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Georgia Media (de)Polarization Index

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Abstract

Georgia Media (de)Polarization Index

While there is a consensus on high polarization in Georgia as confirmed by the public perception of increasing polarization on one hand and the call of the country's development partners towards depolarization, there has not been any tool available to measure and monitor the polarization dynamics. On this basis, the ISET Policy Institute developed a media polarization index to explore and measure the dynamics of media polarization in Georgia. It looks at media polarization as a proxy for political polarization. The conducted research is based on the use of Natural Language Processing (NLP) techniques. Machine learning application makes the tool unbiased and independent of subjective interpretations. The note presents the Media Polarization Index and analyzes how media polarization relates to various factors, including political events, public perception, opinion polarization, political party ratings, and consumer confidence.

The research reveals that there are two distinct media clusters in the country. The Index shows an increase in media polarization since 2020, particularly acute since early 2022. While the Index captures significant polarization around specific events like elections, its response varies across different events and developments. Notably, public perception of polarization doesn't directly correlate with the media polarization index. Opinion polarization shows an upward trend, but its dynamics diverge from media polarization after March 2022. Political party ratings initially mirrored media polarization patterns, but this link weakened post-2022, possibly due to the impacts on political rhetoric around the Russian war in Ukraine. Analysis of party rating relevance to media polarization shows that the higher the polarization, the higher are ratings of the two largest political parties and the 'middle' (which mainly consists of smaller opposition parties) shrinks. Finally, the media polarization index exhibits a similar upward trend to the consumer confidence index, potentially reflecting the similar influence of events on both metrics. Based on the conducted research/Index the note offers three recommendations for the desired depolarization path, particularly in the context of the European Commission’s recommended nine steps, one of which is depolarization.

MEASURING MEDIA POLARIZATION IN GEORGIA

Introduction

Political polarization is a division of a country's population into two opposed political camps. Polarization, characterized by the divergence and clustering of political viewpoints, can be beneficial for democracy, as it implies argument, debate, and policy choices presented to citizens. However, when polarization becomes excessive, individuals tend to dismiss perspectives divergent from their own, thereby impeding the attainment of democratic resolutions to societal challenges (Heltzel & Laurin, 2020)[1].

Mass polarization, also known as *popular polarization*, manifests when the electorate's attitudes toward political issues, policies, and prominent figures become sharply divided along party lines. In contrast, *elite polarization* pertains to the polarization between the party in government and the opposition party. ***Political polarization* does not necessarily require ideological and social distance.** In highly polarized countries, the conflict between opposing groups can perpetuate itself not based on ideological differences, but emotional opposition, fostering identities that are shaped by the confrontation (Somer & McCoy, 2018). This phenomenon is known as *affective polarization* and may result in heightened hostility and a diminished willingness to engage in compromise or collaborative efforts with individuals who hold divergent political views (Boxell, Gentzkow & Shapiro, 2022).

All above is highly relevant in today's Georgia, where polarization leaves little room for a middle ground and individuals are compelled to take sides. Political opponents are transformed into enemies, characterized by positions deemed illegitimate and threatening. Strong leaders emerge as a result of political polarization, as internal contestation within the party or coalition is minimal. These leaders, in turn, solidify their position by reinforcing the polarization (Palonen, 2009).

World Bank (2016) shows that many countries in Europe and Central Asia (ECA) are experiencing notable political polarization. Various factors are driving the political polarization in the region, such as economic challenges, ethnic tensions, the refugee crisis, and geopolitical pressures, with their significance varying from one country to another. Furthermore, there seems to be a discernible movement away from traditional centrist political parties and toward more populist political sentiments.

Political polarization in Georgia is widely acknowledged as one of the most apparent shortcomings of the political process. **The EU Commission widely acknowledges the importance of depolarization, considering it as one of the nine steps to attain deeper integration into the European Union.** Polarization is also recognized as a major challenge by local political actors and research institutions.

There is limited literature examining political polarization in Georgia, especially through the utilization of quantitative methods. Typically, discussions about polarization in Georgia emphasize that there is no clear ideological polarization in the country, given that political parties lack distinct and well-defined ideological identities. Examining the stances of the two major parties, Georgian Dream (GD) (the ruling party) and United National Movement (UNM) (the most popular opposition party), on 30 policy issues

[1] McCoy and Somer (2018) use the term "pernicious polarization" to describe a condition that has become extreme and damaging for a society.

reveals agreement on half (the study covers the summer of 2020). This level of accord might not align with expectations of intense ideological division. Furthermore, voter preferences do not seem to form two distinct, opposing societal groups with mutually exclusive preferences (Kakhishvili, Keshelava, Papava & Sichinava, 2021).

This analysis echoes the findings of the CRRC (2020) report, which suggests no clear division of Georgian society into two opposing political camps with entirely incompatible policy preferences. In addition, the Who Governs data, which measures polarization based on anti-establishment party votes[2] (the other way of measuring ideological polarization), paints a similar picture. Georgia's score on this metric fluctuates between 1.3% and 15.4% across five analyzed elections between 2004 and 2020. Notably, this contrasts with countries like Germany, where the same metric has steadily climbed from 6.5% to 25.7% during the same period[3].

In Georgia, political polarization primarily manifests through elite affective polarization. This refers to the intense emotional animosity and distancing between opposing political groups, characterized by a complete rejection of each other's visions (Bertoa, 2019; Samkharadze, 2022).

Media polarization likely plays a significant role in fostering affective polarization, creating echo chambers that amplify negative emotions towards opposing groups (Kubin & von Sikorski, 2021; Torcal & Comellas, 2022; Törnberg, 2022). Furthermore, as a primary conduit for information dissemination and a platform for diverse viewpoints, the media plays a pivotal role in influencing societal perceptions, fostering constructive dialogue, and providing platforms enabling political parties to effectively communicate with potential electorate and disseminate their ideas to a broader audience.

This policy note aims to measure media polarization, analyze its dynamics and responsiveness to political and economic events, and examine its correlation with other forms of polarization.

Negative Consequences of the Excessive Polarization

Scholarly discourse suggests the negative and harmful impacts of polarization on the economy and society. One of the most concerning potential consequences of excessive political polarization is the **erosion of trust in institutions** which itself might lead to weakened legitimacy and authority of institutions, reduced collaboration with government units, increased cynicism and apathy, and escalation of political conflict.

Excessive political polarization also has negative implications for economic prosperity and smoothening business cycles. Polarization, particularly affective polarization is systematically associated with distortions in economic expectations. Evidence of 27 European countries over three decades, suggests that in highly polarized contexts, the deviation of subjective expectations from economic fundamentals is likely to be significant (Guirola, 2021).

[2] Anti-political-establishment parties are selected based on the following three criteria: (1) it perceives itself as a challenger to the parties that make up the political establishment; (2) it asserts that a fundamental divide exists between the political establishment and the people (implying that all establishment parties, be they in government or in opposition, are essentially the same; and (3) it challenges the status quo in terms of major policy issues and political system issues. For example, in 2020, anti-political-establishment parties consisted of Georgian Labour Party, Alliance of Patriots of Georgia, Democratic Movement-United Georgia, Georgian Idea, Georgian March, Green's Party. These political parties received 5.8% of the total votes.

[3] Casal Bértoa, F. (2021): Database on WHO GOVERNS in Europe and beyond, PSGo. Available at: whogoverns.eu.

In addition, excessive political polarization has a negative impact on firm investment. Political polarization is harmful to local economies. Counties bordering areas with higher polarization experience decreased employment opportunities and business creation (Zhu, 2021).

Furthermore, studies describe the potential linkage between political polarization and health outcomes. , independent of party affiliation.

Unchecked political polarization risks tipping a vulnerable democracy into further disarray. Mccoy and Press (2022) conducted an analysis, based on the Varieties of Democracy (V-Dem) dataset, and explored global instances of pernicious polarization since 1950 and its impact on the state of democracy. It reveals a troubling correlation between the level of polarization and the democratic regime category.

The research covers cases of 52 countries and suggests that among 16 countries experiencing depolarization, all remained stable democracies, while 26 countries out of 36 with high **polarization suffered downgrades in their democratic status (Mccoy, Press, 2022)**.

Table 1: Outcomes of Episodes of Pernicious Polarization

		Democratic Regime Category	
		Stable	Downgraded
Polarization Level	Depolarized	16	0
	Remained Perinicious	10	26

Source: Mccoy & Press (2022)

Measuring Different Dimensions of the Political Polarization

Researchers employ a range of methods to capture the nuances of polarization: examining media discourse through content analysis, gauging individual attitudes through surveys, tracking voting patterns, visualizing political landscapes through ideological mapping, analyzing group dynamics through network analysis, and understanding online sentiment through social media analysis.

Extensive research has examined political polarization and factualization, often focusing on election results in European countries (Akdede, 2012). While this approach reliably measures polarization in post-election periods and at multi-year intervals, its key limitation is only capturing snapshots every few years. This method is also applicable to Georgia, but its infrequent data points pose a challenge.

Another common approach utilizes roll-call voting data o measure polarization (Gu & Wang, 2022). However, it seems unsuitable for Georgia due to significant differences in the country's socio-economic context and political structure compared to the contexts where this method has been successfully applied.

Content analysis is a traditional method for examining media polarization by systematically analyzing the content of textual, audio, or visual media. Researchers often categorize and quantify themes, topics, or sentiments within media content to identify patterns and trends. This approach helps to uncover biases, framing effects, and ideological slants present in the news coverage (Kamiri & Mariga, 2021).

Another popular methodological approach is network analysis, which has been extensively applied to study the structure of information dissemination and ideological clustering in media networks. By examining the connections between different media outlets, journalists, and online communities, network analysis reveals the patterns of information flow. This method allows for the mapping of the relationships and interactions that contribute to the reinforcement of

polarized viewpoints within the media (Segev, 2020).

Existing measures often define polarization as dispersion, meaning the diversity and distance between opinions. Standard deviation is a common dispersion measure, but it has limitations for rating scales with fixed categories. It's influenced by both dispersion and skewness, making it less reliable.

As media becomes increasingly polarized, researchers are turning to machine learning as a valuable tool for analysis. Nemeth (2022) conducted a scoping review of 154 studies published since 2010 to understand how Natural Language Processing (NLP) is being used in this context. The author found a significant bias towards studies in the US (59%), (the cross-national validity of their results has rarely been tested), utilizing Twitter data (43%), and employing machine learning approaches (33%). Most studies analyzing political texts skip close reading and neglect the potential pitfalls of inferring causality from text alone. Notably, many lack interdisciplinarity, with 45% lacking domain expertise and 20% solely authored by social scientists.

Measuring polarization in text often involves the application of sentiment analysis, a tool within the machine learning domain. This approach enables researchers to automatically categorize the emotional tone of news articles or social media posts. By employing natural language processing algorithms, sentiment analysis helps identify polarized language and emotional cues within media content. This approach allows for a quantitative assessment of polarization, providing scalable and efficient means of analyzing large datasets (Jain & Dandannavar, 2016).

Methodology and Data Collection

The methodology employed in the ISET Policy Institute's research and Index relies heavily on two primary Natural Language Processing (NLP) models: "Word2Vec" and its extension, "Doc2Vec". Developed in 2013 by Mikolov, Chen, Corrado, & Dean, Word2Vec addresses the challenge of capturing semantic meanings of words. Unlike traditional numerical methods that assign unique identifiers to words, Word2Vec represents words such as "Good," "Great," and "Bicycle" using unique vectors, accurately capturing their semantic nuances when adequately trained.

The Doc2Vec model extends Word2Vec's capabilities by aligning similar documents or sentences in Euclidean space. Despite no shared words, a well-trained Doc2Vec model can recognize semantic similarity between sentences. While many Doc2Vec models are well-trained on English documents, the authors trained a Georgian model specifically to capture semantic meanings in Georgian news articles. This model was trained on a corpus exceeding 250,000 online political news articles gathered from diverse sources.

The model training process, utilized Python's "Gensim" library, uses unsupervised machine learning algorithms to process raw, unstructured digital texts. The evaluation of the model's quality is performed by assessing the discriminative capacity of a linear model in identifying the source of news articles, employing their vectorized representations as predictor variables. The approach involves training a Multinomial Logistic Regression model on the vectorized training set and evaluating its macro F1 score[4] on the test set. The set of hyperparameters corresponding to the model achieving the highest score on the test set is selected for subsequent analysis. This unsupervised learning approach allows the model to organically identify media clusters based on the

[4] The macro F1 score is calculated as the average (unweighted) of the individual F1 scores of all classes. Where the F1 score refers to the harmonic mean of precision and recall

content itself, without any prior knowledge of their political stance.

Following training, the model is applied to political news articles from popular media outlets (the articles being taken from their websites). The vectors generated by these models exist in a high-dimensional space, which can be challenging to visualize. To enhance clarity, Principal Component Analysis (PCA) is utilized to project these vectors onto a two-dimensional plane. This allows for easier interpretation and analysis of the data.

The media outlets included in this study comprise the most popular media sources as determined by the Nielsen Television Audience Measurement System. These are: "Imedi", "Mtavari", "TV Pirveli", "1TV" (Public Broadcaster), "Formula", "PosTV" and "Rustavi2". Table 2 presents details about the media sources analyzed in this study. It lists the name of each source, the date their political news coverage began, and the number of articles included in the analysis. While most sources started reporting political news in early 2020, some had different starting dates due to limited archive access or not being operational at the time (e.g., tvpirveli.ge and post.media).

Table 2: News Articles Employed in the Model

Media Source	The date of the First Political News Article	The Number of News Articles
Imedinews.ge	2020-01-01	71,671
1TV.ge	2020-01-01	57,509
Mtavari.tv	2020-01-01	44,704
Tvpirveli.ge	2021-02-26	34,798
Formulanews.ge	2020-01-01	23,581
Rustavi2.ge	2020-01-01	15,252
Postv.media	2022-10-31	2,080
Total		249,595

After the vectorization of news articles, dissimilarity among news sources is measured using cosine similarity metrics. The resulting metrics are then negated to represent dissimilarity and normalized within a range of 0 to 1. This dissimilarity comprises both politically biased and non-biased components. The objective is to differentiate their contributions to total dissimilarity, formalized as $D_{i,j,t}$, representing the total dissimilarity between media sources i and j during period t, where $D_{i,j,t}$ is the sum of legitimate[5] (politically non-biased) dissimilarity $L_{i,j,t}$ and politically biased dissimilarity $B_{i,j,t}$.

$$D_{i,j,t} = L_{i,j,t} + B_{i,j,t}$$

To derive $D_{i,j,t}$, two fundamental assumptions are made. First, it assumes that "Doc2Vec" can adequately capture information from news articles, allowing the derivation of representative vectors for each media source in each period. Second, it assumes that cosine distance is a correct measure of dissimilarity, enabling the computation of dissimilarity between representative vectors.

Two additional assumptions, $L_{i,j,t} \approx D_{i,j,t}$ for media outlets within the same cluster, and $L_{i,j,t} = L_t + u_{i,j,t}$, are utilized to further derive legitimate dissimilarity. The first assumption categorizes media into clusters, such as ["Imedi", "PosTV", "1TV" and "Rustavi 2"] and ["Mtavari", "TV Pirveli", "Formula"], implying that within clusters, political dissimilarities are negligible.

The second assumption defines legitimate dissimilarity $L_{i,j,t}$ as a random variable with a time-specific distribution, denoted as L_t, and a random error term ui,j,t, where the expected value of $u_{i,j,t}$ is 0. This implies that legitimate dissimilarities

[5] E.g. stylistic or editorial choices, topic similarity, etc.

don't depend on the sources themselves, it has time-specific distribution and it is expected that the legitimate dissimilarity between any given pair of media will be the same.

The expected value of legitimate dissimilarity between media sources i and j during period t equals the average of the total dissimilarity within two clusters in that period. The politically biased dissimilarity between media platforms i and j during period t is then calculated as the difference between the total dissimilarity and the average total dissimilarity within clusters.

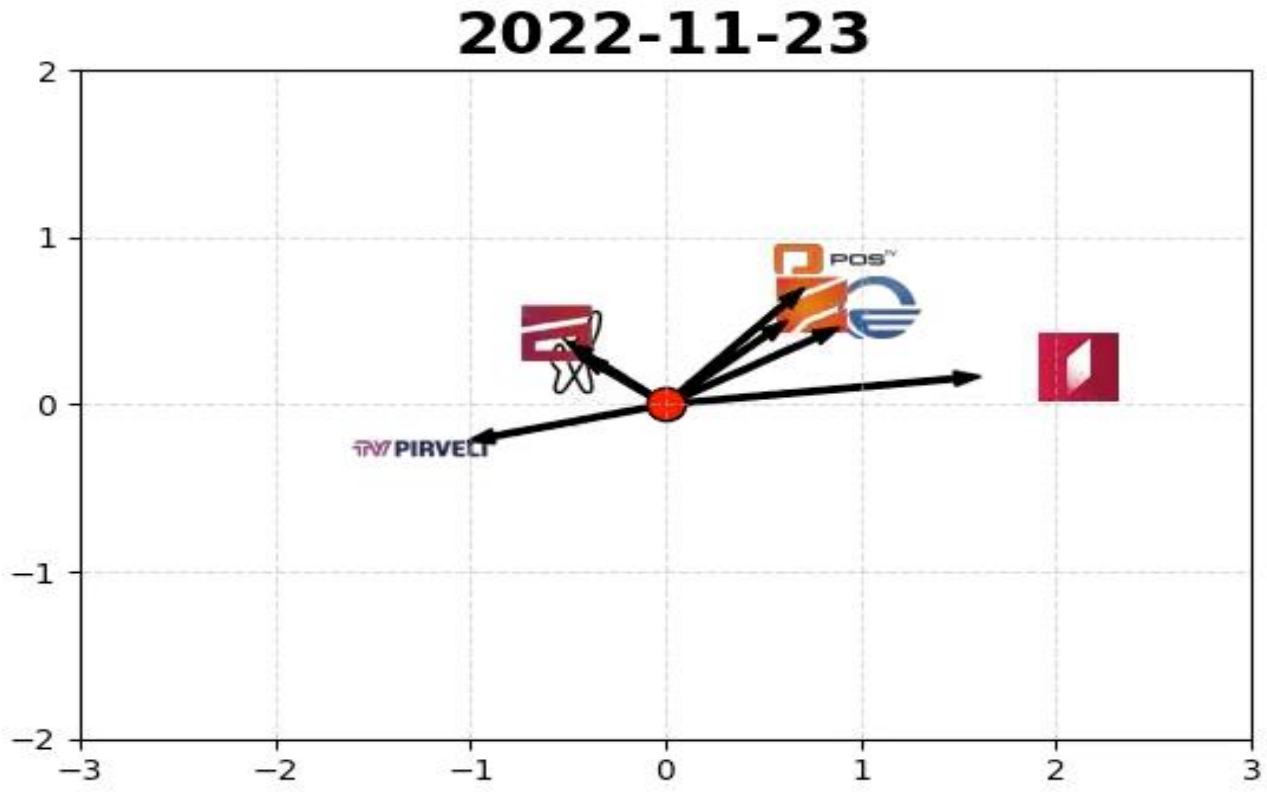
For example, political polarization between "Mtavaria" and "Imedi" (belonging to the different clusters) will be the difference between the total dissimilarity of the text of these two media sources and the average total dissimilarities of the text within all two clusters (the average of the dissimilarities between all of the pairs of media sources belonging the same clusters (e.g. „Mtavari" and „TV Pirveli", „Mtavari" and „Formula", „Formula" and „TV Pirveli", „Imedi" and „Pos TV", „Imedi" and „Rustavi 2", „Imedi" and „1TV", „Pos TV" and „Rustavi 2", „Pos TV" and „1TV", „Rustavi 2" and „1TV").

To derive the final form of media polarity index, an additional assumption is introduced: media polarity is a linear function of media biases, with weights proportional to their ratings. This assumption, while simplifying the complexity of media polarization, provides a useful model for estimating polarization.

$$P_t = \sum_{i,j} w_{i,j,t} \cdot B_{i,j,t}$$

Where P_t is a media polarization index for period t, $w_{i,j,t}$[6] is the weight representing multiplication of ratings of the media source i and j during period t[7].

Figure 1: Two Media Clusters



[6] Where $w_{i,j,t} = \frac{w_{i,t} w_{j,t}}{\sum_{\forall i,j} w_{i,t} w_{j,t}}$

[7] The ratings stem from Nielsen's established system for measuring television viewership.

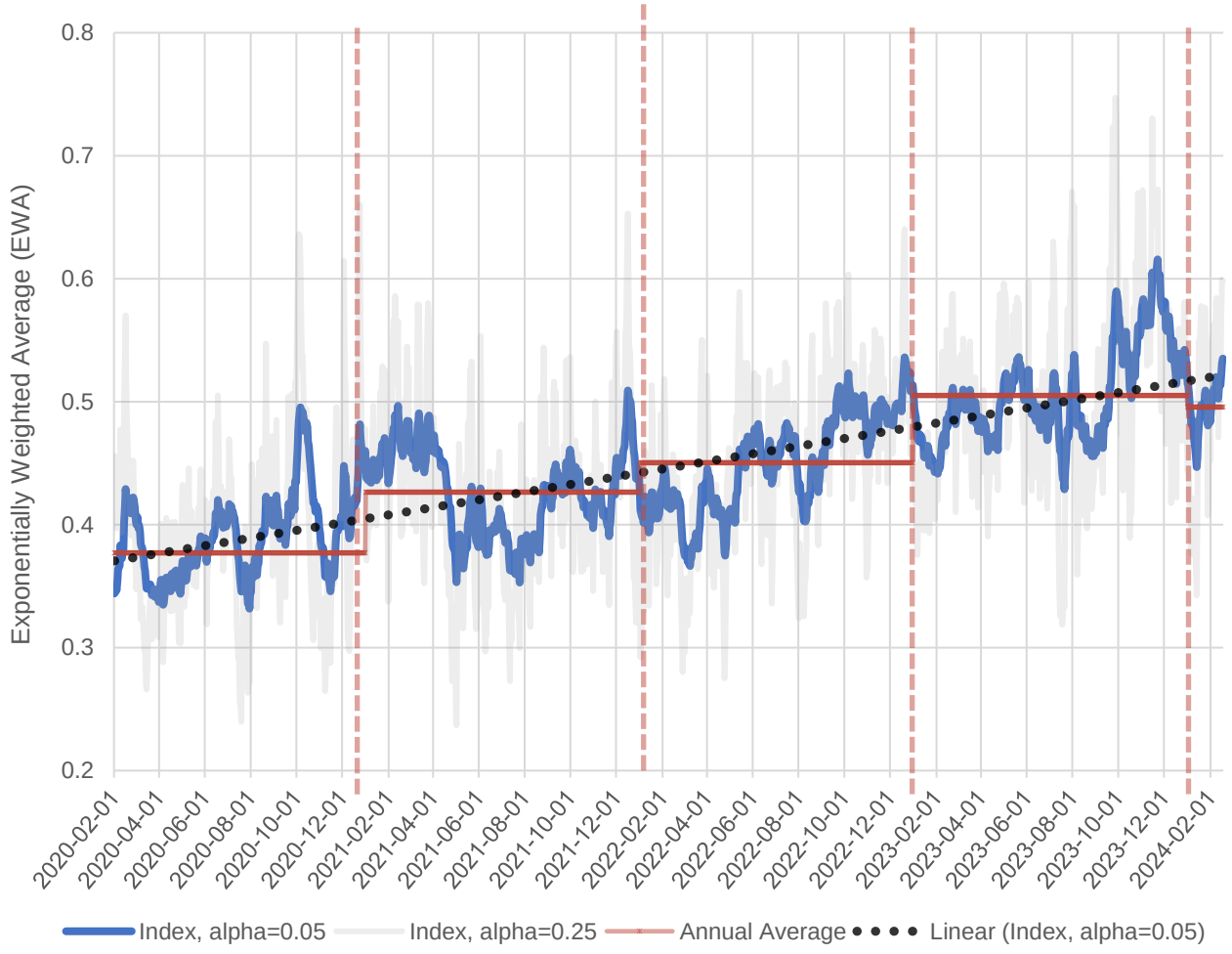
Media Polarization Index and Political Events

Analyzing political news articles from popular media outlets through a trained model and PCA, we discovered two distinct clusters based on text similarity (measured by the cosine similarity of their vectors). The first cluster includes "Mtavari," "Formula," and "TV Pirveli," where government officials are absent and opposition voices are common. These outlets are trusted by opposition supporters but not those of the ruling party (according to IRI surveys). The second cluster comprises "Imedi," "1TV," "Rustavi 2," and "Pos-TV," where government representatives have regular access and opposition voices are rare or almost none. These platforms enjoy the trust of ruling party supporters but not opposition supporters. Notably, the model identified these clusters solely based on content analysis, without any prior knowledge of political affiliations.

Furthermore, the statistically significant difference between average within-cluster and between-cluster dissimilarity strongly points to a distinct separation between media outlets belonging to different political camps.

Figure 2 displays the media polarization index, calculated using the method described earlier. This index ranges from 0 (no polarization) to 1 (maximum polarization). While the specific values don't directly translate into concrete interpretations, the index effectively captures the trends of media polarization over time and reflects how it reacts to various political events, such as crises, elections, protests, and the Eurointegration process. Hence, identifying a specific threshold for 'excessive' media polarization remains debatable and is influenced by various factors and contexts.

Figure 2: Media Polarization Index



Neither complete media uniformity nor rapid polarization are good for a healthy society. While complete uniformity (media polarization index equals 0) resembles more an authoritarian regime with limited information diversity, excessive polarization (media polarization index equal to 1)

can fracture society, diverting attention from crucial issues towards unproductive political clashes, often devoid of substance, and fueling extremism and conflict.

Daily media polarization fluctuates significantly, necessitating the use of an Exponentially Weighted Moving Average (EWMA). Even with low variance, EWMA is preferred because it captures the relationship between current and past polarization more accurately, reflecting the dynamic nature of real-world media environments.

Figure 2's blue line represents the media polarization index calculated using an Exponentially Weighted Moving Average (EWMA) with a smoothing parameter (alpha) of 0.05. This means that the index assigns more weight to recent data points, capturing trends in polarization more effectively[8]. While direct interpretation of results as "high" or "low" polarization may be misleading, observing trends and the variable's response to political and economic events offers valuable information for understanding the dynamic nature of polarization.

The Index shows that average annual media polarization (red line in Figure 2) has been growing annually since 2020. Media polarization has particularly increased since the beginning of 2022 (as indicated by the dashed trendline). The average index value rose from 0.38 in 2020 to 0.43 in 2021, and then to 0.45 in 2022. However, the most significant increase occurred in 2023, reaching 0.51.

The polarization index demonstrated sensitivity to major political and economic events during this period. The COVID-19 pandemic's start in February 2020 initially led to a slight decline in the index, likely due to the shared focus on factual reporting about the new threat. Furthermore, subsequent government measures like the lockdown in March didn't cause significant changes. The index started rising again in April, coinciding with the extension of lockdown, and continued increasing until June before seeing a slight dip.

A much sharper increase occurred before the parliamentary elections, reaching its peak around 10 days before the first round, marking one of the index's most significant historical jumps. This suggests a significant rise in media polarization during the election period. The index then declined but started increasing again in November, roughly 10 days before the second round of the election, and continued to climb until the end of the year.

The media polarization index, after starting to rise in late 2020, plateaued between January and March 2021. This period coincided with several highly polarizing events, including The "Cartographer's Case"[9], Prime Minister Gakharia's resignation, Nika Melia's imprisonment (the leader of the major opposition party), and a scandal involving the son of Bidzina Ivanishvili all occurred during this period.

Despite these events, the index saw a sharp decline in April-May 2021. This timeframe coincides with the attempted resolution of the political crisis in Georgia, marked by an

[8] With a slightly larger alpha value such as 0.25 (the gray line on the Figure 2), the EWMA still gives more weight to recent observations but assigns more significance to past observations compared to alpha = 0.05.

[9] The investigation, initiated in August 2020 and culminating in arrests in January 2021, involved accusations of treason to cartographers and fueled anti-opposition rhetoric by the ruling party (the narrative of the current government that the prior government relinquished a part of the country's territory to a neighboring nation, with compensation being provided

agreement between the ruling and opposition parties mediated by Charles Michel (the president of the European Council) in mid-April. This suggests a potential connection between the eased political tensions and the decrease in media polarization.

However, two further waves of increase followed:

- The first, starting before the first round of the October local elections, potentially reflected pre-election anxieties.
- In early October, Mikheil Saakashvili, the third president of Georgia and leader of the major opposition party, returned to Georgia from Ukraine and was subsequently arrested by the government.
- The second, peaking in mid-December 2021 after the second round of the local elections (held in November) might suggest post-election tensions.

In addition, while the index captured significant polarization around specific events, it wasn't equally responsive to all occurrences, such as the Tbilisi Pride attack in July 2021[10].

2022 witnessed two distinct peaks in media polarization, occurring in May-June and August-October. Here's a look at some key events:

- Russia's War in Ukraine (February 2022): Despite being the most significant event of the year, the war's initial stages didn't significantly impact the index as the media primarily focused on factual reporting. Despite the initial lack of response, Russia's war in Ukraine is expected to continue influencing media polarization throughout the year.
- Imprisonment of Nika Gvaramia (May 2022): Director of a critical television channel, Gvaramia's imprisonment coincided with the first wave of increased polarization.
- Europarliament Resolution on Georgian Media Freedom (June 2022): This critical resolution coincided with the first wave of increased polarization, potentially contributing to media discourse surrounding press freedom and journalist safety.
- Gudauri Helicopter Crash (July 2022): This tragic incident, claiming eight lives, didn't appear to coincide with significant fluctuation of the media polarization index. However, there is a noticeable surge in the index starting in mid-August 2022, which persists until early October 2022.
- Death of Child in Vake Park Fountain (October 2022): This tragic event didn't have a significant reflection on the dynamics of the media polarization index.

2023 witnessed a stable media polarization index in the first half, followed by a significant upward trend in the second half. Five distinct waves of increase were observed: February, April-May, July-August, September, and October-November. Here's how these waves align with key events:

March: Ruling party's attempt to adopt so-called 'Russian' "Foreign Agent" Law: While significant, this event didn't coincide with any increase. Post-demonstration media focus shifted to Georgia's EU aspirations.

April: US Sanctioning Georgian Judges: This didn't trigger a noticeable rise in the index.

August: Landslide in Shovi, Racha region: This likely fueled the July-August wave due to intense debate surrounding government responsibility (existence of the early warnings system, permits of building cottages, rescue operation).

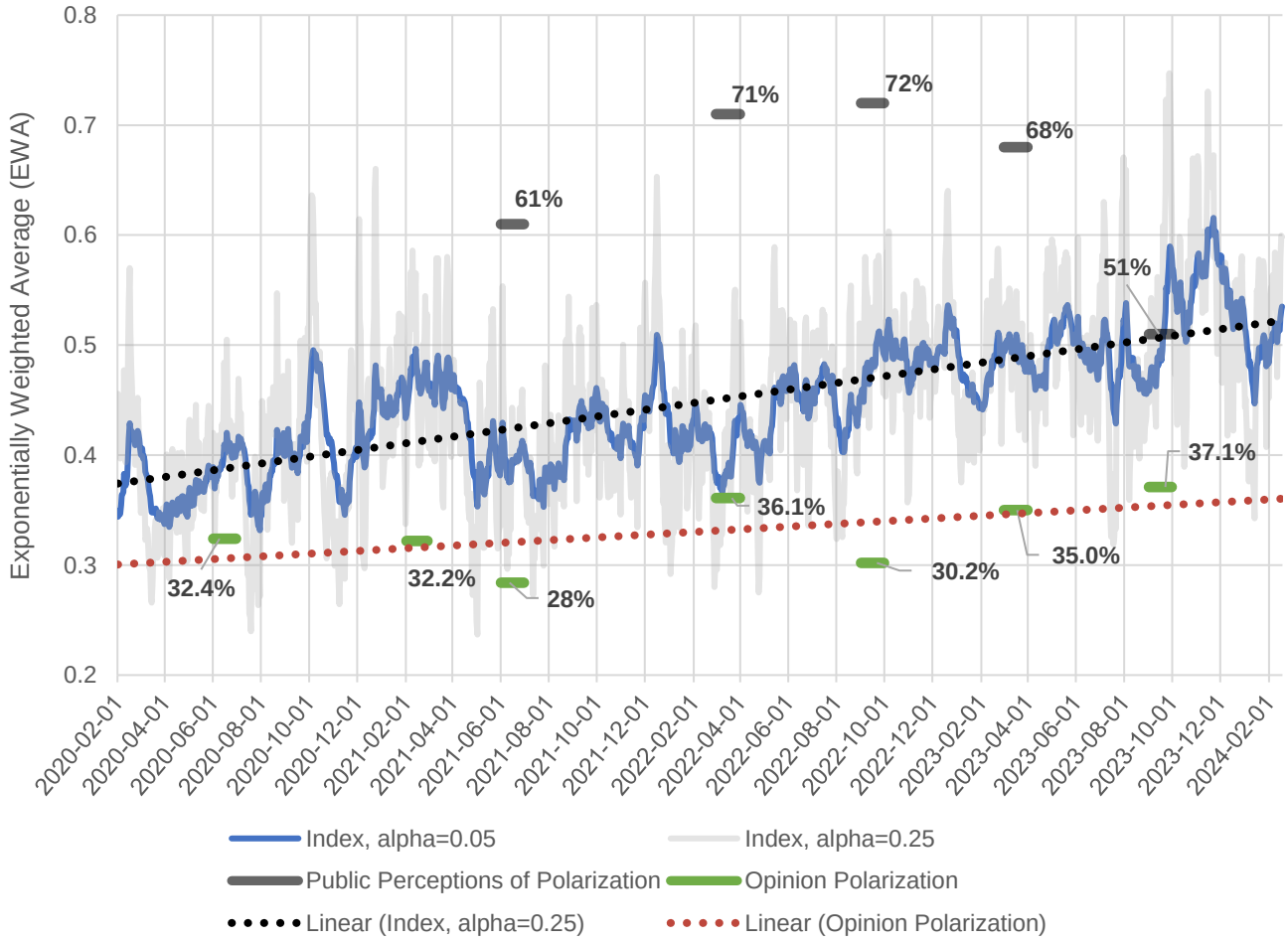
[10] The 2021 Tbilisi Pride event, planned by the NGO Tbilisi Pride, was violently disrupted by far-right counter-protesters, resulting in injuries and widespread condemnation."

September-November Surge: This turbulent period saw:

- President Zurabishvili's Impeachment Process: Potentially contributing to the increasing trend.
- US State Department Sanctioning Otar Partskhaladze (Georgian–Russian businessman and former Prosecutor General of Georgia): Unclear impact on the index.
- The Crisis of the National Bank of Georgia - NBG's resolution about sanctions and resignation of three vice-governors of NBG and an adviser: This internal conflict within the National Bank might have fueled media polarization.

In November 2023, the media landscape became more polarized than ever before, as measured by the media polarization index.

Figure 3: Media Polarization Index, Public Perception of Polarization and Opinion Polarization



In December 2023, Georgia received EU candidate status, coinciding with the return of Bidzina Ivanishvili to the political scene.

Overall, the second half of 2023 saw a clear rise in media polarization, potentially linked to several political events, particularly the Shovi Landslide and the turbulent political events (described before) in the September-November period. The media polarization index in Georgia has been steadily rising since mid-January 2024.

It's worth noting that the media polarization index might even underestimate the true level of media platform polarization. This is because the index relies on the dissimilarity of media content, while critical media outlets often quote statements from

ruling party members and the Georgian government, potentially leading to some overlap with content from government-favored media. This overlap could mask the true extent of opposing viewpoints presented in the media landscape.

Media Polarization, Public Sentiment, and Opinion Polarization

Following the development of the Media Polarization Index, the ISET Policy Institute examined how public perception of political and opinion polarization relates to the media polarization index. Perception is measured by the percentage of people who believe the country's politics are becoming more polarized (based on the question "Would you say that our country's politics are moving toward consensus or more polarization?" in International Republican Institute IRI Opinion Surveys). Figure 3 shows this perception with black dashes. Interestingly, the percentage of people believing in increasing polarization follows an inverted U-shape, rising from June 2021 to September 2022 before steadily declining to a low of 51% in September 2023. This suggests that media polarization and public perception of polarization aren't directly linked.

Regarding public opinion polarization, several methods are commonly used in the literature. Green dashes in the graph show one version of the index calculated based on the Esteban and Ray (1994) method (the detailed methodology is presented in the annex).

We calculate an opinion polarization score for each of the six questions from the International Republican Institute (IRI) Opinion Survey. The questions covered diverse topics such as political leanings, economic situation, foreign policy, security concerns regarding Russia, European integration, and NATO membership (a detailed list is provided in the annex). The choice of these questions is based on the academic literature. For example, Samkharadze (2022) analyzed media appearances from the ruling party, Georgian Dream, and the leading opposition party, United National Movement (UNM), across nine media platforms (four affiliated with the ruling party, four with the opposition, and one neutral platform). Their content analysis identified two main polarizing themes: (1) Russia's invasion of Ukraine and Georgia's response, and (2) European integration and its interpretations. These themes were further characterized by two key polarizing strategies: (a) mutual attacks and conspiracy theories, and (b) personalization of political discourse.

Esteban and Ray (1994) index range from 0% (everyone agrees) to 100% (two equally strong opposing viewpoints). While the index doesn't have a specific threshold after which polarization becomes damaging, it can track changes in opinion polarization.

Analysis shows a rising opinion polarization trend, but it's much flatter than the media polarization trend. Interestingly, between June 2020 and March 2022, their patterns mirrored each other: when one rose, the other did too, and vice versa. However, since March 2022, patterns have diverged.

Media Polarization and Political Party Ratings

This section analyzes how major political party ratings fluctuate in relation to media polarization. In Figure 4, blue, red, and green dashes respectively represent the percentage of voters supporting the Georgian Dream (GD - ruling party), United National Movement (UNM - leading opposition), and other smaller opposition parties, respectively. Note that percentages don't always equal 100% due to voters who abstain, cast blank votes, or remain undecided.

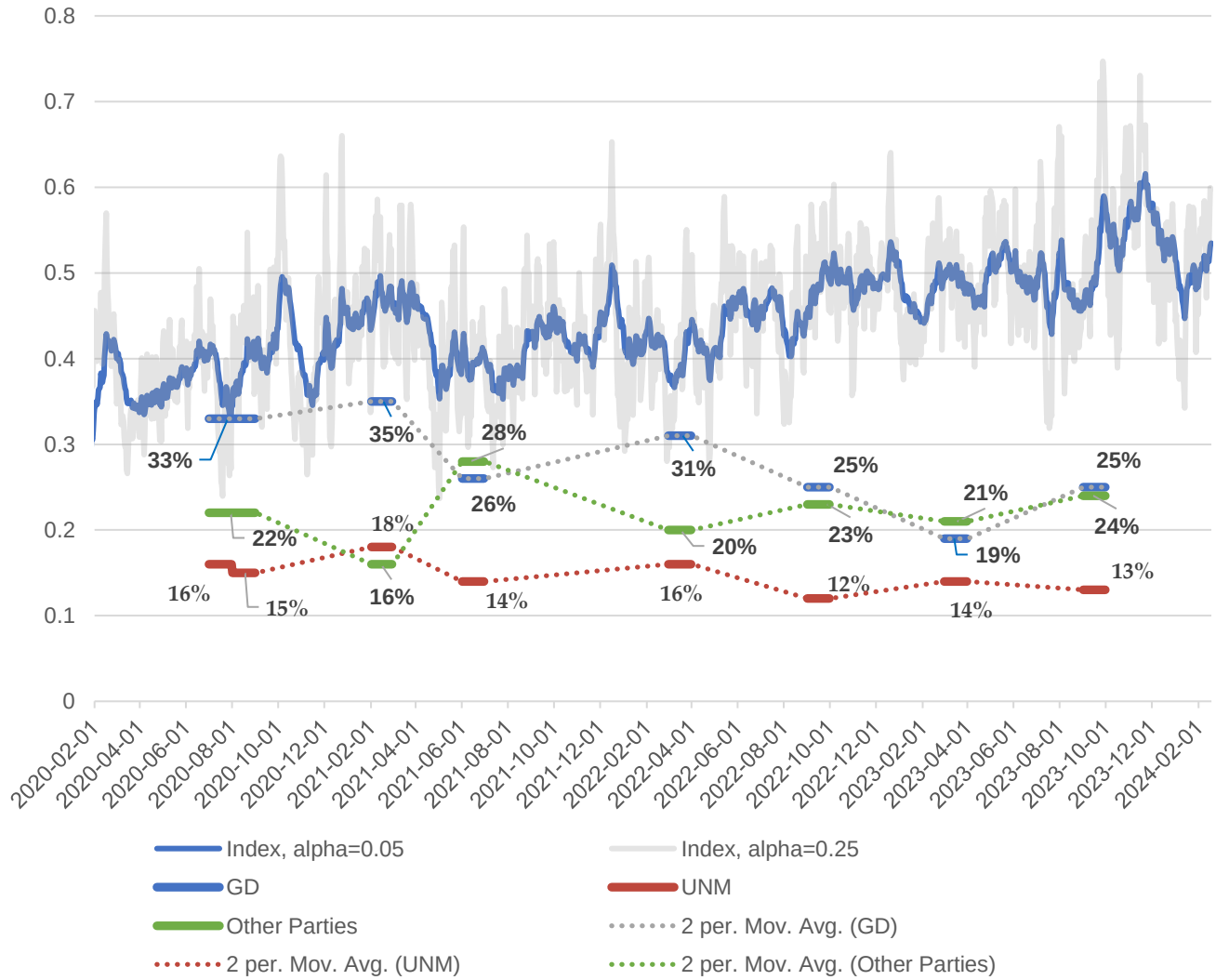
Initially, Figure 4 reveals a pattern: before mid-2022, increasing media polarization coincided

with rising support for GD and UNM and declining support for other parties. Conversely, decreasing media polarization aligned with falling GD/UNM ratings and increased support for other parties.

However, this pattern disintegrates in the latter half of 2022. Despite media polarization increasing sharply, GD's ratings fell, recovering slightly in late 2023. Meanwhile, UNM's and other parties' ratings mirror each other but don't correspond to media polarization trends. It is noteworthy that the proportion of respondents **undecided has exhibited a rapid rise over the** past two years**.** Similar conclusions emerge when comparing opinion polarization to party ratings.

This shift in dynamics could be partly explained by the fact that 2020 and 2021, when party ratings broadly mirrored polarization trends, were election years. Moreover, the patterns change post-mid-2022, coinciding with Russia's Ukraine invasion and the resulting shifts in political rhetoric.

Figure 4: Media Polarization Index and Political Party Ratings



Media Polarization and Consumer Confidence

Finally, we compare the media polarization index with the consumer confidence index, developed by ISET Policy Institute's Consumer Confidence Index measuring consumer sentiment by surveying 300-350 individuals monthly about their past, present, and future financial outlook (personal and national).

Besides the notable decline in consumer confidence observed in early 2021 and late 2022/ early 2023, which deviates from the media polarization index trends, both indices generally exhibit similar patterns. Both indices also exhibit an upward trend since the second half of 2021. This alignment could be attributed to the influence of shared major events impacting both metrics. A figure is presented in the annex.

Conclusion and Recommendations

The Index emerges as the only and important instrument for quantifying and measuring media polarization as a proxy of political polarization in the country. Based on a machine learning algorithm it is an impartial and independent tool to inform all parties across the spectrum of stakeholders. Using content analysis, the tool found two distinct clusters of media outlets, that release significantly different news content during the study period. The first group prioritizes news stories featuring opposition voices and lacks presence of the government officials. Conversely, the second group primarily features news involving government figures and seldom includes opposition perspectives. The index paints a complex picture of media polarization in Georgia over the past four years and reveals a distinct upward trend in media polarization, likely linked to various political and societal events. It can be applied further to understanding the linkages between media, public opinion, and support for political actors. While both media and public opinion appear to be influenced by major political events, the nature and extent of influences are multifaceted and not always directly proportional, including the relationship between media polarization and political party support.

While the Index captures significant polarization around specific events like elections, its response varies across different events and developments. Notably, public perception of polarization doesn't directly correlate with the media polarization index. Opinion polarization shows an upward trend, but its dynamics diverge from media polarization after March 2022. Political party ratings initially mirrored media polarization patterns, but this link weakened post-2022, possibly due to the impacts on political rhetoric around the Russian war in Ukraine. Analysis of party rating relevance to media polarization shows that the higher the polarization, the higher are ratings of the two largest political parties and the 'middle' (which mainly consists of smaller opposition parties) shrinks. Finally, the media polarization index exhibits a similar upward trend to the consumer confidence index, potentially reflecting the similar influence of events on both metrics. Based on the conducted research/Index the note offers three recommendations for the desired depolarization path, particularly in the context of the European Commission's recommended nine steps, one of which is depolarization:

First, to carry out further monitoring and measurement of the media polarization as a proxy for political polarization through the Media Polarization Index. It will keep informing the stakeholders, society, and partners on the dynamics of the process towards desired depolarization.

Second, it is highly advisable to facilitate cross-party dialogue and broad dialogue in a society strongly focused on the real issues (sectoral, developmental, etc), particularly in the politicized environment of approaching elections. This will help to change the focus from political divisions to possible convergence on policy approaches at all levels, promoting a culture of compromise and cooperation.

Third, support for independent media is vital in a highly polarized environment. Namely, provision of the financial and institutional support to independent and fact-checking journalism initiatives fosters critical analysis and diverse perspectives.

ANNEX: Methodology for Opinion Polarization Index

Six questions from the IRI Opinion Survey were selected to gauge public opinion on various aspects of Georgian life, including:

Q1. Political Direction: In general, would you say that our country is heading in the right direction or the wrong direction?

Q2. Economic Situation: Over the last 12 months, how has the economic situation in Georgia changed?

Q3. Foreign Relations: Do you support or oppose further dialogue with Russia?

Q4. Security Concerns: Given the current state of Georgia's relationship with Russia, how secure do you feel living in Georgia?

Q5. European Integration: Do you support or oppose Georgia joining the EU?

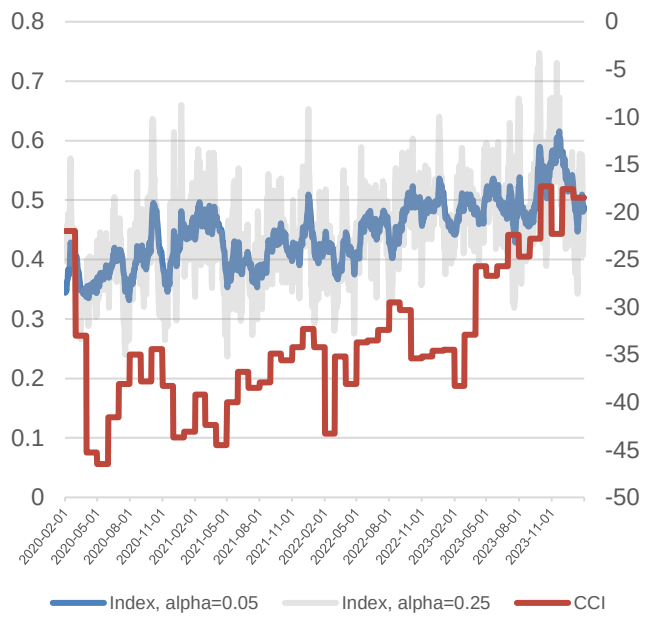
Q6. NATO Membership: Do you support or oppose Georgia joining NATO?

Using the Esteban and Ray (1994) method, we calculated the level of opinion polarization for each of these six questions. We then averaged these individual polarization scores to obtain a single overall value. Esteban and Ray's Index of political polarization captures the extent to which a distribution deviates from perfect equality, accounting for both the mean and the spread of the distribution. The index is derived from the Gini coefficient and is a function of the mean and variance of the distribution. Esteban and Ray (1995) use the following formula to measure opinion polarization:

$$P_{ER} = \sum_{j=1}^{n} \sum_{j \neq i}^{n} v_i^{\beta} v_j |x_i - x_j|$$

Where x_i and x_j are the opinions of individuals i and j, and v_k is the relative population frequency of population subgroup k. β parameter is equal to 1.8.

Figure A1: Media Polarization Index and Consumer Confidence Index



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