



## Pakistani Print Media and Climate Literacy: A Study of Formal-Stylistic Frame Analysis During 2018-19

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**Keywords:** *Climate Literacy, Qualitative Frame Analysis, Formal-Stylistic Frames, Episodic Vs Thematic, Environment News Coverage, Climate Action*

<b>Article</b>	<b>History</b>
Date of Submission:	
27-02-2023	
Date of Acceptance:	
31-03-2023	
Date of Publication:	
31-03-2023	

**DOI No:**10.56976/rjsi.v5i1.61

*The purpose of this study was to examine climate and environment news articles in two newspapers in Pakistan, and to identify how these articles are framed using formal-stylistic approaches i.e., episodic and thematic framing. The goal of the research was to determine whether the print media in Pakistan is contributing to climate literacy through the framing of climate and environment news stories. The present study employed qualitative frame analysis for exploring episodic and thematic framing of news regarding climate and environment. It investigated how print media covered news stories about climate and environment over the period of 2018 to 2019, which was selected because they coincided with significant climate change events. The study discovered that the predominant framing approach employed in both Dawn and Jang newspapers is episodic, with 87.4% in Dawn and 98.6% in Jang. Whereas, in Dawn, the thematic framing approach constitutes 12.6% while Jang's usage is merely 1.4%. The most common themes under the episodic framing approach during the selected time period were news reports about the harmful effects of climate and environmental disasters and the actions of government officials and ministers in relation to climate and environmental issues. However, these news stories lacked any context of climate change and did not contribute to enhancing climate literacy.*

## Introduction

The Earth has always undergone changes in climate, but the current rapid and significant changes are a major concern due to their potential impact on the planet's ecosystem, biodiversity, and human health, and it is affecting life worldwide by altering the physical environment (Heshmati, 2020). The reduction in undisturbed ecosystems is happening at a rapid pace, and many plant and animal species, as well as human health, are at risk due to climate change (Heshmati, 2020).

Despite efforts to combat climate change, the global average temperature continues to rise, greenhouse gas emissions are increasing, and extreme weather events and wildfires are becoming more intense (Carter 2018). This urgent issue calls for “urgent and accelerated action by countries as they implement their commitments to the Paris Agreement on Climate Change” (UN 2016). However, keeping commitments to the Paris Agreement and meeting Sustainable Development Goal 13 will be impossible without widespread climate change literacy. Having knowledge of climate change science is critical for developing policies and making effective decisions to combat climate change and its impacts. Two possible approaches to responding to climate change are proposed: climate mitigation, which involves reducing emissions and stabilizing the levels of heat-trapping greenhouse gases in the atmosphere, and climate adaptation, which involves adapting to life in a changing climate (NASA, n.d.).

According to Ozturk et al., (2021), climate literacy plays a critical role in climate change mitigation and adaptation efforts. They argue that "climate education is a fundamental pillar in the transition to a low-carbon society" . Furthermore, they assert that even in the absence of successful efforts to stabilize the climate, climate literacy will be essential for adaptation strategies. This sentiment is echoed by the United Nations' Sustainable Development Goals (SDGs), particularly SDG Target 13.3, which calls for improved knowledge and capacity for meeting climate change challenges (UN, 2020). Specifically, this target emphasizes the importance of enhancing education, awareness, and institutional capacity for climate change mitigation, adaptation, impact reduction, and early warning. Therefore, it is clear that climate change literacy is a crucial component of building human and institutional capacity to tackle climate change.

News media play a crucial role in enhancing literacy among the public, particularly in developing countries (Molyneux & Momoh, 2018). By providing access to information and knowledge, the media can help improve people's literacy skills, as well as their ability to make informed decisions and participate in civic activities (Kumar, 2017). Despite the fact that Pakistan is not a major contributor to climate change, it is among the top ten countries most vulnerable to its effects, as stated by The Global Change Impact Studies Centre. As a result, it is crucial for the Pakistani media to sensitize the public about the impact of climate change in order to increase public engagement in climate change actions. By understanding the impact of climate change, people will be better equipped to combat it.

According to the National Climate Change Policy document (Government of Pakistan - Ministry of Climate Change, 2012), Pakistan faces several significant climate change threats. These include more frequent and intense extreme weather events, irregular monsoon rains resulting in floods and droughts, the projected recession of glaciers in the Hindu Kush-Karakoram-Himalayan (HKH) region, rising temperatures leading to water and heat stress, reduced agricultural productivity, loss of forest cover, saline water intrusion in the Indus delta, increased health risks and climate change-induced migration. These threats pose significant challenges to Pakistan's water security, food security, and energy security. Furthermore, the document highlights the potential threat to Pakistan's coastal areas due to projected sea-level rise and increased cyclonic activity. Lastly, the sharing of water resources between upper and lower riparian regions could cause stress, leading to further complications for the country.

With the increasing presence of climate risks and environmental issues, it is crucial to have an educated public. It is widely acknowledged that the media has a significant impact on where the public's focus lies. The media has the ability to shape and alter people's viewpoints and attitudes towards current events. Through its discussions and thorough reporting on climate change, the media is essential in promoting awareness and understanding of climate-related topics and driving people towards taking appropriate action.

A study by van der Linden et al. (2017) found that media coverage of climate change can influence public perceptions of the issue and their willingness to take action. The researchers found that people who were exposed to climate change information in the media were more likely to perceive climate change as a serious issue and were more willing to take action to address it. Moreover, they found that the effects of media exposure were stronger among individuals who had lower levels of prior knowledge about climate change.

Similarly, a study by Hall et al. (2018) found that exposure to climate change news was associated with increased levels of climate change knowledge and concern among the public. The researchers found that people who were exposed to climate change news in the media were more likely to have accurate knowledge about the issue and were more concerned about its impacts. In the last 5 years, there have been numerous notable events that occurred globally in the fight against climate change. Pakistan and other member countries of the United Nations have agreed to the sustainable development goals in 2015, with the aim of achieving social, economic, and environmental sustainability by the year 2030. Additionally, almost all countries signed the Paris agreement in 2015 to tackle the adverse effects of climate change.

The media is recognized as the fourth pillar of the state and plays a crucial role in promoting the Sustainable Development Goals (SDGs) by providing comprehensive coverage and raising public awareness about the negative effects of climate change. The United Nations has established an SDG Media Compact, which consists of over 80 major news media companies worldwide, to encourage media participation in SDG-related reporting (Nishimura, 2020). This has had a global impact on climate journalism, including in Pakistan. According to the Media and Climate Change Observatory (MeCCO), media coverage of climate change increased substantially in 2018 and

2019, with a 73% increase in coverage in 2019 compared to 2018 across one hundred newspaper sources, and a 74% increase in global radio coverage. These findings indicate that media attention to climate change has risen significantly, both globally and at the national level (Ami Nacu-Schmidt, 2019).

The study at hand follows a qualitative deductive approach. In qualitative analysis, a deductive approach involves using theory to test the data. This approach is often described as a "top-down" method, where the researcher starts with a theory and applies it to the data to see if it is supported. It is to assign pre-established codes to the data. These codes may serve as organizational tools only, or they may be based on concepts derived from existing literature, theories, or hypotheses developed by the researcher (Bingham, n.d.). The study focuses on analyzing climate and environment-related news published in two popular newspapers in Pakistan, namely Jang and Dawn in order to find out how the news stories are framed.

A study by Dudo and Besley (2016) found that media frames can significantly influence public perceptions of science and technology issues, including climate change. Similarly, a study by Boykoff and Boykoff (2019) found that media frames can shape public perceptions of climate change solutions. The researchers found that media coverage of climate change tended to focus on individual actions and technological solutions, rather than systemic changes or policy solutions. This framing may lead the public to believe that climate change can be addressed through individual lifestyle changes, rather than collective action or policy changes.

Iyengar (1991) defines framing as "subtle alteration in statement or presentation of judgment in news stories". The diversity of facts and presentation of judgments depends on the reporter's decision to maintain the reliability of sources or display bias while covering a news story (Tuchman, 1978). The political leaning of journalists also affects the way they report news stories (Shoemaker & Reese, 1996). Despite the media's claim of objective or unbiased reporting, newspapers are still classified as having left-leaning or right-leaning ideologies, which can potentially influence public perception and change responses about climate change (Leiserowitz, 2006). However, environmental issues are framed differently in news media, and there are certain frames that are commonly used within the journalistic domain (Dirikx & Gelders, 2010). These frames can be applied to different social situations without the limits of subject, place, or time (De Vreese, 2005). Iyengar (1991) classifies framing into two main domains: episodic and thematic frames also known as formal-stylistic frames. Episodic frames are event-oriented and focused on contemporary happenings without detailed background information, while thematic frames are abstract in nature and promote contextual information by putting emphasis on the solution and effects of the issue (Iyengar, 1991).

The existing literature did not include any categorization of the framing patterns utilized by Pakistani print media in their coverage of climate and environmental issues. Furthermore, no qualitative research has been conducted to determine whether the framing techniques utilized in Pakistan for climate and environmental stories have an impact on climate literacy. Therefore, the objective of the present study is to examine how climate and environment issues are framed in

Pakistani print media by qualitatively identifying and analyzing the use of episodic and thematic framing approaches. The study also aims to determine whether the framing approach used by Pakistani print media contributes to improving climate literacy.

While researchers have reached a consensus on the need to reduce human-caused impacts on the climate, the public opinion regarding the urgency of climate change as a problem has become increasingly uncertain. This has created a significant gap in knowledge, particularly with regards to strategies for mitigating climate change and adapting to its effects. According to a Gallup Pakistan survey conducted in 2020, the climate literacy rate in Pakistan is relatively low. The survey found that only 39% of the population had heard of climate change, and only 23% had a basic understanding of the issue (Gallup Pakistan, 2020). Studies have shown that the news media can play a critical role in improving climate literacy and public understanding of climate change (Boykoff & Rabe, 2014; Feldman et al., 2014). News media outlets have the ability to shape public opinion and influence policy decisions by providing information and framing issues in a way that resonates with their audiences. The findings of this study could have significant implications for the role of news media in enhancing climate literacy, and for the strategies that journalists and media outlets can use to communicate effectively about climate change.

## **Literature Review**

The main objective of this study is to assess does the Pakistani print media enhance climate literacy through the way climate and environment news stories are framed and structured, using the two framing approaches, episodic and thematic. After reviewing relevant literature, the research revealed the interconnection between media, the public, and climate change. In his study on public and media discourse on the global environment, Bell (1994) discovered that people often misunderstand the impact of their actions on climate change due to the media's inadequate reporting. McCaffry and Buhr (2008) suggested that climate education should be incorporated into curricula to raise people's awareness and prompt them to take action against climate change.

One reason for the inadequate coverage of climate change and people's lack of understanding about it is the absence of formal climate education among journalists. However, when a weather-related catastrophe occurs, the media's attention is drawn to the issue, which could potentially raise awareness among people. This is a positive development that could help people become more informed about climate change, despite its sporadic occurrence amid regular weather reports (Gavin, 2009). Jackson (2011) identified a similar problem to the one Somerville and Hassol (2011) pointed out, which is that climate scientists often struggle to effectively communicate their message to the public. When journalists fail to recognize the significance of climate issues and report on them poorly, it creates chaos and prevents the public from understanding the message. Somerville and Hassol (2011) also point out that the language barrier between scientists and the public is a key factor in creating confusion because they are not on the same page. Both studies emphasize the need for skilled journalists and constant coverage of climate change in the news media.

Additionally, D'Souza's (2000) study discusses organizational obstacles that impede climate journalism and make it less popular. According to the researcher, editors sometimes prioritize advertisements over important news, which generates more revenue for the organization. This market-driven approach challenges traditional news values and reporting norms. According to Gibson et al. (2015), journalists have developed strategies to link local events with global trends in order to report on climate issues. However, the study highlights that news organizations are being pressured by their business interests to let go of experienced reporters who can effectively communicate about climate, and instead rely on inexperienced reporters to generate revenue. Skilled environmental reporters are often freelancers, which allows them to work on stories that align with their values, but may not receive the same level of recognition.

In Pakistan, existing research on environmental journalism focuses on the challenges faced by journalists in their reporting. Yousaf et al. (2013) conducted a study that explored the typical reporting practices and obstacles faced by environmental journalists in Pakistan. Their research suggests that while significant work has been done on environmental issues in the country, media coverage is inadequate and does not fully capture the efforts being made to address these issues. The Pakistani media's coverage of climate change is not consistent and is based on events rather than solutions. Journalists focus on current issues and switch to other topics when something more interesting arises, which results in less impactful coverage of climate issues. When covering environmental stories, journalists often rely on government reports and scientific research, failing to connect local environmental issues to global climate change (Saleem, 2019).

Similar findings were deduced before by Sharif (2018). The study claimed that climate stories are not given special treatment in Pakistani news media, which is primarily focused on politics, national security, and the economy. Climate change only receives attention during natural disasters, and even then, the media tends to politicize the issue rather than provide solution-oriented coverage. Despite these challenges, some journalists attempt to raise awareness about climate change through articles, TV shows, and documentaries. However, the media's uninteresting framing of climate stories hinders their ability to sensitize the public to the issue (Riaz, 2018).

The lack of knowledge on climate change among the masses in Pakistan is a result of deficiencies in information. Climate change is seldom the main topic of news stories and is mostly associated with events organized by NGOs, according to Climate Tracker's 2017 report. A study by Gallup & Gilani Pakistan (2019) found that half of the population claimed to be unaware of climate change. The effect of these deficiencies results in an uninformed or barely informed masses. In Pakistan, climate change concerns are never the lead stories. The climate stories are mostly linked to the events being held by NGOs (Climate Tracker, 2017). A study by an organization reported that half of the Pakistanis claim to know nothing or have never heard of climate change (Gallup & Gilani Pakistan, 2019).

The analysis of climate change research in Pakistan has shown that the center of previous studies has been on the challenges journalists encounter while reporting on climate news. However, there has been no investigation or proposal regarding the framing approaches of climate and environment news stories in Pakistan, leaving no basis to determine whether climate news is framed in a way that amplifies climate literacy. Therefore, this study aims to investigate the framing approaches employed by the Pakistani print media in covering climate or environment-related stories. The analysis of framing is crucial because the media's portrayal of social issues in news narratives can potentially shape the audience's perception of those phenomena. As a result, identifying patterns in journalism can provide new insights and raise awareness among the public in a more impactful manner (Valeda, 2002). In mass media, frames serve four functions to address the implicit questions in news stories by diagnosing the problem, identifying the cause, postulating a judgment, and proposing a solution to the problem, all of which help define the context of frames and engage the public in social issues (Tuchman, 1978).

The news stories analyzed by Iyengar in several studies conducted in 1990, 1991, and 1996 were categorized into two main frames: thematic and episodic. For instance, when studying the coverage of domestic poverty in America, Iyengar classified the issue into two categories. The first category was the thematic frame, which described poverty in the context of social outcomes while the second category was the episodic frame, which highlighted individual victims of poverty. The episodic frame often focuses on specific and sensational stories, such as illegal migrants, group suicide, and homeless persons, while the thematic frame provides a broader and more general background on issues within historical and societal contexts (Park, 2012). In addition, a thematic news piece about corruption could bring attention to current patterns, rates of corruption, and the reasons for its frequent occurrence. Typically, thematic coverage provides a broader context of a particular issue. Conversely, episodic news reports use dramatic, graphic, or attention-grabbing visuals to tell the story, without offering much analysis. Multiple studies on news coverage, including research by Gamson (1989) and Altheide (1987), have aimed to identify the prevalence of episodic frames in news stories.

The way in which news stories are framed can significantly influence the audience's perception of cultural, social, and political realities (Gamson, 1992). However, “thematic news stories focusing on structural attributions, news stories with episodic frames evoke individualistic attributions” (Iyengar, 1990). Several recent studies have found that the framing of climate change is often episodic in nature (Boykoff & Boykoff, 2007; Check, 1995; Hutchison, 2008; Nitz & Ihlen, 2006; von Storch & Krauss, 2005). However, because of the complex nature of environmental issues, relying solely on episodic coverage may not provide a comprehensive picture of the issue (Boykoff & Boykoff, 2007). This creates problems with consistency and context, particularly in the context of environmental issues that are relevant and important. In this study, researcher aims to find out how Pakistani print media news articles related to climate and environment are framed using the two framing approaches found out through existing literature. The study aims at examining these two framing approaches in a qualitative manner in order to interpret if the framing approaches enhance climate literacy.

The Pakistani news media is primarily focused on politics, national security, and international affairs, according to a recent study by Gallup and Gilani Pakistan (2020) which analyzed newspaper content from February of that year. The study found that these topics received the most coverage in mainstream media. However, literature has suggested that journalists in Pakistan often lack formal training, leading to poor quality content and inappropriate news framing. There are no established methods to guide journalists on how to present news in a way that is relatable to the public, particularly with regard to climate stories. Similarly, the framing of news stories fall short in building up climate literacy and train the people for climate mitigation and adaptation. Following is the research objective of the study. To explore the climate change/environment news framing approach in Pakistani print media.

H1: Climate and environment-related news coverage in Pakistani print media is usually episodic rather than thematic.

H2: The way news stories of climate and environment are framed in Pakistani print media, does not enhance climate literacy.

### **Plan of Work and Methodology**

As per the findings of the literature, previous studies explored formal-stylistic frames, using quantitative methods. However, the present study employed qualitative frame analysis for exploring episodic and thematic framing of news regarding climate and environment as the qualitative frame analysis allows for a more nuanced and in-depth understanding of the ways in which news stories are constructed and framed. Therefore, this study employs Qualitative Research Methodology to identify, select, process, and thoroughly analyze information. The focus of qualitative research is to understand the meaning individuals have attributed to events.

Denzin and Lincoln (2005) explain that qualitative researchers observe objects in their physical context, seeking to interpret or decode events based on the meanings people assign to them in their qualitative research handbook. The author of the preface titled "Reclaiming Qualitative Methods for Organizational Research" defines qualitative research as a comprehensive term that covers a variety of explanatory procedures used to understand and interpret the meaning, rather than the frequency of recurrence, of naturally occurring phenomena in the social domain (Maanen, 1979). In qualitative research, the researcher plays a vital role in gathering and analyzing information. Since the primary goal of qualitative research is to gain an understanding of a problem, human interpretation is an effective way of gathering and analyzing data because it is flexible and responsive. according to Saunders, Lewis, and Thornhill (2007, 117), two approaches to research are available to investigators: the deductive and inductive approach. Deductive research involves a researcher constructing a hypothesis, designing a research study to test that hypothesis. On the other hand, inductive research starts with data collection and uses analysis to develop a theory. Gay and Airasian (2003, pg 4) explain that, "an inductive research approach is typically qualitative in nature, while a deductive research approach is typically quantitative in nature".



However, both qualitative and quantitative researchers demonstrate inductive and deductive processes in their research practices. It is important for us as researchers to recognize and formalize these processes (Hyde, 2000). The aim of the present research study is to identify and decode the framing approaches i.e., episodic and thematic frames in climate and environment coverage in Pakistani print media and analyze does the framing approach followed by the Pakistani print media, provides climate literacy. Hence, qualitative research is the most appropriate methodology for this investigation, as it involves interpretive techniques that enable the researcher to elucidate, decipher, interpret, and comprehend meanings.

### **Research Design**

This research study employs only one research method for addressing the research problem i.e., Qualitative Frame Analysis.

### **Qualitative Frame Analysis**

Robert Entman's paper, 'Framing: Towards clarification of a fractured paradigm', marked the evolution of frame analysis into an important methodology. Although the concept of frame analysis was originally introduced by Goffman (1973), Entman applied this concept to analyze mass media, paving the way for other researchers to adopt this method to understand how information is presented in both print and electronic media. This approach has been used by media scholars for several decades to comprehend how media content is structured by selecting specific aspects of reality and delivering it to audiences to promote certain interpretations (Linström & Marais, 2012). In this study, the Qualitative Frame Analysis method was utilized to explore and identify the prevailing climate and environment news framing approaches in Pakistani print media. The Qualitative approach to frame analysis is subjective in nature and does not simply count the frequency or size of media text and discussion. Instead, it aims to capture the essence of the media text and discourse (Reese, 2007).

### **Classification of frames**

Scholars have examined the process of communication by using various types of frameworks. In this study, the focus was on a particular set of mediatic-frames categorized by Jörg Matthes, which are known as formal-stylistic frames (Matthes, 2007).

### **Formal-stylistic frames**

Iyengar's work introduced two main types of formal stylistic frameworks, namely, episodic and thematic frames. Episodic frames tend to present issues in isolation without considering their background, history or wider context, whereas thematic frames are more comprehensive and provide background information and contextualize the issue. Previous studies by Check (1995), Von Storch & Krauss (2005), Nitz & Ihlen (2006), Boykoff & Boykoff (2007), and Hutchison (2008) it has been found that climate change news coverage has mostly been episodic in nature (as cited in McCann M., 2010). Episodic framing is a method of presenting news stories in an event-centered way, depicting community problems in terms of specific events. In contrast, thematic

frames provide context, background, outcomes, and solutions to the public issues. Presenting climate change news stories with context enhances public understanding. Iyengar's study indicated that episodic coverage of issues may be a reason why the public fails to understand the connections between various issues, resulting in the media neglecting important issues (Iyengar, 1991). This research study has incorporated episodic and thematic framing into its research design to investigate how the Pakistani print media structures and presents climate change stories.

### **Process of conducting news frame analysis**

In this section, the researcher outlines the methodology employed to conduct a qualitative analysis of news framing. The researcher does the medium selection by choosing newspapers to perform a qualitative news frame analysis based on the research problem. This decision was influenced by McNair's assertion (2000) that newspapers are better equipped to convey intricate concepts compared to radio and television. However, it should be noted that electronic and broadcast media can also be used for news frame analysis. In this particular study, the researcher opted for Dawn and Jang newspapers due to their widespread popularity, circulation, and print media revenue.

The three most prominent newspapers in Pakistan are the Daily Jang, which is published in Urdu, the Daily Business Recorder, which specializes in finance and business news, and the English-language Daily Dawn. The three major groups that dominate the print media landscape in Pakistan are the Nawa-e-Waqt Group, the Herald Group, and the Jang Group, according to one source (Press Reference, n.d.). Another source, BBC (2017), confirms that the Daily Jang and Daily Dawn are the top two newspapers in the country, with the largest daily circulation.

According to the Media Landscapes reports for 2011 and 2012, the top two newspapers in Pakistan in terms of print media revenue were the Jang newspaper, which generated 3.45 billion Pakistani rupees and accounted for 31% of the total print advertisement revenue, and the Dawn newspaper, which generated 1.87 billion Pakistani rupees, or approximately 17% of the total print advertisement revenue (Din, n.d.).

In order to determine the time-frame, the researcher focused on analyzing how print media covered news stories related to the environment and climate for a period of two years (2018-19). These two years were chosen due to the occurrence of significant climate change events that made them highly relevant for media analysis. The years witnessed a range of memorable climate change events such as record-breaking heatwaves, dangerous bushfires, severe droughts, and political responses, or lack thereof.

The years 2018 and 2019 were marked by a significant increase in global climate action, as the issue of climate change gained widespread attention. In 2018, a young teenager named Greta Thunberg held her first protest by skipping school to sit outside the Swedish parliament, holding a placard that read 'Skolstrejk för klimatet' or 'School strike for climate', demanding that officials take immediate action on climate change. This single act of defiance sparked worldwide climate protests, with young people and campaigners gathering outside their governments to demand action on the climate emergency. Thunberg's speech at the United Nations Climate Change

Conference in 2018 inspired daily student rallies around the world. In 2019, coordinated multi-city rallies like Fridays for Future, People's Climate March, and the Zero Hour March amplified youth and underrepresented voices on climate action, with each rally attracting over one million students (Fridays for Future, n.d.).

In the wake of these momentous events, media outlets around the world have begun to take climate and environmental news seriously, making it an important part of their coverage. In 2019, there was a significant increase in global attention to climate coverage, with print media reporting reaching unprecedented levels by the end of the year. Compared to 2018, reportage increased by 73% across hundreds of newspaper sources in 2019. Similarly, global radio reportage saw a surge of 74% in 2019 compared to the previous year, and national-level reportage increased across the board (Nacu-Schmidt et al., 2020).

For the frame analysis, the researcher examined a total of 1,460 newspapers published between January 01, 2018 and December 31, 2019. The entire population of newspapers was included in the sample, consisting of N=694 for Dawn and N=622 for Daily Jang. For this study, the researcher examined news articles published between January 01, 2018 and December 31, 2019 in various sections of each newspaper, such as the front, back, national, and international pages. The focus was on news stories related to climate or environmental incidents, relating directly or indirectly to these topics. The individual news articles served as the unit of analysis for this research.

The technique of news framing employs different textual and visual components known as framing devices, which were analyzed by the researcher to comprehend the framing approach used by the Pakistani print media for the climate and environment stories during the selected time period. Technical framing devices include various elements of news writing like headlines, subheads, and quotations. The study by Linström and Marais (2012) identifies the following technical framing devices; headlines and subheadings, lead paragraph of the news, sources used in the article, picture captions, selection of quotes, concluding statements and paragraphs used.

The researcher following the same method did a thorough analysis of all the news articles gathered from January 01, 2018 to December 31, 2019, from Dawn (N=694) and Daily Jang (N=622), and categorized them into two framing approaches: episodic framing and thematic framing. The researcher operationally defined the episodic and thematic approaches below: Method of episodic framing in reporting climate and environmental issues utilizes storytelling techniques to depict a particular event or incident that has happened recently. The principal objective of this approach is to narrate individual stories related to weather phenomena and describe the details and aftermath of weather events or catastrophes. To present climate and environment issues in a more comprehensive manner, the Thematic Framing approach is used. This approach provides a wider context by presenting the climate or environment issue with a broader perspective. News stories using this approach typically include historical data, statistics,

interviews with experts, or scientific and academic studies related to climate change, to provide a more complete analysis of the issue.

### Findings and Analysis

Qualitative frame analysis was carried out in order to explore how the climate and environment news stories are framed using the formal-stylistic frames.

From January 01, 2018 to December 31, 2019, the researcher thoroughly went through Dawn and Jang newspapers and gathered all the news articles that had any connection, direct or indirect, to climate and environment. These news articles were selected from Front, Back, National, and international pages of the newspapers. After collecting the articles, the researcher categorized them based on formal-stylistic frames, specifically episodic and thematic styles.

**Table No 1: Dawn News**

Year	Dawn		
	Total no. of stories	Formal-stylistic frame type	
		Episodic	Thematic
2018	279	239	40
2019	414	367	47
Total	693	606	87

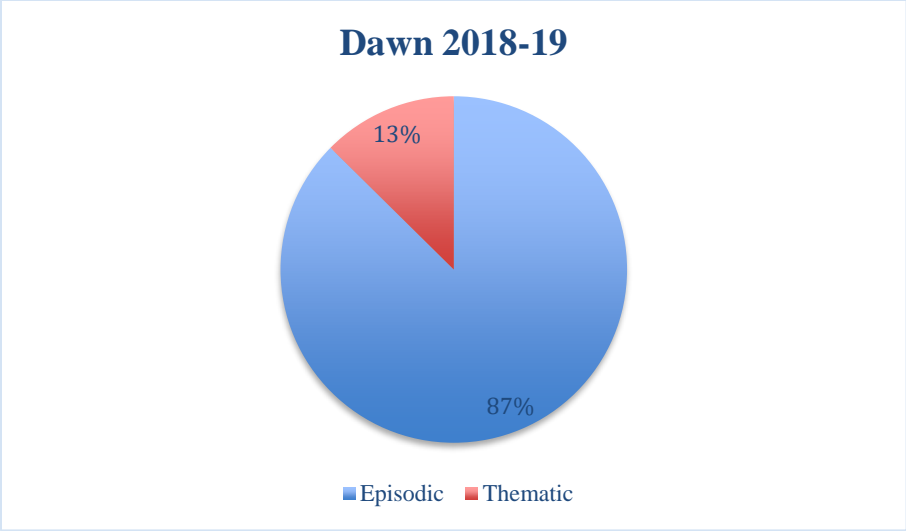
During the selected time period of 2018-19, the Dawn newspaper published a total of 693 news stories related to climate and the environment. Out of these, 606 were framed episodically while the remaining 87 were framed thematically.

**Table No 2: Daily Jang**

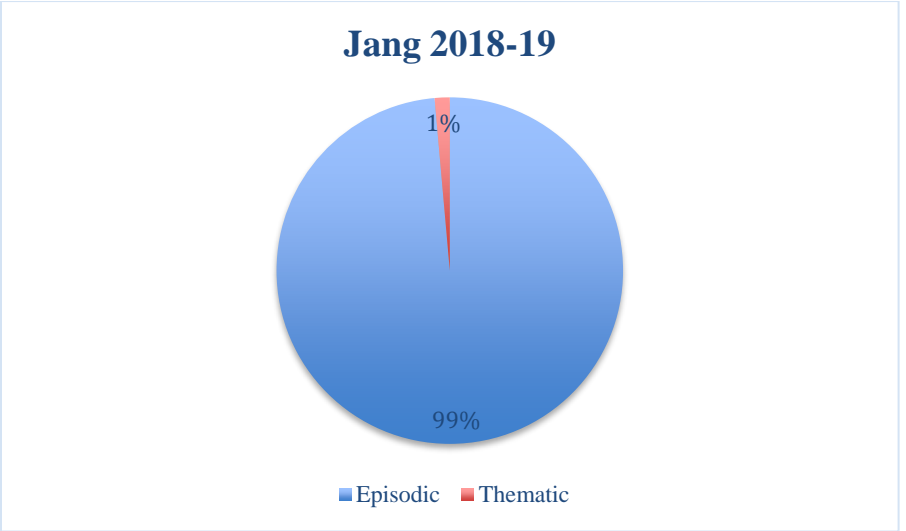
Year	Daily Jang		
	Total no. of stories	Formal-stylistic frame type	
		Episodic	Thematic
2018	312	304	8
2019	310	309	1
Total	622	613	9

Out of 622 news stories on climate/environment in the Daily Jang, 613 were categorized under the episodic framing approach, while only 9 articles were classified as adopting the thematic framing approach.

**Figure No1: Graph od Dawn News**



**Figure No2: Daily Jang**



The study discovered that the predominant framing approach employed in both English and Urdu print media (specifically Dawn and Jang newspapers) is episodic, with 87% in Dawn and 99% in Jang. Nevertheless, Dawn's usage of the thematic framing approach constitutes 13% while Jang's usage is merely 1%.

**Qualitative analysis of the data coded under Episodic Framing Approach**

The analysis of data collected from news reports by both Dawn and Jang indicates that the most prevalent theme of news reports coded under episodic framing is the coverage of extreme weather conditions and their consequences. The majority of these news articles are centered on events like natural disasters, droughts, famine, and smog that are caused by changes in the climate.

Such articles are focused on providing information about the number of people affected, displaced, or killed due to these events. They also report on the damage caused to infrastructure and the impact on everyday life due to these climate-related incidents. These articles offer a vivid portrayal of the aftermath of these events and their impact on the lives of people.

The second most prevalent theme in news articles categorized under episodic framing pertains to politicians' involvement in climate or environment-related endeavors. Such undertakings comprise conferences, seminars, campaigns, and initiatives that aim to address environmental issues on national and international scales. News reports on this topic describe politicians' attitudes and actions towards environmental problems, emphasizing their contribution to promoting sustainable development and protecting the environment. They provide a comprehensive overview of the political reaction to environmental concerns and the actions taken to reduce the effects of climate change.

Some instances of the most prominent theme found in news articles labeled as episodic framing, comprised of news articles with headline such as; *“Floodwaters threaten Paris, close roads, tunnels”*, *“Landslide kills five in Java; 18 missing”*, *“Tourist killed as landslide hits van in Hunza”*, *“Seven killed in Diامر landslide”*, *“Storms, lightning leave 47 dead in India”*, *“Smog shuts schools in Iran”*, *“Schools in three cities shut today as smog hits Punjab”* etc. All these and similar other news stories focused on the impacts of extreme weather disasters but did not provide background of the story and context of climate change.

A news article that appeared in Dawn on July 24, 2018, headlined, *“Record high in Japan as heatwave torments region”*, was about a record heatwave that has hit Japan, resulting in temperatures exceeding 40 degrees Celsius (104 degrees Fahrenheit) in some parts of the country. It highlighted how extreme heat has caused a number of deaths, and many people have been hospitalized due to heat-related illnesses. The news article also discussed the impact of the heatwave on the region, including the strain it has put on the country's power grid. Using information from the Korea Centres for Disease Control and Prevention, the news articles mentioned, *“Ten people have died in South Korea of heatstroke and other heat-related causes this summer, seven of them last week”* (Dawn, 2018). It used quotations of the people who were suffering from the extreme heatwave, *“it is so hot these days that I cannot figure out whether I am in [South Korea] or in Southeast Asia, said Kim Sung-hee, a student in downtown Seoul”* (Dawn, 2018).

Another news article which was published on August 25, 2018, headlined, *“Three villages evacuated after huge wildfire near Berlin”* was about a massive wildfire that broke out near Berlin, Germany, which forced the evacuation of three villages. For providing the incident details, the news discussed that the blaze spread rapidly through dry forests and destroyed an area of more than 500 hectares (1,235 acres). Firefighters worked tirelessly to contain the fire, and they were aided by helicopters and drones to drop water on the flames. The news highlighted the impacts of the extreme weather event, *“More than 500 people had to leave their homes on Thursday night as a result of the fire in the Treuenbrietzen region, some 50 kilometers outside of Berlin (Dawn, 2018)”*.

Similarly, another news article published in Dawn on June 17, 2019 headlined, “*Heatwave kills 49 in India’s Bihar state*”. The news article was about a heatwave that occurred in the Indian state of Bihar in June 2019, which resulted in the deaths of at least 49 people. The heatwave was caused by high temperatures and dry winds, and temperatures reached as high as 45 degrees Celsius (113 degrees Fahrenheit) in some parts of the state. The news included quotations of healthcare official who provided information regarding the impacts caused by extreme weather events. “Forty-nine people died in three districts of the Magadh region that has been hit by drought”, “Patients affected by heat stroke are still being brought, the death toll is likely to increase if the heatwave continues” (Dawn, 2019).

Heatwaves are more frequent and severe due to climate change. As global temperatures rise, heatwaves become more common and intense. Climate change increases the probability of extreme heat events, as it raises the average temperature of the planet. The warming of the Earth’s surface is caused by greenhouse gases, such as carbon dioxide, which trap heat in the atmosphere. As a result, heatwaves are becoming more frequent, and their effects are becoming more severe, with impacts on human health, agriculture, and the environment. However, the news articles used as examples above did not provide this background in the story and framed the event with an episodic approach.

An example from the Daily Jang newspaper is a news article that appeared on February 13, 2018. The article, titled “Tourists stranded due to rainfall, hailstorm and heavy snowfall” (translated), reported several incidents of extreme weather impacts around the country. The article included case studies of individuals who died or were seriously injured, and also reported on other impacts such as power shortages, road blockages, accidents, and damage to buildings (Jang, 2018). The article did not make any connections between human-induced climate change (global warming) and the changing precipitation and hydrological cycle, and it presented the information in a segmented way.

On June 4, 2018, a news article was published on the front page concerning the devastating effects of a heatwave in various parts of the country. The article highlighted the suffering of citizens who were impacted by the extreme heatwave (Daily Jang, 2018). Similarly, an international news article was published on January 7, 2019, discussing the severe impacts of a heavy storm and landslides in the Philippines. The article reported the number of people affected by the storm and the number of casualties resulting from heavy rainfall and landslides. Additionally, the article stated that some individuals were still missing (Daily Jang, 2019).

Notably, the news articles failed to establish a connection between the rising global temperature and the widespread changes in weather patterns that led to the heatwaves, storms, and landslides, leaving the readers to make sense of the situation on their own. There were some news articles found to be examples of the second most prominent theme labeled as episodic framing. These articles had headlines such as; “*Sanjrani inaugurates desalination plant in Gwadar*”, “*Seychelles launches plan to protect marine life*”, “*Supreme Court takes notice of water scarcity*”

*across country*”, “*Balochistan CM kicks off tree plantation drive*”, “*Alyani assures flood-affected people of rehabilitation*”, “*Water shortage in Balochistan to end soon: CM*”, “*Choose hope or climate surrender, says UN Chief*” etc. These and other similar news stories centered on the political actions of politicians, parliamentarians, ministers, and so on, without offering any background information or context related to climate change.

A news article published in Dawn on February 23, 2018, headlined, “*Seychelles launches plan to protect marine life*”, was about the Seychelles launching a new plan to protect marine life in their waters. The government of Seychelles has announced the creation of two new marine protected areas, covering a total of 210,000 square kilometers (81,000 square miles) of the Indian Ocean. Sharing the details of the initiative, the news article stated, “The deal with the country’s creditors was brokered by US-based The Nature Conservancy and involved a \$1 million grant by the foundation of actor Leonardo DiCaprio” (Dawn, 2018).

Another example of a news focused on a political activity was published on August 19, 2019, under the headline, “*Balochistan CM kicks off tree plantation drive*”. The news was about Chief Minister of Balochistan, a province in Pakistan, launching a tree plantation drive to promote afforestation and tackle environmental challenges. The news highlighted the aim of the campaign by stating that 1 billion trees across the province will be planted in the next five years. The news also explained that this tree plantation drive is part of a larger initiative launched by the government of Pakistan to plant 10 billion trees across the country to combat climate change and deforestation. The news quoted statements made by the minister on the tree plantation ceremony, “Tree plantation has been termed Sadqa-i-Jariya in Islam. Every individual of our society should participate in the Pakistan Day plantation campaign in order to secure environment for future generations, the chief minister said while speaking at a ceremony” (Dawn, 2019).

On March 13, 2018, a front-page article in Jang, headlined, “*Korea, China, approves 1 billion grant for solar power in Pakistan (translated)*” described an international grant awarded to Pakistan Council of Renewable Energy Technologies (PCRET), a department of the Ministry of Science and Technology, for the purpose of launching solar power projects. However, the news story failed to provide information about how solar power could help in reducing the greenhouse gas effect (Jang, 2018).

Another news article published on April 16, 2019 on the national/international page, reported on the completion of a clean water project in Sindh during the new fiscal year. However, similar to the previous example, the news article did not provide any context about the project for readers to understand the environmental challenges faced in the area and the need for such initiatives to mitigate climate change.

### **Qualitative analysis of the data coded under Thematic Framing Approach**

According to the data gathered from Dawn and Jang, although there were fewer stories coded under the thematic frame, they contained more detailed and informative content regarding climate and environmental issues. These news articles offer a broader context of the issue and



provide readers with detailed background information, interpretations, impacts, trends over time, and potential causes and solutions for the problem at hand.

These news stories coded under thematic framing approach either cover the latest scientific studies and research related to climate change or report on environmental issues in a broader context. They use research reports and statistics to support their coverage. By following the thematic framing approach, they discuss the implications of the research findings and provide insight into the global environmental changes and their potential impact on nature and society.

Some instances of the most prominent theme found in news articles coded under thematic framing, included news articles with headline like; *“EU forests can’t help climate fight: study”*, *“Flood risk for Pakistan will double by 2040, says report”*, *“Shifting weather patterns fade harvest prospects”*, *“Footprints: WOES AND FEARS IN KAHOON VALLEY”*, *“Himalayan glaciers melting twice as fast as 20-40 years ago”*, *“World unprepared for impact of climate change on mountain water supplies experts”*. *“Melting ice sheets may cause ‘climate chaos’: study”*, etc. All such news articles focused on presenting news stories in a way that places them within the larger context of climate change and its impacts. This involves emphasizing the underlying causes and drivers of climate change, as well as the scientific evidence and research that supports the claims made in the news story.

An article published on January 11, 2018 in Dawn with the headline, *“Flood risk for Pakistan will double by 2040, says report”*, focused on a report by the World Resources Institute (WRI) and reported that Pakistan's flood risk is expected to double by 2040 due to climate change. The news article by quoting the WRI report suggests that the country needs to urgently invest in measures to adapt to these changes and mitigate their effects. The report recommends that the government should prioritize building more water storage infrastructure, reducing deforestation, and improving soil conservation practices to protect against floods. The report also warns that if action is not taken, the frequency and intensity of flooding events in the country could worsen, leading to severe economic and social consequences, *“Unless actions are taken — such as enhancing dykes, boosting building standards, relocating settlements and managing rivers — the number of people affected by devastating floods could skyrocket”* (Dawn, 2018). The news story provided complete background of the issue and established its relation to climate change following the thematic framing approach.

Another news article which was published on July 20, 2018, headlined, *“Experts link glacier melt to climate change, call for risk assessment”*, reported that a group of experts have linked the rapid melting of glaciers in Pakistan to climate change, and are calling for a comprehensive risk assessment of the impact on the country. The news while sharing the concerns communicated by the experts, highlighted that the melting of glaciers poses a serious threat to the country's water supply, food security, and energy production. The experts also warn that the rapid melting of glaciers could cause flooding, landslides, and other natural disasters. The news added quotations of the experts and explained the changing weather trends, *“The overall weather pattern is changing. Earlier, the winter peak season was November to January with heavy snowfall. Now, it has shifted towards January, February and March”* (Dawn, 2018). The news article also

explained the cause of glacier melting and mentioned, “this year snowfall was in April. The result is that the snow is not getting converted into ice” (Dawn, 2018).

Similarly, on July 2, 2018, the Jang newspaper featured a news article on their national/international with headline, “*The grave issue of water, chances of Mangla and Trabela damn water levels to reach dead level (translated)*”. The news focused on the issue of water shortage in Pakistan. The article specifically discussed the present situation of water availability in Mangla and Tarbela dams with a detailed background, citing a report by the Indus River System Authority (IRSA) that explained the factors that may have contributed to the decline in water levels and the potential threat it poses to the country's food security. The report followed a thematic framing tradition by including discussions on water level trends from previous years and the conditions of other rivers (Jang, 2018).

Another instance recorded in the data is a news article that was published on the front page on August 05, 2019, headlined, “*Ban on plastic bags (translated)*”. The news reported regarding the government's announcement to ban plastic bags in Islamabad from August 14, 2019. However, the news was not presented in an episodic manner but followed a thematic framing approach. The news piece discussed historical references of plastic bag bans at provincial and federal levels and criticized the government for failing to enforce those restrictions. It also included research on the decomposition process of polyethylene terephthalate and the increasing annual use of plastic bags both in Pakistan and globally. The article provided a comprehensive background on the campaigns to ban plastic in various other countries and their historical context, including the origins of polythene bags. Furthermore, the news highlighted the adverse effects of plastic on marine life (Jang, 2019).

## **Discussion**

It was supposed by the researcher that climate and environment-related news coverage in Pakistani print media is usually episodic rather than thematic (H1) and also the way news stories of climate and environment are framed in Pakistani print media, does not enhance climate literacy (H2). The findings of the qualitative frame analysis supported H1 and H2.

It was found that in Dawn and Jang, both, the most prevalent framing approach between episodic and thematic is the episodic framing approach. Most of the stories framed using an episodic framing approach focused on specific events, such as extreme weather disasters, and tends to present them as isolated incidents rather than as part of a larger pattern or trend. The other dominant theme was political actors' engagement in climate and environment related activities.

Focusing on adverse impacts of weather disasters can create the impression that extreme weather events are random or unusual, rather than being linked to the underlying causes of climate change. Furthermore, an exclusive focus on extreme weather disasters' adverse impacts can create a sense of helplessness or fatalism, as it may leave readers feeling overwhelmed by the scale and severity of the problems being reported. This can lead to a lack of engagement or action towards

addressing climate change, as people may feel that the problem is too big to solve or that their individual actions will not make a difference.

Also, the news articles that focus on the political angle only does not help enhance climate literacy because it tends to prioritize short-term political considerations over the urgent and long-term challenges of climate change. Focusing on the political angle can also be problematic, as it can lead to a narrow and limited understanding of climate change. While political decisions can certainly have an impact on climate policy and action, they are just one aspect of a much broader set of factors that contribute to climate change, including economic, social, and technological factors.

Additionally, a focus on politics can be divisive and polarizing, and may reinforce pre-existing ideological biases rather than promoting a shared understanding and sense of urgency about the need to address climate change. This can make it harder to build broad-based support for effective action and solutions. Episodic framing is a way of presenting issues that focuses on individual stories or events rather than on the broader narrative. While this approach can be useful in capturing the audience's attention and conveying emotional impact, it can also be limiting. One of the problems with episodic framing is that it often ignores the systemic nature of climate change. Climate change is a complex issue with many interrelated factors, such as greenhouse gas emissions, deforestation, and ocean acidification (Nisbet et al., 2015). Episodic framing often focuses on a single event, such as a natural disaster or extreme weather, without exploring the underlying causes and systemic connections. As a result, the audience is left with a limited understanding of the broader issue of climate change.

Another issue with episodic framing is that it can lead to a sense of helplessness and apathy among the public. By focusing on individual events, episodic framing can create a perception that climate change is an uncontrollable force beyond human influence. This sense of hopelessness can lead to apathy and inaction, as individuals feel that their actions will not make a difference in the face of such a large and complex issue (Maibach et al., 2018). Episodic framing can also reinforce misconceptions and myths about climate change. For example, media coverage of cold weather events often leads to the misconception that climate change is not real or not a significant issue. This reinforces the false idea that climate change only refers to warm weather events, and undermines efforts to raise awareness and understanding about the systemic nature of climate change (Poortinga et al., 2011).

Iyengar's research, which investigated how television presents political issues, suggested that the way issues are portrayed in individual episodes could contribute to the public's failure to recognize connections between different issues. This, in turn, creates a danger that the media might overlook important topics (Iyengar, 1991). However, framing news stories in thematic way, journalists and news outlets can help their audience understand how climate change is affecting various aspects of our lives, from extreme weather events to food security to public health. They also help readers understand the linkages between different issues and the various factors that contribute to climate change.

The data collected and coded under thematic framing approach although was less in number but provided rich context of climate change by reporting on new scientific and academic researches with regards to climate and environment. The climate and environment issues were reported with a detailed background, affects and causes of the problem using stats and other informative data from scientific reports to provide climate change context. Quoting various researches and studies is an important aspect of thematic framing approach, as it allows news outlets to provide evidence-based information and to demonstrate the credibility of their claims. By citing research and studies, journalists provide readers with a deeper understanding of the scientific evidence and how it supports the story being reported.

Overall, providing climate change context through thematic framing and quoting various researches and studies is an important part of responsible climate journalism. It helps to ensure that news stories are accurate, informative, and placed within the broader context of climate change and its impacts. This can in turn help to raise public awareness and encourage action towards addressing the urgent challenges of climate change. Thematic framing can help to increase the sense of urgency around climate and environmental issues. When information is presented in a way that highlights the potential consequences of inaction, people are more likely to take notice and take action. For example, a study by Leiserowitz et al. (2017) found that framing climate change as a public health issue increased people's concern and willingness to take action.

Thematic framing can also help to overcome resistance to climate and environmental messages. Many people are resistant to climate and environmental messages because they perceive them as threatening or as challenging their worldviews. Thematic framing can help to overcome this resistance by presenting information in a way that is relevant and meaningful to people's lives. For example, a study by Schäfer et al. (2017) found that framing climate change as a social justice issue increased people's engagement with the issue.

## **Conclusion**

Pakistani print media followed episodic framing approach for reporting climate and environment stories during the period of 2018-19. The most dominant themes coded under episodic framing approach during the selected time period were reports on adverse impacts of climate/environment disasters and political activities of ministers and other government officials with regards to climate and environmental concerns. Such news articles do not provide any context of climate change but report news stories with the focus on giving an update on the damages caused by weather events and political leaders' actions with regards to climate change.

To enhance climate literacy, it is important to frame climate and environment stories in a way that emphasizes the underlying causes and drivers of climate change, and the interconnectedness of various issues. This can include discussing the role of human activities such as carbon emissions, deforestation, and industrial agriculture, as well as the social, economic, and political factors that contribute to climate change.

Additionally, it is important to provide readers with information about solutions and actions that can be taken to address climate change, and to highlight the positive impacts that can result from these actions. By presenting a more comprehensive and nuanced understanding of climate change, news outlets can help to enhance climate literacy and encourage more effective action towards addressing this urgent global challenge.

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