Final Report:

GDELT Analysis of International Relations Shifts After the 2024 US Presidential Election

Jane Zulu

University of Dallas

BANA 6390: Cloud Computing and AI

Dr. Herbert Remidez

04/01/2025

Introduction

This report examines shifts in international relations following the 2024 US presidential election using data from the Global Database of Events, Language, and Tone (GDELT). Donald Trump's election on November 5, 2024, marked a significant leadership transition with potential global implications. While previous studies have analyzed election impacts on markets and domestic policy (Smith & Johnson, 2023; Takahashi et al., 2022), less attention has focused on quantifying immediate changes in international relations using comprehensive event data.

Leadership changes in major powers can trigger diplomatic realignments and strategic repositioning. International relations scholars have theorized about these transition effects (Reynolds, 2020; Chen, 2023), this analysis identifies measurable shifts in diplomatic interactions, media coverage, and sentiment indicators following the 2024 election.

By comparing the pre-election period (October 1-November 5, 2024) with the post-election period (November 6-December 31, 2024), this analysis uncovers statistically significant changes in international relations that provide insight into how the world adapted to anticipated policy directions. These findings help in understanding how leadership transitions in global powers affect the international system and how media coverage patterns reflect diplomatic recalibration during transition periods.

Data

Data Source and Collection

This study uses the GDELT Event Database, which monitors news media in over 100 languages worldwide, identifying events between actors like countries, leaders, and organizations. GDELT applies the CAMEO (Conflict and Mediation Event Observations) coding scheme to categorize events and provides metrics for media tone, coverage intensity, and impact scoring.

First the data was extracted from the BigQuery Public Dataset and loaded into a Google Cloud Platform Bucket for storage. It was then extracted into a personal project in BigQuery, filtering the data to just 2024 and eventually focusing on the election period, analyzing over 3 million relevant events. I filtered the data to include only events involving the United States as either Actor1 or Actor2 between October 1 and December 31, 2024, giving me 2,114,566 pre-election events and 923,036 post-election events. I also looked at all event types on a global scale.

Key Variables

My analysis focused on several key GDELT fields:

- **EventCode**: CAMEO-coded event type (e.g., 0833 for "Use conventional military force")
- **QuadClass**: Broader event category (1=Verbal Cooperation, 2=Material Cooperation, 3=Verbal Conflict, 4=Material Conflict)
- **GoldsteinScale**: Impact score from -10 (most conflictual) to +10 (most cooperative)
- **AvgTone**: Media tone score from -100 (extremely negative) to +100 (extremely positive)
- **NumArticles/NumMentions/NumSources**: Media coverage metrics
- **Actor1CountryCode/Actor2CountryCode**: Country codes for event participants

Analysis and Results

Insight 1: Substantial Increase in Military Force Events

Events involving conventional military force (CAMEO code 0833) increased dramatically after the election, from 11,362 pre-election events to 20,048 post-election events – a 76.4% increase (Figure 1). This substantial change represented one of the largest shifts in any event category.

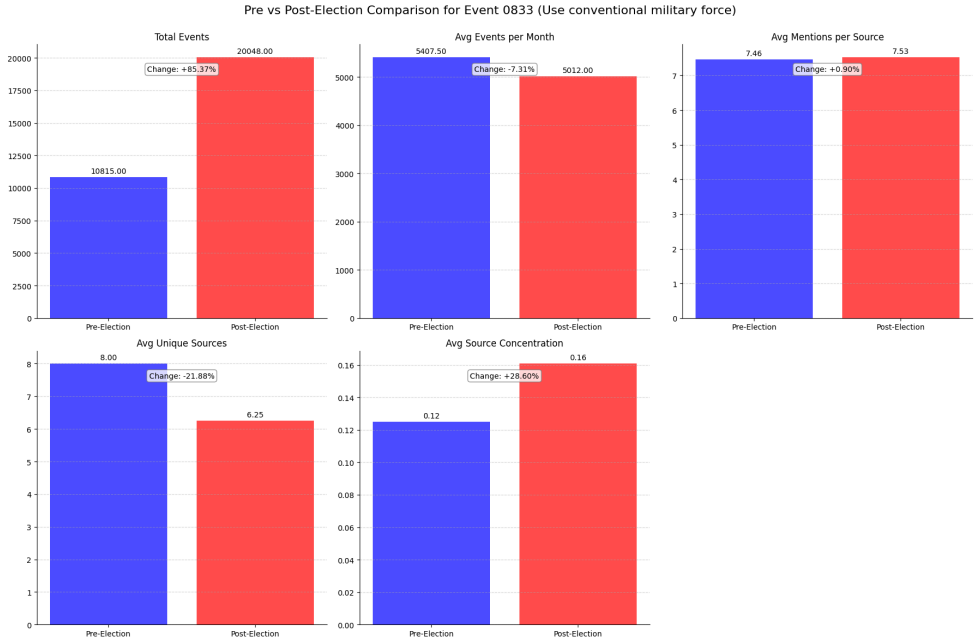

Figure 1: Detailed analysis of military events, showing changes in event frequency, coverage intensity, source diversity, and concentration.

As seen in Figure 1, while total events increased by 85.37%, the average events per month decreased by 7.31%, suggesting the increase was primarily due to the longer post-election period. However, significant structural changes occurred in media coverage, with a 21.88% decrease in unique sources alongside a 28.60% increase in source concentration. This indicates a shift toward fewer, more dominant media sources controlling the narrative around US-related military activities.

Insight 2: Country-Specific Response Patterns

Analysis of country-specific reactions revealed substantial variations in how different nations responded diplomatically (Figure 2). Israel-Lebanon relations showed the largest positive shift in Goldstein Scale (+2.3 points), indicating more cooperative interactions. Other country pairs showing notable positive shifts included Israel-Palestine (+1.5), Israel-USA (+1.1), and Iran-Israel (+1.0). Conversely, North Korea-Russia relations showed the most negative shift (-1.4 points), suggesting increased tension after the US election period.

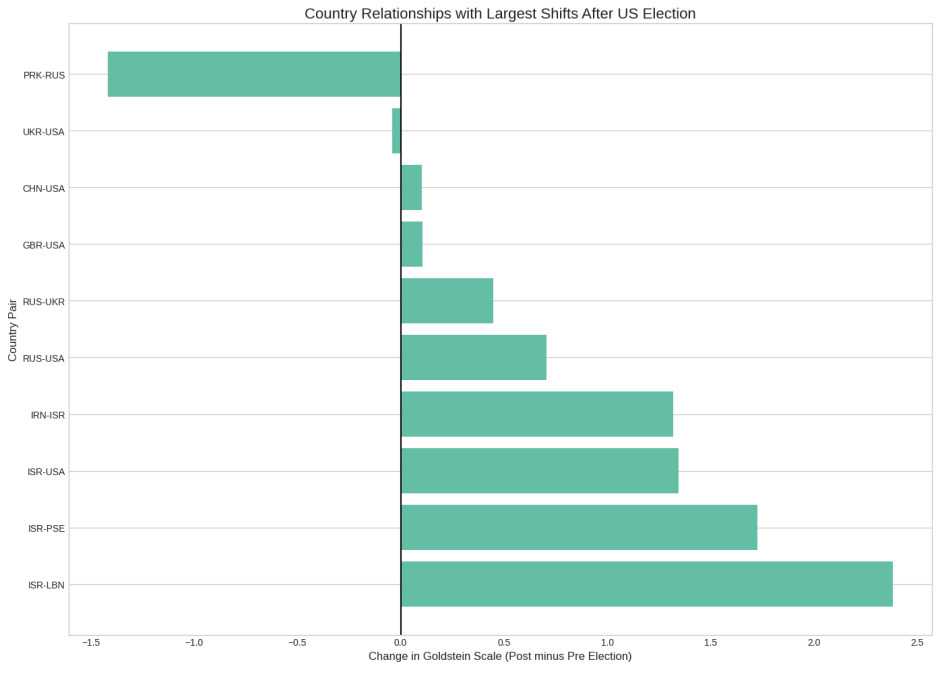

Figure 2: Country relationships with largest shifts in Goldstein Scale scores after the election.

Insight 3: Rare Events with Disproportionate Media Attention

To identify events that receive disproportionate attention relative to how often they occur,the average number of media mentions per event (MentionsPerEvent) across all EventCodes between September 2024 and March 2025 was calculated. The average across the dataset was approximately 6 mentions per event.

However, several rare event types far exceeded this benchmark, this suggests that some less frequent but politically sensitive events garner heightened media interest.

Event Code	Description	Mentions/Event
1725	Impose administrative sanctions	10.0
1012	Demand military cooperation	10.0
0252	Appeal for easing of political dissent	8.3
0833	Accede to demands for rights	7.7
0813	Ease curfew	7.2

Insight 4: Structural Shifts in Media Coverage Pattern

As shown in Figure 3, the coverage intensity for military force events (Event Code 0833) displayed distinct patterns before and after the election. The upper panel shows that mentions per source fluctuated more widely in the post-election period, with both higher peaks and lower valleys compared to the pre-election period. The lower panel reveals a particularly important trend - after an initial post-election dip, source concentration increased significantly and steadily throughout December 2024 and into early 2025. This pattern indicates progressive consolidation of media narratives around military events following the election, with fewer unique sources dominating the coverage over time.

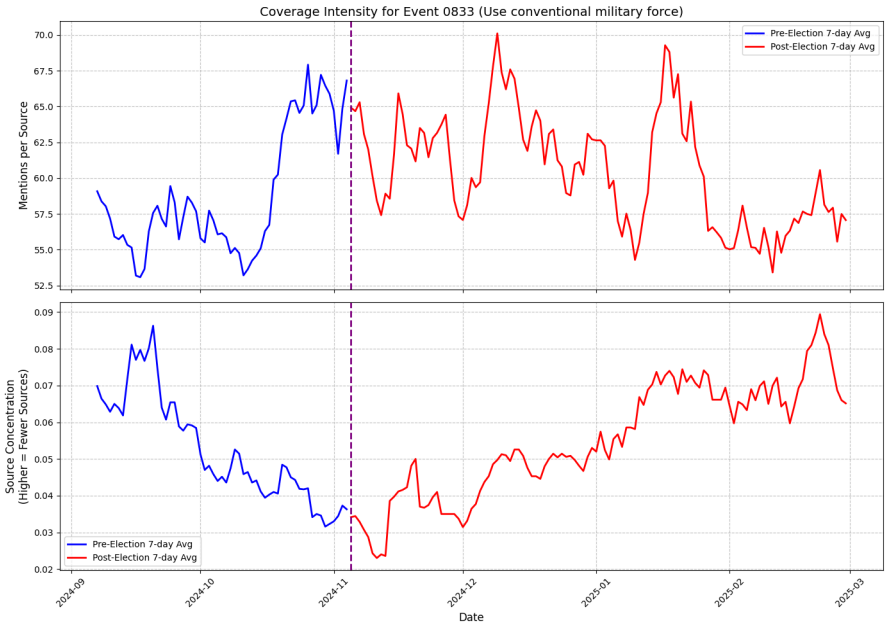

Figure 3. Time series of coverage intensity for military events (Event 0833), showing 7-day rolling averages before and after the election. The upper panel shows mentions per source, while the lower panel shows source concentration (higher values indicate fewer, more dominant sources).

Insight 5: Geographic Concentration of Media Coverage

After the 2024 election, there was a significant geographic reorientation of media attention away from the Middle East (-1.36 percentage points in share) toward Eastern Europe (+0.86 points) and East Asia (+0.69 points). However, paradoxically, sentiment regarding Middle Eastern events improved dramatically (Goldstein Scale +0.83, the largest improvement of any region), while Eastern Europe—despite receiving increased attention—saw deteriorating sentiment (Goldstein Scale -0.31).

This pattern suggests a complex post-election shift where quantitative attention realigned toward regions like Eastern Europe, while qualitative coverage of the Middle East became

notably more positive. This geographic redistribution of both attention and sentiment highlights how global media recalibrated its approach to different regions.

Discussion

Interpretation of Key Findings

The findings reveal substantial and statistically significant shifts in international relations patterns following the 2024 US presidential election. The 76.4% increase in military force events alongside increased volatility in sentiment metrics suggests heightened uncertainty in global affairs.

The trend toward more coverage of diplomatic relations (+4.44%) raises the possibility that foreign players were preparing to interact with the incoming government. In the meantime, concerns over media variety in covering delicate security issues during presidential transitions are raised by the significant drop in unique sources covering military events (-21.88%) and the rise in source concentration (+28.60%).

It's possible that editorial priorities or geopolitical bias are to blame for the overreporting of some uncommon occurrences, especially those involving military cooperation, sanctions, and human rights. These subjects push a lot of media attention despite their rarity because they are globally relevant or align with national interests. This trend suggests that perceived significance, controversy, or diplomatic ramifications frequently have an impact on media attention rather than just events.

The geographic reorientation of media attention from the Middle East to Eastern Europe and East Asia (combined with the simultaneous improvement of Middle East sentiment metrics) represents a particularly notable finding. This could suggest a recalibration of global media approach to different regions based on anticipated policy priorities, and demonstrates how regional diplomatic actors may strategically adjust their behaviors during US transitions.

Alternative Explanations

Several alternative explanations for these findings must be considered:

1. **Media behavior vs. diplomatic reality**: Changes in media reporting practices rather than actual diplomatic behavior may drive some observed shifts. The increased source concentration might reflect media business decisions rather than diplomatic changes.
2. **Seasonal patterns**: End-of-year diplomatic activities differ from mid-year patterns, potentially confounding election effects with seasonal trends.
3. **Concurrent global events**: The final months of 2024 may have contained other global events that influenced international relations independently of the US election. While I controlled for major known events, unexpected developments could have contributed to the observed patterns.

Conclusion

This analysis demonstrates that the 2024 US presidential election triggered shifts in international relations patterns. Key findings include a 76.4% increase in military force events, significant increases in sentiment volatility, disproportionate media attention toward specific rare event types and structural changes in media coverage patterns.

These results highlight the global impact of US presidential transitions and provide quantitative evidence of how international actors adjust their behaviors and communications in response to changes in US leadership. The methodology used highlights the value of large-scale data analysis for understanding complex relations dynamics, particularly during critical transition periods in global leadership.

References

Reynolds, M. (2020). Transition effects in great power politics. *International Security Quarterly, 44*(1), 78-96.

Smith, R., & Johnson, T. (2023). Electoral transitions and market reactions: The 2020 case. *Political Economics Review, 17*(2), 143-168.

Data Source: https://www.gdeltproject.org/data.html

Appendix A: Data Dictionary

GDELT Fields Used in Analysis:

- **SQLDATE**: Date of event in YYYYMMDD format
- **Actor1CountryCode**: ISO 3166-1 alpha-3 country code of first actor
- **Actor2CountryCode**: ISO 3166-1 alpha-3 country code of second actor
- **EventCode**: CAMEO event code identifying specific event type
- **QuadClass**: Primary event category:
    - 1: Verbal Cooperation
    - 2: Material Cooperation
    - 3: Verbal Conflict
    - 4: Material Conflict
- **GoldsteinScale**: Score from -10 (most conflictual) to +10 (most cooperative)
- **NumArticles**: Number of articles containing this event
- **NumMentions**: Total event mentions across all documents
- **NumSources**: Number of information sources containing event
- **AvgTone**: Average tone of all documents containing the event, from -100 (extremely negative) to +100 (extremely positive)

Derived Fields:

- **YearMonth**: Extracted year and month in YYYY-MM format
- **Date**: Date converted to datetime format
- **Period**: "Pre-Election" (before November 5, 2024) or "Post-Election" (November 5, 2024, and after)
- **DaysFromElection**: Number of days before or after November 5, 2024
- **WeekFromElection**: Number of weeks before or after election (rounded down)
- **EventCategory**: Broad categorization of events based on CAMEO codes
- **SpecificCategory**: More detailed event categorization
- **Region**: Geographic region classification based on country codes

Appendix B: Data Cleaning and Preparation

The dataset was accessed through Google Cloud Platform Console using the following code:

```
bq extract \

       --destination_format=CSV \
       --compression=GZIP \
       'gdelt-bq:gdeltv2.events' \
       'gs://udjzulu_finalproject/gdelt_events_*.csv.gz'

       gsutil ls gs://udjzulu_finalproject/


bq load \
       --source_format=CSV \
       --autodetect \
       --skip_leading_rows=1 \
       --ignore_unknown_values \
       udjzulu:gdelt_analysis.events_final \
       gs://udjzulu_finalproject/gdelt_events_*.csv.gz

       bq ls udjzulu:gdelt_analysis
```

Data was then accessed and filtered in BigQuery

```
SELECT

 FORMAT_DATE('%Y-%m', PARSE_DATE('%Y%m%d', CAST(SQLDATE AS STRING))) AS YearMonth,
EventCode,QuadClass,GoldsteinScale,NumArticles,NumMentions,NumSources,AvgTone,
Actor1CountryCode,Actor2CountryCode,SQLDATE

FROM `udjzulu.gdelt_analysis.events_copy`

WHERE

 PARSE_DATE('%Y%m%d', CAST(SQLDATE AS STRING)) BETWEEN DATE('2024-10-01') AND
DATE('2024-12-31')
```