

# Social Media Dynamics of Partisan Bias, Rhetorical Strategies, and Affect Polarization in Pakistan

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## ABSTRACT

**Aim of the Study:** This study examines how partisan bias in TV news content and political rhetoric on social media influence public polarization in Pakistan.

**Methodology:** The study analyzes the partisanship of two major Pakistani TV news channels, Geo News and ARY News, through a content analysis of videos posted on their official Facebook pages during the Panama Papers case involving the then Prime Minister Nawaz Sharif. It also evaluates the rhetorical strategies of the leading political parties, *Pakistan Tehreek-e-Insaf* (PTI) and *Pakistan Muslim League Nawaz* (PML-N), by analyzing keywords, hashtags, and persuasive appeals in Facebook posts from Imran Khan (founder of PTI) and the official PML-N page. Affect polarization was assessed through sentiment analysis of user comments on the selected posts.

**Findings:** Results indicate that the Facebook pages of ARY News and Geo News exhibited partisan bias in favor of PTI and PML-N, respectively. The use of keywords and hashtags differed between the pages of Imran Khan and PML-N, though both frequently employed emotional (pathos) appeals, with limited use of logical (logos) arguments. Public sentiment in comments did not consistently align with the partisan bias or rhetorical style of posts; however, media pages triggered more polarized reactions than political ones. The public appeared more inclined to criticize opponents than defend their own party, reflecting a high level of affective polarization.

**Conclusion:** This study reveals that partisan media and emotional political rhetoric contribute to polarization, but public hostility toward opponents remains high regardless of media bias or rhetorical appeal.

**Keywords:** Media Partisanship, Political Rhetoric, Public Polarization, Affect Polarization, Sentiment Analysis, Social Media, TV News Channels.

## 1. INTRODUCTION

Political polarization has been a buzzword in both academia and popular media all over the world for more than a decade now. There still is a gap in understanding the relationship between ‘digital-born news sources’ and polarization outside the United States of America and Northern Europe (Fletcher & Jenkins, 2019), as most of the studies focus on US samples for understanding the polarization (Kubin & von

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Sikorski, 2021). Very few studies go 'beyond the west' hence, lacking empirical evidence in developing countries, despite the increasing internet penetration and usage of social media.

Our study analyzes media partisanship, public polarization, and political rhetoric in a developing country, Pakistan, and is an empirical contribution in this regard. It was during and after the 2013 general elections in Pakistan that the use of social media became part of political parties' campaigns and public deliberation in and outside the electoral process. This analysis is significantly essential for developing countries like Pakistan, where political leadership is plagued with corruption; the media is alleged to be partisan, and the public holds polarized views on religious, political, and even international issues. Democracy is also not fully consolidated in Pakistan yet. In such newly transitioned democracies, polarization may not only pose a threat to the democracy but it becomes a tool of divide and rule in the hands of democratic and sometimes not so democratic political elite to maintain their rule over naive masses. We have discussed the previously available literature about polarization, media partisanship, and political rhetoric on social media in the next section, and then presented our assumptions according to the Pakistani context.

### **1.1. Media Partisanship**

Media partisanship is the political alignment of the media that Seymour-Ure (1974) described as *party/press parallelism*, the direct organizational connections between political parties and news organizations. He defined a newspaper paralleling a political party if it is "closely linked to that party by organization, loyalty to party goals and the partisanship of its readers" (p. 173). Blumler and Gurevitch (1975) referred to this concept as *mass media partisanship*, and Hallin and Mancini (2004) termed media-party alignment at the system level as political parallelism because direct organizational connections do not exist anymore in modern democratic societies.

Alignments between politicians and media organizations do affect objectivity and lead to bias in political news coverage. According to Stevenson and Greene (1980), "bias is the systematic differential treatment of one candidate, one party, and one side of an issue over an extended period of time. Bias is the failure to treat all voices in the marketplace of ideas equally" (p. 116). McQuail (1992) categorized partisanship as hidden but intended bias. The biased coverage of electoral candidates can change the voters' /decisions as well (DellaVigna & Kaplan, 2007; Druckman, 2005; Druckman & Parkin, 2005). If the media continuously misinform citizens and distort facts, then it may even harm the democratic process (Street, 2001). Mainly commercialization and profit-making motivate media outlets to tailor their content according to the target audiences that are aligned with a particular political party (Mancini, 2013; Martin & Yurukoglu, 2017; Peake, 2007). This selectivity of audiences may lead media organizations to provide more biased and politically aligned content in order to get hold of the market share (Gentzkow & Shapiro, 2006).

Without looking into the motives of media bias of Pakistani TV channels, we investigate whether they are partisan in their coverage of political parties or not. These TV channels were launched by the print media organizations of the country when the electronic media policy was liberalized after 2002. Before this, there was a monopoly of the state channel, Pakistan Television (PTV). Now, there are 88 private TV channels in the country registered with the Pakistan Electronic Media Regulatory Authority. Although a few popular news channels like ARY News and Bol TV do not have the strong backing of print media networks but most of the TV news channels, including Geo News, Express News, Dawn News, and Dunya News, are run by powerful media groups having a strong infrastructure of newspapers. Presence on social media by electronic media outlets is also a growing trend in Pakistan. Almost all TV news channel of Pakistan have their official accounts on different social media platforms, including Facebook. In this article, the Facebook pages of ARY News and Geo News are selected; both are among the top three TV news channels of Pakistan (Medialogic, 2018; MediaVair, 2024). Even ARY News page is the third most famous Facebook page from Pakistan with a total of 26 million followers and the engagement rate of .009%. Geo News Urdu has 14 million followers and the engagement rate of .010% (Rival IQ, 2024).

ARY News and Geo News are usually considered to have a leaning toward PTI and PML-N, respectively. Both parties and their supporters continuously blame ARY News and Geo News for being partisan. Even PTI and its founder, Imran Khan, have announced to boycott Geo News many times for taking the side of the opponent party (Ahmad, 2023; Imran, 2014). Based on this background and the literature related to media bias and partisanship, we hypothesize that:

H1a: Geo News exhibits bias in favor of PML-N in the video content of their Facebook page.

H1b: ARY News exhibits bias in favor of PTI in the video content of their Facebook page.

## **1.2. Elite Polarization and Political Rhetoric**

Polarization among the public is also linked with elite polarization (Abramowitz, 2010; Banda & Cluverius, 2018; Druckman et al., 2013). Strong line of literature indicates the polarization among political elites (Eilperin, 2006; Leimgruber et al., 2010), particularly in American politics (Layman et al., 2006; McCarty et al., 2006; Theriault, 2008; Zingher, 2022) and the Latin American region (Béjar et al., 2020; Singer, 2016). The relationship between public and elite polarization seems to be of a reciprocal nature as both respond to each other (Abramowitz, 2010; Layman et al., 2006). Political elites tend to follow public opinion on certain issues not to shape their policymaking decisions but to influence and change it in their favor (Jacobs & Shapiro, 2000; Lupia & Menning, 2009). For bringing about this change, they employ different rhetorical strategies and appeals.

Aristotle (trans. 2007) described three different types of appeals to be used in rhetoric for the purpose of persuasion: ethos, logos, and pathos. Ethos is the appeal to the audience through the moral and ethical authority of the speaker. Logos is the appeal to logical argument in the message, while pathos is the emotional appeal. Research on the rhetoric of political elites suggests that they tend to use all three kinds in their speeches and addresses (Johnson, 2012). Though ethical and emotional appeals are more frequent than logical ones (Mshvenieradze, 2013), it is emotional appeal that generates more public response (Jerit, 2004; Samuel-Azran et al., 2015).

It seems that the use of certain rhetorical strategies by politicians and political parties may lead their followers towards or away from political polarization. Pakistani politics, particularly, is characterized by shiny slogans and popular statements (Shafiq et al., 2017). In the present study, we have analyzed appeals in the political rhetoric of two major political parties of Pakistan, PTI and PML-N, presented on their official Facebook pages.

In the 75 years of the history of Pakistan, the first smooth democratic transition was made possible after general elections in 2013 as the government was transferred from *Pakistan Peoples Party* (PPP) to *Pakistan Muslim League – Nawaz* (PML-N) and a third party *Pakistan Tehreek-e-Insaf* (PTI) emerged as a strong political contender. PTI got the third highest number of seats in the National Assembly and the second highest vote share. In the elections of July 2018, PTI became victorious and formed the government. The PTI government was unable to fulfill its five-year tenure and was removed from power through a vote of no confidence on April 10, 2020. However, PTI is the first political party in Pakistan to initiate the usage of social media for connecting with the public (Ahmed & Skoric, 2014), and it has used social media successfully in all of its election campaigns. Now, almost all political parties and their leaders have a strong social media presence.

For this study, we selected the official Facebook pages of Imran Khan and the Pakistan Muslim League–Nawaz (PML-N). Imran Khan's official page, as the founder of PTI, is the most popular political page in Pakistan, with 15 million followers and an engagement rate of 0.8% (Fanpage Karma, 2025a). In contrast, the official Facebook pages of PML-N leaders are relatively less popular, and PTI's official page also has fewer followers compared to Imran Khan's personal page. The official PML-N page has 3.7 million followers and an engagement rate of 1.0% (Fanpage Karma, 2025b). As international literature on political rhetoric (Jerit, 2004; Samuel-Azran et al., 2015), and studies on Pakistani politics (Ramzan et al.,

2021; Saeed et al., 2020; Shafiq et al., 2017) indicate the presence of emotional manipulation so we hypothesized that:

H2: Pathos is the most prominent persuasive appeal in the posts on the Facebook pages of Pakistani political parties.

### **1.3. Political Polarization**

When more and more individuals take extreme positions on various subject matters and political issues, society becomes polarized. A large segment of the general public is ideologically polarized (Abramowitz & Saunders, 2008). Affect polarization is another type in which extreme political opinions of people enter the realm of emotional dislike for the opponents (Iyengar et al., 2012; Iyengar & Westwood, 2015). Though, relationship between media partisanship and political polarization of masses is still debatable but some studies provide evidence that mass polarization somehow catalyzes a partisan media environment (Iyengar & Hahn, 2009; Jamieson & Cappella, 2010; Prior, 2007; Stroud, 2008, 2010). While others have claimed the minimal or weak effects of online media on political polarization (Guess et al., 2021; Wazzan & Aldamen, 2023).

Polarization tends to exacerbate among people who are already politically partisan and then further exposed to partisan media content (Levendusky, 2013). Social media is also charged with fueling polarization (Bail et al., 2018), though some studies argued that social media usage reduces the level of polarization (Barberá, 2014; Beam et al., 2018; Boxell et al., 2017). A new strand of literature even challenges the direction of the relationship between social media usage and polarization and contends that the level of affect polarization is the driver of social media usage (Nordbrandt, 2023).

It seems that different studies have yielded different results regarding internet or social media usage and its effects on polarization among the masses. These effects of online news consumption may be quite modest (Flaxman et al., 2016), but access to the Internet has surely increased the likelihood of getting exposed to congruent news content, thus leading to *partisan hostility* too (Lelkes et al., 2017). Exposure to partisan news sources leads people to have different perceptions about the intrinsic value of different issues (Stroud, 2010). In the same way, some issues generate more polarized opinions among the masses (Barber & McCarty, 2015; Evans, 2002).

In this study, we have attempted to establish the relationship of political polarization among the masses with their exposure to biased media content or elite political content, and we have particularly focused on one issue of Panama Leaks. Panama papers, leaked documents of a Panamanian law firm Mossack Fonseca and exposed by German newspaper *Süddeutsche Zeitung* (SZ) and International Consortium of Investigative Journalists (ICIJ), named the children of Nawaz Sharif, the former Prime Minister of Pakistan and ex-President of Pakistani political party PML-N, for their offshore accounts used for illegal financial activities. The issue of Panama leaks generated not only huge debate but also unleashed the political divide among every section of society, including the masses, elites, and media. People seemed to have divergent opinions on the issue. We formulated the following hypotheses to determine the extent of polarization on the Panama issue among the masses during these seven months on the Facebook pages of ARY News, Geo News, Imran Khan, and PML-N.

H3: Public sentiment expressed in the comment section of partisan content on Facebook pages of TV news channels demonstrates polarization.

H4: Political content replete with emotional appeals on the Facebook pages of political parties generates a polarized public response.

## **2. METHOD**

We entered the word Panama in both English and Urdu languages in the search function of Facebook. All posts, which appeared on the Facebook pages of Geo News and ARY News from January to July 2017, were selected for measuring media bias through content analysis. This time period was selected because

on January 4, 2017, a five-judge larger bench constituted by the Supreme Court resumed hearing of the Panama leaks case against the then Prime Minister Nawaz Sharif, and on July 28, 2017, he was finally disqualified for being dishonest and not disclosing his assets. Later, he was sentenced to ten years of imprisonment for having assets beyond his means on July 6, 2018. A total of 370 posts of TV channels pages appeared within the selected period; 165 posts from the Geo News Urdu page and 205 posts from ARY News. 370 posts accounted for a total of 105,506 shares.

Keywords and hashtags were counted for Imran Khan and PML-N's Facebook pages through the online tool Popsters (<https://popsters.us/>). The top 50 posts from January to July 2017, based on the number of likes and comments on both political pages, were also selected using the same online tool. These 100 posts from both pages had a wider impact as they were shared 811713 times after being posted by the original pages. The content of these 100 posts was analyzed to assess their persuasive rhetorical appeals on both political pages. Sentiment analysis was done for the comments of the public on the selected posts of media and political pages.

### ***2.1. Measure of Media Bias***

In order to assess the bias of Geo News and ARY News against or in favor of PTI or PML-N, an index with four indicators for partisan bias was developed based on the studies of Diddi et al. (2014) and Zeldes et al. (2008). Valence of the items was added in the index as recommended by Diddi et al. (2014). Indicators were as follows:

- 1) If a particular party appeared first in the video clip
- 2) Presence or absence of sound bites of the party
- 3) Dominance of the party in the clip
- 4) Tone was positive, negative, or neutral for the party.

The first three indicators were coded for their presence or absence. Tone for the party could be negative, neutral, or positive. An additive index of partisan bias for PTI and PML-N was developed by adding the four indicators with score ranging from 1 to 6. Where 1 was maximum bias against any party, while 6 was bias in favor of the party. The value of Cronbach's alpha ( $\alpha$ ) for the four indicators of partisan bias was 0.845.

### ***2.2. Measure of Political Rhetoric***

Persuasive appeals in political rhetoric were operationalized as done in the studies of Samuel-Azran et al. (2015) and Bar-Ilan et al. (2015) with some minor modifications. A post was coded 1 for using ethical appeal i.e. ethos if all or any of these were found in the post: a) the image of the party or political leader was boosted, b) their credibility and authority was established through showing personal life, accomplishments or future plans and c) a criticism was made on the opponent. Post was coded 2 for pathos (emotional appeal) if all or any of these were found in the post: a) it tried to create a bond with the audience, b) appealed to the emotions of the audience, c) flattered the audience. Post was coded 3 for logos (logical appeal) if all or any of these were found in the post: a) it had logical appeal and presented facts, figures, and statistics, b) presented party ideology or manifesto, c) countered allegations with the help of facts. Posts were coded 4 if ethos and pathos, both appeals were present; 5 if pathos and logos were found; 6 with ethos and logos; 7 if all three appeals were included in a single post; while 0 if there was no persuasive appeal found in the post.

### ***2.3. Measure of Affect Polarization***

In order to measure affect polarization, manual sentiment analysis of all comments on the posts of both political and media pages was done. The unit of analysis for sentiment analysis can be a whole document, paragraphs, single sentences, or words (Turney & Littman, 2003). In this study, a single comment is the unit of analysis, and a number of comments ranged from 29000 to none ( $M = 681.92$ ,  $SD = 2.103E3$ ) on

all retrieved posts. Every comment is scored as positive or negative toward PTI and PML-N. A single comment can be simultaneously positive for one party and negative for the other. Such bipolar comments are counted for both parties accordingly. Comments posted repeatedly by the same person on the same post were counted as one comment, while spam comments (not related to the posts and the promotion of business/services) were not included in the total count of negative or positive comments for any party.

In this study, affect polarization is considered to be the increasing hostility and emotional dislike toward the other party and its supporters (Iyengar et al., 2012; Iyengar & Westwood, 2015). A higher number of negative comments compared to positive ones on any given post indicates a tendency toward cumulative negativity toward opponents, rather than the expression of support for one's own party. Score for negativity was computed by subtracting the sum of positive comments for PTI and PML-N from the sum of negative comments for both parties:

$$\text{Negativity} = (\text{Total number of positive comments}) - (\text{Total number of negative comments})$$

Based on this score, we labeled each post as polarized or non-polarized.

## **2.4. Inter-Coder Reliability**

After training and deliberation, two coders coded the posts for this study. Inter-coder reliability tests were conducted on 10% of the total posts. Krippendorff's alpha values were measured for each indicator of media bias for both parties. Its value for "who appeared first" was 0.85, for "presence of sound bites" 0.929, for "dominant presence" 0.798, while 0.836 for the "tone of the video clips". For rhetorical strategies, the value of Krippendorff's alpha was 0.828.

To check the reliability of negative and positive comments for PTI and PML-N on a post, the Intraclass Correlation Coefficient (ICC) was measured. The average measure of both coders for negative and positive comments for PML-N was 0.98 and 0.92, respectively, and the average measure for the negative and positive comments for PTI was 0.99 and 0.99, respectively.

## **3. RESULTS AND DISCUSSION**

In this section, we have discussed media partisanship, elite political rhetoric, and public polarization with reference to media pages, political pages, and public sentiment accordingly.

### **3.1. Media Pages**

Among 370 total posts on media pages, 86 (23.2%) were neutral and 284 (76.8%) were partisan. Out of these partisan media posts, 159 were biased in favor of PTI, while 125 favored PML-N. ARY News page shared more news on the Panama issue, while Geo News did not give much significance to the issue. This distribution of the total number of posts on the issue of Panama leaks indicates an indirect bias of both channels. The Panama leaks issue is intrinsically against PML-N, hence we found a smaller number of posts on the Facebook page of its aligned channel, Geo News. On the other hand, ARY News used this issue to support its aligned party, PTI, and shared more posts on the Panama issue.

To test H1a and H1b, we applied a one-way ANOVA to examine differences between the Facebook pages of the two TV channels in terms of their bias either in favor of or against a political party. The test indicated statistically significant difference between the Facebook pages of both ARY News and Geo News with respect to partisan bias score for PTI ( $F(1, 369) = 10.808, p = .001, \eta^2 = .029$ ) and PML-N ( $F(1, 369) = 20.768, p = .001, \eta^2 = .053$ ). Even though there was a significant difference between the TV channels, the effect size was very small. Both Facebook pages accounted for almost a 3% change in the partisan bias score for PTI and 5% for PML-N.

The mean partisan bias score for the PTI in the videos on Geo News indicated negative bias against the party ( $M = 1.79, SD = .67$ ). On the other hand, these scores were better for PML-N on the Geo News page ( $M = 2.83, SD = 1.29$ ). The mean partisan bias score in the videos of ARY news page for both PTI ( $M = 1.99, SD = .499$ ) and PML-N ( $M = 2.2, SD = 1.3$ ) also showed the negative bias. It indicates

partisan bias against both parties in the overall coverage of the Panama issue on the Facebook pages of TV news channels. However, they did not go for extreme negative bias, and particularly the scores for PML-N remained closer to neutral scores. These results are different from the general perception of public about both Pakistani TV channels ARY News and Geo News, thus hypothesis H1 is not proven.

**Table 1.** *Tone of Facebook Pages of TV News Channels for PTI and PML-N.*

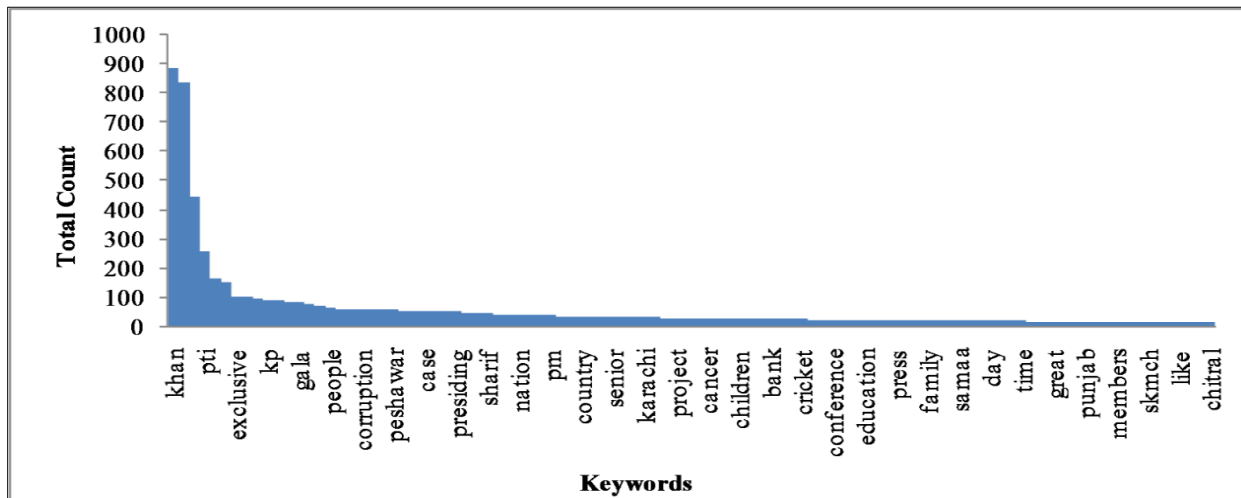
Tone for PTI and PML-N	Pages of TV channels	
	Geo News	ARY News
Favorable Posts to PTI & Unfavorable to PML-N	6 (3.6%)	21 (10.2%)
Favorable Posts to PTI	8 (4.8%)	13 (6.3%)
Unfavorable Posts to PML-N	52 (31.5%)	123 (60%)
Neutral Posts	47 (28.5%)	36 (17.6%)
Unfavorable Posts to PTI	17 (10.3%)	4 (2%)
Favorable Posts to PML-N	19 (11.5%)	8 (3.9%)
Favorable Posts to PML-N & Unfavorable to PTI	16 (9.7%)	0 (0%)
Total	165	205

We also performed a chi-square test to see the difference in distribution of only the tone of the posts across the two channels. Both pages of TV channels differed significantly in terms of their tone ( $\chi^2(6, N = 370) = 64.749, p < 0.05$ ). Cross tabulation indicated that ARY News was overwhelmingly against PML-N (see Table 1). The number of favorable posts for the opponent party was almost negligible on both channels. However, both channels try to maintain partisan balance in their news by giving equal time and presence to both parties in their news. Though H1 is not proven yet, the presence of partisan content on the Facebook pages of Geo News and ARY News is also partially indicated.

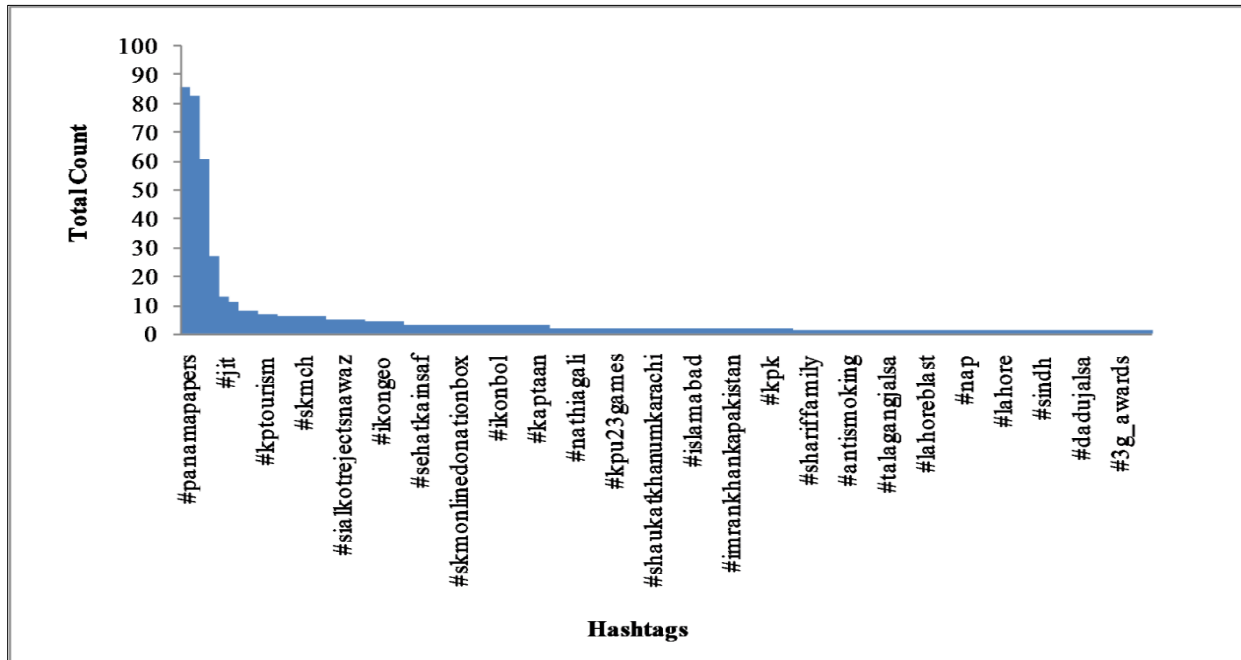
### 3.2. Political Pages

Before testing the H2, we counted keywords and hashtags for the pages of Imran Khan and PML-N through an online tool. Both pages showed a different pattern of keywords and hashtags, thus showing a divide among the political elite, particularly on the issue of Panama leaks. Imran Khan was in opposition, so his page specifically emphasized the Panama issue from January to July 2017. Words like money, case, Panama and PM i.e. prime minister (see Figure 1) and hashtags including #jit (judicial investigation team), #sialkotrejectsnawaz and #shariffamily are related to Panama issue (see Figure 2).

**Figure 1:** *Frequently used Keywords on the Imran Khan Page.*

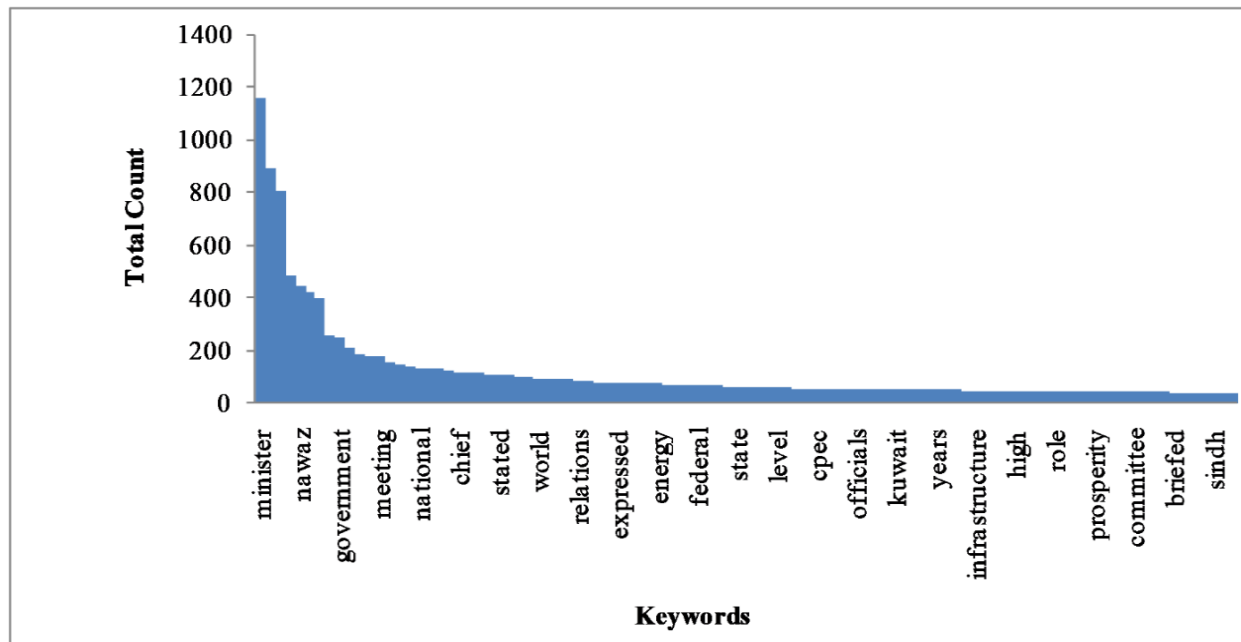


**Figure 2:** *Frequently used Hashtags on the Imran Khan Page.*



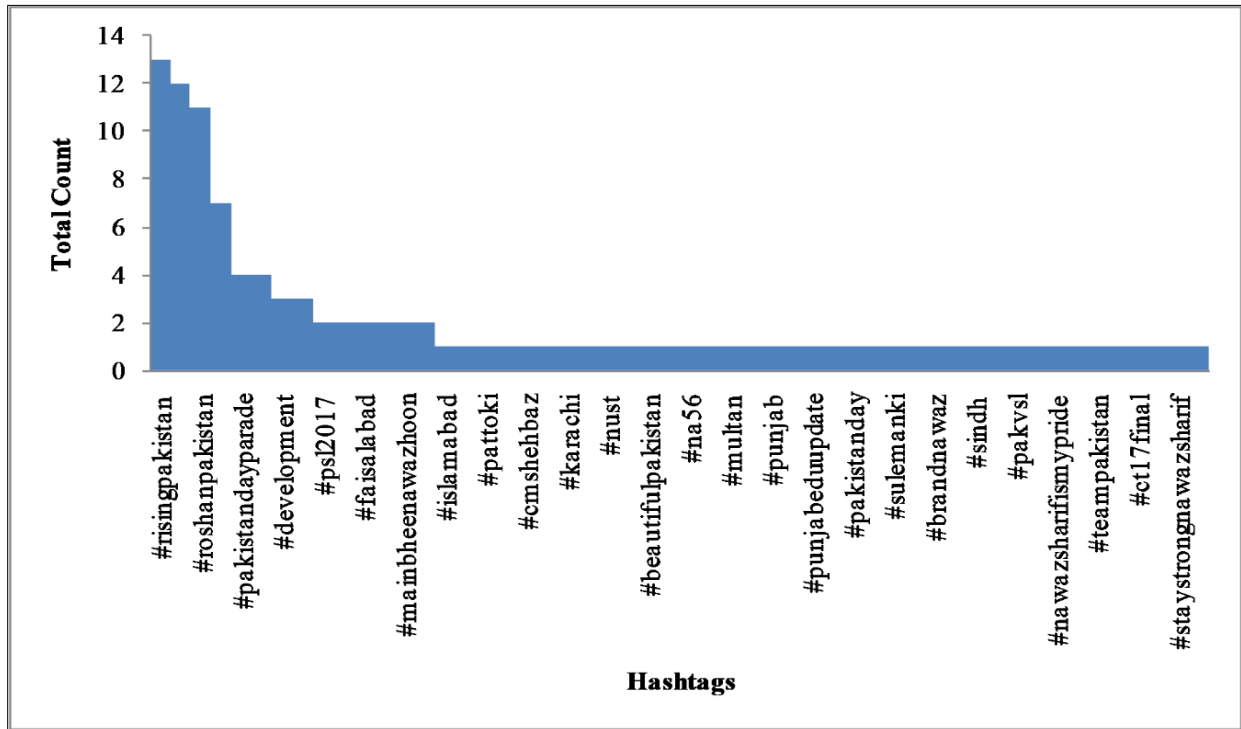
Page of PML-N did not give Panama case a single mention (see Figure 3). Their focus was on the shiny slogans and specific development projects in different cities (see Figure 4).

**Figure 3:** *Frequently used Keywords on the PML-N Page.*





**Figure 4:** *Frequently used Hashtags on the PML-N Page.*



In terms of rhetorical appeals, pathos or emotional appeal was more common than any other persuasive appeal ( $\chi^2(5, N = 100) = 75.320, p < 0.05$ ) in the posts of both Imran Khan and PML-N pages, thus H2 was supported. Cross tabulation showed a different pattern of using rhetorical appeals on both political pages ( $\chi^2(5, N = 100) = 12.345, p < 0.05$ ). Logical appeal was not used in any of the top posts of both political pages (see Table 3), which means the general public responded more to the emotional appeals. This pattern does indicate that the fault lies not only with political elites, but the public is also responsible for falling for emotional appeals more than factual and logical messages.

### 3.3. Public Sentiment

After analyzing the posts of media and political pages for their partisanship and rhetoric, respectively, we did a manual sentiment analysis of public comments on all posts. Sentiments on the posts of both political and media pages were more negative than positive toward PTI ( $\chi^2(3, N = 470) = 297.064, p < 0.05$ ) and PML-N ( $\chi^2(3, N = 470) = 783.532, p < 0.05$ ). This overwhelming negative sentiment for PML-N can be accounted for high levels of mistrust and hostility toward the ruling party. The nature of the Panama leaks issue also made it a cumbersome task for the supporters of PML-N to defend their party. Therefore, they preferred attacking their opponents rather than defending their party. However, PTI also got more negative sentiment than positive. This overall negativity in comments does indicate a pattern of affect polarization among the Pakistani public, as it was found among the American public as well (Iyengar et al., 2012; Iyengar & Westwood, 2015). The public is more motivated to express dislike for the opposing party than to show support for its own.

**Table 2: Rhetorical Appeals on the Facebook Pages of Imran Khan and PML-N.**

Rhetorical Appeal	Posts of Political Pages	
	Imran Khan	PML-N
None	9 (18%)	1 (2%)
Ethos	8 (16%)	14 (30%)
Pathos	24 (48%)	19 (36%)
Logos	0 (0%)	0 (0%)
Ethos & Pathos	9 (18%)	13 (26%)
Pathos & Logos	0 (0%)	0 (0%)
Ethos & Logos	0 (0%)	1 (2%)
All three	0 (0%)	2 (4%)
<b>Total</b>	<b>50</b>	<b>50</b>

The pages of Geo News and ARY News were slightly different in terms of overall sentiment for PTI on their posts ( $\chi^2(3, N = 370) = 8.265, p < 0.05$ ), as a considerable number of posts with positive sentiment for PTI were present on the page of ARY News. Posts with negative sentiments for PTI were more in number on both pages (see Table 4). Both pages of TV channels were also different in terms of their posts, with overall sentiment for PML-N ( $\chi^2(3, N = 370) = 12.987, p < 0.05$ ). Table 4 shows that there were very few posts with positive sentiment for PML-N on both pages, though negative sentiment for PML-N was more widespread on the posts of the ARY News page.

**Table 3: Overall Sentiment for PTI & PML-N on Media Pages.**

Facebook pages of TV news channels	None		Negative		Neutral		Positive	
	PTI	PML-N	PTI	PML-N	PTI	PML-N	PTI	PML-N
Posts of Geo News	37 (22.4%)	20 (12.1%)	106 (64.2%)	131 (79.4%)	4 (2.4%)	1 (0.6%)	18 (10.9%)	13 (7.9%)
Posts of ARY News	48 (23.4%)	24 (11.7%)	107 (52.2%)	174 (84.9%)	7 (3.4%)	5 (2.4%)	43 (21%)	02 (1%)

Cross tabulation between the overall sentiment for PTI on political pages shows more positivity for PTI on Imran Khan page and negativity on PML-N page ( $\chi^2(1, N = 100) = 36.232, p < 0.05$ ). In the same manner, there was no post with positive sentiment for PML-N on the Imran Khan Page (see Table 5). Overall sentiment for PML-N was this much negative that even on their own page the posts with negative sentiment were almost equal to the posts with positive sentiment ( $\chi^2(1, N = 100) = 35.135, p < 0.05$ ).

**Table 4: Overall Sentiment for PTI & PML-N on Political Pages.**

Political Facebook pages	None		Negative		Neutral		Positive	
	PTI	PML-N	PTI	PML-N	PTI	PML-N	PTI	PML-N
Posts of Imran Khan	0	0	12 (24%)	50 (100%)	0	0	38 (76%)	0
Posts of PML-N	0	0	42 (84%)	24 (48%)	0	0	8 (16%)	26 (52%)

Kendall's tau-b correlation was run to determine the relationship between the bias score for PTI and the sentiment expressed for PTI from the public on media pages, and no statistically significant association was found between both ( $\tau_b = .042, p = .376$ ). In the same way, overall sentiment for PML-N and the bias score for PML-N on TV channels' posts were not associated with each other ( $\tau_b = .028, p = .552$ ), thus H3 was not supported. Similarly, no association appeared between rhetorical appeals in the posts of political pages and polarization in the comment section ( $\chi^2(5, N = 100) = 7.636, p > 0.05$ ), thus rejecting

H4. As H3 and H4 were not supported in our study so it can be inferred that the public in Pakistan is itself motivated enough to express dislike and hatred. They already are polarized, and media or political content do not play a significant part in this polarization.

#### **4. CONCLUSION**

Facebook pages of both Pakistani TV channels, ARY News and Geo News, do not exhibit overall bias in favor of PTI and PML-N and try to maintain partisan balance. However, in our study, the general perception about Pakistani TV channels ARY News and Geo News is proven only partially correct, as results reveal that the tone of Facebook pages of both channels is biased in favor of their aligned parties, PTI and PML-N. Both channels do share neutral or balanced posts, yet the number of biased posts outweighs them. The total number of posts on the issue of Panama leaks also indicates the bias of both channels. The Panama leaks issue is intrinsically against PML-N, hence we found a smaller number of posts about Panama leaks on the Facebook page of its aligned TV channel, Geo News. On the other hand, ARY News used this issue to support its aligned party, PTI, and shared more posts on the Panama scandal.

Analysis of political pages confirmed the popularity of emotional appeals and slogans among the public. People responded more to the pathos in the political rhetoric, while logical messages were not included in our top-selected political posts. This explains the emotional outburst of dislike in the comment section of the Facebook posts. People do not indulge in logical debate and reasoning; rather, they like to just express their emotions.

Sentiment analysis revealed a high level of division among the public, regardless of the partisan bias and rhetorical appeal of the posts. Political pages got more loyal people for the respective parties, hence positive sentiments were prevalent for the corresponding party on the political pages but overall negative comments were more widespread for both parties. This pattern of dislike for the opponent party and its supporters also indicates a high level of affect polarization.

In our study, we focused on one issue of Panama leaks, while future research can be done to assess the public polarization on multiple issues in different political and media systems. We coded sentiments as negative and positive for a party. For future work, a fine-grained sentiment analysis is suggested, entailing the type of sentiment like anger, disappointment, pride, and happiness etc. In this way, public sentiment can be tapped more accurately on social media, though it is debatable whether such fine analysis of huge data is possible either manually or through automated software.

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