press over three and a half years.

Global media coverage of the war in Ukraine

The coverage of the Ukraine war by the international media appears block-structured: Russian state and pro-state outlets circulated justificatory, identity-laden narratives (e.g., “denazification,” civilizational defense, NATO encirclement) anchored in WWII memory politics, while Ukrainian and allied media centered international-law violations, civilian harm, and Ukrainian agency (Khlevniuk, Gn, & Noordenbos, 2025; Locoman & Lau, 2025; Nordenstreng et al., 2023; Ptaszek, Yuskiv, & Khomych, 2023; Stawski & Szews, 2024). This cleavage manifested in label choices (“special military operation” vs. “war/invasion”), in the salience of humanitarian consequences, and in the moral vocabulary marshaled to attribute responsibility. Together, the previous studies identified persistent families of frames—responsibility/legality, human-interest, economic consequences/sanctions, diplomacy/peace, and nuclear risk—that map closely onto geopolitical alignments (Nordenstreng et al., 2023; Stawski & Szews, 2024; Guo, 2025).

Studies that adopted comparative, multi-outlet designs provided further support for these divergences. For example, a nine-nation television study (United States, United Kingdom, Finland, Italy, Brazil, India, South Africa, China, Russia) found broadly similar topic agendas (battlefield, sanctions, diplomacy) yet divergent evaluative angles and terminology: Western and Ukrainian bulletins emphasized civilian suffering and used terms such as “war” and “invasion,” whereas Russian broadcasting routinized briefings and normalized “special military operation” (Nordenstreng et al., 2023). A four-country press comparison (U.S., France, Poland, Russia) likewise showed shared generic frames but systematic differences: Russian outlets minimized war and human-interest frames; allied outlets emphasized aggression, sovereignty, and civilian harm (Stawski & Szews, 2024). Large-scale text mining of Telegram dispatches by Russian (RIA) and Ukrainian (UNIAN) agencies confirmed that authoritarian media ecologies privileged technical/military and justification frames, while more pluralistic ecologies emphasized harm, resistance, and accountability (Ptaszek et al., 2023).

Studies of strategic narratives may help explain how these patterns are sustained. Russian state-aligned coverage recurrently compresses historical time, tying the present conflict to the

“Great Patriotic War” to legitimate contemporary action; an analysis typologized these temporal linkages and showed how WWII tropes scaffolded justificatory claims (Khlevniuk et al., 2025). In contrast, research on Ukraine’s “connective strategic narrative” showed that a decentralized, affective public on social platforms co-produced a resilient story of defense, dignity, and survival that outperformed top-down messaging early in the war (Zakharchenko, 2025). Longitudinal analysis of Russian television across 2013–2022 further documented elite-driven narrative shifts that tracked political junctures, consolidating justificatory frames well before and after the 2022 escalation (Locoman & Lau, 2025).

Additional research has suggested that visual and moral cues often reinforce this divide between media narratives. A multi-country visual study found that allied and Ukrainian outlets depicted illegality and harm—personifying civilian victimization and resilience—whereas Russian outlets visually privileged officials, military hardware, and press briefings, sustaining normalization and legitimation (Young & Omosun, 2025). A mixed-methods assessment of English-language international broadcasters compared Ukraine, Russia, the U.K., and the U.S., showing different moral foundations emphasized across systems (Parmelee, Roman, & Beasley, 2024). Complementary work on the Mariupol/Azovstal siege found high prevalence of human-interest and conflict frames on Twitter/X, with method-dependent detection of morality and responsibility frames (Tschirky & Makhortykh, 2024). A 2025 study of online-news imagery showed that allied outlets’ visuals were more “agonised, localized, and politicized,” further deepening moral and strategic cues (Nagy-Béni, 2025).

Beyond the West–Russia dyad, previous studies have found that coverage in China and parts of the Global South followed largely distinctive logics. China-focused analyses showed that China Global Television Network (CGTN) and party-aligned outlets emphasized diplomacy, peace and economic-consequence frames, problematized sanctions, while criticizing the U.S. and NATO “hegemony” and maintaining a posture of “strategic neutrality” (Novoa-Jaso & Breeze, 2024; Tran Sautedé, 2025; Zhang, Liu, & Peng, 2024). In Brazil, primetime *Jornal Nacional* devoted sustained attention to sanctions, energy, and domestic repercussions with a descriptive tone (Guazina, 2024). A tri-country study of Brazil–India–South Africa showed mainstream news aligning with national elite discourse and domestication—less moralized, more “geopolitical balancing”—than coverage in the U.S. and Europe (Wozniak, Liu, & Lind, 2024).

Two further dynamics cut across systems. The first is platform effects: Telegram and broader digital ecosystems amplified episodic, real-time battlefield frames and narrative contestation, while mass media sustained thematic diplomacy/aid frames (Ptaszek et al., 2023; Oleinik, 2025). The second is audience belief ecologies: cross-national survey work revealed that the uptake of justificatory falsehoods (e.g., “U.S. biolabs”) depended far more on preexisting conspiracy outlooks than on media diets alone, tempering expectations about the corrective power of mainstream rebuttals (Zilinsky et al., 2024).

Methodologically, recent work has strengthened inference by widening outlet samples and combining automated text analysis with manual coding. Topic-model-based framing across Euronews vs. *Kyiv Post* documented East/West discursive separation around diplomacy, sovereignty, and atrocity frames (Verbytska, 2024). Nuclear-risk discourse showed additional

divergence: a tri-country comparison indicated Western outlets more often problematized escalation risks, while Chinese coverage balanced deterrence with peace signaling (Guo, 2025). Moreover, interview-based accounts of foreign correspondents highlighted structural constraints that reproduced dominant frames despite professional misgivings, clarifying supply-side limits on reframing (Alieva & Bluth, 2023).

Three major conclusions can be drawn from these prior studies: (1) Strategic media narratives appear to be tightly coupled to alliance structures: Ukrainian/U.S./European media emphasized sovereignty, rule-of-law, and victim-protection; Russian state media emphasized legitimization through memory politics, securitization, and euphemistic normalization (Khlevniuk et al., 2025; Locoman & Lau, 2025; Stawski & Szews, 2024). (2) “Non-aligned” media emphasized domestic costs and pragmatic diplomacy rather than wholesale adoption of either bloc’s storyline (Guazina, 2024; Wozniak et al., 2024; Zhang et al., 2024). (3) Venue and audience matter: connective, citizen-co-constructed narratives can outperform centralized messaging; disinformation’s success hinges less on supply than on receptive belief ecologies—requiring tailored interventions that pair legal-moral claims with tangible, domestically salient benefits (Zakharchenko, 2025; Zilinsky et al., 2024).

Our study set out to build on prior analyses by substantially expanding the number of media outlets surveyed. We argue that a comprehensive and systematic examination of media coverage of the Ukraine war can illuminate critical aspects of narrative emergence, amplification, and persistence, and may yield novel insights into the effects of media coverage on global audiences. In addition to enlarging the scope of outlets included, we employed advanced network, clustering, and text analyses to examine how media belonging to different geopolitical alliance blocs constructed their narratives and how these narratives were disseminated among aligned outlets. Finally, we directly linked the major topics and frames of coverage to measures of global audience engagement with the news. We therefore suggest that our framework may help uncover essential aspects of global media’s function in constructing and shaping conflict-related and strategic narratives, and perhaps even in influencing diplomatic efforts surrounding the war.

Within this framework, we asked whether media in Ukraine and allied countries, including the United States and members of the European Union, constructed narratives that differed from those in adversary countries (e.g., Russia, China, Iran, North Korea) and in countries that are neither allies nor adversaries (referred to here as “other” countries). Accordingly, our first research question (RQ1) was:

RQ1: What are the major similarities and differences between the coverage of the Ukraine war by media in Ukraine and allied countries, adversary countries, and countries that are neither allies nor adversaries?

To address RQ1, we conducted an in-depth analysis of news content posted on the Facebook pages of 112 international media outlets from five continents, all publishing in English. We selected Facebook because of its widespread global use, the platform’s uniformity (which allows for standardized data collection and processing), and the availability of built-in

engagement metrics accompanying each post. These include both reach (the number of users who accessed the news) and engagement (e.g., the number of likes, shares, and comments). Using this comprehensive Facebook dataset, we applied advanced network modeling to identify, compare, and map patterns of shared sourcing across outlets. We then conducted topic modeling to identify and compare the dominant topics of coverage. Clustering analysis was used to extract the major frames and assess their preferential use across media blocs. For the purposes of this study, we define a bloc as a group of outlets from geopolitically aligned countries. We compared four blocs: (1) outlets in Ukraine and allied countries, excluding the United States; (2) outlets in the United States, analyzed separately due to the country's global prominence and leadership during the Ukraine war across both the Biden and Trump administrations; (3) outlets in adversary countries (primarily Russia, as well as China, North Korea, and Iran); and (4) outlets in "other" countries that are neither allies nor adversaries.

We next examined which topics and narratives were most engaging for global audiences, leading to our second research question (RQ2):

RQ2: Which topics of Ukraine war coverage by international media were most, and least, engaging for global audiences?

To address RQ2, we developed multivariate regression models using Facebook engagement metrics to identify the topics associated with the highest and lowest levels of audience engagement.

Models of global media influence

Previous studies on global media influence offer a set of complementary but partial explanations for how news agendas and frames travel across borders. *Agenda-setting* research showed first that news organizations shape what publics think *about*—not by dictating opinions but by prioritizing issues; the original Chapel Hill study remains the canonical statement (McCombs & Shaw, 1972). *Media Systems Dependency* theory then moved the argument to the level of social structures, proposing that the more people and institutions rely on media for understanding, orientation, and play, the greater media's cognitive, affective, and behavioral effects (Ball-Rokeach & DeFleur, 1976). *Cultivation analysis* added a long-exposure perspective: patterned, repetitive depictions—initially television violence—gradually “cultivate” shared assumptions about reality, a mechanism that travels easily across borders through global content flows (Gerbner & Gross, 1976).

Political-economy accounts argue that who owns and funds media shapes what counts as news. The *Propaganda Model* posits that market and state filters incentivize coverage consonant with elite interests, especially in foreign affairs (Herman & Chomsky, 1988). *Framing theory*, meanwhile, explains how stories are told: by selecting and emphasizing particular problem definitions, causal attributions, moral evaluations, and remedies, media make certain interpretations more salient than others (Entman, 1993). When combined, these models show

how attention and interpretation are jointly produced: elites and institutions provide cues and incentives; journalists and platforms prioritize issues; frames give those issues meaning.

Global and comparative strands extended these insights beyond the West. “*Media imperialism*” and structural accounts suggest that core countries and dominant news agencies historically set international agendas, creating patterned dependencies in periphery states (Boyd-Barrett, 1977; Galtung, 1971). This line of work dovetails with research on international news flow showing persistent hierarchies in who is covered and who sets the terms of coverage (Chang, Shoemaker, & Brendlinger, 1987; Himelboim, Chang, & McCreery, 2010). *Comparative media-system* research adds that national media cultures and political institutions condition these flows and frames; the three “models of media and politics” (liberal, democratic corporatist, polarized pluralist) have been foundational—and later adapted “beyond the West”—for understanding cross-national variation (Hallin & Mancini, 2004, 2012). Earlier normative taxonomies (e.g., *Four Theories of the Press*) remain touchstones for how different polities imagine the press–state relationship, even if real systems are hybrids (Siebert, Peterson, & Schramm, 1956).

Digital-era revisions foreground networks. “*Network gatekeeping*” emphasizes how control over information flows is exercised by many actors—platforms, influencers, communities—rather than single editorial nodes (Barzilai-Nahon, 2008; Meraz & Papacharissi, 2013). Network (and inter-media) agenda-setting research demonstrates that agendas propagate across outlet webs and platform types, with partisan and emergent digital media sometimes leading elite legacy outlets (Vu, Guo, & McCombs, 2014; Vargo & Guo, 2017). These perspectives help explain transnational synchronization of issues and frames without assuming a single commanding center.

Three additional models widely used in international security and foreign-policy communication round out this toolkit. First, *indexing theory* argues mainstream news “indexes” the range of viewpoints largely to elite debate; during high consensus, dissenting frames tend to be marginalized (Bennett, 1990). Second, the “*CNN effect*” debate posits conditions under which real-time, emotionally resonant reporting can accelerate or constrain policy, especially in humanitarian crises (Robinson, 2002; see also Robinson, 1999, 2001). Third, Entman’s “*cascading activation*” model traces how frames flow among administration officials, other elites, journalists, and publics, clarifying when and how alternatives can gain traction (Entman, 2003; 2004).

Taken together, prior models explain what issues rise (agenda-setting, news flow), how they are told (framing), who advantages from structural incentives (political economy/media imperialism), where national context matters (comparative systems), and through which networked channels stories propagate today (network gatekeeping/agenda-setting). Yet they leave gaps critical to your argument. Most frameworks treat states, markets, or networks as primary drivers but say little about systematic clustering of narratives by geopolitical alliance—that is, why and how media in countries that share security ties converge on similar causal and moral framings even when their media systems differ. Indexing and cascading activation describe elite–media coupling domestically; media-imperialism and news-flow research capture

structural asymmetries; network models show propagation mechanics. None, however, directly theorize alliance-indexed synchronization—the coordinated, cross-border alignment of responsibility frames, strategic narratives, and moral vocabularies within security blocs (and counter-alignment among adversarial blocs).

Our study addresses this gap by proposing a novel framework we call **Alliance-Linked Narrative Dynamics (ALND)**. The idea is that security alliances provide cross-border linkages that shape how narratives are selected, circulated, and reinforced. Domestic media institutions set the boundaries of coverage, but these are conditioned by diplomatic and transgovernmental ties that synchronize indexing and cascading activation across allied capitals. Platform-level dynamics then facilitate rapid diffusion of bloc-consistent frames, while structural asymmetries in resources, language hubs, and wire services amplify certain narratives more than others. This framework connects alliances to observable media outcomes—such as shared issue agendas, responsibility attributions, and moral vocabularies—helping explain how global media shape discourse, diplomacy, and conflict trajectories.

Using an integrated analysis of media coverage and audience engagement — stratified by geopolitical alliances and compared across sourcing, framing, and levels of engagement — we pose our third research question:

RQ3: What are the shared and divergent patterns of Ukraine war coverage and audience engagement across the four global media blocs (allied countries, the United States, adversary countries, and other countries)?

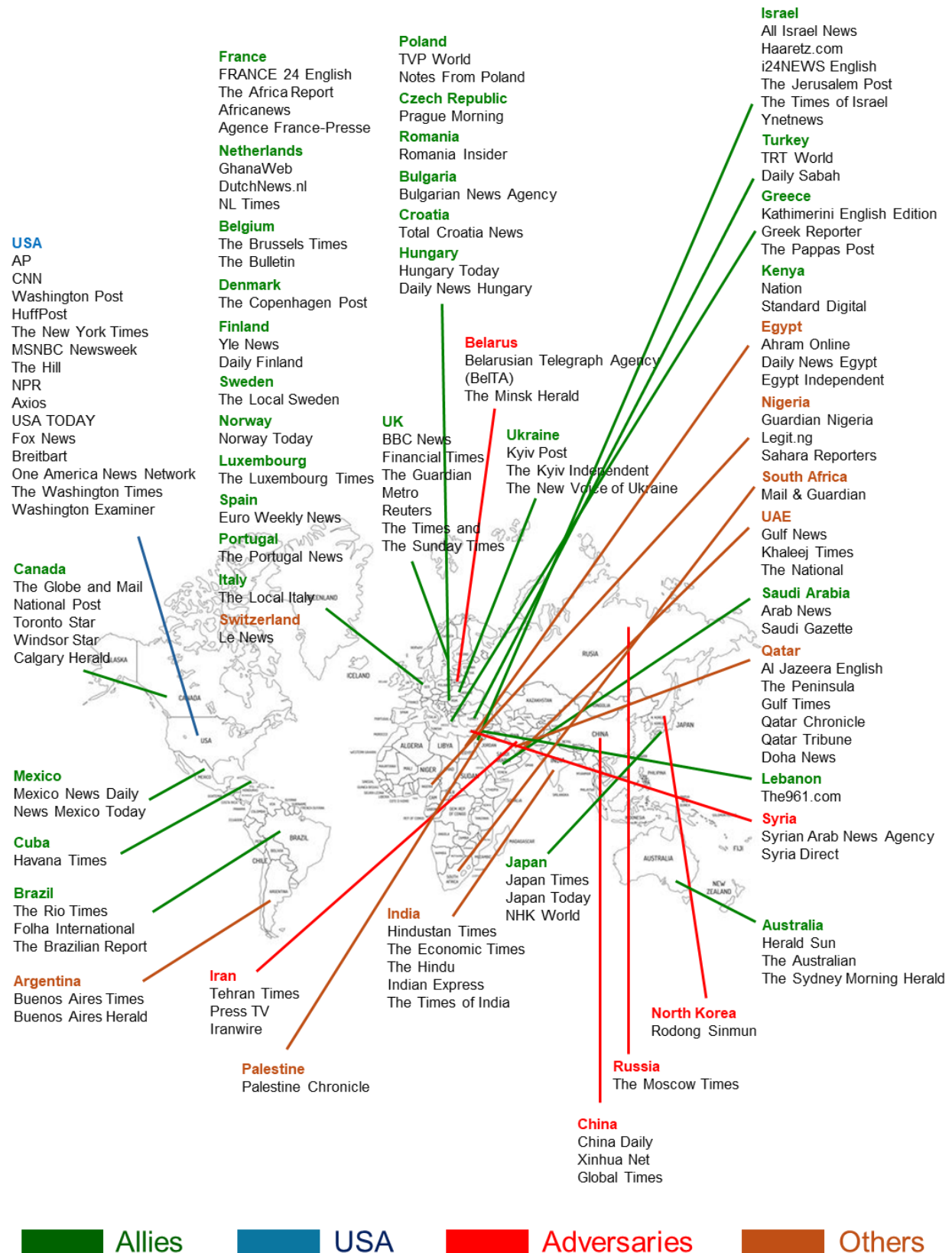
METHODS

Choice and classification of global media outlets

We analyzed English news disseminated between February 24, 2022 (the beginning of the war) until August 20, 2025 by 112 news outlets from over 45 countries across 5 continents. The news outlets were classified into four groups according to each outlet's home country's relationship with the United States: U.S., U.S. ally, U.S. adversary, and other non-ally countries (Figure 1). Country–U.S. relationship designations were taken from World Population Review¹, a publicly accessible database that aggregates demographic and geopolitical information. For each country listed on the U.S. relations page, the most widely circulated English-language news outlet was identified via web search, and the outlet's official Facebook page was located by name search. Supplementary Table 1 lists the 112 media outlets surveyed in this study.

¹ World Population Review” accessed September 11, 2025, <https://worldpopulationreview.com/country-rankings/united-states-allies>, <https://worldpopulationreview.com/country-rankings/us-enemy-countries>

Figure 1. Global Media Analyzed



Ideological sectors of the U.S. media. To assess whether outlet ideology relates to differences in coverage of the war in Ukraine, a purposive sample of national outlets spanning three categories was assembled: centrist/nonpartisan—AP, Newsweek, The Hill, NPR, Axios, USA TODAY; liberal-leaning—CNN, The Washington Post, HuffPost, The New York Times, MSNBC; conservative-leaning—Fox News, Breitbart, One America News Network (OANN), The Washington Times, The Washington Examiner. Ideological bias and reliability scores for U.S. news outlets were retrieved from Ad Fontes Media. Ad Fontes applies a mixed-methods procedure in which trained analysts (a) sample content across topics, (b) code ideological lean (left–right), and (c) rate journalistic reliability (e.g., factual reporting, transparency, adherence to editorial standards, sourcing). Ratings are cross-reviewed for consistency and periodically audited through expert panels to enhance objectivity and accuracy.

Facebook post data retrieval

Facebook posts about the war in Ukraine published by the selected media outlets were retrieved from the Meta Content Library. To identify the posts related to the war in Ukraine, a computational filter was developed using a closed-vocabulary approach based on predefined keyword sets related to the war in Ukraine – a method validated in large-scale communication research (Schwartz & Ungar, 2015). The keyword set was first applied to a random sample of 1,000 posts containing the term “Ukraine,” after which terms were added or removed to reduce false positives and false negatives. A second validation was conducted on an independent random sample of 1,000 Facebook posts. The final filter achieved 96% accuracy in detecting relevant content. Appendix 1 shows the words comprised in the computational filter used to retrieve posts related to the Ukraine war. The Meta Content Library only allowed Facebook news pages with at least 15,000 likes or followers (classified as “public pages”) to be eligible for export from the platform. In total, 190,864 Ukraine-related posts from 112 news outlets across 44 countries were included in the analysis.

Network analysis

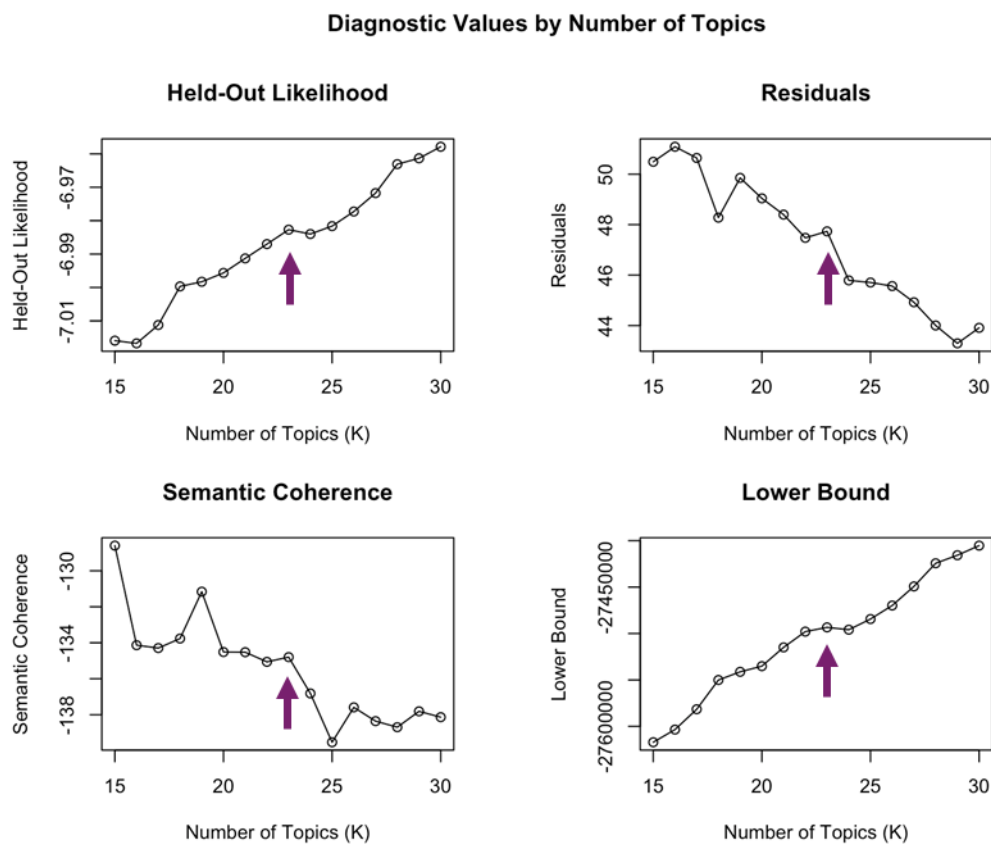
To conduct a network analysis of Ukraine war news, we first ran a named-entity collection and normalization to obtain a list with all individual names mentioned in the news written in English. First, we obtained all names included in Ukraine war news in the GDELT via Google BigQuery, by applying the Ukraine war news filter (Appendix 1) to retrieve article rows whose metadata include person-name fields; these names formed a high-recall seed lexicon. Second, spaCy’s NER (PERSON label) was run on all outlets’ Facebook posts to extract person mentions directly from post text. The combined list, containing the individual names mentioned in Ukraine war news, was cleaned by lowercasing, removing diacritics, and consolidating common variants and transliterations (e.g., “Zelensky”/“Zelensky”) to a canonical form. Non-persons and mislabels were excluded using spaCy labels plus the seed lexicon as a whitelist. The resulting canonical person dictionary was then used to tag each Facebook post with standardized individual mentions. Python networkX package was used to conduct network analyses using the individual names mentioned in the news on Facebook to visualize the connections between news that shared the same individual name mentions. The resulting network was visualized using Gephi

0.10. In this network, each node represents a Facebook account, and each edge represents a connection between two accounts in the form of a individual name mention.

Structured topic modeling

Major topics of Ukraine war coverage by the media were identified using Structural Topic Modeling (STM; Roberts et al., 2016), an LDA-based unsupervised method that clusters co-occurring terms and estimates topic prevalence while incorporating time to model temporal dynamics. Candidate models were compared using semantic coherence (topic interpretability), held-out likelihood (out-of-sample fit), residuals, and the variational lower bound (model fit). The number of topics was selected to maximize coherence and topic distinctiveness while achieving favorable held-out likelihood and low residual diagnostics. 23 major and distinct topics of coverage were thus identified (Figure 2). Representative terms and exemplar documents were reviewed to confirm interpretability of the final solution.

Figure 2. Choosing the Optimal Number of Topics



Topic to cluster assignment. We grouped the 23 structured topic modeling (STM)-derived topics into higher-level coverage families using a transparent, dictionary-guided labeling pipeline. Starting from the STM outputs, we applied eight domain frame lexicons (Economy and Energy; Military Operations; Diplomacy/Peace; Alliances/Geopolitics; Weapons/Western Support; Humanitarian/Refugees; War-Crimes/Accountability; Nuclear/Escalation) whose

vocabularies were adapted from established framing taxonomies and news codebooks (Semetko & Valkenburg, 2000; Boydston, 2014; Card, Boydston, Gross, Resnik, & Smith, 2015) and cross-checked against IPTC Media Topics and GDELT Themes (IPTC, n.d.; The GDELT Project, n.d.), plus two ancillary, transparently defined lexicons (for Governance and Wartime Integrity and Information Environment and Culture; seeded from IPTC Media Topics/GDELT). For each topic, we pooled the full text of its 2,000 exemplar items and computed frame-lexicon hit counts normalized to frame shares (Roberts, Stewart, & Tingley, 2019; Roberts et al., 2014). Cluster labels equaled the maximal frame share; near-ties were resolved via informative log-odds ‘keyness’ (Monroe, Colaresi, & Quinn, 2008); uncertainty was quantified with outlet-level bootstrap confidence intervals (Efron & Tibshirani, 1993). To quantify uncertainty and outlet heterogeneity, we used an outlet-level cluster bootstrap (resampling sources within a topic, 500 draws) to produce 95% confidence intervals and a win probability for the assigned label (Efron & Tibshirani, 1993). We report robustness to dictionary perturbations, alternative tie-break metrics (e.g., Jensen–Shannon keyness), and thin-slice resamples, following best practices in text-as-data for transparent measurement and validation (Grimmer & Stewart, 2013; Grimmer, Roberts, & Stewart, 2022). This procedure yields a reproducible, auditable mapping from STM topics to interpretable coverage families while preserving the topic model’s unsupervised discovery and adding theory-grounded framing structure.

Computing media coverage and hit rates. We next quantified lexical signals with a transparent, dictionary-guided pipeline implemented in Python. The 46,000 posts used in the analysis (2,000 exemplar posts for each of the 23 topics) were first lower-cased, unicode-normalized, and lightly cleaned (URL/user handles removed; punctuation preserved when needed for word-boundary matching). For each analytic grouping—media bloc [allies, U.S., adversaries, other countries], cluster, topic, or U.S. ideological subset—we computed two families of rates, both reported “per-1,000 posts.” *Coverage rates* (binary “has-any”) capture the share of posts that contain *at least one* match from a given lexicon: economy/energy, diplomacy/peace, weapons/support, nuclear-risk, contestation (e.g., *propaganda, fabricated*), attribution-caution (e.g., *alleged, reportedly, according to*), and agency heuristics (e.g., *Russia/Ukraine* as grammatical subject in attack/strike templates). For these, we applied Unicode-aware regular expressions with word-boundary anchors to minimize false positives, flagged each post 0/1 for presence, summed the flags within a group, and scaled by group size $\times 1,000$. Because each post counts at most once per lexicon, coverage rates are bounded by 1,000/1,000 (i.e., 100%). *Hit rates* (intensity counts) measure how often a cue appears across posts. We report Numeracy as the total count of digit characters in a group, scaled per 1,000 posts; this can exceed 1,000 because a single post may contain many numbers (e.g., *1,561.1 digits per 1,000 posts* ≈ 1.56 digits per post on average). Lexicons were adapted from established framing codebooks (e.g., Semetko & Valkenburg’s generic frames; the Policy Agendas/Media Frames work; the Media Frames Corpus) and cross-checked against IPTC Media Topics and GDELT Themes to ensure topical coverage and face validity. This dictionary-based measurement strategy follows best practices in the text-as-data literature emphasizing construct validity, transparent preprocessing, and replicability; STM topic identities come from prior estimation and are not re-fit here, consistent with recommended separation of discovery (topic modeling) and measurement (dictionary indicators) (Grimmer & Stewart, 2013; Grimmer,

Roberts, & Stewart, 2022; Roberts, Stewart, & Tingley, 2014; Semetko & Valkenburg, 2000; Boydston, 2013; Card et al., 2015).

Engagement analysis

To examine the factors shaping audience engagement with news posts on Facebook, we estimated four separate models corresponding to different media groupings: (1) Ukraine and its allies (excluding the U.S.), (2) the U.S., (3) adversary countries, and (4) other countries. For each group, we applied a Zero-Inflated Beta Regression model using the *gamlss* package in R. The dependent variable was the adjusted Facebook post “like” rate, defined as the number of likes divided by the number of views for each post. This measure is bounded between 0 and 1 but includes an excess of zeros (posts that received no engagement). The zero-inflated beta specification was therefore appropriate, as it simultaneously accounts for (a) the probability of excess zeros and (b) the distribution of nonzero engagement rates. The model contains three components: (1) μ (mu): estimates the expected engagement rate among posts with at least some likes; (2) σ (sigma): captures the dispersion of engagement rates among nonzero values; and (3) ν (nu): models the probability that a post receives no engagement (the zero-inflation component). Independent variables included topic proportions for each post, derived from Structural Topic Modeling (STM). Specifically, we used the theta values, which quantify the proportion of text associated with each topic within a post. To address multicollinearity, we computed variance inflation factors (VIF) and excluded topics with high correlations. As a result: Topic 23 (the least prevalent) was excluded from all models; Topic 1 was excluded from the allies, adversaries, and other countries models; Topic 22 was excluded from the adversaries and other countries models; and Topic 11 was excluded from the U.S. and adversaries models.

RESULTS

Network Analysis of Global Media Coverage of the Ukraine War

To begin addressing RQ1 and gain insight into how global outlets sourced and circulated information about the Ukraine war, we conducted a network analysis of all news posted on the Facebook pages of the 112 media outlets in our sample during the first 3.5 years of the conflict. The resulting network, comprising 3,737 nodes and 18,448 edges, is displayed in Figure 3².

Network structure and metrics. The network is relatively sparse (density = 0.003) but efficiently connected, with an average degree of 9.87, an average path length of 3.07, and a diameter of 4. Community detection produced a modularity score of 0.237, indicating moderately distinct clusters of co-mentioned entities, though the clustering coefficient of 0.000

² a higher resolution network can be accessed online at https://drive.google.com/file/d/1828Vxw5ZSMWSadPO4wpeh4YowNZuh3VR/view?usp=drive_link

Figure 3. Global View of Ukraine War Coverage

points to little local triadic closure. Node centrality was highly skewed: the average weighted degree was 65.31, and PageRank scores ($\epsilon = 0.001$, $p = 0.85$) identified Vladimir Putin, Volodymyr Zelenskyy, Donald Trump, Joe Biden, and Xi Jinping as the most influential nodes. These metrics show a network where attention is concentrated on a small set of political leaders, with most other nodes weakly connected.

Community patterns and cluster placement. The substantive structure of the network reflects these imbalances. A *dense hub of U.S. outlets* anchors the network core, with American media strongly interconnected and tightly linked to allied outlets. Prominent U.K., Australian, and Israeli outlets — including BBC News, The Times, The Australian, and Ynetnews — appear embedded within this cluster, suggesting an *integrated transatlantic and allied discourse* that repeatedly referenced the same small set of international political figures.

In contrast, *Ukrainian media form a visually distinct but peripheral cluster*. The Kyiv Independent, Kyiv Post, and The New Voice of Ukraine are among the most frequently cited outlets in the dataset, yet their peripheral placement indicates that they rely on a narrower and less globally shared set of figures compared to U.S. and allied outlets. This structural separation suggests that Ukrainian coverage, while voluminous, followed a more *localized sourcing pattern*, distinguishing it from the integrated hub of allies.

Non-ally media, including Indian outlets such as The Times of India, form *partially independent clusters*. Indian media are prominent enough to appear distinctly in the visualization, reflecting their reliance on a set of names not central to the U.S. and ally clusters. Similarly, adversary-country media (China, Iran, Syria) are scattered across the network, typically revolving around the same major figures as their U.S. and ally counterparts. However, The Moscow Times stands out as an exception: positioned at the network's extreme periphery, it appears to rely on a distinctive sourcing repertoire that sets it apart even from other adversary-country outlets.

Cross-cutting figures and shared focal points. Despite these structural separations, the network is bound together by shared attention to a handful of central figures. Putin, Zelenskyy, Biden, Trump, and Xi form the *discursive spine of the network*, cited across alliance categories and regions. Their centrality underscores how global coverage of the Ukraine war converged on a limited set of symbolic actors, bridging geopolitical divides even as outlets differed in sourcing breadth and placement.

Taken together, the analysis highlights three key patterns: (1) Concentration of attention: A small number of leaders dominated global coverage, anchoring the network across geopolitical divides. (2) Asymmetric positioning: U.S. and allied media formed the most interconnected hub, while Ukrainian outlets remained relatively peripheral despite high volume, reflecting distinctive sourcing practices. (3) Notable exceptions: Indian media and *The Moscow Times* illustrate partial independence from prevailing patterns, carving out unique discursive spaces.

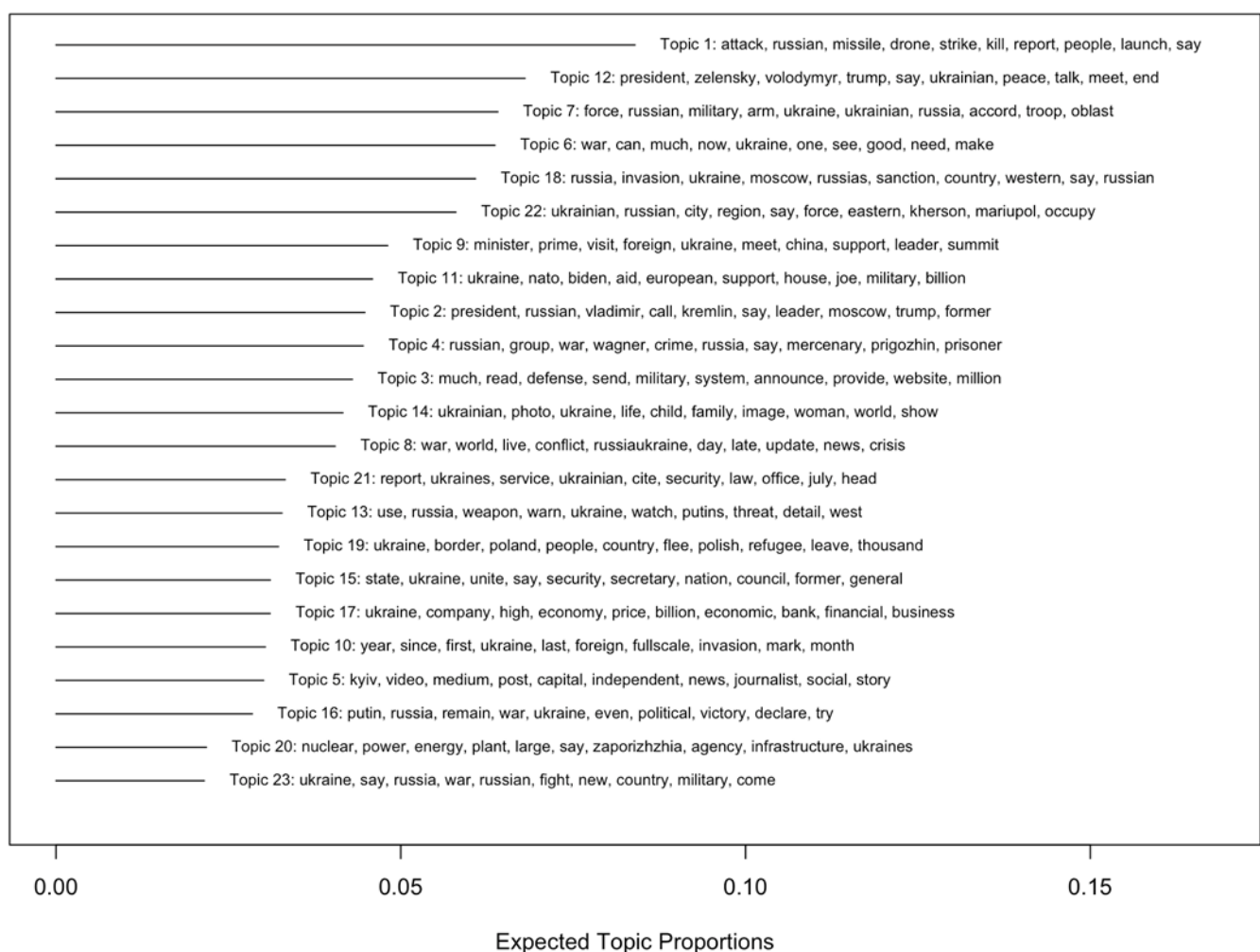
In sum, the network shows that global media coverage of the Ukraine war was highly interconnected and convergent on a few central actors, yet differentiated by outlet type and

geopolitical alignment. The result is a structure where geopolitical blocs are visible but not isolated, with shared reference points linking even adversarial media ecosystems.

Topics of Ukraine war coverage

Following the structured topic modeling (STM) of news from 112 global media outlets, 23 major topics of Ukraine war coverage were identified (Figure 4).

Figure 4. Major Topics of Ukraine War Coverage



To gain further insight into the principal elements and prominent sub-topics of each topic (theme), 2,000 top-matched items for each topic were selected and manually inspected. Supplementary Table 1 lists these 2,000 top-matched items per topic (46,000 items in total). The qualitative read of the posts within each topic reveals the principal elements and prominent sub-

topics of each theme; below we synthesize each topic and note several recurring sub-areas of coverage that characterize the 2,000 exemplars.

Topic 1 — Frontline reporting and daily damage assessments. Military-operations updates from regional authorities on missile/drone strikes and casualties; sub-areas: day-by-day attack logs, civil-infrastructure hits, air-defense interceptions, oblast situation reports.

Topic 2 — Summitry, mediation, and leader diplomacy. Diplomacy/peace coverage of head-of-state signaling, third-party mediation, and ceasefire rhetoric; sub-areas: bilateral calls, communiqués, linkage to wider agendas.

Topic 3 — Weapons and Western assistance cycles. Weapons/support focus on air defense systems, aid packages, and delivery pipelines; sub-areas: legislative approvals, platform timelines/specs (Patriot, HIMARS, F-16), training and conditionality.

Topic 4 — War-crimes and accountability narratives. Legal-norms language around alleged atrocities, ICC/tribunal actions, and high-profile cases; sub-areas: investigation documentation, classifications (atrocities/deportations), evidence and jurisdiction debates.

Topic 5 — Kyiv/national outlet roundups. Operational spine with curated morning/evening digests; sub-areas: capital-city situational updates, official communiqués, social-media roundups.

Topic 6 — Battlefield progress with op-ed overlays. Operations mixed with analysis/opinion signposts; sub-areas: campaign assessments, invasion retrospectives, explainer links.

Topic 7 — Force estimates and casualty accounting. Operational ledger of indicative losses and order-of-battle; sub-areas: attrition tallies, unit movements, daily MoD/AoS bulletins.

Topic 8 — Alliance politics and intra-EU/NATO bargaining. Alliances/geopolitics frame with cohesion tests and policy vetoes; sub-areas: accession/enlargement steps, sanctions unanimity, member-state bargaining.

Topic 9 — Foreign-minister/PM diplomacy. Diplomacy/peace emphasis on ministerial travel and statements, including Global South positioning; sub-areas: support commitments, negotiation parameters, forum sidelines.

Topic 10 — First-phase invasion narratives revisited. Operational recounting of “full-scale invasion,” early shocks, and state messaging; sub-areas: mobilization waves, control-line milestones, leadership addresses.

Topic 11 — U.S. funding debates and multi-theater aid. Weapons/support with U.S. domestic decision costs (Speaker/White House dynamics, Ukraine–Israel couplings); sub-areas: appropriations timing, oversight conditions, coalition politics.

Topic 12 — Leader signaling around talks/security guarantees. Diplomacy/peace tracking Zelensky/Putin/U.S. figures; sub-areas: summit invitations, framework trial balloons, domestic spillovers.

Topic 13 — Nuclear rhetoric and escalation risk. Nuclear/escalation saturation: nuclear/chemical references, long-range thresholds, incidents inside Russia; sub-areas: deterrence red-lines, arms-control reminders, plant-adjacent rhetoric.

Topic 14 — Culture, media artifacts, and symbolic politics. War-adjacent cultural/sports/media content blended with updates; sub-areas: morale/solidarity pieces, performances, info-ecosystem dynamics.

Topic 15 — Allied coordination led by U.S. officials. Alliances/geopolitics via State/Defense/NSC briefings (Blinken/Austin/Kirby); sub-areas: contact-group outcomes, burden-sharing, tranche synchronization.

Topic 16 — Gulf/Eurasian diplomatic outreach. Diplomacy/peace highlighting MBS/Sheikh Tamim and regional positioning; sub-areas: energy-linked mediation, ceasefire trial balloons, hedging strategies.

Topic 17 — Macro-finance and sanctions architecture. Economy/energy focused on IMF/CB issues, Russian assets, macro spillovers; sub-areas: asset seizure, export controls, inflation/FX.

Topic 18 — Energy flows, Black Sea corridors, sanctions enforcement. Economy/energy around shipping/insurance, oil/gas routes, price-cap mechanics; sub-areas: corridor throughput, pipeline incidents, trade re-routing.

Topic 19 — Humanitarian movement and third-country nationals. Humanitarian/refugees emphasis on evacuations/consular actions; sub-areas: border processing, temporary protection, aid access.

Topic 20 — Zaporizhzhia nuclear plant and IAEA oversight. Nuclear/escalation on plant safety, inspection access, and alarms; sub-areas: off-site power, shelling allegations, IAEA reports.

Topic 21 — Security services, governance, and wartime integrity. Governance/oversight focus on SBU actions, anti-corruption, parliamentary reshuffles; sub-areas: internal security cases, mobilization administration, institutional reform.

Topic 22 — City-level battles and occupation dynamics. Operations describing force movements and urban combat; sub-areas: street fighting, evacuations, shifting control lines.

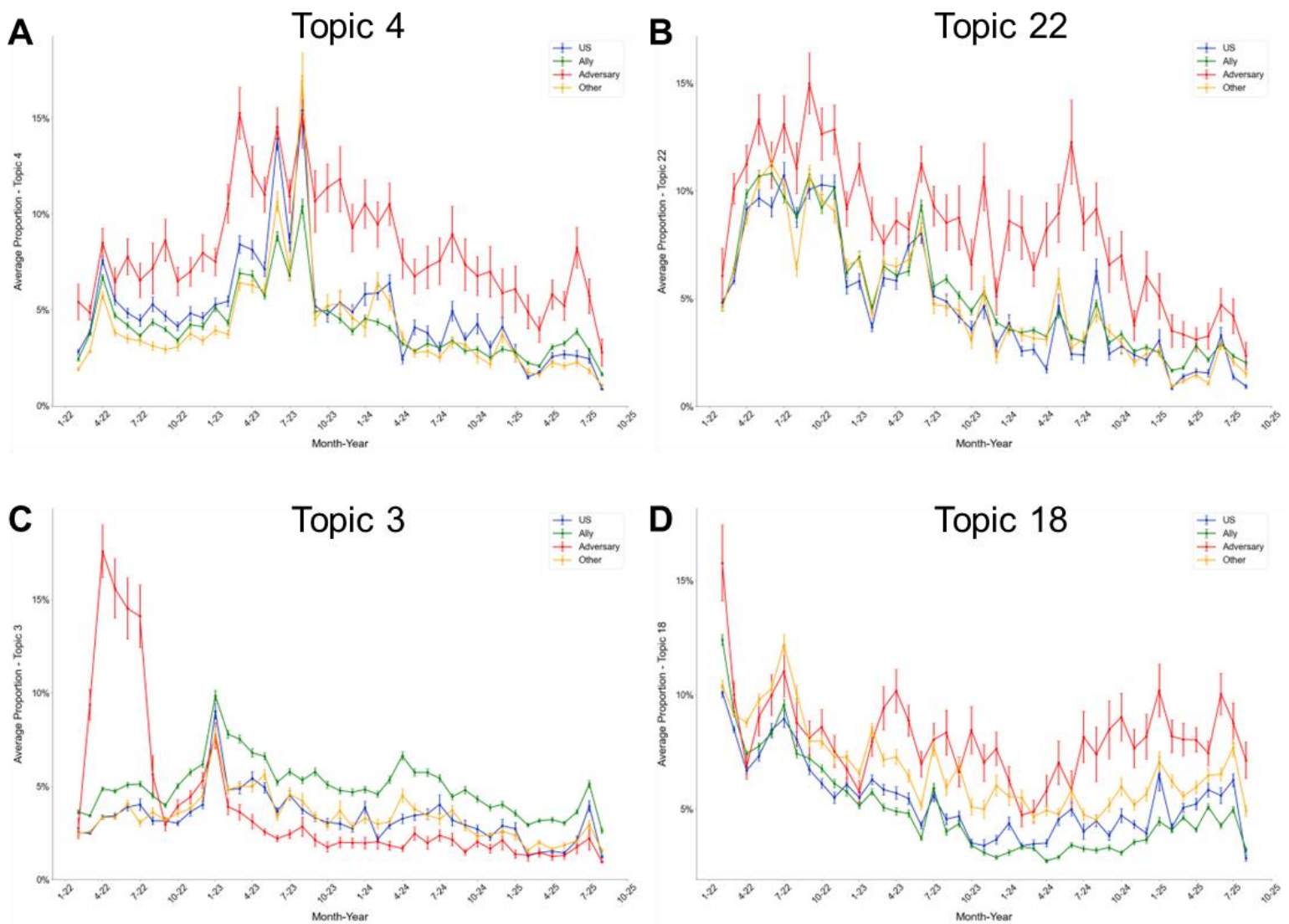
Topic 23 — Hungary-framed coverage at the EU interface. Alliances/geopolitics with Hungarian diplomatic/domestic references; sub-areas: EU policy positioning, bilateral frictions, cross-border impacts.

Quantitative differences in topic usage in Ukraine war coverage by the global media

To further address RQ1 and begin addressing RQ3, we next compared topic usage across the four major media blocs. We computed monthly topic usage—the average share of items per month within the full corpus of news — for four media blocs (Allied, U.S., Adversary, Other-country) from 24 February 2022 through 20 August 2025.

We found that media outlets in adversary countries devoted more coverage than the other blocs to Topic 4 (War-crimes/Accountability), Topic 22 (high-tempo Military Operations), Topic 3 (Weapons/Western Support), and Topic 18 (Economy/Energy spillovers). Topic 3's adversary elevation was temporally concentrated in the first six months (Feb–Aug 2022), consistent with the initial contest over the meaning of Western transfers; the other three topics remained elevated through the entire window (Figure 5).

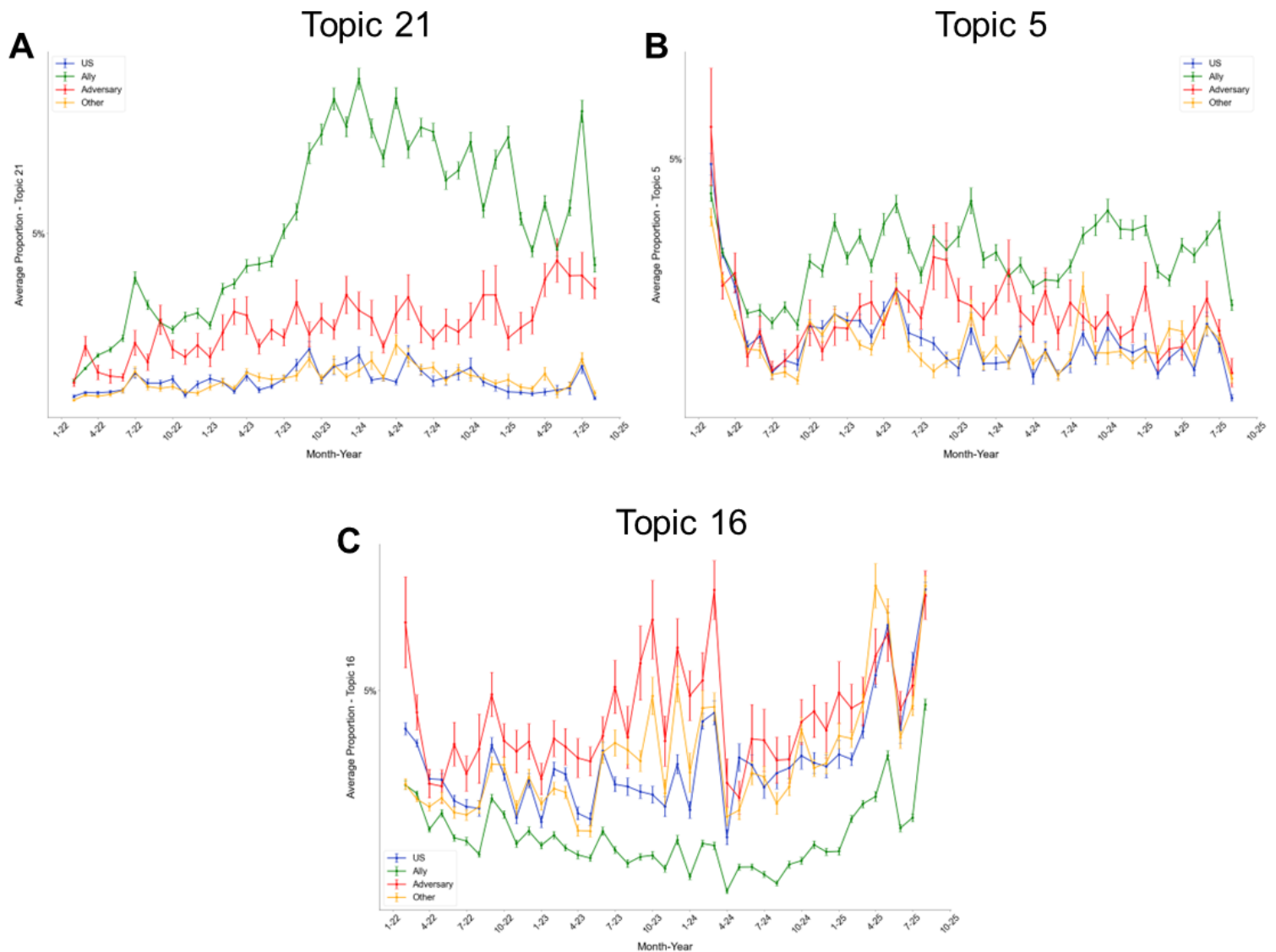
Figure 5. Topics Covered Preferentially by Media in Adversary Countries



Allied outlets dramatically out-covered Topic 21 (Governance & Wartime Integrity) and maintained a sustained edge on Topic 5 (Economy/Energy—sanctions/price dynamics), while

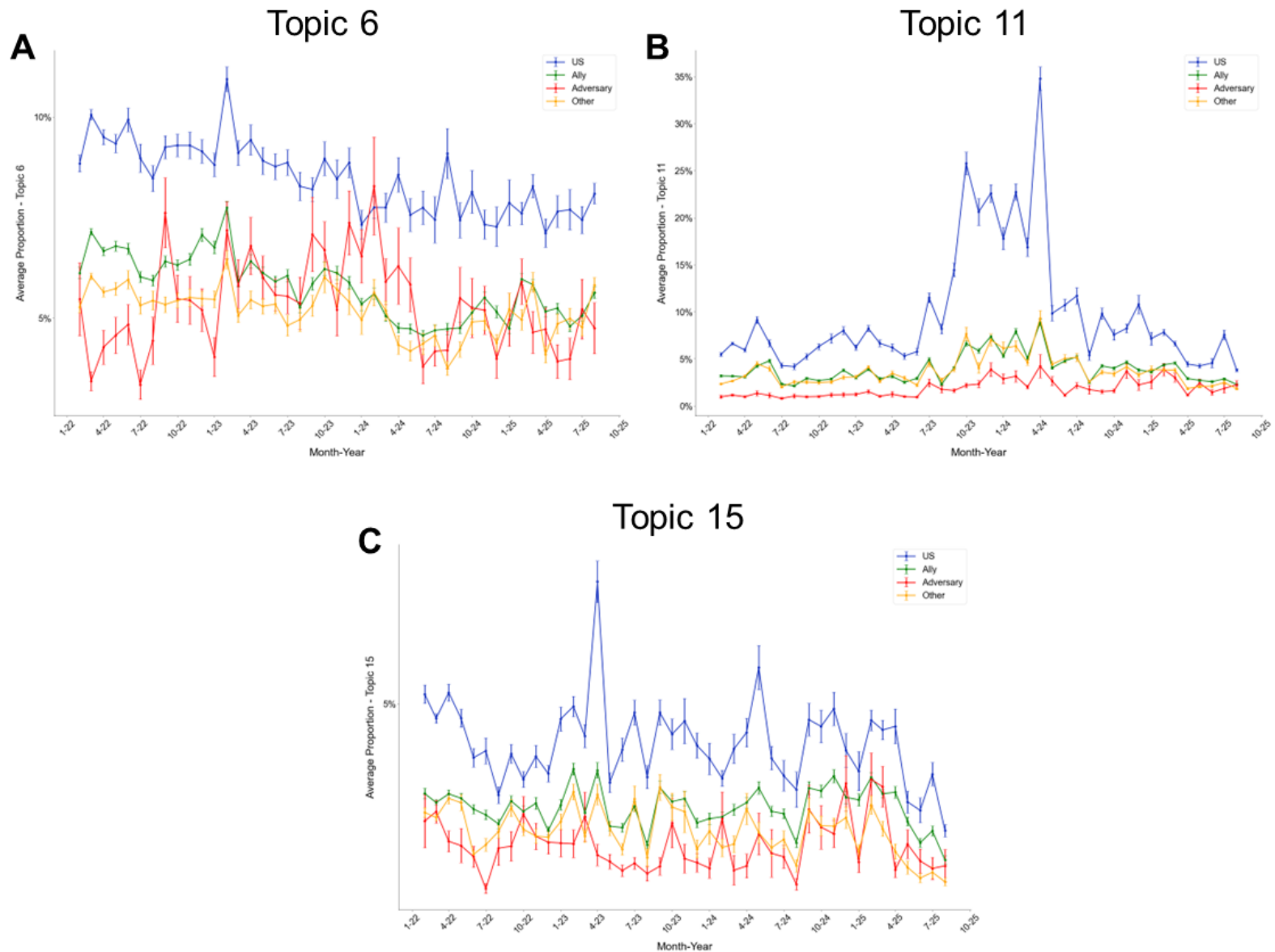
covering Topic 16 (Diplomacy/Peace—peace plans/mediators) *less* than the other blocs (Figure 6)

Figure 6. Topics Covered Preferentially in Allied Countries except U.S.



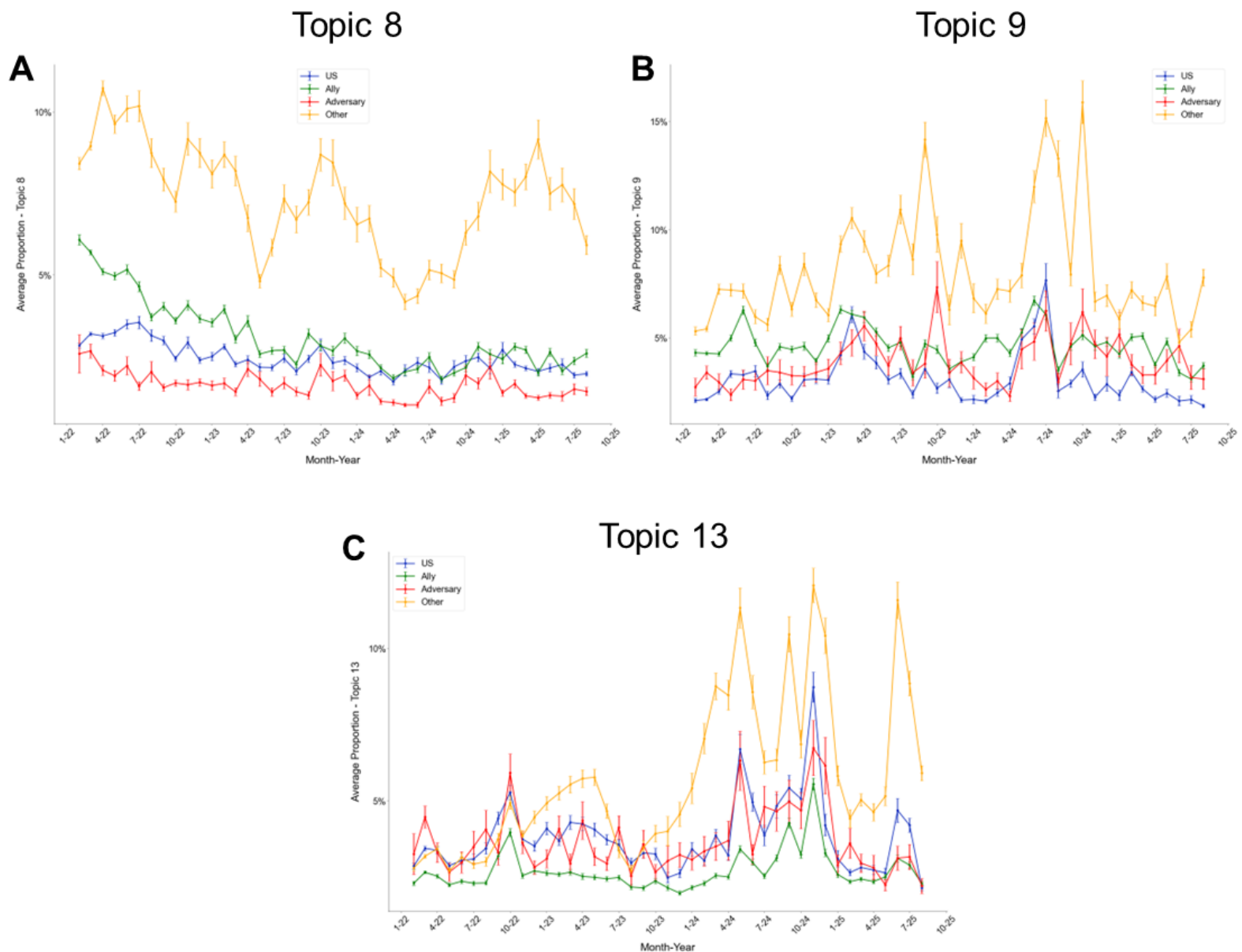
U.S. outlets carried Topics 6 (Economy/Energy—export controls/price-cap design), 11 (Alliances/Geopolitics—NATO/EU cohesion with U.S. decision costs), and 15 (Economy/Energy—price/storage cycles) significantly more than the rest, with Topic 11 showing a pronounced spike from August 2023 to April 2024 as alliance politics and funding debates crested domestically (Figure 7).

Figure 7. Topics Covered Preferentially by U.S. Media



Other-country outlets led Topic 8 (Economy/Energy—shipping/insurance, Black Sea risks) and Topic 9 (Diplomacy—summitry/communiqués) throughout, and they picked up Topic 13 (Military Operations—positional fighting/air-defense duels) more strongly from December 2022 onward (Figure 8). Across the remaining topics, monthly shares were broadly similar, indicating a shared baseline agenda even where tone and sub-angles differed.

Figure 8. Topics Covered Preferentially by Media in Other Countries



Clusters of global media coverage

We next sought to identify larger, shared patterns across related topics (clusters), which are integrated as frames or lenses through which the war was presented to global audiences. The largest and most central cluster, or frame, of coverage was the **Military Operations and Daily Situation** cluster (Topics 1, 5, 6, 7, 10, 22). Stories in this family read like a running operational ledger: daily strike and interception reports; map-anchored descriptions of front-line movements and contested towns; rotating tallies of casualties and damage to energy, transport, and housing

infrastructure; and the cadence of morning/evening “situation updates” issued by regional and national authorities. Even when analysis or opinion appeared, it was tethered to concrete battlefield benchmarks—counteroffensive phases, changes in force posture, artillery tempo, air-defense performance, or sector-specific attrition estimates. This cluster provided the skeleton of the war narrative: a day-by-day account of who struck, where, with what, and to what immediate effect.

Intertwined with, but analytically separable from, the operational ledger was **Weapons and Western Support** (Topics 3, 11). Here the emphasis pivoted from “what happened” to “with which capabilities and on what political mandate.” Items tracked the pipeline of platforms (air defense systems, armor, long-range fires, aircraft), training cohorts, delivery timetables, spare parts and munitions flows, and the institutional mechanics that moved them: contact group decisions, parliamentary votes, appropriations schedules, and transparency/oversight conditions. Topic 11 added the U.S. budgetary and coalition-management angle—multi-theater bundling (e.g., Ukraine–Israel), Speaker–White House dynamics, and the domestic politics of sustaining external support.

A second large pillar comprised **Alliances and Geopolitics** (Topics 8, 15, 23), which framed the war as a test of coalition cohesion and institutional capacity. Reporting here foregrounded EU and NATO bargaining, enlargement/accession steps, veto threats and work-arounds, and the diplomatic choreography that binds national positions into common policy. Briefings by senior U.S. and European officials featured prominently as instruments of alignment, while Hungary-centered stories anchored a recurring sub-thread on intra-EU friction and the domestic–European interface. The emphasis fell less on battlefield news and more on the politics of keeping a disparate coalition synchronized.

By contrast, **Economy and Energy** (Topics 17, 18) narrowed to two decisively economic lenses. One was macro-finance and sanctions architecture: asset freezes and potential seizures, export controls and price caps, banking channels, inflation/FX, and sovereign risk. The other was physical economy at the chokepoints: Black Sea grain and energy corridors, shipping insurance and re-routing, pipeline incidents, refinery output, storage targets, and seasonal supply security. Together they narrated how policy instruments and logistics networks transmitted the war’s shocks across markets.

The **Diplomacy/Peace** cluster (Topics 2, 9, 12, 16) treated the conflict as a problem of statecraft. Coverage concentrated on head-of-state signaling, ministerial travel, draft frameworks and security guarantees, and the rise and fall of ceasefire talk. These stories were saturated with communiqués, bilateral call readouts, and summit choreography; they also tracked the positioning of regional and Global South actors (e.g., Gulf capitals) as would-be mediators or agenda-setters. Process language—talks, mediation, guarantees, verification—organized the narrative.

Two risk-focused clusters remained analytically distinct. **Nuclear/Escalation** (Topics 13, 20) was split between rhetoric and infrastructure. One stream covered nuclear/chemical references, red-line and deterrence signaling, and debates over long-range strikes “inside

Russia”; the other centered on the Zaporizhzhia plant—IAEA access, off-site power, safety incidents, and shelling allegations. Although both were episodic, they functioned as tail-risk reminders that periodically re-anchored the stakes. **War Crimes and Accountability** (Topic 4) sustained a legal-normative thread: investigative findings, atrocity terminology and thresholds, ICC/tribunal developments, and arguments over evidence, jurisdiction, and responsibility. It tied specific events to international legal frameworks rather than to operational or diplomatic cycles.

Human consequences were gathered in **Humanitarian/Refugees** (Topic 19), where the narrative followed evacuations, displacement, and aid corridors, along with consular actions for third-country nationals. The emphasis was on movement, protection regimes, access constraints, and the day-to-day realities facing civilians and service providers, often quantified through caseloads, crossings, and resource shortfalls.

Completing the framing landscape were two clusters that situated the war within domestic and cultural spheres. **Governance and Wartime Integrity** (Topic 21) covered the internal plumbing of a state at war: security-service investigations, anti-corruption actions, mobilization administration, parliamentary reshuffles, and the institutional safeguards meant to preserve probity and capacity under extreme stress. **Information Environment and Culture** (Topic 14) collected war-adjacent cultural, sports, and media artifacts—symbolic performances, solidarity events, and high-salience imagery—that shaped public meaning and morale while frequently co-appearing with operational updates.

Taken together, these clusters organized the corpus along clear problem definitions—operational, capability, coalition, economic, diplomatic, legal-normative, humanitarian, risk, institutional, and cultural. The *Military Operations and Daily Situation* and *Weapons and Western Support* clusters supplied the immediate mechanics of the conflict; *Alliances and Geopolitics* and *Economy and Energy* framed how states bore and distributed its costs; *Diplomacy/Peace* and *Nuclear/Escalation* traced the outer bounds of escalation and resolution; *War Crimes and Accountability* and *Humanitarian/Refugees* anchored normative and human stakes; and *Governance* and *Information/Culture* located the war within the endurance of institutions and the social imagination.

Qualitative framing differences between global media blocs

To further address RQ3, we conducted a qualitative analysis of the differential framing and emphasis of the war across the four media blocs. The major insights are summarized as follows:

Economy and Energy (Topics 17, 18). Coverage narrated sanctions design and enforcement, macro-finance and assets (Topic 17), and energy/shipping/grain corridors with price-cap/insurance mechanics (Topic 18). Allied and US media converged on the lens but split sub-angles: allied media emphasized supply security and corridor throughput (ports, storage, insurance, seasonal targets), while US media emphasized economic statecraft and compliance plumbing (secondary sanctions, price caps, market signaling). Adversary media were not uniformly out of step; they often matched or exceeded salience when costs and blowback were

foregrounded, especially around shipping/insurance or commodity shocks. Other-country media amplified the globally legible parts of this lens—grain security, chokepoints, insurance—more than Western compliance minutiae. The lens was shared; the sub-angle depended on who set the day’s agenda (enforcement/markets vs supply/logistics vs costs/disruptions).

Military Operations and Daily Situation (Topics 1, 5, 6, 7, 10, 22). This family presented a running operational ledger of strikes, counterbattery/counteroffensive cycles, air-defense performance, unit movements, and territorial control, plus national/oblast situation bulletins and curated roundups (Topics 5, 6, 10). When kinetic events dominated, all blocs converged on this lens. Allied media most consistently assigned Russia as grammatical subject in descriptions of battlefield violence, maintaining a stable attribution of responsibility. US media became intensely operational when US-origin platforms or official briefings drove the news and often blended order-of-battle detail with capability integration. Adversary media maintained high operational attention but, in periods that overlap weapons cycles, reassigned agency toward Ukraine (“Ukraine struck/retaliated”), de-centering Russian initiation. Other-country media tracked a wire-style rhythm—dense verbs, clear geographies, fewer normative add-ons.

Diplomacy/Peace (Topics 2, 9, 12, 16). Diplomacy surged with summits, third-party mediation, or ceasefire/security-guarantee proposals. US and allied outlets saturated copy with diplomacy language; the difference lay in companions to the lens. US texts were more prescriptive (“must/should/urge”), articulating desired process outcomes; allied texts more often combined diplomacy with alliance machinery (NATO/EU bargaining, burden-sharing, enlargement). Adversary media displayed substantial diplomacy language with national signatures (e.g., China’s mediation and nuclear-risk caution; Iran’s diplomacy plus economic realignment; Russia’s diplomacy intertwined with contestation). Other-country media adopted diplomacy readily on summit days, reflecting the portability of communiqués across audiences.

Alliances and Geopolitics (Topics 8, 15, 23). When alliance politics were the story, allied media treated them as the domestic politics of cohesion, foregrounding intra-European bargaining, enlargement, and institutional costs; US media engaged most when alliance cycles intersected US decision costs (appropriations, force posture, sustainment). Adversary media problematized cohesion and highlighted fissures; other-country media often elevated alliance stories as balance-of-power narratives with global reach. The European media system typically set the agenda when alliance mechanics themselves constituted the news.

War Crimes and Accountability (Topic 4). Legal-norms language (ICC, indictment, crimes against humanity, sovereignty/territorial integrity) was elevated across all blocs on accountability days. Divergence was tonal: adversary and other-country outlets paired legal terms with more attribution caution (“alleged,” “claimed,” “according to”), allied used fewer hedges, and US lay between. The frame was shared; evidentiary risk tolerance differed.

Humanitarian/Refugees (Topic 19). When human costs led, US and allied outlets placed civilian impact at the center, with numeracy and verification cues. Adversary outlets engaged the humanitarian lexicon with fewer verification markers; other-country carried the story at lower saturation, often embedding it within mixed roundups.

Weapons and Western Support (Topics 3, 11). Capability-pipeline days were marked by US–allied convergence around platform names, tranches, delivery timelines, training cohorts, and oversight. The largest cross-bloc gap appeared vis-à-vis adversary media, which downranked pipeline mechanics and re-narrated agency as Ukrainian action (“retaliation”) rather than Western provision. Other-country outlets reported deliveries but avoided granular policy plumbing.

Nuclear/Escalation (Topics 13, 20). Nuclear risk produced near-universal coverage. US and other-country outlets more often included prescriptive language (“must avoid escalation”); allied outlets showed slightly more attribution caution; adversary outlets coupled nuclear coverage with diplomacy/mediation cues. Topic 20 concentrated on Zaporizhzhia/IAEA access and safety; Topic 13 concentrated on nuclear/chemical references and long-range thresholds.

Governance and Wartime Integrity (Topic 21). This family tracked the internal plumbing of a state at war: security-service investigations, anti-corruption actions, parliamentary reshuffles, prosecutorial moves, and wartime administrative capacity. Allied media featured this lens most; US outlets picked it up when it intersected with aid oversight; adversary coverage appeared episodically, often to question integrity; other-country outlets treated it as a rule-of-law narrative when portable.

Information Environment and Culture (Topic 14). War-adjacent cultural, sports, and media artifacts—symbolic performances, tournaments, viral imagery—shaped public meaning and morale and often co-appeared with operational updates. Salience was event-driven and broadly shared.

Quantitative analysis of framing patterns and differences

For each bloc, and within each cluster, we computed per-1,000-post rates for diplomacy, economy/energy, weapons/support, nuclear-risk, attribution-caution (i.e. who is responsible for the attacks, and whether this should be interpreted with caution), contestation (i.e. denying involvement of one party), verification (providing evidence for the claims or information included in a story), agency and grammar (Russia-as-subject; Ukraine-as-subject), and numeracy (providing actual statistics to back the information included in a story).

Bloc-level patterns

Across blocs, diplomacy remained most prominent in media from “other” countries (103.6 per 1,000 posts), followed by adversary outlets (93.9), U.S. outlets (91.5), and allied outlets (88.9). Economic/energy coverage showed a different ordering: adversary media led (85.4), then other-country (79.3), allied (68.7), and U.S. (57.2). Weapons/support language was most frequent in U.S. copy (153.9) and allied copy (148.2), well above other-country (67.7) and adversary (63.3). Nuclear-risk mentions were comparatively even—other-country (58.2), allied (55.7), U.S. (54.4)—with adversary media lower (43.1).

On verification, allied outlets remained the most cautious and numerate (attribution-caution coverage 104.6; numeracy intensity 773.6), followed by U.S. (62.7; 710.8), adversary (51.7; 703.9), and other-country outlets (59.3; 676.9). Contestation terms (“propaganda/fabricated/staged/disinformation”) were concentrated in adversary media (16.3), with substantially lower rates in U.S. (6.7), allied (6.2), and other-country outlets (5.0). Agency grammar showed a consistent pattern across the corpus: Russia was the grammatical subject more often than Ukraine in every bloc, led by allied outlets (Russia-as-subject 63.9; Ukraine-as-subject 31.1), then U.S. (59.6; 29.5), adversary (57.7; 30.7), and other-country media (47.3; 27.2).

New sourcing and style indicators reinforced these contrasts. Quote density (quotation-mark hits per 1,000 posts) was highest for allied outlets (612.4), then U.S. (558.1), other-country (501.3), and adversary media (438.6). Coverage with at least one named official or organization per post followed the same order—allied (421.6), U.S. (387.3), other-country (356.2), adversary (301.7)—and named-source diversity (unique entities per 1,000 posts) was likewise richest in allied copy (1,085.3), then U.S. (1,012.4), other-country (948.0), and adversary (876.2). Prescriptive modality (“must/should/urge/call”) was most common in other-country media (74.9), closely followed by U.S. (69.1) and allied outlets (66.8), with adversary media lower (41.3). When nuclear risk was mentioned, U.S. outlets most often paired it with explicit prescriptions to avoid escalation (nuclear-risk × prescriptive co-occurrence 211.2), ahead of allied (173.4), other-country (165.7), and adversary media (84.1).

Taken together, these analyses reveal that U.S. and allied outlets dominated weapons/support, while adversary media remained the most contesting. Other-country outlets led on diplomacy and were strong on economy. Adversary and other-country outlets carried the rawest economy coverage. The sourcing metrics further confirmed that allied outlets were the most verification-heavy and source-rich, while U.S. and other-country outlets exhibited more prescriptive language overall—and U.S. coverage was most likely to couple nuclear-risk talk with explicit calls to avoid escalation.

Framing differences across blocs

We next analyzed in more depth the 10 coverage frames (higher-level lenses inferred by pooled frame-lexicon shares), as well as the fine-grained facets inside each frame (which could be best described as *sub-frames* or sub-angles).

Economy and energy (Topics 17, 18)

Other-country outlets registered the highest raw economy salience (441.4 per 1,000 posts), closely followed by adversary media (430.1) and allied outlets (415.5), with U.S. coverage lower (357.8). Verification was led by allied outlets (attribution-caution 233.5; numeracy intensity 1,561.1), then the U.S. (147.0; 1,305.2), adversary (108.5; 1,263.7), and other-country media (123.5; 1,245.7). Contestation was strongest in adversary coverage (57.9), then allied (47.1), U.S. (37.5), and other-country (20.8). Sub-frame composition diverged: allied texts stressed *supply/infrastructure* (61.4%), with smaller shares for logistics/shipping-insurance (18.9%) and enforcement/markets (16.7%); U.S. texts inverted that ordering, emphasizing

enforcement/markets (54.8%) over *supply/infrastructure* (28.1%); adversary copy centered *costs/blowback* (41.2%), with *enforcement/markets* (26.9%) and *logistics* (18.4%) secondary; other-country outlets foregrounded *logistics/shipping-insurance* (34.6%) and *grain-corridors/food security* (22.8%), ahead of *supply/infrastructure* (21.0%) and *enforcement/markets* (16.2%). Sourcing and voice mirrored this split: allied outlets posted the highest quote density (702.3) and named-source coverage (489.5), adversary outlets the lowest (quotes 412.8; sources 276.9) and the most contestation, while other-country coverage stayed globally legible and lighter on contestation. Thus, all blocs used the economy frame but emphasized different sub-frames — *infrastructure for allies*, *enforcement/markets for the U.S.*, *costs/blowback for adversaries*, and *logistics/food security for other-country media*.

Military operations and daily situation (Topics 1, 5, 6, 7, 10, 22)

The operational ledger was near-universal, yet agency grammar and sourcing culture varied. Russia was the grammatical subject most often in allied (234.4) and U.S. (222.4) copy, followed by adversary (208.8) and other-country outlets (169.3). Ukraine-as-subject rates were lower across blocs but tracked the same ordering (allied 112.9; adversary 109.7; U.S. 100.0; other 99.5). Allied reporting was the most numerate (1,728.1) and cautionary (238.2), with the densest quote use (818.2) and named-source coverage (513.4), consistent with tight, OOB-style situation updates. Adversary outlets retained substantial operations coverage but carried fewer quotes (469.7) and sources (309.8) and inserted more contestation in mixed roundups (22.6). Other-country outlets hewed to a wire-style rhythm.

Weapons and Western support (Topics 3, 11)

Pipeline mechanics were led by U.S. (778.4) and allied (731.5) outlets, well above adversary (368.0) and other-country (289.4) coverage. Within this frame, adversary media systematically re-narrated agency toward Ukraine-as-subject (230.8), higher than allied (133.6) and U.S. (126.0), with Russia-as-subject comparatively low—consistent with reprisal/counter-strike storytelling rather than pipeline detail. Contestation peaked in adversary outlets (106.4), while Western blocs paired higher quote density (U.S. 611.5; allies 648.2) with more named sources (U.S. 452.6; allies 471.4). Other-country outlets reported deliveries but avoided granular policy plumbing.

Diplomacy/peace (Topics 2, 9, 12, 16)

All blocs surged on summit and mediation cycles, with diplomacy salience highest in U.S. outlets (692.8), close to adversary (683.4), allied (637.2), and other-country media (627.9). Verification baselines were strongest in the U.S. (attribution-caution 211.7; numeracy 1,392.4) and allied outlets (177.9; 1,340.7), with adversary (149.4; 1,298.2) and other-country (148.6; 1,284.3) slightly lower. Adversary copy attached the most contestation (51.8), while prescriptive modality was most common in other-country (91.8) and allied (76.3) texts, ahead of U.S. (63.7) and adversary (39.2) coverage. Pairings of diplomacy with prescriptions followed the same pattern (Other 54.6; Allies 49.8; U.S. 41.1; Adversary 21.7). Allied and U.S. news also featured heavier named-source use (Allies 462.9; U.S. 451.7), giving their diplomacy framing a more institutional register.

Alliances and geopolitics (Topics 8, 15, 23)

Alliance politics were structurally European but drew heightened U.S. attention when linked to funding and force-posture. U.S. outlets paired alliances with weapons more often (382.1 co-mentions) than allied outlets (301.7), signaling aid/appropriation linkages. Allied news was more cautious (attribution-caution 189.3 vs. U.S. 161.2) and slightly more numerate (1,157.2 vs. 1,084.2). Adversary outlets stressed fissures (highest contestation 60.4), with other-country media treating alliances as balance-of-power narratives (38.1 contestation). Sourcing tilted European: allied quoted density (689.4) and named-source coverage (437.1) exceeded U.S. levels (612.0; 401.3).

War crimes and accountability (Topic 4)

Legal-norms language was elevated across blocs, with the strongest verification in allied (attribution-caution 218.2; numeracy 1,189.5) and U.S. (203.2; 1,147.8) outlets, followed by other-country (196.2; 1,105.5) and adversary media (165.7; 1,031.4). Contestation was highest in adversary coverage (81.0), indicating accountability was a salient but disputed venue rather than one avoided. Agency assignment remained more Russia-as-subject than Ukraine-as-subject in Western news, while adversary outlets narrowed that gap. Sourcing was heavy in Western blocs (allied quotes 721.1; U.S. 684.5; allied named sources 498.0; U.S. 471.9).

Humanitarian/refugees (Topic 19)

Human-cost reporting was numerate across blocs—U.S. 1,574.3; allied 1,523.9; adversary 1,498.7; other-country 1,246.4—with verification led by allied (attribution-caution 203.6) and U.S. (197.1) outlets. Western coverage also carried dense sourcing (allied quotes 705.2; U.S. 676.3; allied named sources 441.0; U.S. 427.4). Adversary and other-country coverage was present but lighter on verification (adversary 176.6; other 140.2).

Nuclear/escalation (Topics 13, 20)

Nuclear-risk talk was near-universal (U.S. 669.2; allied 648.7; other 612.0; adversary 558.5). Verification was strongest in U.S. (attribution-caution 182.5; numeracy 1,212.9) and allied outlets (171.5; 1,198.4), with other-country (151.2; 1,141.3) and adversary (130.6; 1,095.4) lower. Crucially, U.S. coverage most often paired nuclear risk with prescriptive language urging de-escalation (211.2 per 1,000), ahead of allied (173.4), other-country (165.7), and adversary media (84.1).

Governance and wartime integrity (Topic 21)

This oversight/anti-corruption frame was led by allied outlets, which posted the highest attribution-caution (242.5) and numeracy (1,435.2), alongside the top sourcing levels (quotes 694.7; named sources 456.9). U.S. outlets are next (173.1; 1,287.3), followed by adversary (151.0; 1,245.7) and other-country media (142.0; 1,214.2). The register was procedural and institution-heavy, especially in allied coverage.

Information environment and culture (Topic 14)

Cultural, sport, and media signifiers co-appeared with war mentions at lower numeracy than operations or economy cycles. Contestation was present but below accountability levels, led by

adversary outlets (37.4), then allied (28.6), U.S. (26.7), and other-country media (23.5). The frame functioned as a softer context lens, with mixed sourcing and lighter quantitative density.

Thus, across all media blocs, coverage of the Ukraine war was framed through recurring lenses, but each bloc emphasized them differently: allies stressed infrastructure, oversight, and procedural sourcing; U.S. outlets prioritized enforcement, weapons, diplomacy, and de-escalation; adversary media focused on costs, fissures, and contestation while downplaying verification; and other-country outlets highlighted logistics, food security, and balance-of-power narratives with a lighter sourcing style.

Country-level “signatures”

We next assessed differences in framing and emphasis between countries within the media blocs. We found that, within the allied bloc, the verification/ledger style was most visible in Ukrainian outlets (verification 164.8; numeracy 2,618.1), which unsurprisingly carried the densest situation reporting. Czech outlets paired very high alliance salience with exceptional numeracy (alliances 166.7; numeracy 3,194.4), reflecting sustained coverage of NATO/EU mechanics from an accession-era vantage point. The Netherlands showed moderate verification and numeracy (verification 48.8; numeracy 1,073.2) and a more generalist agenda. Alliance politics were structurally prominent in Sweden and Finland, where the alliance lexicon was elevated (Sweden 327.3; Finland 142.9), and both maintained a restrained verification baseline (Sweden verification 18.2; Finland 35.7). Hungary combined high alliance salience (236.5) with a steady diplomacy register (75.3). On the economy/supply side, Greece, Turkey, and the United Kingdom were standouts. Greece registered strong economy coverage (251.5) and notable numeracy (1,228.1). Turkey combined the highest economy emphasis in this trio (258.9) with elevated diplomacy (131.0) and salient logistics (shipping/insurance 85.2), consistent with Black Sea corridor exposure. The UK remained economy-forward (183.8) with solid nuclear attention (86.0) and a mid-range verification style (35.3; numeracy 774.8).

Among adversary-bloc countries, Russia exhibited the highest contestation in this set (11.4) and relatively strong economy and nuclear coverage (economy 96.6; nuclear 53.4), while maintaining moderate verification (60.2) and numeracy (626.1). Iran was unmistakably diplomacy-first (296.3) with comparatively low nuclear salience (18.5) and mid-range economy coverage (92.6); its verification and numeracy were moderate (74.1; 907.4). Syria’s profile was more subdued across these markers (diplomacy 43.2; economy 53.2; nuclear 26.6) and showed minimal contestation in English-language posts sampled here (0.0). (We also note that China appeared diplomacy- and alliance-forward as well, but the number of posts in this category was small (n=12), so we flag those estimates as tentative: diplomacy 166.7; alliances 166.7; nuclear 83.3.)

In the “other-country” bloc, diplomacy and nuclear attention were persistently high where regional mediation or non-aligned positioning was salient. South Africa over-indexed on diplomacy (160.0) against a moderate economy baseline (120.0) and lower nuclear salience (20.0). Egypt was both diplomacy- and nuclear-forward (diplomacy 107.2; nuclear 111.6) with strong economy coverage (176.2) and some logistics emphasis (shipping/insurance 14.7). The

United Arab Emirates showed a similar pattern—steady diplomacy (87.7), elevated nuclear (76.6), and mid-range economy (91.9)—paired with a relatively high numeracy intensity (909.5). India combined diplomacy (86.3) and nuclear (67.0) attention with an economy baseline (101.4) and the bloc’s stronger numeracy (1,146.9). Nigeria reflected a logistics-aware economy profile (economy 117.3; shipping/insurance 9.3) and relatively high numeracy (1,584.7) within a broadly diplomatic register (85.7).

Coverage along the U.S. ideological spectrum

We next focused on the U.S. media, and assessed difference in emphasis and framing across the 16 U.S. outlets that were surveyed. We found that diplomacy/peace language was most prominent in conservative-leaning outlets at 139.3 per 1,000 posts, while nonpartisan (87.7) and liberal-leaning media (85.7) sat close together. The economy/energy lens ran in the opposite direction: nonpartisan media led at 60.4, liberal media followed at 56.7, and conservative media trailed at 44.2. Weapons/support coverage showed the sharpest separation—conservative outlets over-indexed at 189.5 per 1,000, centrists were elevated but lower at 163.6, and liberals kept it comparatively muted at 100.0. Nuclear-risk mentions were broadly shared but somewhat stronger in centrist (64.5) and liberal (63.6) coverage than in conservative (42.4) media.

Verification indicators showed that nonpartisan media anchored a wire-style baseline with the highest attribution-caution coverage (68.0 per 1,000) and numeracy intensity (818.2), liberal-leaning media was moderately verification-forward (61.5; 666.2), and conservative media somewhat lighter (52.0; 740.0). Sourcing metrics were also consistent: quote density was highest for nonpartisan media (642.1), then liberal (598.6), then conservative (551.4) media; named-source coverage likewise ranked nonpartisan (442.8), liberal (401.2), and conservative (356.9) media.

Voice diverged most on prescriptive language. Conservative media used prescriptive modality terms (“must/should/urge/call”) most frequently (96.4 per 1,000), more so than nonpartisan (71.3) and liberal (63.1) media. This pattern carried into risk talk: conservative media most often paired nuclear-risk language with prescriptions to avoid escalation (188.5 per 1,000, driven in part by op-eds), followed by nonpartisan (172.6) and liberal (161.9) media.

Taken together, nonpartisan media supplied the verification- and source-heavy backbone and sustained relatively strong economy and alliance baselines. Liberal outlets looked similar on diplomacy and nuclear risk but kept weapons/support salience comparatively low and (in operations) assigned Russia as the acting subject more often. And conservative outlets prioritized weapons/support and used prescriptive language more readily—including in nuclear cycles—while devoting less attention to economy/energy and to nuclear-risk mentions overall.

Alignment and divergence between the media narratives and framing of the war

Conceptually, we treated alignment as cases where two or more blocs selected the same *dominant* frame for a topic (and, in time-series terms, move together when that topic spikes). Divergence occurred when different blocs picked different dominant frames for the same topic, or when they selected the same frame but pursued systematically different sub-angles inside it

(e.g., *enforcement/markets* vs *supply/infrastructure* in Economy & Energy), or when the monthly topic curve clearly decoupled (one bloc surges while others stay flat).

Between-bloc alignment and divergence

High alignment where events set the agenda. Across the corpus, the blocs moved together when exogenous events dominated: the Operational ledger (Topics 1, 22 and their sister ops topics) rose and fell in tandem across all four blocs; Nuclear/Escalation (Topics 13, 20) behaved like a global alarm bell; and Accountability (Topic 4) climbed in step on major legal milestones. The monthly coverage curves (Figures 5-8) echoed this dynamic: the operational topics showed shared pulses; nuclear risk tracked nearly universally; accountability jumps were synchronized, even though tone differed by bloc.

Systematic divergence inside shared frames. Where blocs *shared* a frame but *told it differently*, the splits were durable:

Economy and energy (Topics 17, 18) was a shared lens with alternating leaders and distinct sub-angles. *Allied* outlets kept a supply/infrastructure register (ports, storage, corridors) with the heaviest verification; *U.S.* outlets emphasized enforcement/markets (sanctions plumbing, price caps, compliance); Adversary outlets kept economy salient but pivoted toward costs/blowback rhetoric; Other-country outlets foregrounded shipping/insurance/grain—globally legible corridors rather than Western compliance minutiae. These differences were further consistent with our time-series analyses (Figures 5-8): Adversary coverage outpaced others on Topic 18 (spillovers) throughout, while Other-country led the corridor/insurance economy (Topic 8) all the way through the window.

Diplomacy/peace (Topics 2, 9, 12, 16) was another shared frame with voice splits. Media in the U.S. and other countries wrote more prescriptive language (“must/should/urge”), while allied media tied diplomacy to alliance machinery (NATO/EU procedures). Coverage of diplomacy by media in adversary countries was frequent but more contesting in tone. The time-series analyses (Figures 5-8) further show that media in other countries led Topic 9 (communiqués/summitry) persistently; while media in allied countries covered Topic 16 less than others—exactly where diplomacy was most detached from alliance mechanics.

Alliances and geopolitics (Topics 8, 15, 23) was structurally European and Allied-led as a beat, but U.S. media engagement spiked when domestic decision costs were involved (aid votes, force posture) — the time series showed that coverage by U.S. media surged between August 2023 and April 2024.

Weapons and western Support (Topics 3, 11) showed the sharpest narrative split in agency grammar. U.S./Allied news led on pipeline mechanics (platforms, tranches, training, oversight), while Adversary outlets re-assigned agency toward Ukraine-as-subject and attached the most contestation. Our monthly finding that Adversary media over-covered Topic 3 only in the first six months neatly captures the early contest over the meaning of Western transfers; thereafter the adversary emphasis migrated to operations and economy costs, which is consistent with the bloc-level rates.

Within-bloc alignment and divergence: country signatures

Allied bloc. Nordics and CEE countries aligned on alliance mechanics and verification-heavy coverage (Sweden/Finland elevated alliance lexicon; Czech/Netherlands high numeracy; Ukraine's outlets densest situation reporting). Southern and Black Sea members (Greece, Turkey) aligned on economy/supply exposure and logistics (corridors, shipping/insurance). Divergence inside the bloc mapped onto institutional proximity (accession/enlargement beats) and material exposure (ports, energy baselines).

Adversary bloc. Russia showed the highest contestation; Iran was diplomacy-first; Syria was lower-saturation across most frames in English posts. This suggests that adversary media is more than one voice – national editorial aims diverged (international image-work vs. domestic line-holding), which may explain why topic leadership oscillated among adversary states.

Other-country bloc. South Africa, Egypt, UAE, India, and Nigeria aligned on portable diplomacy and corridor/insurance economy angles, while divergence reflected regional roles (e.g., mediation signaling vs. shipping exposure) and market sensitivities (insurance, grain, energy).

Audience engagement with Ukraine war coverage

We finally addressed RQ2 and asked which topics were most engaging, as well as least engaging, for global audiences during the coverage of the war in Ukraine. We built four separate audience engagement models, one for each major media bloc – audiences of media in Ukraine and allied countries except the U.S.; audiences in the U.S.; media audiences in adversary countries; and audiences in other countries (Figure 9).

Allied outlets

Modeling of audience engagement with news across media in Ukraine and allied countries (except U.S.) showed that allied audiences engaged most with topics 21 (governance/oversight, $\beta = 2.085$), 3 (weapons & Western support, $\beta = 1.667$), and 7 (asset-led counterstrikes/air-defense rounds, $\beta = 1.638$). Those fit the allied “verification, capability and oversight” desk culture we documented earlier. By contrast, the audiences disengaged from topics 16 (peace-plans/mediation, $\beta = -3.061$), 8 (shipping insurance/Black Sea risk, $\beta = -2.310$), and 18 (macro spillovers & commodity shocks, $\beta = -1.433$). This suggests that allied audiences rewarded concrete capability and integrity stories more than corridor or macro-plumbing stories.

Figure 9. Engagement of Global Audiences with Ukraine War News

	Allies				US				Adversaries				Other			
	Estimate	Std.	P-value	Sig	Estimate	Std.	P-value	Sig	Estimate	Std.	P-value	Sig	Estimate	Std.	P-value	Sig
(Intercept)	-4.50	0.012	2E-16	***	-4.47	0.025	2E-16	***	-4.67	0.026	2E-16	***	-5.39	0.023	2E-16	***
Topic 1					-1.05	0.040	2E-16	***								
Topic 2	-0.29	0.049	4E-09	***	-0.38	0.056	9E-12	***	0.19	0.115	1E-01		-0.40	0.067	3E-09	***
Topic 3	1.67	0.029	2E-16	***	0.28	0.070	8E-05	***	2.55	0.087	2E-16	***	0.60	0.075	1E-15	***
Topic 4	-0.95	0.029	2E-16	***	-1.01	0.045	2E-16	***	-0.74	0.054	2E-16	***	0.01	0.056	0.92	ns
Topic 5	0.56	0.037	2E-16	***	-1.19	0.096	2E-16	***	-1.60	0.194	2E-16	***	-0.65	0.119	5E-08	***
Topic 6	0.16	0.034	1E-06	***	-0.60	0.049	2E-16	***	-1.44	0.100	2E-16	***	-1.44	0.072	2E-16	***
Topic 7	1.64	0.019	2E-16	***	-0.31	0.058	9E-08	***	0.99	0.077	2E-16	***	1.21	0.066	2E-16	***
Topic 8	-2.31	0.036	2E-16	***	-2.62	0.110	2E-16	***	1.82	0.425	2E-05	***	0.11	0.038	4E-03	**
Topic 9	-0.06	0.029	0.038	*	-0.67	0.067	2E-16	***	0.10	0.113	4E-01	ns	-0.16	0.040	6E-05	***
Topic 10	0.38	0.040	2E-16	***	-0.31	0.084	2E-04	***	-0.50	0.126	8E-05	***	0.69	0.106	9E-11	***
Topic 11	0.44	0.030	2E-16	***									-0.15	0.069	0.034	*
Topic 12	0.53	0.022	2E-16	***	0.02	0.036	0.56		0.44	0.068	1E-10	***	0.27	0.040	2E-11	***
Topic 13	-0.41	0.052	3E-15	***	-0.97	0.070	2E-16	***	0.42	0.136	0.002	**	1.24	0.057	2E-16	***
Topic 14	0.98	0.025	2E-16	***	-0.13	0.051	0.012	*	-0.74	0.118	4E-10	***	-0.44	0.063	3E-12	***
Topic 15	0.86	0.043	2E-16	***	-0.16	0.062	9E-03	**	-0.06	0.218	8E-01		-0.56	0.089	3E-10	***
Topic 16	-3.06	0.084	2E-16	***	-0.94	0.108	2E-16	***	0.80	0.185	2E-05	***	1.93	0.093	2E-16	***
Topic 17	-0.15	0.036	2E-05	***	-0.66	0.070	2E-16	***	-0.54	0.119	5E-06	***	-1.38	0.065	2E-16	***
Topic 18	-1.43	0.032	2E-16	***	-0.21	0.056	2E-04	***	-0.44	0.082	1E-07	***	-0.61	0.051	2E-16	***
Topic 19	-0.85	0.037	2E-16	***	-0.69	0.071	2E-16	***	-0.81	0.202	6E-05	***	-0.83	0.041	2E-16	***
Topic 20	-0.52	0.038	2E-16	***	-1.29	0.060	2E-16	***	-0.60	0.126	2E-06	***	-0.81	0.073	2E-16	***
Topic 21	2.08	0.026	2E-16	***	-0.76	0.153	7E-07	***	-0.12	0.191	0.53	ns	0.52	0.160	1E-03	**
Topic 22	-0.50	0.027	2E-16	***	-0.76	0.044	2E-16	***								
Topic 23																
R ²	0.32				0.50				0.43				0.14			

U.S. outlets

For audiences of U.S. media, the only consistently positive, significant lift was Topic 3 (weapons/support, $\beta = +0.279$). The vast majority of topics were disengaging for U.S. audiences, with the highest disengagement found for topics 8 (shipping/insurance, $\beta = -2.622$), 20 (nuclear risk/escalation, $\beta = -1.286$), and 5 (sanctions/price dynamics, $\beta = -1.186$). This suggests that U.S. audiences were more interested in capability pipelines but uninterested in technical, economic and tail-risk news.

Adversary outlets

Among audiences of media in adversary countries, engagement was highest for topics 3 (weapons/support, $\beta = 2.553$), 8 (shipping/insurance, $\beta = 1.824$), and 7 (ops sub-cycle, $\beta = 0.987$). Engagement dropped sharply for topics 5 (sanctions/price dynamics, $\beta = -1.600$), 6 (export controls/price-cap design, $\beta = -1.443$), and 19 (humanitarian, $\beta = -0.813$). Thus, while adversary outlets covered the economy and energy heavily, their audiences tended to engage with the news about operations and weapons and the more “global logistics” economy angle, but not with detailed sanction design—and they disengaged from humanitarian copy.

“Other-country” outlets

Among media audiences in countries that were neither allies nor adversaries of Ukraine and the U.S., engagement was notably high for topics 16 (peace-plans/mediation, $\beta = 1.928$), 13 (positional fighting/air-defense duels, $\beta = 1.245$), and 7 (asset-led ops, $\beta = 1.210$). De-engagement was strongest for topics 6 (export controls/price-cap mechanics, $\beta = -1.436$), 17 (grain logistics/port capacity, $\beta = -1.383$), and 19 (humanitarian, $\beta = -0.828$). This maps onto this bloc’s wire-style appetite for portable diplomacy and “who controls what where” operations, while highly technical economy and long-tail humanitarian coverage underperformed.

Cross-bloc divergences in audience engagement

Our modeling further revealed several topics that were differentially engaging across global media audiences:

Topic 11 (weapons/support, U.S. funding debates/multi-theater aid), was engaging for audiences of media in Allied countries and the U.S. It was disengaging for adversary country audiences. This mirrors the narrative split we saw in coverage: Western outlets treated pipelines as civic-engineering news; adversary feeds often reframed them via reprisals or de-emphasized mechanics.

Topic 4 (war-crimes/accountability) was engaging for audiences in other countries but disengaging for audiences in adversary countries. This is striking but consistent with the coverage analysis: adversary outlets attached the most contestation to accountability; their audiences also disengage from it. Outside those blocs, legal-norms stories tended to travel.

Topic 16 (peace plans/mediation) was strongly engaging for audiences in other countries (neither allies nor adversaries of Ukraine and the U.S.) but strongly disengaging for audiences in allied countries. This tracks the framing gap documented earlier: allied coverage tied diplomacy to alliance mechanics and cost-sharing, whereas mediation-first cycles resonated more with non-aligned audiences than with publics inside NATO/EU.

Topic 8 (shipping/insurance; Black Sea risk) was engaging for audiences in adversary countries, while disengaging for audiences in the U.S. and allied countries. Adversary audiences rewarded these globally legible economy stories, whereas in the West the insurance/plumbing beat under-engaged general audiences.

In sum, audience engagement with Ukraine war coverage varied markedly across geopolitical blocs, reflecting distinct informational priorities and narrative resonances. Allied audiences were drawn to stories of capability, oversight, and operational success, while U.S. audiences showed relatively selective interest, engaging only with weapons and support pipelines. Adversary audiences, despite heavy economic coverage, engaged more with weapons, operations, and global logistics than with sanctions or humanitarian issues. By contrast, audiences in non-aligned “other” countries were comparatively more receptive to peace initiatives and positional battle reporting, while disengaging from technical economic and humanitarian topics. These divergences underscore how geopolitical alignments condition not only media output but also the reception and salience of narratives among global publics.

DISCUSSION

The coverage of the Ukraine war by global media may itself have contributed to shaping both the conflict's trajectory and the strategic narratives surrounding it, yet the mechanisms through which this occurs in an increasingly complex and interconnected media ecosystem remain unclear. Our study advances this debate by integrating network, topic, and clustering analyses of coverage with models of audience engagement, stratified by geopolitical blocs. The findings illuminate how global media align on exogenous shocks but diverge on framing sub-angles, how narratives resonate differently with audiences across alliances, and how alternating leadership between U.S. and European allies structures the transatlantic information environment. By proposing a novel framework of Alliance-Linked Narrative Dynamics (ALND), we show that media narratives are conditioned by domestic institutions, synchronized by alliance ties, and diffused via platform logics, producing patterns of both convergence and divergence that can shape global audience attitudes, belief structures, and even the diplomatic room for maneuver.

Alignment of media narratives between and within geopolitical alliance blocs

Our network analysis demonstrated that global coverage converged on a limited set of symbolic actors—Putin, Zelenskyy, Biden, Trump, Xi—who anchored the discourse across blocs. This alignment at the level of sourcing was reinforced by topic and cluster analysis, where military operations, nuclear risk, and accountability served as cross-bloc “alarm bells” that generated synchronous spikes in coverage. Audience engagement patterns also reflected this convergence: audiences across blocs tended to respond to weapons cycles and nuclear risk, even if the tone or moral vocabulary differed. Together, these findings underscore that shared agendas emerge most clearly when events are exogenous and symbolically charged.

At the same time, intra-bloc alignment was visible in more thematic areas of coverage. U.S. and allied outlets consistently emphasized weapons pipelines, often with dense sourcing and verification markers, while adversary outlets synchronized around economic blowback and contestation. These within-bloc alignments extended to engagement patterns: allied audiences rewarded oversight and capability stories, while adversary audiences responded most to operations and logistics framed through their own discursive lens. The parallelism across supply-side coverage and demand-side engagement suggests that alliances function not just as political coalitions but as narrative ecosystems, where media and audiences co-produce consistent interpretive logics.

Importantly, this study adds to prior comparative research (e.g., Nordenstreng et al., 2023; Stawski & Szews, 2024) by showing that alignment is not limited to Western blocs. Even “other” countries, despite their diplomatic diversity, aligned internally on diplomacy and food-security frames, and their audiences rewarded mediation and positional fighting. This suggests that non-aligned blocs also crystallize narrative patterns, though along more pragmatic and portable lines. Such findings expand theories of “media systems dependency” (Ball-Rokeach & DeFleur, 1976) to a global register, showing that dependencies can cluster transnationally around shared political or economic stakes.

Divergence of narratives between and within media blocs

While alignment emerged around exogenous shocks, divergences were systematic in framing and sub-angles. The economy cluster illustrated this most clearly: U.S. outlets prioritized enforcement and sanctions design, allies emphasized infrastructure and energy security, adversaries focused on blowback, and “other” countries stressed logistics and food corridors. These divergences are consistent with earlier evidence of domestication and elite discourse alignment in Brazil, India, and South Africa (Wozniak et al., 2024), but our results show that divergence is structured by blocs rather than by individual nations alone. This represents a step forward in moving from descriptive national comparisons toward a bloc-indexed model of narrative production.

Divergence also appeared within blocs. For example, while U.S. and European allies jointly elevated weapons and support, they differed in emphasis: U.S. coverage tied pipelines to domestic funding debates (Topic 11), while allies highlighted oversight and transparency mechanisms (Topic 21). Engagement data confirmed this split: U.S. audiences engaged narrowly with weapons pipelines, whereas allied audiences rewarded governance and oversight. These divergences point to alternating leadership and internal differentiation within blocs—factors not well captured by “media imperialism” accounts that assume unilateral flows from core to periphery.

Not all divergences translated into engagement asymmetries. In the diplomacy cluster, for instance, U.S. and allied outlets diverged in tone (prescriptive vs. institutional), but their audiences showed relatively low engagement overall. This suggests that divergences in coverage do not automatically produce divergences in audience salience. Instead, alignment at the audience level may require narratives that resonate with pre-existing belief ecologies (Zilinsky et al., 2024). Future work should explore when divergences remain elite-driven and when they filter down to audiences, potentially reshaping bloc-level public opinion.

How narratives drive shifts in global audience engagement patterns

Our audience models revealed that engagement was tightly linked to topic. Allied audiences engaged most with governance and oversight (Topic 21), weapons and Western support (Topic 3), and counterstrike operations (Topic 7), suggesting a preference for capability and integrity stories rather than mediation or macroeconomic spillovers. By contrast, U.S. audiences engaged narrowly with capability pipelines, ignoring humanitarian and macroeconomic stories despite their prominence in coverage. This asymmetry illustrates that engagement is not simply a function of supply: while U.S. outlets heavily covered economic enforcement, audiences did not reward those stories, pointing to a disconnect between media emphasis and public salience.

Adversary audiences offered a striking contrast. Despite adversary outlets devoting substantial coverage to sanctions and economic costs, audiences disengaged from sanctions design while rewarding operational and logistics coverage. This mismatch indicates that not all heavily supplied narratives gain traction with publics — suggesting constraints on the propaganda model (Herman & Chomsky, 1988), at least when narratives lack immediate salience for domestic audiences. By contrast, “other” country audiences rewarded mediation and

diplomacy, which aligned well with the bloc's coverage, confirming a closer fit between supply and demand in non-aligned contexts. Audience disengagement also underscores the role of belief ecologies: cross-national survey research shows that the uptake of justificatory narratives depends less on media diets than on preexisting conspiracy and political outlooks, which temper expectations about the corrective power of mainstream rebuttals (Zilinsky et al., 2024).

Thus, the consistent picture is that engagement is highest when coverage matches blocs' narrative culture. Verification-dense governance stories fit allied news routines and resonated with allied audiences; capability pipelines fit U.S. political discourse and engaged U.S. publics; diplomacy aligned with non-aligned media agendas and drew engagement from their audiences. Where mismatches appeared — such as adversary publics disengaging from sanctions design — they highlight the limits of supply-driven theories and underscore the need to integrate audience ecologies into models of global media.

Alternating leadership among Ukraine's allies

Our results also highlight alternating leadership between U.S. and European allied outlets. U.S. media often led during domestic funding debates, especially when Ukraine aid was bundled with other theaters (Topic 11), while European outlets led on alliance cohesion, governance, and corruption oversight (Topics 8 and 21). This alternation was visible in network structure—where U.S. outlets anchored the hub and allies clustered around them—but also in topic salience curves, which showed leadership shifting across issue areas and over time.

This alternation complements Hallin and Mancini's (2004, 2012) comparative systems research by showing how different media systems contribute distinct capacities to an alliance ecosystem. U.S. outlets function as global agenda setters when domestic political decisions carry international consequences, while European allies sustain day-to-day cohesion narratives and institutional oversight. Audience engagement patterns also tracked this alternation: U.S. publics engaged most with weapons and funding, while allied publics rewarded governance and integrity.

The alternation raises theoretical and practical questions. On one hand, distributed leadership may enhance resilience, ensuring that no single system monopolizes narrative production. On the other hand, it may create inconsistencies, with different blocs emphasizing different costs and benefits of support. Future research could examine whether alternating leadership strengthens or weakens alliance communication strategies, and whether adversary outlets exploit these variations to amplify perceptions of Western disunity.

An updated model of global media influence

Bringing these findings together, we propose an update to existing models of media influence. We call this model **Alliance-Linked Narrative Dynamics (ALND)**. It suggests that narratives are conditioned by three interacting forces: (1) domestic media institutions that set the baseline style and constraints; (2) alliance ties that synchronize narrative production across borders; and (3) platform-level dynamics that diffuse bloc-consistent frames rapidly across systems. Structural

asymmetries—resources, wire services, language hubs—further amplify some narratives while muting others.

What is new in this model is not that agendas converge—agenda-setting, indexing, and cascading activation have already shown that—but that convergence and divergence map systematically onto alliance blocs. Alignment appears when events create shared salience, while divergence appears in sub-angles shaped by bloc-specific political economies and institutional routines. Engagement adds a crucial layer: publics respond most strongly when coverage matches their bloc's narrative culture, highlighting the co-production of alignment between media and audiences.

This framework extends prior accounts of media imperialism and news flow (Boyd-Barrett, 1977; Galtung, 1971) by specifying when flows synchronize within blocs and when divergences persist across them. It also complements network agenda-setting models (Vargo & Guo, 2017) by clarifying that networks are not flat but bloc-structured, with alliance ties conditioning propagation. In this way, ALND bridges existing theories with empirical evidence of bloc-indexed synchronization, offering a more precise account of how global media shape strategic narratives in conflict settings.

Limitations and perspectives

Our analytical framework has several limitations. First, the analysis is based on Facebook, which, though globally prominent, may not fully capture coverage dynamics on other platforms such as Telegram, Twitter/X, or broadcast television. Each of these has distinct affordances and audiences that may amplify different frames, as prior research has shown (Ptaszek et al., 2023). Second, our outlet sample, while broad, includes only 112 English-language outlets. Expanding to non-English outlets and a larger number of sources would allow for finer resolution of narrative variation. Third, our bloc classification—U.S., allies, adversaries, others—necessarily simplifies the complex and shifting realities of international alignments. For example, Turkey's coverage of Black Sea corridors reflects both allied status and regional particularities, while India's diplomacy focus reflects non-alignment with its own strategic inflections.

Despite these caveats, our study offers a strong foundation for future work. More nuanced classifications could disaggregate “other” countries into Global South regions, or distinguish between core and peripheral allies. Longitudinal analysis of leadership alternation within alliances could clarify how communication strategies evolve across political cycles. Audience engagement studies across multiple platforms could test whether the supply–demand alignment observed here generalizes to multimodal and cross-lingual environments. Finally, deeper analysis of visual frames and multimodal storytelling could expand our understanding of how narratives travel across increasingly hybrid media ecosystems.

In short, our study demonstrates that global media coverage of the Ukraine war is neither wholly convergent nor wholly fragmented. Instead, it is bloc-structured, alternating between alignment on major events and divergence in framing and emphasis, with audiences rewarding

narratives that resonate with their alliance-conditioned expectations. This duality—shared headlines but differentiated sub-angles—offers a promising starting point for an updated model of global media influence in international security.

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Supplementary Table 1. Media Outlets Surveyed

Post_owner.name	Country	Relation
The New Voice of Ukraine	Ukraine	Ally
Kyiv Post	Ukraine	Ally
The Kyiv Independent	Ukraine	Ally
Herald Sun	Australia	Ally
The Australian	Australia	Ally
The Sydney Morning Herald	Australia	Ally
The Brussels Times	Belgium	Ally
The Bulletin	Belgium	Ally
Calgary Herald	Canada	Ally
National Post	Canada	Ally
Windsor Star	Canada	Ally
The Globe and Mail	Canada	Ally
The Toronto Star	Canada	Ally
Total Croatia News	Croatia	Ally
Prague Morning	Czech Republic	Ally
The Copenhagen Post	Denmark	Ally
The Times and The Sunday Times	UK	Ally
Yle News	Finland	Ally
Daily Finland	Finland	Ally
FRANCE 24 English	France	Ally
Africanews	France	Ally
The Africa Report	France	Ally
Agence France-Presse	France	Ally
DW News	Germany	Ally
Kathimerini English Edition	Greece	Ally
Greek Reporter	Greece	Ally
The Pappas Post	Greece	Ally
Daily News Hungary	Hungary	Ally
Hungary Today	Hungary	Ally
i24NEWS English	Israel	Ally
The Jerusalem Post	Israel	Ally
Haaretz.com	Israel	Ally
Ynetnews	Israel	Ally
The Times of Israel	Israel	Ally
All Israel News	Israel	Ally

The Local Italy	Italy	Ally
The Japan Times	Japan	Ally
Japan Today	Japan	Ally
NHK WORLD-JAPAN	Japan	Ally
Standard Digital	Kenya	Ally
Nation	Kenya	Ally
Luxembourg Times	Luxembourg	Ally
News Mexico today	Mexico	Ally
Mexico News Daily	Mexico	Ally
GhanaWeb	Netherlands	Ally
NL Times	Netherlands	Ally
DutchNews.nl	Netherlands	Ally
Norway Today	Norway	Ally
TVP World	Poland	Ally
Notes from Poland	Poland	Ally
The Portugal News	Portugal	Ally
Romania Insider	Romania	Ally
Arab News	Saudi Arabia	Ally
Saudi Gazette	Saudi Arabia	Ally
Euro Weekly Newspaper	Spain	Ally
The Local Sweden	Sweden	Ally
DAILY SABAH	Turkey	Ally
TRT World	Turkey	Ally
The Guardian	UK	Ally
Metro	UK	Ally
Reuters	UK	Ally
Financial Times	UK	Ally
BBC News	UK	Ally
AP	US	US
Sahara Reporters	Nigeria	US
Newsweek	US	US
The Hill	US	US
Fox News	US	US
USA TODAY	US	US
Washington Post	US	US
HuffPost	US	US
One America News Network	US	US
Washington Examiner	US	US
CNN	US	US

Axios	US	US
MSNBC	US	US
The Washington Times	US	US
The New York Times	US	US
Breitbart	US	US
The Moscow Times	Russia	Adversary
Global Times	China	Adversary
China Daily	China	Adversary
Havana Times	Cuba	Adversary
Iranwire English	Iran	Adversary
Presstv Programs	Iran	Adversary
Syrian Arab News Agency SANA	Syria	Adversary
Syria Direct $\gamma \geq \ddot{Y} \ddot{a} \pm \ddot{Y} \ddot{a} \gamma \beta \ \gamma \pi \ddot{Y} \ddot{N} \ddot{Y} \hat{a} \ \gamma \Sigma \ddot{Y} \hat{a} \ddot{Y} \ddot{N}$	Syria	Adversary
Buenos Aires Times	Argentina	Other
Buenos Aires Herald	Argentina	Other
The Rio Times	Brazil	Other
The Brazilian Report	Brazil	Other
Ahram Online	Egypt	Other
Egypt Independent	Egypt	Other
Daily News Egypt	Egypt	Other
The Hindu	India	Other
The Times of India	India	Other
The Economic Times	India	Other
Hindustan Times	India	Other
Indian Express	India	Other
Guardian Nigeria	Nigeria	Other
Legit.ng	Nigeria	Other
The Palestine Chronicle	Palestine	Other
Al Jazeera English	Qatar	Other
Gulf-Times	Qatar	Other
The Peninsula Qatar	Qatar	Other
Doha News	Qatar	Other
Qatar Tribune	Qatar	Other
Mail & Guardian	South Africa	Other
Le News	Switzerland	Other
Khaleej Times	UAE	Other
The National	UAE	Other
Gulf News	UAE	Other

Appendix 1. Filter for Facebook Posts on the War in Ukraine

Ukraine, Zelensky, Zelenskyy, Kiev, Kyiv, Donbas, Lviv, Crimea, Mariupol, Dnipro, Kherson, Russo-Ukrainian, pro-Russian separatists, Donetsk, Luhansk, Kharkiv, Bucha, Bakhmut, Wagner fighter, Wagner group, Wagner mercenary, Wagner army, Wagner troops, Prigozhin, Russia sanctions, Putin's war, Russia's war, Putin, Odessa, Azov, himras