

Representation of Climate Change in Pakistani Media: An Analysis of Print Media News Stories and Official Tweets

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Abstract

This study aims to examine the way Pakistani newspapers and climate ministers have framed climate change from 2020 to 2022. This research has been carried out using a quantitative content analysis. The content of news stories from English print media (Dawn and The Nation) and Urdu print media (Daily Jang and Daily Dunya). Official tweets of the Ministry of Climate Change (PTI and PDM government) regarding coverage of climate change was examined by utilizing deductive frames proposed by Semetko and Valkenburg (2000). These frames include attribution of responsibility, human interest, conflict, morality, and economic consequences. It was a census study. A total of 208 news stories and 149 tweets were selected for analysis from the year 2020 to 2022. The findings revealed that the attribution of responsibility and economic consequences frames were the most commonly employed frames in both print media and official tweets. Subsequent, conflict and human interest frames were more prominently featured in print media than in the official tweets of the Ministry of Climate Change. Additionally, this study also revealed that government ministries and print media placed the least emphasis on highlighting the morality frame with respect to climate change

Keywords: Climate Change, Framing, Official Tweets, News Stories, Pakistan.

1. Introduction

In today's world, people rely on media and news industry as the primary source to get updated about current events. This is because that the most of information such as news on economy, politics, sports, entertainment, weather and other critical matters exist outside of peoples' personal or communal experience (Bolsen & Shapiro, 2017). Hence, the media having inevitable influence on people shapes public opinion, transforms societies, informs and educates public, and makes them aware towards particular issue (Anderson, 2009). Climate change is one of the issues about which people become aware through the media. Climate-related issues are covered by print, electronic, and online (social) media to keep people informed about this global happening consequently serving as means of educating the general public regarding the environmental and climatic shifts and also imparting cautionary messages and promoting proactive measures (Schäfer & Schlichting, 2014; Kakade et al., 2013; Shanahan, 2011). Corner (2011) inferred that media is the main source of information to get people aware of climate change. Schmidt et al. (2013) also figured it out that increased media coverage of climate change resulted in higher public awareness and education. Public awareness and knowledge holds a critical position towards climate change response. By having significant knowledge, they have been able to influence decision-making, dealing with global warming, support change and actions (UNESCO, 2014).

Pakistan like Bangladesh, Kenya, Haiti, Nigeria and many other developing countries has been identified as the most affected countries in this regard (GCRI, 2020). Regardless of the utmost efforts to attain SDG 13 goal, in the year 2022, the country faced a series of meteorological disasters. Floods have affected over 33 million people; with approximately 8 million displaced. The floods killed almost 1,700 people, one-third of them were children (NDMA, 2022). Pakistan's glaciers are anticipated to disappear by 2035, wreaking havoc on freshwater flow. As Pakistan is an agricultural country, agriculture accounts for 21 percent of its GDP but due to climate change threats its GDP might decline by 18 to 20% by 2050 (Tribune, 2022).

Despite of the fact that that Pakistan falls among countries most vulnerable to climate change media coverage to this hot issue is quite low, resulting in rather limited public knowledge and awareness in Pakistan regarding this issue (Sharif & Medvecky, 2018). Media in Pakistan frame issues like political and military upheaval as the most important issue making climate change to be low on the list of priorities for opinions and newsrooms all over the country (Yousaf et al., 2013). Since people's perception regarding climate change is heavily influenced by media, it is very crucial to investigate the ways media presents this topic (Han et al., 2017). Particularly with respect of Pakistan which is despite its lowest contribution has regarded as the most vulnerable nations (Latif et al., 2022).

Many studies have investigated media portrayal of climate change with respect to developed countries (Han et al., 2017), but If we see the proportion of Asian researchers in the field of climate change communication we could merely find the contribution 14.2% of the total media research (Schäfer & Schlichting, 2014). Methodologically, the proportion of research papers leans somewhat towards quantitative studies (47.8%) compared to qualitative studies (44.85%), while only 7.5% employ a mixed method approach. But Pakistan's contribution to media and climate change research is negligible when compared to that of developed nations and even with some of the Asian countries like India, Bangladesh, Nepal, and Sri Lanka (Sharif & Medvecky, 2018).

In Pakistan, some studies have examined the media portrayal of climate change (Ejaz et al., 2022; Hussain et al., 2022; Kim, 2011; Ali, 2020; Ali and Manzoor, 2021; Volkmer & Sharif, 2018; Sharif & Medvecky, 2018; Yousaf et al., 2013). But most of them usually revolve around either quantitative analysis or qualitative approach with little or no scholarly studies on online (Internet media) and electronic media coverage of climate change (Sharif & Medvecky, 2018). Furthermore, the prevailing approach in the investigation of climate change coverage within research studies has involved the utilization of framing analysis, employing an inductive qualitative method (Antilla, 2005). This paper partly focuses on analyzing media portrayal of climate change in Pakistan. It investigates the coverage of climate change through the lenses of five deductive frames defined by Semetko and Valkenburg (2000) and the tweets of PTI and PDM climate ministers from the years spanning 2020 – 2022. The rationale for selecting this time period from

2020 to 2022 was that during covid-19 lockdown in year 2020 there was a significant improvement in air quality (Ilyas et al., 2022). Year 2022 is recognized as most horrific year in Pakistani history as country experienced deadly floods that affected 15% of the country's population (Bhutta et al., 2022). The present research also supplements the understanding of framing techniques utilized in prominent newspapers and official tweets with respect to climate change.

2. Research Questions

The present paper aims to examine how the five generic frames defined by Semetko and Valkenburg (2000) are applied in the climate change coverage of print media news stories and official tweets of ministry of climate change in Pakistan. This research should be complemented by framing analyses of media. As we look for dominant frames in selected newspapers and tweets difference of coverage of English and Urdu newspapers. This results in following Research Questions:

RQ1: What are the dominant frames used by Dawn and The Nation for the coverage of climate change from 2020 to 2022?

RQ2: What are the dominant frames used by the Daily Jang and Dunya for the coverage of climate change from 2020 to 2022?

RQ3: What are the dominant frames used in the tweets of climate ministers regarding climate change from 2020 to 2022?

3. Hypotheses

As stated, this study looks for difference of coverage of attribution of responsibility, human interest, conflict, morality and economic (consequences) frames in print media news stories and official tweets and expect Morality and Conflict frame should be reflected less in print media than tweets. In addition, this study assumes that Economic consequences and attribution of responsibility will be prominent in news stories. The human interest frame is also expected to be used more in tweets. This results in the following hypotheses:

H1: English print media covered climate issues more as compared to Urdu print media.

H2: English news sorties covered economic consequences and human interest frames more than Urdu print media.

H3: Morality frames are least likely to be covered in Pakistani print media as compared to tweets.

H4: Conflict frames are least likely to be covered in Pakistani print media as compared to tweets.

H5: Economic consequences frame is more dominant in news stories as compared to tweets.

H6: Attribution of responsibility frame is highlighted more in Pakistani print media as compared to tweets.

H7: Human Interest frames are used less in news stories as compared to tweets.

H8: There is a significance difference in the nature of frames highlighted in tweets of climate change ministers during mentioned years.

4. Literature Review

4.1 Media and Climate Change

The news media assumes a critical role as a main source of information pertaining to climate change for individuals (Hansen, 2010). But portrayal of climate change in news media should not be viewed as merely as a compilation of stories from newspapers and television segments. Rather, it should be understood as a complex social process involving several players, with the specific news items serving as mediators in this interaction (Boykoff, 2007). It is also argued that media most often utilizes climate change information strategically in order to persuade public towards a certain agenda or to endorse an objective in particular. Media disseminates information on climate change through several frames that shapes audiences' perceptions of the relevant topic (Bolsen & Shapiro, 2017).

The analysis and assessment of past studies disclosed that interests of politicians and media practitioners affect the coverage of climate change (Anderson, 2009). Antilla (2005) expounded upon many factors that exert influence on the portrayal of media with regards to climate change for instance selection & de-selection and focus of content, interests, policies, climate scepticism and dynamics of climate research, ethics and journalistic norms. This change in view point could lead to bias in media coverage about climate change (Xie et al., 2015). Feldman et al. (2012) found the coverage of climate change in US has been media biased over the years that Fox News tend to portray a higher frequency of climate change denial and other CNN or MSNBC exhibited the issue as the greater concern. Similarly, Semujju (2013) inferred that news about climate change in Uganda tend to favour the stakeholders who have media control.

4.2 Print and Twitter Media Portrayal of Climate Change

Although the general public is now conscious about climate change climate change through different source of media like electronic and digital media, but print media continues to be the significant and credible source of information for the individuals on issues like climate change (Tairo, 2011; Kakade et al., 2013). Its extensive coverage not only raises awareness regarding local level climate issues but also keep people updated regarding major global climate events as well (Azmi et al., 2015). But according to Ogbimi (2012) and Chinenye et al. (2015) print media coverage to climate change is generally event driven, even in the country like Pakistan (most vulnerable to climate change) media covers this issue only when any calamity strikes (Azmi et al., 2015; Razaque et al., 2020).

Ewart and McLean (2015) inferred that at times, print media instead of focusing on disaster management plays blame. Olausson (2009) and Young and Dugas (2011) also contended that the majority of climate change reporting is often one-dimensional, concentrating on discrete aspects of the problem and it most often focuses on a certain agenda using several frames within the framework of politics and economics. Pakistan is a country where climate change coverage is relatively low because of insecurity, disapproval, and a lack of environmental awareness (Sharif & Medvecky, 2018). Also due to

country's current social, political, military turmoil and resources constraints, editorials and newsrooms across the nation do not prioritize environmental reporting (Yousaf et al., 2013; Volkmer & Sharif, 2018; Ali, 2020; Ali & Manzoor, 2021; Hussain et al., 2022). Aside from this lack of expertise, education, Western approach and paradigm of environmental journalism also influence climate change reporting (Ejaz et al., 2021). According to Javed (2020) and Qaisar et al. (2021) print media also uses several frames for portrayal of climate change Pakistan accompanied by allocation of space.

The use of Twitter as a means to evaluate public sentiment towards a particular matter, such as climate change, has experienced a surge in popularity (Fownes et al., 2018). It has now become valuable platform for disseminating information and raising awareness about climate change (Cody et al., 2015; Maynard et al., 2017; Berglez & Al-Saqaf., 2020). Open-ended tweet posts can provide valuable insights into the challenges associated with discussions about climate change. The discourse surrounding the existence of climate change, the level of public awareness regarding the issue, and the consensus among professionals on this matter constitute a prominent and recurrent topic of discussion within the Twitter platform (Jang & Hart, 2015). A study revealed that in countries like United States, the United Kingdom, Canada, Australia, and Norway tweets found to be highest in proportion to get climate change information and social networks have become a major source to grab climate related information (Kirilenko & Stepchenkova, 2014).

Akhtar et al. (2023) and Jongman et al., (2015) in their studies found social media platforms (specifically tweets) has emerged as most effective tool for taking preventive measure for disaster management in country like Pakistan. Murthy and Longwell (2012) found that during the 2010 floods in Pakistan users as well as authorities significantly favored linking to social media such as twitter. But twitter has also been found as a tool to represent climate change as a hoax than as a true phenomenon by displaying several framing techniques (Jang & Hart, 2015). Moreover, twitter coverage to climate change also found to be event driven as an increase in weather events may increase the level of attention directed towards climate change (Sisco et

al., 2017). This is why politicians' frequent tweets about any climate issue make people believe it's a hot topic (Maynard et al., 2017).

4.3 The Framing of Climate Change

Many studies focusing on coverage of climate change have studied framing utilizing inductive qualitative analysis (Antilla, 2005). Despite having numerous methods to frame climate change news journalists tend to utilize "generic frames". In comparison to qualitative inductive frame analyses, deductive investigations of generic news frames in the context of global warming and climate change coverage allow for the examination and comparison of frames as well as framing methodologies (Dirikx & Gelders, 2010). Semetko and Valkenburg (2000) identified five deductive frames that are commonly utilized in news coverage. These frames are responsibility, conflict, economic consequences, human interest, and morality frames. The presence of these general frames has been widely observed across various cultures and throughout diverse news contexts (Dirikx & Gelders, 2010). This paper will analyze these five frames in the print and twitter media coverage of climate change.

The presence of Attribution of responsibility frame occurs when news stories primarily emphasizes the source or solution of an issue or incident that impacts an individual, group, place, or country. The responsibility frame is anticipated to be extensively employed in the discourse surrounding climate change due to its emphasis on the need for proactive measures to mitigate its effects, as well as the recognition of human activities as significant contributors to global warming (Chon & Kim, 2022). Dirikx and Gelders (2010) analysed the framing of climate change coverage in Dutch and French newspapers during the annual United Nations Conferences of the Parties and found responsibility frame as the most utilized by print media. Similarly, Nagarajan and Aram (2022) studied print media coverage of the 26th annual Glasgow Climate Change Conference from October 17 to November 14, 2021, in The Hindu and The Times of India and found attribution of responsibility frame was the most prominent one highlighting government responsibilities for mitigating climate change.

The Conflict frame effectively accentuates the presence of conflict among individuals, groups, or organizations in order to capture the viewer's attention. It also accentuates the differences among political parties and individuals over the matter of climate change, with a major emphasis on the pursuit of win and defeat. Climate change conflict situations can be classified based on several aspects, including disputes regarding the genesis of climate change, difficulties related to climate funding, and the extent of commitment towards mitigating greenhouse gas emissions (Biswas & Kim, 2016). Boykoff and Boykoff (2004) argue that the prestige press provides equal coverage to both proponents and sceptic of climate change, leading to increased levels of misinformation and disagreement concerning anthropogenic climate change. Nonetheless, according to Boykoff (2007), between the years 2003 and 2006, there was a significant decrease in the amount of balanced reporting, and more recent research that was conducted along the same lines revealed little support for the standard of journalistic balance reporting. Despite the fact that these studies appear to indicate a decline in conflict over the truth and causes of climate change, additional research indicates that conflict is still the most frequently cited frame (An & Gower, 2009).

The human-interest frame approaches an issue from a more emotive standpoint; it humanizes a problem. In the context of climate change, this may involve narratives describing how individuals' lives have been affected by the phenomenon. It appeals to the individual's emotions by personalizing an issue or concern, such as climate change, to make it more relevant to their daily lives. Ford and King (2015) inferred that climate change reports often include humanistic approach in mitigating weather impacts and focused more on need to adapt than actual adaptation.

Han et al. (2017) in his studies found human interest effect were the most utilised frame by Chinese print media while covering climate change and highlighting joint global mitigation efforts. Similarly, Ogbimi (2012), during the famine in Somalia due to climate change human interest frames were determined to be the most prevalent frame. This frame emphasised the suffering of the hunger victims and their living situations in a way that stirs strong feelings of sorrow for the people. Ali and Mahmood (2013) investigated

the visual coverage of floods in the Pakistani press in 2010 and found newspapers frequently highlighted human interest frame in their coverage.

The morality frame contextualizes the event, circumstance, or issue within the parameters of religious principles or moral imperatives. As has been previously observed, journalists commonly employ this framing technique in an indirect manner. On the other hand, scholarly studies of the ethical framework employed in climate reporting mostly focus on the assessment of the environmental impact as being either significant, beneficial, or detrimental (Biswas & Kim, 2016).

This Economic (consequences) frame is commonly observed in news coverage that focuses on the economic consequences, advantages, or broader impact of an event or issue on individuals, groups, and/or organizations. The utilization of this frame can effectively generate and maintain public interest in a certain subject or event, while the magnitude of economic consequences may vary depending on the specific circumstances. Numerous scholarly studies have been conducted to analyse the way media depicts the consequences of global warming.

In February 2019, research conducted by the National Oceanic and Atmospheric Administration revealed that a total of 14 climate disasters occurred in the year 2018. Among these disasters, Hurricane Michael was identified as the most severe, resulting in an estimated \$91 billion in losses (NOAA, 2019). Tong (2014) in his studies examined newspaper investigative stories on environmental concerns from 10 Chinese publications from 2008 to 2011. The findings revealed that these reports depicted environmental issues in ways that contradicted the national aim for economic growth.

5. Method

In order to investigate climate change coverage in Pakistan, a quantitative content analysis (N = 357) of four leading newspapers and official tweets of the Ministry of Climate Change (PTI and PDM government) was conducted from 1st January 2020 to 31st December 2022.

5.1 Content Analysis

Survey was conducted with 20 parents for this research. This sample size was chosen to provide a range of insights into how Facebook usage affects parent-adolescent interactions.

5.2 Sample

For the collection of data initially, the content of selected newspapers and tweets was retrieved through their official websites (by sing key word climate change, environment, climate), their traditional resources and twitter handles respectively. Consecutive coverage of climate change from year 2020 to 2022 was part of analysis of frames highlighted in news stories of selected newspaper and in tweets of official minsters. A total 357 news stories (208) and tweets (149) selected from respective newspapers and twitter handles of minister. 73 new stories were from DAWN, 64 from The Nation, 57 from Daily Jang, and 14 news stories were analysed. On the other hand, 62 tweets from twitter handle of PTI minister and 87 from PDM minister's twitter handle were retrieved.

5.3 Measures

A coding sheet based on deductive frames suggested by Semetko and Valkenburg (2000) was prepared for the quantitative content analysis of news stories and tweets. For each news story and tweet, coders recorded formal variables including ID (unique identification number), Name of newspaper/minister of which the content is selected, Year, the language of the news stories/tweets that is either Urdu or English, and its genre. Quantitative content analysis of news stories and tweets was mainly based on content variables of five deductive frames, responsibility, conflict, human-interest, morality and economic consequences frames.

5.3.1 Attribution of Responsibility Frame

To measure attribution of responsibility frame in news stories and tweets the following 5 indicators were measured: govt. has the ability to alleviate the

problem, govt. is responsible for the problem/issue, suggests a solution to the problem/issue, individual is responsible for the issue/problem, problem requires urgent action, and govt. has the ability to alleviate the problem and Krippendorff's alpha was .77, .85, .79, .72, and .81 respectively.

5.3.2 Human-Interest Frame

To measure human-interest frame in news stories and tweets the following 5 indicators were measured: human example or human face on the issue, employing personal vignettes that generate feelings of outrage, empathy, caring, sympathy, compassion, individuals and groups are affected by issues/problem, visual information that generates feelings of outrage, empathy, caring, sympathy, compassion, shows the private or personal lives of actors, and human example or human face on the issue Krippendorff's alpha was .76, .85, .90, .88, and .77 respectively.

5.3.3 Conflict Frame

To measure the conflict frame in news stories and tweets the following 4 indicators were measured: disagreement between parties/individuals/groups/countries, parties/individuals/groups/countries reproach another, two or more than two sides of the issue/problem, story refers to winners or losers and Krippendorff's alpha was .85, .73, .78, and .71 respectively.

5.3.4 Morality Frame

To measure morality frame in news stories and tweets the following 3 indicators were measured: shows any moral message, reference to morality or other religious tenets, social prescription about how to behave Krippendorff's alpha was .71, .72, and .77 respectively.

5.3.5 Economic (Consequences) Frame

To measure economic consequences frame in news stories and tweets the following 3 indicators were measured: losses and gain (now or in the future),

costs/degree of the expense involved, pursuing and not pursuing a course of action Krippendorff's alpha was .72, .81, and .76 respectively.

6. Findings & Discussion

The paper primarily focuses on content analysis of news stories of four prominent newspapers in Pakistan i.e. Dawn, The Nation, Daily Jang, and Daily Duniya and Official Tweets of ministry of climate change from year 2020 to 2022.

Figure 6.1

Genre of Text

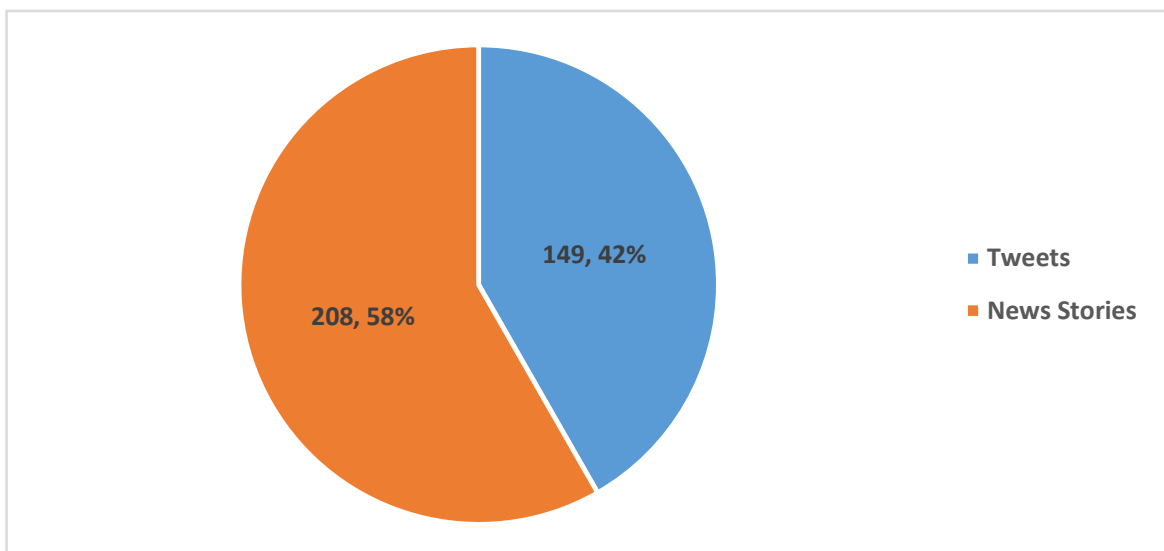
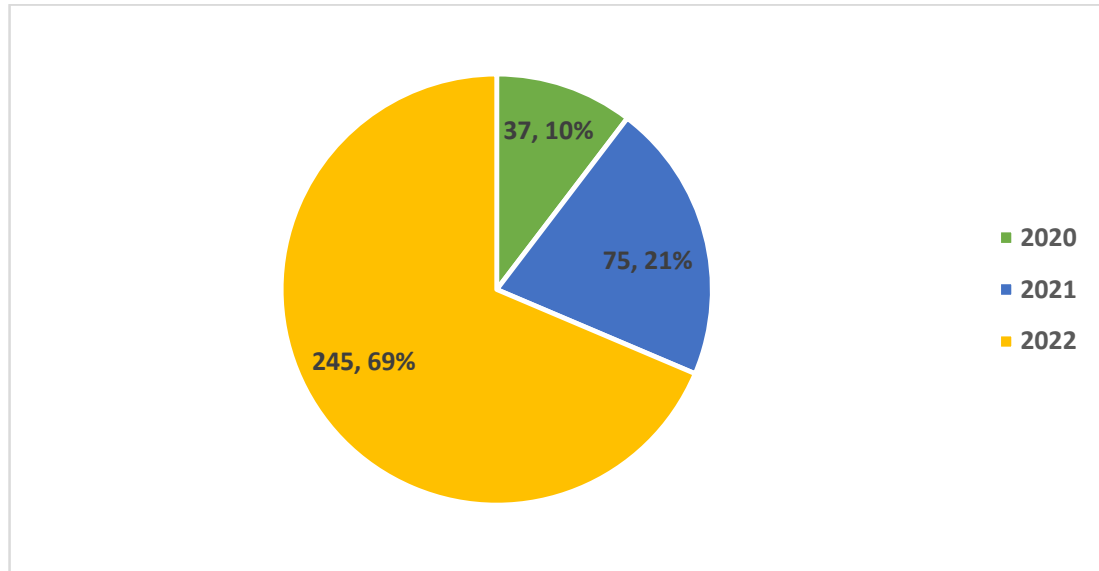


Figure 6.1 shows the genre of text selected from year 2020 to 2022. It was census study and findings show that total 357 articles including news stories and tweets were analysed. The analysis shows that news stories were published more 208 (58%) whereas 149 (42%) tweets were made regarding climate change by the ministers of climate change.

Figure 6.2

News Stories and Tweets about Climate Change Published in Selected Year



The figure 6.2 presents the number of news stories and tweets with respect to climate change appeared in selected years (2020-2022) in selected newspapers and official tweets of climate change ministry. Findings shows number of news stories and official tweets published in the year 2022 were 245(69%), in year 2021, 75(21%) news stories and tweets were made. Where as in the year 2020, 37(10%) news stories and tweets addressed climate change. So, it can be inferred that maximum news stories and tweets related to climate change were appeared in year 2022.

The frequency distribution analysis addressing RQ1 (What are the dominant frames used by the Dawn and The Nation for the coverage of climate change from 2020 to 2022) exhibited that the attribution of responsibility frame appeared most frequently in english print media but Dawn used this frame more prominently with “Problem requires urgent actions” indicator 50(68.5%) The Nation that focused “suggests a solution to the problem/issue” indicator 25(39.1%). Economic consequences frame was the second most commonly found frame in both newspapers with “losses and Gain (now or in the future)” as frequently highlighted inidicator but Dawn employed it more commonly 38(52.1%) than The Nation 28(43.8%). Conflict frame was the third most frequently used frame in news stories of Dawn with with “Party/individuals/groups/countries reproach another” indicator 21(28.8%) than The Nation 15(23.4%).

In The Nation human interest received prominence as third most frequently utilized frame with “Human example or human face on the issue” indicator 17(26.6%) as compared to Dawn that commonly used “Individuals and groups are affected by issues/problem” indicator 20(27.4%). Whereas Dawn did not publish any news story highlighting morality frame, The Nation covered three news story with “Shows any moral message” indicator 3(4.7%). These findings are aligned with An and Gower (2009) who concluded that for the coverage of crisis and climate change attribution of responsibility frame and economic (consequences) frame are more frequently highlighted frame in news stories of print media. Media focuses on attribution of responsibility frame most likely to blame government and organization and economic consequences to take immediate action on climate related damage.

The frequency distribution analysis addressing RQ2 (What are the dominant frames used by the Daily Jang and Dunya for the coverage of climate change from 2020 to 2022) showed that the attribution of responsibility was prevalent frame in the news stories of Daily Jang and Daily Dunya but Daily Jang used it more frequently with “Problem requires urgent actions” indicator 36(63.2%) than Daily Dunya 12 (85.7%). Economic consequences frame was the second most utilized frame in both newspapers with “losses and Gain (now or in the future)” indicator however Daily Jang 16(28.1%) used it frequently than Daily Dunya 6(42.9%). Further analysis showed that conflict frame was prevalent in Daily Jang with “party/individuals/groups/countries reproach another” indicator 20(35.1%) than Daily Dunya 2(14.3%). While highlighting human interest frame, Daily Jang used “human example or human face on the issue” indicator 8(14%) more than Daily Dunya that covered “individuals and groups are affected by issues/problem” indicator 3(21.4%) commonly.

Daily Dunya did not cover any news highlighting morality frame whereas Daily Jang published only one with “social prescription about how to behave” indicator 1(1.8%). The findings indicated attribution of responsibility and economic consequences as the most widespread frames for coverage of climate change in Urdu print media news stories. These findings align with Nagarajan and Aram (2022) who inferred that for mitigation and on annual conferences of parties for climate change local newspapers commonly used these frame to call government attention and responsibilities for mitigating and to take necessary action for climate related economic loss.

The frequency distribution analysis addressing RQ3 (What are the dominant frames used in the tweets of climate ministers regarding climate

change from 2020 to 2022) exhibited attribution of responsibility as frequently highlighted frame in tweets of both ministers where PDM Minister mostly used “problem requires urgent action” indicator 28(32.2%) whereas PTI minister commonly used “government has the ability to alleviate the problem” indicator 23(37.1%). While utilizing human interest frame PTI minister focused on the “Individuals and groups are affected by issues/problem” indicator 14(16.1%) whereas PDM climate minister remained consistent with “human example or human face on the issue” 16(18.4%). In tweets highlighting conflict frame PTI climate minister emphasized “disagreement b/w parties/individuals/groups/countries” indicator 10(16.1%) while PDM climate minister focused “party/individuals/groups/countries reproach another” indicator 17(19.5%).

Economic consequences was fourth prevalent frame in tweets of both minister, talking about loss and gain 11(12.6%) and 4(6.5%) respectively. These findings lined up with Ghoraba (2023) who deduced that in communication of climate change of Spanish politicians on twitter depict the human race as engaged in a fight and blame game (conflict frame) with opponents against the issue resultantly portraying climate change as a natural tragedy.

Table 6.1

Difference of Coverage of Climate Issues in News Stories of English and Urdu Print Media

Variable	English Print Media (n=137)		Urdu Print Media (N=71)		<i>t</i> (208)	<i>P</i>	95% <i>CI</i>		<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
Climate Issues	3.69	1.842	3.14	1.615	2.109	.036	.259	0.035	0.317

Note: CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit,

Independent Sample t test was applied to check difference of highlighting climate issues in the news stories of English (Dawn and The Nation) and Urdu (Daily Dunya and Daily Jang) print media and to test H1. The results showed English print media gave significant coverage to climate issues as compared

to Urdu print media. The findings showed that the English print media ($M=3.69$, $SD=1.842$) published more news stories on climate issues as compared to Urdu print media ($M=3.14$, $SD=1.615$), $t(208)$, $p<.05$, $d=0.317$.

The results has supported the H1 that the English print media covers climate issues more as compared to Urdu print media. It is also in line with Sharif and Medvecky (2018) who concluded that Urdu print media coverage on climate issues is comparatively less than English print media. Climate change and environmental issues receives more prominence in English print media. Moreover, Ejaz et al. (2023) found that over the years there is significance increase in English print media coverage on climate change and environmental issues.

Table 6.2

Difference of Coverage of Economic (Cosequences)and Human Interest Frames in News Stories of English and Urdu Print Media

Variable	English Print Media (n=137)		Urdu Print Media (N=71)		$t(208)$	p	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
Responsibiltiy frame	1.62	.892	1.45	.807	1.343	.181	-.079	.419	0.199
Human Interest frame	.53	.805	.32	.752	1.855	.046	-.014	.431	0.269
Conflict frame	.55	.962	.54	.859	.090	.928	-.255	.280	0.010
Morality frame	.01	.085	.01	.119	-.473	.636	-.035	.021	0.000
Economic Consequences frame	.98	.903	.82	1.060	1.092	.027	-.131	.453	0.248

Note: CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit,

Independent Sample t test was applied to find the difference of coverage of economic (consequences) and human interest frames in English (Dawn and The Nation) and Urdu (Daily Dunya and Daily Jang) print media and to test H2. Result of t test showed that news stories highlighting economic (consequences) ($M=.98$, $SD=.903$) and human interest frames ($M=.53$, $SD=.805$) received more frequent coverage in English print media as compared to Urdu print media economic (consequences) ($M=.82$, $SD=1.060$)

and human interest frames ($M=.32$, $SD=.752$) , $t(208)$, $p<.05$, $d=0.248$ & 0.269 .

The result validates the H2 that while covering climate change English media highlights human-interest and economic (consequences) frame more as compared to Urdu print media. This finding also showed agreement with Ali and Mahmood (2013) who inferred that human-interest (depicting grief, misery and suffering) and economic consequences (showing loss and damage) are more prominent in English print media covering climate change and relevant environmental issues. On the other hand Urdu print media less frequently highlight these frames in their news stories while covering climate change and environmental issues.

Table 6.3

Difference of Coverage of Morality Frame in Pakistani Print Media and Official Tweets of Ministry of Climate Change

Variable	News Stories		Tweets		95% CI				
	(n=208)		(N=149)		<i>t</i> (357)	<i>P</i>			<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
Morality frame	.01	.098	.05	.212	2.001	.047	.001	.074	0.242

Note: CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit,

Independent Sample t test was applied to find the difference of coverage of morality frame in print media news stories and tweets of ministry of climate change and to test H3. The result of t test showed that both English (Dawn and The Nation) and Urdu (Daily Dunya and Daily Jang) print media gave significantly less coverage to morality frame as compared to official tweets of ministers (PDM and PTI Minister). The findings showed that morality frame in news stories of print media was ($M=.01$, $SD=.098$) less used than official tweets ($M=.05$, $SD=.212$), $t(357)$, $p<.05$, $d=0.242$.

The result validates the H3 that morality frames are least likely to be covered in Pakistani print media as compared to tweets. The results are also in line with Dirikx and Gelders (2010) that print media uses morality frames only in crises that may be avoided, when there is a high degree of intentionality and controllability. When reporting on a crisis, the news media may draw attention to moral and ethical issues.

Table 6.4

Difference of Coverage of Conflict Frame in Pakistani Print Media and Official Tweets of Ministry of Climate Change

Variable	News Stories (n=208)		Tweets (N=149)		<i>t</i> (357)	<i>p</i>	95% <i>CI</i>		<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
Conflict frame	.54	.926	.39	.685	-1.806	.072	-.322	.014	0.184

Note: CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit,

Independent Sample t test was applied to find the difference of coverage of conflict frame in print media news stories and tweets of ministry of climate change and to test H4. The results showed both English (Dawn and The Nation) and Urdu (Daily Dunya and Daily Jang) print media gave more significant coverage to conflict frame compared to official tweets of ministers (PTI and PDM minister). The findings showed that conflict frame in news stories of print media was ($M=.54$, $SD=.926$) more highlighted than official tweets ($M=.39$, $SD=.685$), $t(357)$, $p<.05$, $d= 0.184$.

Hence, the H4 'conflict frame are least likely to be covered in print media news stories as compared to official tweets of climate ministers' is not supported by the findings of this study. This finding is also supported by Dotson et al. (2012) who stated that while portrayal of climate change centred on political ideology of the media, conflict frame is more frequently used frame by media. The conflict frame was more frequently employed in a strike.

The internal conflict between the dominant party and the employee members of other parties. Some may place the responsibility for the issue with management, while others may place the blame with the unions. How the media assigns responsibility for the strike may be significant in this uncertain circumstance.

Table 6.5

Difference of Coverage of Economic (Consequences) Frame in Pakistani Print Media and Official Tweets of Ministry of Climate Change

Variable	News Stories (n=208)		Tweets (N=149)		<i>t</i> (357)	<i>p</i>	95% <i>CI</i>		<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
<i>Economic (Consequences) frames</i>	.23	.422	.02	.141	-6.692	.0	-.273	-.149	0.667

Note: CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit,

Independent Sample t test was applied to find the difference of coverage of economic (consequences) frame in print media news stories and tweets of ministry of climate change and to test H5. The results showed both English (Dawn and The Nation) and Urdu (Daily Dunya and Daily Jang) print media gave more significant coverage to economic (consequences) frame. The findings showed that economic (consequences) frame in news stories of print media was ($M=.23$, $SD=.422$) more highlighted than official tweets ($M=.02$, $SD=.141$), $t(357)$, $p<.05$, $d= 0.667$. Thus, these findings have supported the H5 that economic (consequences) frame receives more dominant coverage in print media news stories as compared to official tweets of climate ministers.

The findings of this study also get in lined with An and Gower (2009) who stated that economic consequences is most frequently used frame when media outlets talk about loss and damage occurs due to any crisis or any environmental issue with major economic deterioration. Economic consequences are most frequently used as a reference to potential gains and losses, the necessity for quick action, and problems that may arise as a result of a crisis.

Dirikx and Gelders (2010) also discovered that in crisis news stories or covering climate change, economic consequences frame is the most utilized frame when media make reference to losses and gains that could result from not pursuing a particular course of action (the consequences frame). Media most often emphasise the necessity for quick action by government or to urge to follow a particular strategy.

Table 6.6

Difference of Coverage of Attribution of Responsibility Frame in Pakistani Print Media and Official Tweets of Ministry of Climate Change

Variable	News Stories (n=208)		Tweets (N=149)		<i>t</i> (357)	<i>P</i>	95% CI		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
<i>Attribution of responsibility frame</i>	1.56	.866	.89	.663	-8.357	.000	-.836	-.517	0.868

Note: CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit,

Independent Sample t test was applied to find the difference of coverage of attribution of responsibility frame in print media news stories and tweets of ministry of climate change and to test H6. The findings showed that both English (Dawn and The Nation) and Urdu (Daily Dunya and Daily Jang) print media gave more significant coverage to attribution of responsibility frame. The findings also showed that attribution of responsibility frame in news stories of print media was ($M=1.56$, $SD=.866$) more highlighted than official tweets ($M=.89$, $SD=.663$), $t(357)$, $p<.05$, $d= 0.868$.

Thus, this finding supported H6 that attribution of responsibility frames get prominent space in print media news stories as compared to tweets. The findings of this study are also inline with Han et al. (2017) who concluded that when covering a crisis, the news media frequently use responsibility frame to assign blame specifically to the person or group involved and places the blame for the problem on one of the two.

This is especially true when covering crises that might have been avoided, including organisational wrongdoing, poor management, and wrongdoing that results in injuries. As a result, in crisis circumstances when there is a high degree of controllability and intentionality on the side of the actor, the news media is more inclined to concentrate on attribution of responsibility frame.

Table 6.7

Difference of Coverage of Human Interest Frame in Pakistani Print Media and Official Tweets of Ministry of Climate Change

Variable	News Stories (n=208)		Tweets (N=149)		<i>t</i> (357)	<i>p</i>	95% <i>CI</i>		<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
<i>Attribution of responsibility frame</i>	.46	.792	.28	.580	-2.568	.011	-.329	-.044	0.259

Note: CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit,

Independent Sample t test was applied to find the difference of coverage of human interest frame in print media news stories and tweets of ministry of climate change and to test H7. The findings showed that both English (Dawn and The Nation) and Urdu (Daily Dunya and Daily Jang) print media gave more significant coverage to human interest frame as compared to official tweets of PTI and PDM climate ministers. According to findings human interest frame in news sotries of print media ($M=.46$, $SD=.792$) received more coverage than official tweets ($M =.28$, $SD=.580$), $t(357)$, $p<.05$, $d= 0.259$.

Hence, the H7 ‘human interest frames are least likely to be covered in print media news stories as compared to offical tweets of climate ministers’ is not supported by the findings of this study. The findigns of this study are also in line with An and Gower (2009) who inferred that crisis news sotries more frequently employed attribution of responsibility, economics, conflicts, human interest, and morality frames but in certain type of crisis that directly affect people human interest is the frequnlty sued frame in news stories.

For instance, the human-interest frame is used to tell stories about groups of victims, to depict human suffering, and to give stories an emotional undertone. Thus, findigns of this study doesn’t support this hypothesis.

Table 6.8

Difference of Frames Highlighted in Official Tweets of Ministers of Ministry of Climate Change

Variable	PTI Minister (1) (n=62)		PDM Minister (2) (N=87)		<i>t</i> (149)	<i>P</i>	95% <i>CI</i>		<i>Cohen's d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			<i>LL</i>	<i>UL</i>	
Responsibility frame	.95	.556	.84	.729	1.068	.287	-.105	.330	0.169
Human Interest frame	.11	.447	.39	.635	-3.133	.002	-.453	-.103	0.509
Conflict frame	.45	.717	.34	.662	.938	.350	-.118	.332	0.159
Morality frame	.08	.275	.02	.151	1.500	.137	-.019	.134	0.270
Economic (Consequences) frame	.11	.447	.22	.443	-1.425	.157	-.252	.141	0.247

Note: CI= Confidence Interval, LL= Lower Limit, UL= Upper Limit,

Independent sample *t* test was applied in order to find difference in nature of frames highlighted in tweets of climate ministers during 2020-2022 and to test H8. Results of *t* test showed that there was no significant difference in nature of frames highlighted in tweets of both ministers except human interest frame. While talking about climate change PDM climate minister utilized human interest frame ($M=.39$, $SD=.635$) more frequently as compared to PTI minister ($M=.11$, $SD=.447$), $t(208)$, $p<.05$, $d=0.509$.

Thus, H8 is not supported by the finding of this study. The findings of this hypothesis are also inline with Yu et al., (2021) Politicians from diverse parties continue to tweet about climate change to appeal to their fans, even after accounting for party differences. These tweets from politicians largely follow the same patterns and don't differ significantly. Most frequently, these politicians mention how much they value environmental policies in order to indirectly benefit their parties and win over more followers.

7. Conclusion

The present study has examined the climate change coverage in top-tier newspapers of Pakistan and the official tweets of ministry of climate change

using the deductive framing analysis described by Semetko and Valkenburg (2000). It explored the difference of coverage of attribution of responsibility, human interest, conflict, morality and economic (consequences) frames in print media news stories and official tweets. The results indicated that English print media provides a significant coverage to climate change in Pakistan as compared to Urdu print media. The attribution of responsibility frame was the most frequently employed frame in both print media and official tweets. This frame was either focused on governments' responsibility to alleviate climate change, bringing its attention towards issues that require quick action or highlighting climate mitigation efforts and initiatives taken by government. This study also revealed that print media highlights conflict issues and disagreements between parties related to climate change more as compared to minister. It also gives more prominence to emotional, physical and substantial damage and suffering of people affected from climate change. But when it comes to moral responsibility and creating awareness in people regarding climate change, print media and tweets of ministers lack the professional and ethical responsibility despite of the fact that Pakistan ranks the eighth most vulnerable country to climate change.

8. Recommendations for Future Researchers

The future researchers may explore inductive framing analysis of print media news stories and tweets. Moreover, the content of other media such TV channels can also be examined by using deductive framing analysis can also be done.

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