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Exploring Public Perception about Traditional Media Coverage on Climate Change

Ghulam Safdar[1], Asna Butt[2]

[1]Assistant Professor, Department of Media & Communication Studies, Rawalpindi Women University, Pakistan.
[2]MPhil Scholar, Department of Media & Communication Studies, Rawalpindi Women University, Pakistan.
Correspondence: safdarsting@gmail.com[1]

ABSTRACT

Aim of the Study: This study intends to investigate the function of traditional media in the formation of public opinion about climate change in Pakistan. It looks into the consumption patterns of media, the credibility of climate-related news, and the reach of traditional media in creating awareness among the public and engaging the government on environmental issues.

Methodology: The research adopted a quantitative survey-based approach and collected the data from 231 respondents. In the study, descriptive statistics, correlation analysis, t-tests, and ANOVA were used to examine the relationships of demographic factors, media consumption, and public perceptions about climate change.

Findings: The results show that respondents are rather doubtful about the role of media in raising visibility to such issues in climate change. Traditional media remain the most important source of information; however, many respondents lamented its coverage as being reactive rather than proactive. It further shows that there are significant relationships between media consumption, demographic factors, and public opinion on climate change. ANOVA results also indicate differing levels of media perception with regard to age and level of education.

Conclusion: The findings point to a need for much deeper and more proactive coverage of climate change in traditional media. Media organizations and policymakers should enhance climate journalism in order to better inform and engage the public on environmental issues. Addressing these shortcomings would contribute to creating a more informed and climate-conscious society in Pakistan.

Keywords: Traditional Media, Public Opinion, Climate Change Awareness, Media Credibility, Public Trust.

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1. INTRODUCTION

Environmental sustainability, economic development, and social well-being are all at serious odds with climate change, one of the century's foremost challenges. Being a highly vulnerable country to climate hazards, Pakistan faces further increasing threats from extreme weather events, glacial melts, and the changing patterns of monsoons. The role of mass media in shaping public opinion on climate change has

become vital, being the major channel through which information flows and the public engages (Ahmed et al., 2024; Raza and Shah, 2024).

The geo-physical and socio-economic conditions of Pakistan render this country particularly vulnerable to climate change. Pakistan has seen an increase in climate-related calamities, such as heat waves peculiar to the area, untimely rainfall, and devastating floods throughout the years. For example, the coastal city of Gwadar has been badly afflicted in terms of climate change due to heavy rain and rising sea levels that resulted in floods, erosion of beaches, and destruction of infrastructure. Not only have these events caused immediate destruction but they imposed a long-term socio-economic impact on agriculture, livelihoods, and health (Javed et al., 2024; Riaz & Farhan, 2023; Amer, 2023).

Traditional media, which include print and electronic outlets as important sources of information for the public, do play an important role in the promotion of climate change literacy. Internationally, studies have questioned the role played by Pakistan's media in building climate literacy. Khan and Hanif (2024) contend that even with the rise in the frequency and severity of climate-related events, the coverage of climate in the media landscape of Pakistan is quite limited. This hinders the public from having a good understanding of climate issues and would weaken their further engagement in both small and far-reaching collective action for mitigation and adaptation.

Perceptions of climate change highly depend on the media portrayal. In their study, Zaheer and Bano (2024) examine how the media shapes various factors with regard to the perception of climate change by the Pakistani public. According to their findings, perceptions of climate change correlate positively with individuals' advocacy activities in the interests of environmental paradigms; affective experiences of climate change damage; and expectations of climate change impacts. This further emphasizes the power of the media in shaping public perceptions and attitudes toward climate change.

Several challenges have been cited as limitations to effective climate journalism in Pakistan. Asif, Jamil, and Ahmad (2024), in a systematic literature review, state that Pakistani media has been unable to cover climate issues adequately due to factors like illiteracy, the lack of infrastructure for reporting, lower viewership ratings, and editorial choices. These setbacks lead to the creation of a media arena where climate change isn't prioritized, thereby making a less-informed, less-engaged public in environmental issues. Yet there are avenues to promote climate literacy through traditional media. By separately advocating for enhanced capacity building for the journalists in the mentioned area and for stronger cooperation between media bodies and civil societies and policy makers, Khan and Hanif (2024) support a stronger climate journalism presence. Such projects can empower media actors to duly report on climate change and educate the public.

1.1 Problem Statement

Pakistan presides in the league of top 10 countries that face severs impacts of changes in climate patterns along with natural disasters. Vulnerability of this nation on account of rising temperatures is highly documented where projections of at least 3-6 degrees rise by the end of the 21st Century are to be effected over average annual temperature, all depending on carbon dioxide emissions scenarios above the level at the beginning of the century. Emerging temperatures have increasingly led to extreme climatic events characterized by increasing magnitude and frequency, including floods, droughts, cyclones, prolonged rainfall as well as unusually high temperatures.

Moreover, rising temperatures are expected to worsen already adverse health effects related to water and air pollution in the present times, lead to reduced labor productivity due to extreme heat, and affect the availability of water, which can also affect ecological conditions of profound river systems in the country and national water security. The media does not seem to cover the real extent of these issues under climate change even though it looks severe. It is said that the climate news generally fails to convey the level of drama and urgency and the consociation with political angle necessary for passing mainstream news sifting standards. Financial cuts again make them tend to support politics, which can bait bigger

audiences. Some journalists reconsider and insist on the need for better media narratives by taking the country into a more socially responsible position in addressing the climate crisis. Previous research indicated that public awareness and engagement could grow with increased media advertisements and special segments on climate change. This study therefore will find out how the public perceive traditional media in addressing the issues of climate changes.

1.2 Significance of the Study

The work on "Exploring Public Perception about Traditional Media Coverage on Climate Change" is significant since it shows how the public perceives the role of traditional media in disseminating information on climate change. Given the fact that Pakistan is one of the countries that are more vulnerable to disasters caused by climate change, responsible media coverage must influence public awareness, policy discourse, and mitigation efforts. The study shows that traditional media is, for many respondents, the main source of information on climate change, but there are doubts about whether this coverage has been adequate and credible.

It indicates a disparity between urgency of climate change and the media's concern, a situation corroborated by most existing literature which suggests that financial constraints and/or political preferences often take precedence over environmental reporting. The study requires the media to step up and shift their strategic focus towards more dedicated programming, advertisement, and investigative journalism on climate issues. Basing on these findings, policymakers and media organizations should be able to use these insights to develop targeted communication strategies to engage the public for the purpose of climate action. This study enriches the discussion on media and environmental communication by providing empirical evidence regarding public perception, thereby incentivizing reforms in traditional media for greater awareness and advocacy for climate change issues.

1.3 Theoretical Framework

The aforementioned study bearing the title "Exploring Public Perception about Traditional Media Coverage on Climate Change" is derived from two theories: Agenda-Setting Theory and Framing Theory. Both are important theoretical underpinnings in the understanding of how traditional media influences public perception about climate change.

According to Agenda-Setting Theory (McCombs & Shaw, 1972), the focus of media is fundamental to affecting the public discourse about an issue such that a discussion is made on it. The study findings demonstrate that although climate change is an issue in Pakistan, traditional media does not prioritize it sufficiently. The respondents were worried about the limited coverage of climate-related issues. This supports the argument that the media agenda somehow shapes an audience's awareness and concern regarding environmental challenges.

Framing Theory (Entman, 1993) states that the way news is presented by the media would have an effect on how the audience interprets it. Data from the study reveal skepticism as to how credible the coverage of climate change by traditional media may be; the framing of climate news may not be perceived as urgent or relevant. Thus, the tendency to prefer political news over environmental reporting indicates how media can shape public priorities.

Together, these theories advocate for media reforms which would improve the climate change coverage, towards effective framing to involve and inform the audience.

1.4 Independent & Dependent Variables

Independent Variable: Traditional Media Use would be defined as the extent to which a citizen accepts traditional media (print, radio, television) for climate change information. It, therefore, becomes instrumental in shaping public perception through awareness, opinion, and attitudes toward climate change.

Dependent Variable: Public Perception of Climate Change Coverage portrays the perception of people concerning the credibility, adequacy, and effectiveness of traditional media in covering climate change. Hence, issues of trust in media reports, belief in media influence, and satisfaction in climate change-related news coverage arise.

The study evaluate the interaction of these variables by taking into consideration how the use of traditional media influences public opinions toward climate change coverage.

1.5 Research Objectives

1) Establishing the role of traditional media in shaping public perception of climate change in Pakistan.
2) To study the perceived credibility and sufficiency of traditional media coverage about climate change.
3) To evaluate the extent to which traditional media informs public awareness, attitudes, and opinions about climate change.
4) To investigate challenges faced by the traditional media in Pakistan while reporting climate change.
5) To determine different modes of traditional media (print, broadcast, radio) preferred by the public for climate change information.
6) To identify missed opportunities and propose strategies to make traditional media more accessible and therefore useful for climate change communication.
7) To correlate media consumption with public engagement on climate change issues.

2. LITERATURE REVIEW

According to Asif et al. (2024), a systematic literature review on media representation of climate change in Pakistan was conducted. As the research shows, the extent to which traditional media covers climate issues is dismal compared to political and economic news. While the reporting on climate change has increased with time, the onus of raising awareness and action among the audiences has not significantly gone up: the media narratives were generally shallow in science within episodic framing that does not encourage long-term public engagement. Improved journalistic practices have been noted by the authors for enhancing climate communication efficacy in Pakistan.

Javed et al., (2024), very little was found that could depict climate change issues in Pakistani media, with most reportage tending to be more event-driven and episodic more than thematic. This study found that Pakistani media tend to give greater emphasis to disaster reporting floods, heatwaves, etc. while hardly covering long-term climate policy mechanisms and mitigation strategies. Environmental stories are not given much priority since political and economic concerns tend to supersede these discussions, keeping the public under-informed. The researchers, therefore, note that a more sustained and informative effort from the media, with expert opinions and scientific viewpoints integrated into the narrative, would boost awareness and involvement in climate change issues.

Khan and Hanif (2024) identified the various challenges and opportunities posed by media in raising climate literacy in Pakistan. Media's role in the climate change narrative is problematic in that it does not offer the requisite depth and continuity of coverage for climate messaging because of financial problems, political pressure, and audience preference for sensational news. On the contrary, though media can enhance a particular audience's awareness of the climate, the absence of specialized environmental journalists as well as insufficient scientific reporting obstruct this process: therefore, the research would underwrite a need for requiring the integration of climate education in media practice for collaboration

between journalists and climate experts by creating a type of digital environment that encourages higher public participation on issues related to climate.

Khan and Ahmed (2024) study the role of social media in shaping university students' perceptions of climate change in Pakistan: results show that social media serves as an important platform for students to obtain information about climate issues, providing a sort of replacement for traditional media in those instances when there are gaps. It offers a unique forum for immediacy and diversity of opinions through which students congregate to participate in climate issues. It also poses threats as misinformation is spread and the emphasis is placed upon need for credible sources. Social media opens the door for awareness and advocacy toward climate issues and should be considered as an important tool in communicating climate issues to policymakers for better outreach and disseminate people disseminated messages to people, thus creating a further forum and broadening the network for sharing.

Climate change impacts every environmental, social, political, and economic system on earth and is threatening their very existence. Human activities have not only been responsible for an increase in the average temperature of Earth but have also contributed to increase atmospheric concentrations of greenhouse gases (GHGs) and have also altered other parts of the planetary environment including oceans, land ecosystems, and the atmosphere (Wyser et al., 2020; Masson-Delmotte et al., 2021). These changes are manifest in very observable phenomena such as rising of global sea levels (Zemp et al., 2019; Garcia-Soto et al., 2021; Oliver et al., 2021), and fast thawing of permafrost along with retreat of glaciers (Sommer et al., 2020; Wilkenskjeld et al., 2022), decreasing snow and ice cover (Shepherd et al., 2018), and furthering ocean acidification (Doney et al., 2020). Climate change must be met with a twofold response of mitigation and adaptation approaches that work together to minimize impacts and improve resilience (Abubakar and Dano, 2020; Diamond et al., 2020; Tosun, 2022).

While adaptation entails constructing resistance to the inevitable effects on people and ecosystems, mitigation concentrates on lowering emissions or improving GHG sinks. Deep scientific knowledge and active participation from researchers, civil society, and other actors are necessary for these initiatives to succeed (Wamsler, 2017; Tai and Robinson, 2018; Gonçalves et al., 2022).

Undoubtedly, by far the most uncomfortable threat that human beings contend with as civilization is concerned. It may at one time be referred to as an existential threat to civilization (IPCC, 2022). Failure to implement effective strategies for adaptation and mitigation will lead to profound paradoxical disturbance in modes of contemporary society (van der Linden, Leiserowitz, Feinberg, & Maibach, 2015). Most critical, climate effects are expected to be more severe in the least developed countries as compared to their developed counterparts (IPCC, 2022). Perhaps, a notable case of these disastrous effects is that of the recent "super-flood" in Pakistan, which killed over 1,400 people, flooded one-third of the country and made about 32 million people homeless (Bokhari & Reed, 2022). The first six months of 2022, on the other hand, saw record global heatwaves and severe rain shortages across Europe, massive storms in Japan, and devastating floods that are once in the 500 years in Montana (Marwan, 2022). All these disasters happen to give a hint at the enormity of the climate crisis and the case for proactive, comprehensive preparedness measures for related disasters.

According to Reid (2019), a number of climate experts concur that global warming is a worldwide issue with a significant likelihood of having catastrophic effects on the environment, society, economy, and emotions in the century to come. Thus, it is clear that the media has been paying more attention to the issue of climate change and the possible threats it poses to humanity in many regions of the world, especially in the previous 20 years [Schmidt, Ivanova & Schäfer, 2013]. It is not unexpected that the media plays such a crucial role because it continues to be the public's primary information source on a variety of topics, including climate change (Newman et al., 2020).

Because of this, the media's significance has naturally attracted a lot of scholarly attention, leading to a variety of empirical research looking at coverage of news in various circumstances. Numerous studies have attempted to examine media coverage by concentrating on or comparing a small number of

countries; in this paper, we especially want to include more work to countries that are typically underrepresented in the literature. These studies mainly focus in nations located in the Global North, but some are also from the South.but mostly we have discussed climate change issues of Pakistan and Asia

Academically, there is increasingly substantial attention paid to the media depictions of climate change, especially about significant climate change conferences (Christensen & Wormbs, 2017; Gurwitt et al., 2017). The base premise of these studies is that media exposure to climate events might influence public attitude towards the meaning and gravity of climate change and the very need for mitigation and adaptation measures. More Recently, several studies have examined the response of the public to climate change media coverage (e.g. Nisbet et al., 2013; Stamm et al., 2000). Empirical findings indicate that greater exposure to such coverage increases public support for climate policy and enhances the belief in government responsibility for addressing climate change (Feldman et al., 2014).

Attitudes and beliefs provide an interesting lens through which to view the perceptions and responses of individuals toward climate change communication. They also form the basis of polarization in most public discourse on the issue, reflecting the wider ideological divide, such as the Republican versus Democrat divide in America (Krosnick et al., 2000; McCright & Dunlap, 2011). Differing views on climate change and its perceived threats tend to correspond with ideological orientations (McCright & Dunlap, 2011). Research findings reveal that both climate skepticism and climate action are affected by cognitive processes and are also contextually embedded within larger value systems and belief structures (Corner et al., 2014; Poortinga et al., 2011).

Furthermore, earlier research has found that the way that climate change is portrayed in the media greatly depends on the opinions and beliefs of the individual (Wiest et al., 2015). For example, the conviction that climate change is occurring might strengthen favorable media impacts on support for policies (Feldman et al., 2014). On the other hand, it has been found that skepticism about climate change poses a significant obstacle to the adoption of mitigation policies and carbon-reducing initiatives (Engels et al., 2013).

The 2010 floods in Pakistan are a severe hydrologic and sociological occurrence. At their height, they buried around 20% of Pakistan's land area, immediately killing and wounding up to 5,000 people and up to 20 million more. The region has seen an economic effect that includes infrastructure, agriculture, livestock, and fatalities. Even though there were other contributing variables (such as snowmelt and water management techniques), an exceptionally high rainfall event was directly linked to the floods. According to the Pakistan Meteorological Department (PMD), 2010 the country-wide total for July–September 2010 was the highest since 1994 and the sixth highest in the previous 50 years.

The majority of the intense downpour took place in the months of July and August. The 2010 flash floods were caused by a meteorological pattern that started in July with many locally generated, strong rainstorms and continued into the early part of August with monsoon rains (Webster et al., 2011). Houze et al.'s synoptic study (2011) revealed that the July rainstorms' intensity and organization were unusual for northern Pakistan. Some have questioned whether the unusual 2010 rainfall in Pakistan is part of climate variability or somehow related to global climate change, partly because of other extreme events that occurred in the course of the summer of 2010, like the Russian heat wave (Marshall, 2010).

The intra-seasonal variability associated with the monsoon trough-which are often associated with the 30- to 60-day mode- has been highlighted for decades on how they modulate the effects of monsoon rains within India and beyond borders to the north (Chang & Krishnamurti, 1987; Goswami, 2005). Also, the distance to which the Indian monsoon penetrates northwards is determined by changes in the Eurasian teleconnection, through which Rossby wave trains propagate across Eurasia and East Asia (Ding & Wang, 2007). The monsoons have not only increased precipitation in northern Pakistan through numerous summer monsoon depressions from the Bay of Bengal, which propagate towards the northwest into the monsoon trough (Muhammad, 2005; Yoon & Chen, 2005), but also the July 2010 rainfall events, during

which several of these depressions traversed India and enhanced moisture convergence over Pakistan (Houze et al., 2011).

Though previous research has established that climate change will increase rainfall variability and lead to more precipitation associated with the South Asian monsoon (Meehl & Washington, 1993; Intergovernmental Panel on Climate Change [IPCC], 2007), further empirical studies based on observational data have shown that, due to the current trends in warming, extreme rainfall events have been on the rise in frequency and intensity across India, particularly during the monsoons (Goswami et al., 2006).

According to Patwardhan and Bhalme (2001) and Singh (2001), there has been a decrease in the frequency for the rainy season depressions over the Arabian Sea and Bay of Bengal between 1890 and 1999. This finding contradicts the theory of an enhanced water cycle in India caused by warming from greenhouse gases. These contradictory findings and the unusual rainstorms in 2010 beg the issue of whether climate change is a contributing factor in the strong monsoon rains that occur in northern Pakistan.

3. METHODOLOGY

3.1 Research Design

A quantitative research design has been employed by the study to analyze the public perception of traditional media coverage of climate change in Pakistan. The study is descriptive and cross-sectional, focusing on statistical analysis to explain the relationship between traditional media consumption and public opinion on climate change issues.

3.2 Population and Sampling

The population of the study consists of people from major cities of Pakistan, namely Rawalpindi, Islamabad, Karachi, and Lahore. The sample consisted of (n=231) respondents who were chosen through convenience sampling, ensuring adequate representation across all age, gender, and education levels.

3.3 Data Collection Method

Primary data was collected by means of a structured survey questionnaire. The questionnaire comprised closed-ended and Likert-scale questions to analyze the respondents' media preferences, perceived credibility of climate news, and opinions on the effectiveness of traditional media in addressing climate change issues.

3.4 Variables

Independent Variable (IV): Traditional Media Use

Dependent Variable (DV): Public Opinion on Climate Change

3.5 Data Analysis

Descriptive statistics, correlation analysis, t-tests, and ANOVA were used for data analysis to test the relationships between demographic variables, media consumption pattern variables, and perception of climate change. Findings are expected to provide empirical evidence as to how traditional media are used in the climate discourse in Pakistan.

4. RESULTS

Table 1: *Respondents' Demographics.*

Respondents' Demographics		Frequency	Percent
Gender	Male	143	61.9
	Female	88	38.1
	Total	**231**	**100.0**
Age	18-27	33	14.3
	28-37	90	39.0
	38-47	63	27.3
	48-57	45	19.5
	Total	**231**	**100.0**
City	Rawalpindi	48	20.8
	Islamabad	96	41.6
	Karachi	60	26.0
	Lahore	27	11.7
	Total	**231**	**100.0**
Education Level	Martic or Below	17	7.4
	Intermediate	107	46.3
	Graduation	95	41.1
	Master	12	5.2
	Total	**231**	**100.0**

The demographic profile of the respondents is presented in Table 1, detailing their gender, age distribution, city of residence, and educational attainment. The gender distribution of the sample indicates that a majority of the respondents were male (n = 143, 61.9%), while female participants constituted 38.1% (n = 88) of the total sample. The age distribution reveals that the largest proportion of respondents fell within the 28–37 age bracket (n = 90, 39.0%), followed by those aged 38–47 years (n = 63, 27.3%). Respondents aged 48–57 accounted for 19.5% (n = 45), whereas the youngest cohort, aged 18–27, comprised 14.3% (n = 33) of the sample. The geographic distribution of participants shows that the highest number of respondents were from Islamabad (n = 96, 41.6%), followed by Karachi (n = 60, 26.0%) and Rawalpindi (n = 48, 20.8%). A smaller proportion of respondents were from Lahore (n = 27, 11.7%). Regarding educational attainment, the majority of respondents had completed an intermediate level of education (n = 107, 46.3%), followed closely by those with a graduate degree (n = 95, 41.1%). A smaller proportion of participants had attained a master's degree (n = 12, 5.2%), while those with matriculation or below accounted for 7.4% (n = 17). These demographic characteristics provide insight into the composition of the study sample, ensuring a diverse representation of respondents across key socio-demographic variables.

Table 2: *Traditional Media use among the respondents*

Sr.	Question	Responses	F	%	M	SD
1	What is your favourite traditional media to get information?	Print Media	64	27.7	1.72	.449
		Electronic Media (Radio, TV)	167	72.3		
2	How much average time you spend daily on traditional media?	1-2 Hours	25	10.8	2.62	.938
		2-3 Hours	86	37.2		
		3-4 Hours	71	30.7		
		> 4 Hours	49	21.2		
3	Traditional Media News are Credible?	Strongly Disagree	39	16.9	3.16	1.272
		Disagree	36	15.6		

		Neutral	24	10.4		
		Agree	114	49.4		
		Strongly Agree	18	7.8		
4	Traditional media give sufficient space to climate change issue?	Strongly Disagree	36	15.6		
		Disagree	107	46.3		
		Neutral	15	6.5	2.61	1.204
		Agree	58	25.1		
		Strongly Agree	15	6.5		
	Traditional media is good source of information?	Strongly Disagree	11	4.8		
		Disagree	22	9.5		
		Neutral	18	7.8	3.63	.894
		Agree	170	73.6		
		Strongly Agree	10	4.3		

The respondents' preferences and perceptions regarding traditional media as an information source are presented in Table 2. Regarding preferred traditional media for information, a significant majority of respondents (n = 167, 72.3%) favored electronic media, including radio and television, while a smaller proportion (n = 64, 27.7%) preferred print media. In terms of daily media consumption, the largest group of respondents (n = 86, 37.2%) reported spending 2–3 hours on traditional media, followed by those who consumed it for 3–4 hours daily (n = 71, 30.7%). Meanwhile, 21.2% (n = 49) of respondents engaged with traditional media for more than four hours, whereas 10.8% (n = 25) spent only 1–2 hours. Regarding the credibility of news from traditional media, nearly half of the respondents (n = 114, 49.4%) agreed that it is credible, while 16.9% (n = 39) strongly disagreed, and 15.6% (n = 36) disagreed. A neutral stance was taken by 10.4% (n = 24), while 7.8% (n = 18) strongly agreed with its credibility. Concerning the coverage of climate change issues, a majority (n = 107, 46.3%) believed traditional media does not provide sufficient space to this topic, while 25.1% (n = 58) agreed that it does. Finally, when evaluating traditional media as a reliable source of information, 73.6% (n = 170) agreed that it serves this role, while only a small fraction strongly disagreed (n = 11, 4.8%).

Table 3: *Traditional media coverage on climate change*

Sr.	Question	Responses	F	%	M	SD
1	Media outlets often shape perceptions of climate change and impact public opinion	Strongly Disagree	57	24.7		
		Disagree	90	39.0		
		Neutral	45	19.5	2.32	1.101
		Agree	30	13.0		
		Strongly Agree	9	3.9		
2	Pakistan 's government has launched campaigns on traditional media against climate change	Strongly Disagree	42	18.2		
		Disagree	81	35.1		
		Neutral	63	27.3	2.53	1.102
		Agree	33	14.3		
		Strongly Agree	12	5.2		
3	Climate change in Pakistan brings challenges and media highlight them in time?	Strongly Disagree	30	13.0		
		Disagree	84	36.4		
		Neutral	78	33.8	2.60	1.025
		Agree	27	11.7		
		Strongly Agree	12	5.2		
4	Education on extreme heat, water, scarcity, and Pakistan's bio-diversity impact comes from traditional media?	Strongly Disagree	69	29.9		
		Disagree	48	20.8	2.55	1.318
		Neutral	54	23.4		
		Agree	39	16.9		

		Strongly Agree	21	9.1		
5	Pakistan ranks among the most vulnerable nations to climate change and disasters	Strongly Disagree	30	13.0		
		Disagree	93	40.3		
		Neutral	60	26.0	2.62	1.108
		Agree	30	13.0		
		Strongly Agree	18	7.8		
6	Pakistani traditional media has ability to highlight climate change issue pre-disaster?	Strongly Disagree	27	11.7		
		Disagree	72	31.2		
		Neutral	84	36.4	2.74	1.076
		Agree	30	13.0		
		Strongly Agree	18	7.8		
7	Pakistani traditional media educate public about climate changes in a good way?	Strongly Disagree	39	16.9		
		Disagree	72	31.2		
		Neutral	54	23.4	2.71	1.196
		Agree	48	20.8		
		Strongly Agree	18	7.8		
8	Politicians in Pakistan utilize media pateforms to address climate change issues	Strongly Disagree	33	14.3		
		Disagree	66	28.6		
		Neutral	75	32.5	2.75	1.132
		Agree	39	16.9		
		Strongly Agree	18	7.8		

The respondents' perceptions regarding the role of traditional media in shaping climate change awareness, disaster preparedness, and governmental responses in Pakistan are summarized in Table 3. A significant proportion of respondents expressed skepticism about the role of media in shaping public perceptions of climate change, with 39.0% (n = 90) disagreeing and 24.7% (n = 57) strongly disagreeing. Only 13.0% (n = 30) agreed, and 3.9% (n = 9) strongly agreed, while 19.5% (n = 45) remained neutral. Regarding government-led climate change campaigns on traditional media, 35.1% (n = 81) disagreed that such initiatives exist, while 18.2% (n = 42) strongly disagreed. A neutral stance was taken by 27.3% (n = 63), whereas 14.3% (n = 33) agreed and 5.2% (n = 12) strongly agreed. When asked whether media highlights climate challenges in a timely manner, 36.4% (n = 84) disagreed, and 13.0% (n = 30) strongly disagreed. Meanwhile, 33.8% (n = 78) remained neutral, while only 11.7% (n = 27) agreed and 5.2% (n = 12) strongly agreed. Regarding the ability of traditional media to educate the public on climate-related issues, responses were divided. While 31.2% (n = 72) disagreed and 16.9% (n = 39) strongly disagreed, a notable portion (20.8%, n = 48) agreed. Overall, the findings indicate a general lack of confidence in traditional media's role in climate change education, disaster preparedness, and political engagement with environmental issues in Pakistan.

Table 4: *Correlations among the variables*

	1	**2**	**3**	**4**	**5**	**6**	**M**	**SD**
Gender	1						1.38	.487
Age	-.081	1					2.52	.964
Education	.073	-.084	1				1.77	.800
City	-.001	.213**	-.068	1			2.29	.926
Traditional Media Use (IV)	.029	.294**	-.080	.146*	1		13.7403	2.44275
Public Opinion (DV)	-.072	.414**	-.086	.112	.333**	1	20.8312	4.24388

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation analysis presented in Table 4 examines the relationships between demographic variables (gender, age, education, and city), traditional media use (independent variable), and public opinion (dependent variable). The findings indicate a significant positive correlation between age and city (r=.213, p<.01 r=.213, p < .01 r=.213, p<.01), suggesting that older individuals are more likely to reside in specific urban areas. Additionally, age and traditional media use exhibit a significant positive correlation (r=.294, p<.01 r = .294, p < .01 r=.294, p<.01), implying that older respondents engage more with traditional media. Traditional media use also shows a significant positive correlation with public opinion (r=.333, p<.01 r = .333, p < .01 r=.333, p<.01), indicating that increased consumption of traditional media is associated with stronger opinions on climate change-related issues. While education and gender do not display significant correlations with media use or public opinion, city of residence correlates weakly with traditional media use (r=.146, p<.05 r = .146, p < .05r=.146, p<.05). These findings suggest that age and media exposure play crucial roles in shaping public perspectives on climate change.

Table 5: *T-test comparison among genders (Male and Female)*

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Gender	43.127	230	.000	1.381	1.32	1.44
DV	74.603	230	.000	20.83117	20.2810	21.3813

The results of the t-test analysis indicate statistically significant differences for both gender and the dependent variable (DV). For gender, the t-value is 43.127 with 230 degrees of freedom (df) and a p-value of .000, suggesting a significant difference in gender distribution within the sample (M = 1.381, 95% CI [1.32, 1.44]). Similarly, the dependent variable (public opinion) shows a highly significant result (t = 74.603, df = 230, p = .000), indicating a strong deviation from the mean (M = 20.831, 95% CI [20.281, 21.381]). These findings confirm statistically significant variations in gender representation and public opinion measurements in the study.

Table 6: *Relationship among age groups*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	978.078	3	326.026	23.388	.000
Within Groups	3164.338	227	13.940		
Total	4142.416	230			

The results of the ANOVA analysis indicate a statistically significant difference between groups. The between-groups sum of squares is 978.078 with 3 degrees of freedom (df), while the within-groups sum of squares is 3164.338 with 227 df, resulting in a total sum of squares of 4142.416. The F-value of 23.388 and a p-value of .000 suggest a highly significant difference among the groups, indicating that the independent variable has a meaningful impact on the dependent variable.

Table 7: *Relationship among educational groups*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	183.033	3	61.011	3.498	.016
Within Groups	3959.382	227	17.442		
Total	4142.416	230			

The ANOVA results indicate a statistically significant difference between groups. The between-groups sum of squares is 183.033 with 3 degrees of freedom (df), while the within-groups sum of squares is 3959.382 with 227 df, leading to a total sum of squares of 4142.416. The F-value of 3.498 and a p-value of .016 suggest a moderate yet statistically significant variation among the groups, implying that the independent variable influences the dependent variable to a certain extent.

Table 8: *Relationship among cities*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	54.630	3	18.210	1.011	.389
Within Groups	4087.785	227	18.008		
Total	4142.416	230			

The ANOVA results indicate that there is no statistically significant difference between groups. The between-groups sum of squares is 54.630 with 3 degrees of freedom (df), while the within-groups sum of squares is 4087.785 with 227 df, resulting in a total sum of squares of 4142.416. The F-value of 1.011 and a p-value of .389 suggest that the differences among the groups are not statistically significant, indicating that the independent variable does not have a meaningful impact on the dependent variable in this analysis.

5. DISCUSSION

Findings from the analysis of the given tables pointed out that the main contribution of traditional mass media in climate change public opinion formation in Pakistan has been displayed. This proves to be highly consonant with what has already been reported in the literature through the existing challenges and opportunities offered by media in depicting environmental issues.

The data indicated that a majority of respondents have serious misgivings regarding the role the media play in opinion formation regarding climate change. About 63.7 percent either strongly disagreed or disagreed that they feel influenced by media opinion regarding public opinion about climate change, with a high mean score of 2.32 and standard deviation of 1.101. This skepticism is further supported by Khan and Hanif (2024), who argue that with the increasing number and severity of climate-related events occurring in Pakistan, it is ironic that the media landscape of Pakistan lacks much in terms of climate coverage, which, in turn, mobilizes limited public awareness.

More than half of the respondents (53.3%) indicated that they do not see the government using traditional media in campaigning against climate change, which is captured as mean 2.53 and standard deviation of 1.102. That finding confirms that by Asif, Jamil, and Ahmad (2024), who concluded that sufficient media coverage on climate issues was deficient in Pakistani media due to many issues such as illiteracy, lack of infrastructure in related reporting, lesser rating, and editorial preferences.

About 49.4 percent of the respondents indicated that the media do not report on climate change problems on time, and the mean score was 2.60, with a standard deviation of 1.025. This is in line with the findings of a study by Javed, Sultan, and Siddiqua (2024), who demonstrated that the Pakistani media's framing of climate change issues is mostly shallow, focusing on political and human-interest frames but not scientific analysis.

Out of the respondents, 50.7% disagreed with the perspective that traditional media educates about issues such as extreme heat, water scarcity, and biodiversity impacts, with a mean score of 2.55 and a standard deviation of 1.318. Khan and Hanif (2024) argue along the same lines that climate journalism needs to be enlightened in order to create awareness and engage the public in dialogues and actions about climate change.

Even though Pakistan itself has high vulnerability to climate change threats, surmized from the recent floods and environmental challenges, 53.3% of respondents did not perceive Pakistan as greatly vulnerable, with a mean score of 2.62 and a standard deviation of 1.108. Umber, Chaudhary, and Latif (2023) imply that such disconnects may arise due to the absence of adequate and effective media coverage, where media coverage of environmental issues is often event-driven with episodic attention.

The survey states that 42.9% of respondents disagreed that traditional media properly advocate climate change issues before disasters with a mean score of 2.74 and a standard deviation of 1.076. An existing concern in the literature concerning environmental reporters has issued calls for a more active approach to

climate change communication. Speaking about climate change education, 48.1% of the participants disagreed that traditional media educate the public about climate change fairly, with a mean of 2.71 and a standard deviation of 1.196. This highlights the very challenges recognized by Khan and Hanif (2025) in advancing climate literacy through media.

The data shows that 42.9% of the respondents disagreed that politicians use media networks to impart climate change-related issues with a mean of 2.75 and a standard deviation of 1.132. This view aligns with the findings of Javed, Sultan, and Siddiqua (2024), who noted that political engagement on environmental issues via media platforms has often been superficial.

6. CONCLUSION

The study concluded that the mass media of Pakistan do indeed act as an important determinant public perception regarding climate change. However, there are issues such as inadequate coverage and inconsistent framing strategies which hinder effective communication about climate. Media organizations should hence invest on more climate journalism while diversifying framing perspectives to fit different audience segments and work collaboratively with stakeholders to promote climate literacy in order to boost public awareness and engagement in climate change. Future studies would include longitudinal studies assessing the long-term impact of media consumption on public opinion regarding climate and the interplay between traditional media and new media platforms in forming perceptions about climate change.

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Conflict of Interest

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ORCID iDs

Ghulam Safdar [1] https://orcid.org/0000-0002-5152-0052
Asna Butt [2] https://orcid.org/0009-0005-2633-1566

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