

Media and Communication Review (MCR)

Volume 3 Issue 2, Fall 2023


ISSN (P): 2790-8356, ISSN (E): 2790-8364

Homepage: <https://journals.umt.edu.pk/index.php/mcr>



Article QR



- Title:** Revisiting Climate Change News Coverage through the Cosmo Journalistic Relational Model – A Case Study of Pakistan
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- DOI:** <https://doi.org/10.32350/mcr.32.02>
- History:** Received: July 7, 2023, Revised: October 10, 2023, Accepted: October 11, 2023, Published: December 5, 2023
- Citation:** Sharif, K., Sharif, A., & Mahmood, Q. (2023). Revisiting climate change news coverage through the cosmo journalistic relational model – a case study of Pakistan. *Media and Communication Review*, 3(2), 15–40.
<https://doi.org/10.32350/mcr.32.02>
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- Conflict of Interest:** Author(s) declared no conflict of interest



A publication of
The School of Media and Communication Studies
University of Management and Technology, Lahore, Pakistan

Revisiting Climate Change News Coverage through the Cosmo Journalistic Relational Model – A Case Study of Pakistan

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Abstract

Climate change is a global issue because of its characterization as a universal, immeasurable and irreversible phenomenon causing natural disasters. The current study drew on face-to-face, in-depth, and semi-structured interviews of Pakistani media professionals. The research employed a multi-stage model of case studies to identify media professionals through a network sampling technique. The data was collected from 51 environmental journalists working in Pakistan. A thematic analysis of the transcribed data was performed. The study concluded that the rise and fall of news coverage from the national perspective is confined to social processes and actors within the national borders only. Whereas, it completely ignores global processes and actors. The application of the cosmo journalistic relational model suggests that the rise and fall in climate change news coverage is the result of both local and global social processes and actors.

Keywords: climate change, cosmo journalistic relational model, environment, news coverage, Pakistan

Introduction

Climate change is a global issue because of its characterisation as universal, immeasurable and irreversible phenomenon (Beck, [2009](#)). The fluctuation in climate is responsible for producing environmental disasters like floods, melting of glaciers, Tsunami, storms under the seas, droughts, bush fires beyond the national borders, and influencing many people across the world. Scientists attribute this to the human activities and inventions such as ‘burning fossil fuels, coal mining, deforestation, burning biomass, fertilizers, and the refrigeration and air conditioning industry (Washington & Cook, [2011](#)). All these activities produce greenhouse gas emissions that

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have caused global warming and climatic changes. However, a group of denials and sceptics challenge the reality of climate change (Intergovernmental Panel on Climate Change [IPCC], [2007](#)). They believe that climate change is a natural phenomenon and is not caused by human actions. They blame the uncertainty of climate change science in explaining the factors responsible for climate change. Furthermore, they argue that climate change models are unpredictable, biased, and result of exaggeration. Additionally, they blame the climate change scientists for the manipulation of scientific facts to support their stance that climate change is the by-product of greenhouse gas emissions like carbon dioxide that is believed to be the cause of global warming. Despite of the growing scepticism, the global public awareness of climate change improved over the last two decades (Chang et al., [2021](#)), in the developing regions but remained low as compared to the advanced countries. (Crona et al., [2013](#)).

Earth's Black Box

Investigating the agents of rise and fall in the environmental reporting across the nations, media science scholars came up with different theoretical models. (Hansen, [2011](#); Hansen & Cox, [2015](#)). The most predominant of these models is the issue-attention cycle model. As per the model, variation in the climate news coverage is attributed to the public attention of the climate change issue. The coverage goes up when the public is in the state of 'alarmed discovery and euphoric enthusiasm' and goes down when there is 'gradual drop in the interest of the public (Down, [1972](#)). Several empirical studies affirmed the relevancy of the issue-attention cycle model to elaborate the existing cadence in the coverage of climate change issues (Anderson, [2010](#); Brossard et al., [2004](#); McComas & Shanahan, [1999](#); Mikami et al., [2002](#); Trumbo, [1996](#)). In a similar manner, public arenas model suggests that the coverage capacity of public arena determines the upsurge and drop in climate change news coverage. It argues that social issues like climate change are covered, filtered, framed and then presented to the public through news media. The news media platforms have limited capacity to cover all the issues in a single period. Therefore, climate change issues have to compete with other issues like polity, economy and law and order to get space onto the public arena.

While existing approaches and models are diverse, they share one similar feature that is they conceptualize climate change coverage in terms of national processes and social actors within the national borders. Among

such approaches, there is no reference to global processes and human and non-human climate change actors beyond the national borders and on digital and physical spaces. Thus, the existing researches are very important to understand the phenomena of rise and fall in news coverage of climate change. For instance, war on terror and global financial crisis decrease the climate change news coverage while Tsunami and international summit on climate change increase the rate of news coverage across the national news media (Djerf-pierre, [2012](#)).

Cosmopolitan Relational Scale and Journalistic Actoral Interconnectivity

Bridging the gap, the researchers proposed the theoretical framework of cosmopolitan relational scales that is built upon the approaches of scale, relational sociology, network society, mobility and cosmopolitanism. To this end, the researchers began with the scale that is often conceptualized as a reality, as a space envelope, as networked, as a material and social product, as mental fiction, and as merely logical divisions of the earth's surface (Herod, [2010](#)). It is a useful concept to analyse the real world in the form of scalar hierarchy comprising of physical and digital scales. Physical scales are the geographical divisions into local (Giddens, [1990](#); Robertson, [1995](#)), national, (Beck, [2009](#); Chernilo, [2011](#); Giddens, [1973](#); Wimmer's & Schiller, [2002](#)) regional (Castells', [2008](#); Herod, [2001](#); Soderbaum, [2003](#)) and global planes (Beck, [2009](#); Sassen, [2007](#); Urry, [2000](#)) based on time and space and delimits the social phenomena within the spatial boundaries and temporal lines. In contrast, the digital scales theories include all the social processes and practices that occur on the digital and virtual platforms such as websites, social media and social networking sites, email and web sites (Urry, [2007](#)) etc) that annihilates the concept of time and space (Anthony, [1990](#); Castells, [2009](#), [2013](#); Hannam et al., [2006](#); Harvey, [1990](#)).

Building upon the relational sociology, the researchers argue that a scale either physical or digital is relational because it emerges out of social relations among social actors. Social relations are an important dimension of relational scale and has its roots in relational sociology that argues that society 'consists of interrelations of individuals within which these individuals stand' (Marx, [1973](#)). These relations are dynamic and a never-ending process (Emirbayer, [1997](#)) and form 'complex relational webs in which subjects and matters are defined relationally, auto and allopoietically'. In other words, relations are the result of repeated

interactions between individual and other members of the network society (Castells, [2009](#)). For Crossley ([2011](#)), “social relations are lived trajectories of iterated [nonlinear] interaction between actors” (p. 28). They are symbolic, effective, strategic, and conventional in nature and create connections, bonds, networks and interdependences among social actors and facilitate the flow of goods and services between social actors across the national borders. Thus, relational scale is formed of ‘web of relations and interactions’ among socio-technical actors (Crossley, [2011](#)). This highlights the second dimension of relational scale that is social actors have their origin in individualistic sociology. According to the actoral approach of sociology, “social issues must be considered bearing the physical and psychic states of the individuals, their actions, social situation and physical environment” (Udehn, [2002](#), p. 499). Such actors exist in natural (individual) and collective forms such as state, corporations, trade unions, and parties (Coleman, [1982](#); Ritzer, [2005](#)). Latour gives a different classification by dividing sociological actors into human and non-human actors, also called the actants. For him, human and non-human actors are sociological entities that do ‘things’ or ‘acts’ (Latour, [1992](#)). For example, climate change activists are the human actors who work for the cause of protecting our environment by mass awakening campaigns. Non-human actors are material objects that interact with human actors to accomplish the goal of the scale. For example, climate change scientists use technology, data and computation platforms to support the stance that climate change is a real phenomenon.

A relational scale can be physical or digital or simultaneously both depending upon the nature of geographical places and digital spaces. A relational scale is physical if all the actoral interactions take place over geographical places (local or global) that can be differentiated on temporal and spatial grounds. Subsequently, it is digital if actoral interactions both local and global, occur simultaneously over digital spaces which negate the concept of time and space. Merging these scales form physico-digital scales where actoral interactions occur concurrently in between physical places and digital spaces and vice versa (Urry, [2007](#)). Forest Watch Network is an excellent example of a local and global interaction “between virtual digital networks and profoundly localized actors/users” (Sassen, [2008](#), p. 66). All the mentioned physico-digital relational scales together form the cosmo relational scale. In other words, cosmo relational scale is based on the dynamic, nonlinear, perpetual and infinite actoral interactions that take

place within and between the physical and digital relational scales or simultaneously both. Thus, a cosmo relational scale is based on the three propositions:

1. Social world is a cosmo scalar entity comprising of different physical and digital relational scales.
2. All physical and digital relational scales are formed by complex, nonlinear and dynamic actoral interactions between/among human, technical and digital actors.
3. Cosmo relational scale provides the theoretical lens to conceptualize all the social processes occurring at physical and digital relational scales and theorize the social practices (relations, connections, and communication) in between these scales to understand the complex nature of globalized social phenomena.

Building upon the framework, the researchers argue that climate change news reporting is a cosmo relational scale because it is the result of multifaceted, vibrant, multidimensional, endless and boundless journalistic interconnections with human and non-human actors of climate change. And so, it takes place over the physico-digital relational scales and altogether form cosmo journalistic relational scale. The intensity, weakness and absence of these journalistic actoral interconnections over physical and digital relational scales determine the quantity of the climate change news coverage. For empirical justification of the theoretical framework, the research explored the case study of Pakistani news media and investigated the factors responsible for the episodic rise and fall in climate change news coverage in the developing regions.

Climate Change News Coverage in Pakistani News Media

Pakistan's news media comprises of traditional media including television, radio, newspapers wire services, and social media. Pakistan provides a particularly useful case study because of its geographical location in the South Asian region and its vulnerability to climate change-related disasters. The latter includes floods, droughts, rising tides, and earthquakes (Volkmer & Sharif, [2018](#)). As Volkmer & Sharif pointed out, "the region is also facing severe change in weather patterns like infrequent rainfall, extreme cold and heat," as well as 'a widening of seasons" (2018, 80). According to Global Climate Risk Index for 2018, "Pakistan is among 10 countries affected most by climate change" (Salam, [2018](#)). Yet, despite

the harmful impact of climate change on Pakistan, the public perception is very low and further caused by insufficient media coverage of environmental issues in the mainstream news media. Thus, the focus of Pakistani media is only regarding the political conflicts, economy and sensational news (Afzal, 2010, Volkmer & Sharif, 2018). Several studies acknowledged the inadequate coverage of climate change issues in Pakistan (Volkmer & Sharif, 2018). These studies also provided context to explore further the cyclic rise and fall in the climate change coverage in the Pakistani news media. Addressing the gap I, the question was framed in the following manner:

Q1. What are the reasons behind the periodic rise and fall in climate change news coverage in Pakistan?

Methodology

The study is based on semi-structured, in-depth interviews from Pakistani media professionals. A multi-stage model of case studies was applied to identify the media professionals with having professional experience of different print and electronic media organizations. A network sampling technique was used to identify the sample of the current study.

At the first stage, a media professional for example a journalist or an editor working in a Pakistani media organization was approached to begin the chain of interviews. The chain started when that particular media professional referred the interviewers to seven other media professionals working in different cities of Pakistan. Those seven media professionals connected the interviewers to other local journalists in their respective cities. The first phase was completed when enough respondents were found to meet the research criteria.

The sociodemographic factor of the journalists has been kept in mind while choosing the respondents of the study. Therefore, journalists of different ethnic and socio-cultural, educational and professional backgrounds were selected from the national and international news media organizations. A total of 28 journalists from the print media organizations and 20 from the electronic media were selected through the selected sampling technique. Moreover, 3 media professionals from online media were also recruited for this study. A total of 14 print media journalists were taken from English newspaper organizations whereas 10 journalists were

selected from Urdu newspaper organizations and 4 journalists were chosen from the news agencies working in Pakistan.

Similarly, a total of 17 electronic media journalists working in TV news and 3 working in radio news channels were selected. The process was repeated again and again to select the sample until a sample size of 51 journalists was completed out of 75 journalists working on environmental journalism in different news outlets (Birenacki & Waldorf, [1981](#)).

Having decided on the sample size, the interview guide was prepared. This guide served as a blueprint to conduct future interviews. A pilot interview with a climate change journalist was conducted to rectify the flaws and weaknesses in the research design and improved the design through revisions prior to conducting interviews with the other media professionals (Kvale, [2007](#)). At the end of each interview, field notes were taken that included key phrases, technical terms, and selected quotes that could be used as triggers to expand upon after the conclusion of the interview. After conducting the interviews, the author transcribed them.

The initial reading was undertaken while listening to the audio recording, which gives voice to the text and aids in understanding the context of the speaker for a better analysis in subsequent readings of the transcript (Smith et al., [2009](#)). Repeated readings of the text “highlight[ed] the location of richer and more detailed sections or indeed contradictions and paradoxes and specific micro event details related to particular theme” (Smith & Osborn, [2007](#), p. 67). The transcript was explored in three ways. Firstly, the “subject of the talk within the transcript” was described (Smith et al., [2009](#)) by recording key words, phrases and explanations used by the interviewees, and their experiences of objects and events related to the relational world of climate change. The current research highlighted the “descriptions, assumptions, sound bites, acronyms, idiosyncratic figures of speech and emotional responses” of the respondents (Smith et al., [2009](#)).

Secondly, focus was made on the specific language used by the media professionals including the structural and functional aspects of that language. The use of “pronoun, pauses, laughter, repetition, tone and degree of fluency” was noted (Smith et al., [2009](#)). Metaphors were identified in the text that created a linkage between the descriptive and conceptual level of analysis.

Thirdly, a conceptual analysis was undertaken by creating a linkage between descriptive notes and the concepts. The text was decontextualized by taking a paragraph or alternatively, reading it sentence by sentence to “get a feel for the use of particular words” (Smith et al., 2009). As a further step, the initial notes were focused leaving aside the text. The volume of detail was reduced by analysing only the exploratory commentary on the left-hand margin of the text. This reorganization of the data helped to identify emerging themes.

After establishing a set of themes within the transcript, the themes were ordered chronologically with the related ones clustered together. Themes that did not fit with the overall trend or structure and that lacked sufficient evidence, were discarded. This stage culminated in a consolidated list of themes in the form of a final table. Each theme was annotated with a page number and paragraph line and a few words that served as a reminder of its source (Smith et al., 2009). After completing one case, the same process was applied to the next case until a final list was achieved. This process of moving forward and backward from one case to another revealed patterns across them which resulted in continuous reconfiguration and relabelling of the themes. During this process, themes were replicated and new ones emerged whereas the subordinate themes changed into superordinate ones and vice versa. This process continued until a master table of themes was developed which will be discussed in the next section.

Results

The climate change issues receive less coverage in Pakistani news media as compared to the other issues of the country. Categorically, almost all journalists have formed a consensus that national news media is not giving its due share to climate change issues as compared to terrorism, politics and economy. The coverage is only limited to weather forecasts, national and international disasters, local and global conferences on global warming and climate changes, press briefings from climate change ministry and scientific bodies and media reports or documentaries on local and international non-governmental organizations working in the field of climate change with no follow up stories. As one broadcast journalist stated:

Since 1970’s climate change coverage is not given its due share in the national newspapers and television channels ... climate change is only covered when some local (e.g., floods in KPK, drought in

Baluchistan) or international events (such Tsunamis in USA, Indonesia and Malaysia or Bush fire in Australia take place ...or when Copenhagen summit on climate change take place or... when the developing countries debate on cut off at greenhouse gas emissions ... only such periods witness the rise in climate change coverage, but it lasts only for days, weeks and maximum a month, with no follow up stories....as a result there is fall in climate change reporting. (Interview 13, p. 9)

This opinion resonates well with the existing scholastic research that claims that national news media organizations are not giving acceptable coverage to the global issue of climate. Since 1970s the news media houses started giving coverage to climate change issues and a pattern of upward and downward trends even in the minimal coverage of climate change issues in Pakistan could be seen over the last five decades.

Explaining further, media professionals revealed several journalistic relational practices that are determining the rise and fall in the coverage of climate change on the news media.

Physical Interconnectivity

Many journalists expressed that local journalists have no physical connections with affected people in remote areas and beyond national borders. They do not have resources to go into the field and record people's responses. Furthermore, state officials, NGOs, offices and even scientific institutions are in the capital cities hence, they can't access them for their news story. A TV news producer claims:

There are two means to collect information: first is to physically interact with the information source and second is to digitally interact with information sources. The problem faced by local Pakistani media is that they are not resourceful to manage travelling in order to meet the victims, stake holders and experts of climate change. (Interview 18, p.3)

To have a better developed interaction with journalist, the stakeholders specially the Ministry of Climate Change, scientific institutions and UNO should hold regular interactions with the journalists. The regular meeting with the people, journalists, stakeholders and the officers of the officials in the Ministry and also

scientists can escalate the reporting rate of climate change issues. (Interview 7, p. 9)

Participants argued that the more the physical interconnections will be developed with the United Nations Organization, Ministry of Climate Change, local and international scientific bodies and with the public in and across the borders, the more will be the coverage of climate change in the national news media.

Digital Interconnectivity

Digital interconnectivity also holds great importance in soaring the amount of coverage of climate change news stories. Lack of computer knowledge and limited access to the internet are the contributing factors of having less communication with online climate change sources for example, official websites, portals of international organizations and data banks. This situation leads to inadequate news coverage of climate change issues at the local level. A TV news producer reports:

Pakistani journalists are far behind in digital technology and its use due to which they cannot bring about a good use of digital libraries and other online sources. In other words, it is to say that media personnel's lack the basic training of information gathering. (Interview 5, p.18)

Participants commented that digital contact saves the reporter's time in getting access to data and information and drafting news story in a timely manner. A freelance climate change journalist states that:

The networking system and information sharing system between the journalists and the provincial authorities and global bodies and international climate change institutes should be established. The information situation analysis, which is related to climate change indicators, should also put it on some website. Data portals, citizen portals and data sets etc ...Departments and NGOs should make databases of all the climate relation information and make the information available to the journalists. (Interview 19, p.11)

Thus, the more the journalists will be interconnected with digital actors the more they will get data, information, angles and dimensions for their climate change-based news stories. And so, physical and digital

interconnectivity with socio-technical actors has direct impact on the quantity of coverage information.

Technical Interconnectivity

Many journalists believe that the limited use of technology is responsible for low and high level of climate change news coverage. Media professionals attribute that local journalists have less interest in using the technology concerning their climate change reporting. Even media organizations have limited financial resources and limited research budgets to provide the journalistic necessary tool kit to cover a highly scientific issue of climate change. A reporter of an Urdu newspaper states:

We will have to understand this thing first that we lack equipment and tools - computers, tape recorders, laptops, and audio and video editing software and Internet of Things and machines. We do not have these things. I think that once we will have the complete equipment then we will be able to highlight this issue much more and play a significant role. (Interview, 23, p. 11)

More than half of the journalists suggest that reporters can be trained to use latest technology in writing climate change stories. It is the job of governmental and non-governmental organizations to providing technical training to them in the form of resourced persons and training programmes in the form of short courses and training workshops. As Muhammad Shahid, the radio reporter observes:

There is need of media training on the subject. Responsibility is rest with government and media houses and NGOs at the national and international level should come and train the local media and tell them as to how work in this field. They at least file a story in week and ten days. There should be seminars, workshops, and exchange programs between developed and developing countries and exchanges views that work on this subject. (interview 41, p.13)

Some of the journalists look for global bodies for the technical training and capacity building of news staff. An English news reporter said:

Yes, it can also happen that the media houses of developed countries may train the media persons of the developing countries- in this way they can share the expert and technical knowledge with them, they can share the stories and the ideas, and they can share the story

techniques. In this way their efficiency can be increased, and it will also help them to address these issues. (Interview, 49, p.23)

In brief, journalistic technological interdependence can both inflates and deflates the climate change news coverage curve.

Knowledge-Based Interconnectivity

Insufficient scientific knowledge and poor understanding of climate science by local environmental journalists are equally responsible for the periodic rise and fall of climate change issues. Overall responses by participants were that local journalists have poor level of information and knowledge because educational institutes do not offer such courses in their curriculum. For instance, one broadcast editor expressed:

In my opinion lack of knowledge about the climate change is responsible for the low coverage of the climate change stories. Many people even in media don't know what climate change exactly is. They never studied the climate change journalism and its mechanism in any university or college.... When our reporters or journalists are doing master's degree even in their syllabus they don't have any such thing on environment - they don't know that we have to focus on environment too - now what they tell us is that this news, how and where will it be formed and what are its sources, and you have to treat it like this. Some of the journalists look for global bodies for the technical training and capacity building of news staff. An English news reporter states: journalists who have science background and contribute to climate change stories, so the ratio of climate stories is less as compared to political and economic news. (Interview 49, p.6)

All the educational books and articles on climate change science are in English language while journalists have an Urdu background. Hence, they are unable to comprehend articles and books on the subject. They neither listen nor watch documentaries and other programmes on media. An English language newspaper reporter confirmed this opinion by stating:

In Pakistan, as Urdu is the national language therefore 90% of the journalists are Urdu writers and since the sources of the entire climate change knowledge are in foreign languages, mostly in English. So, it's hard to read, listen, understand, translate and

communicate so in Urdu newspapers you find few story on climate related issues. (Interview 45, p.19)

The above finding indicates that lack of a knowledge-based interaction is responsible for fluctuation in news coverage of climate change in the national media.

Information-Base Interconnectivity

Almost all journalists highlight the importance of information to increase climate change news coverage. Journalists reported that a lack of informative sessions, on and off meetings with experts, officials and people working in NGOs at both national and international level and receiving information from them within a suitable time frame poses a challenge to the reasonable and consistent coverage of climate change. An English language newspaper reporter/online journalist stated:

I have felt sometimes that when I am following up on a story about climate change there is simply no new information. And so, the follow ups can come monotonous and so that is not an incentive for the journalists that can push it. For me as a journalist, I would push myself away from reporting on that same issue following up on it because I felt there was nothing new to report. So many elders were also demanding or saying that you have to provide new information. (Interview 36, p 17)

In sum, journalists' informative sessions with climate change actors at both local and global scales pave the way to generate more ideas for climate change writing and increase the volume of climate change news stories.

Scientific Interconnectivity

A large number of journalists argue that the availability of climate change experts influences the climate change news coverage. They claim that consistent exchanges of media professionals like owners, editors and reporters with climate change experts in the form of meetings, information sessions, discussion forums, workshops, conferences, short courses, and foreign trips can increase the climate change coverage. As one respondent highlights the importance of journalist scientists' relationships.

Scientists and researchers are reliable sources of information...however in Pakistan we have limited number of available scientists who can brief us about climatic changes and

even they are no social and refuse to communicate with us. We get most of the information by visiting websites of international climate change institutes and think tanks and foreign scientists working on Pakistani climate change. We sometimes do skype calls or zoom in sessions or through Twitter and LinkedIn or use What's app, if they come to Pakistan, we try to approach them or call them or go to seminars for collecting information. (Interview 13, p.11)

Such interactions will result in the establishment of newsbeat for climate change reporting. Once the beat gets established and proper space and time is devoted to climate change stories, coverage will be raised over the period of times.

Financial Interconnectivity

Business relations between news media houses and state and non-state actors determine such periodic cadence in the news stories. Most of the respondents argued that media works on the commercial model and is widely dependent upon the advertisements and subscriptions from the public and private sectors. There are no advertisements and subsidies from the government or the local and international non-government bodies regarding climate change coverage. Consequently, media is not projecting the issue and debates of climate change. As an electronic media reporter commented:

The thing, which I see, is that the media houses have their own interest - they have business interest. When they work on environment change and climate then they don't have much business earning but instead they just have to invest. For example, if they send me to develop a story, if it takes ten days then the expenditure, which falls on the media houses, they cannot afford it. That is why they do not focus on it much. (Interview 45, p.13)

A few journalists are of the opinion that both government and non-government organizations receive funds from international bodies to promote climate change awareness. However, these funds are not provided to the media organizations to spread awareness or run advertising campaigns in order to highlight the ecological issues, policy adaptation and mitigation strategies. An electronic/print senior reporter stated that:

In national media it is that there is no campaign, campaign require money, and money is only for workshops, for NGOs, climate change

ministry and apart from it I think that money is very less, so if they want its coverage then a proper campaign should be done and media should be directly financed by the state government , NGOs and international bodies like UNO, so here missions are done, missions run and because of it these things come forward..(Interview 39, p.18)

Most of the respondents underscore the need of direct monetary collaboration between local media and global actors. Such as the UN organizations that provide funding for awareness campaigns related to climate crisis, sponsoring climate change programs, advertisements for reserving space in newspapers and a time slot over broadcast media. Beside these, cash awards to media houses for covering the issue and to individual reporters for reporting more on local dimensions of climate change should be given.

The above discussion suggests that absence of financial relationships between media houses and state and non-state actors at both local and global level are responsible for unsatisfactory news reporting of climate change issues.

Social Interconnectivity

The seventh factor for the limited coverage is the social interaction of the journalists. The common understanding is that whenever something novel or complex comes to the forefront in Pakistan then the local population which is literally unaware of such phenomenon, perceives it to be something framed by the foreign lobbies and interest groups. Journalists are the members of their local community so, they too are being influenced by the other members of the society. Consequently, research participants articulated that local media has negative images related to local climate change issues in the collective conscience. It is believed to be a foreign agenda and both state and non-state actors are receiving funds from the international stakeholders like western countries and global institutions. . An Urdu newspaper stated:

We have an outlook that they embezzle the funds, and unfortunately, the impression of our media is also that the climate change is not a global issue but a foreign agenda. It is a fact that we are the ones who are being impacted by the environmental issues the most. Unfortunately, it is considered as a foreign agenda of the

international NGOs. So, that is why this sector is ignored the most.... (Interview 26, p.14)

Thus, it can be argued that social interaction of the media is sabotaging the news presentation of climate emergency issues.

Political Interconnectivity

Media's political interaction is another crucial element for the sparse and inconsistent coverage. Journalists claim that the media proprietors and the editors have political associations which pervasively mars the neutral editorial policy of the media organizations. For example, an Urdu newspaper editor puts it in these words:

I would say politics is very dear to the owners and editors of the media houses, they want appreciation and recognition from the political elites... they are working for different political parties who have either no agenda or low priority of environmental issues and they support their party agenda and criticize other parties' agenda ... (Interview 5, p .3)

In other words, media can only give space to climate change reporting if the politicians and political parties are engaged with the climate change issues.

Finally, participants suggested that both government and journalistic bodies develop an ethics of climate change reporting. A female reporter (a reporter/anchor for PTV) says:

Here we also have organizations like Press Council of Pakistan, PEMRA, and Regularity Authority- the code of conduct that we see from its side is related to ethics, different channels and media houses have also made them. I think that we need to identify these things and we should tell the percentage of news and programs that how and how much will it be? (Interview 51, p, 16)

Thus, there exists a direct relationship between the media and politics. The overall increase and decrease in the coverage is the result of direct correlation between media and politics

Routine and Sensational Interconnectivity within News Media Organizations

Journalists have no interconnectivity within news media organizations therefore, climate change reporting is neither encouraged nor promoted. The respondents of the study believe that as there is no culture of particularly dealing with the climate change in the Urdu news media consequently, there is no routine coverage of climate change news stories. Abrar Hussain, an editor of a news agency states:

There is a beat for every kind of reporting in our national media but there is no special beat allocated to climate change issue.... So far in all the places that I have worked, there is no such instruction there that we should have some focus on climate change. (Interview 3, p.7)

The routine interconnectivity is associated with linking of climate change as a non-governmental organizational (NGO) agenda, so it is covered by the most junior staff who has no understanding of climate change and to add more, are not skilled enough to report such complicated issues. Such reporters instead of highlighting climate change issues, are more focused on NGO's climate related activities and highlight their milestones. Abrar Hussain points out:

Instead the junior - the junior mast boy - we send him to cover the NGO's functions. Now if the NGO is doing some work related to finance, then that reporter will go, if they are working on climate change then again, he will go, and if it is related to UN funding also then the same reporter will go. The reporter who is the most pathetic and dumb mostly he will go there. The resultant is that this reporter has no comprehension by himself. That is why such kind of coverage is not coming here because what can the most junior reporter produce - maybe he will not understand the issues there because all of it is happening in English. And our electronic media is full of young lads, they all are reporters and they do not know anything. They just reproduce the news briefs and press related of NGOs in Climate change activities. (Interview 11, p. 11)

Hence, the routine interaction with colleagues, bosses and owners influences the journalist to go for sensational news. Local media is addicted to 'breaking news syndrome' and sensational news stories that flare the

political rivalry among political parties, religious conflicts, violence and disasters providing the sensational material to create hype and inculcate fear among the audience. Their only motive is to soar up the newspaper's readership or channel's viewership. As the climate change stories have no such sensational element in it so, the journalists are not encouraged to report on them. Therefore, the coverage of climate change issues increases only when it fulfills the criteria of sensationalism. A news director adds:

This is because maybe we are passing through the time of making headlines, watching headlines and breaking news, therefore breaking news fascinates us more. Pakistani media, specially, TV is spreading sensationalism in the country. All the news channels give more coverage to spicy news items to create political conflicts as the owners of the media houses think that people enjoy while watching such stories. Therefore, media houses do not give much importance to serious news stories related to education, health and climate change issues and only give space to those stories that have sensational element. (Interview, 53, p.6)

A print media reporter states:

The story that spreads panic, if I give you an example that how much serious is tsunami in Pakistan, we don't know but it is as you can scientifically prove it. So it is that you have to play with panic. So, if you take series of issues and if you play with it by doing some wide bragging sleeping statements, as you say that the issue of tsunami is dangerous, or you can show it scientifically that here high hills are going because all the troubles, problems and issues are at the level of panic. (Interview, 19, p. 8)

Thus, routine interactions of journalist within the news media outlets are responsible for the limited amount of climate change news coverage.

Public Communicative Interconnectivity

Public communication is another decisive factor in the inconsistency of news coverage related to climate in Pakistani media. For effective communication, some participants said that a journalist should write climate change stories as a storyteller. The news story should be written in simple, precise, and everyday language along with elements of sensationalism such as humor, fear and emotional appeal. For example, a Dawn news reporter states:

Now the procedure of storytelling is that the headline should always be catchy. If the highlight in the headline news is whether coming in the start or just as published in print media, so in highlight of the headline you should factually inform that this issue is very important. Then even if it is not sensational but still factually it should contain such a highlight, which can attract people- so this is the first thing. So, then the narration... should be such in which people are interested rather than that it is a dull story in which there are only facts and figures. So instead of facts and figures if more of the people's opinion, their efforts related to it are included than maybe it will prove to be more interesting for the people. For effective story telling. We use internet of things such as virtual machines, what's app, audio, video editing software's, webtools for the final make-up of the story...Even we copy the style, format and structure of international news media on climate change. (Interview 29, p.6)

The above quote sums up that journalists engage with social, technical and digital resources for the effective climate change news storytelling. In short, the ability of effective public communication of news media organizations also determines the volume of climate change news coverage at the national scale.

From the above discussion, it can be argued that a wide range of journalistic relational practices over the cosmopolitan sphere of physical and digital spaces structure the overall climate news coverage curve and are responsible for the alterations in climate change reporting.

Discussion

The empirical findings suggest that journalists across the border use relational practices along with social, technical and digital actors that are responsible for the alterations in climate change news coverage in Pakistan. The conclusion in this way, led us to conceptualize the five stages of 'cosmo journalistic relational model'.

The first stage of the cosmo journalistic relational model encompasses the subjective interactions of the journalist. During this phase, the journalist interacts with the subjective knowledge and experience of climate related events, issues and debates. Such subjective knowledge is the result of his/her interactions with social environment, educational, governmental and

non-governmental institutions and media organizations. As a result of these interactions, the reporter constructs the reality of climate change in his mind and this reality gives him the food for thought to produce climate change stories.

The second stage is the organizational interactions where the journalist interacts with his senior colleagues and superiors on routine basis for the trends, requests and approval of reporting on climate change-related issues. This can entail discussions with editors and sub-editors and in some cases with the owners of the organization who have final authority to accept or reject the idea of climate change news reporting.

The third stage encompasses the material and professional interactions of the media organizations with other stakeholders. Journalists work for media organizations who run on business model for their smooth functioning and survival. Therefore, material interactions are the backbone of any news media organization. Such interactions include funding from both state government and international bodies like UNO and local and global NGOs or in some cases both. This funding includes but not necessarily limited to subsidies and advertisements, sponsoring climate change campaigns, subscriptions and cash awards to encourage young journalists to report climate change issues.

Apart from this, professional interaction is also very important and takes place at this stage in the form of practical training to journalists by the elite news media houses that are mainly involved in the overall process of producing climate change stories. Such professional training helps them to learn the usage of data banks and information communication technologies to report on complexity of climate variations.

The fourth stage is informative interaction where journalist gather and verify information from 1) the human actors like scientists, state government, NGOs, international governing bodies and scientific institutions 2) digital actors for example social media pages and websites devoted to climate change and 3) technical actors which include experiments, scientific reports, policy papers and hard and soft news to produce climate change news story. Such informative interactions take place through physical and digital interactions. The intensity of these interactions with the relevant climate change actors gives new ideas, perspectives, and angles to produce climate change stories on broad range

of topics and overall increases the coverage. The absence of these interactions creates knowledge gap among the journalist (struggling of journalists in the pursuit of innovative ideas to write story) which eventually brings down the climate change news coverage.

The fifth stage is the communicative interaction which includes journalistic interaction with human, technical and digital actors for the final write-up of the story and its communication to the diverse audience. In fact, density, quality and nature of digital, technical and human resources enrich the news content and streamline its smooth delivery to the heterogenous population spreading across the national borders. The more the public interact with these climate change stories, the more the public demand for these stories will rise. Such news consumption will encourage the journalists and media owners to cover a broad range of topics related to climate change and improve the overall coverage of climate change all over the world.

In sum, the five-stage model of cosmo journalistic relational scale suggests that 1) climate change news reporting is a cosmo relational scale of journalistic interconnectivity with social, technical and digital actors. Each stage of the model is formed by complex dynamic, nonlinear, timeless and spaceless interactions between and among human and non-human actors of climate change. These forementioned elements are responsible for shaping the climate change news coverage curve. The more theses interactions will take place at each stage, the more the coverage of climate change events, issues and debates will increase and vice versa. The model moves in both clockwise and anti-clockwise direction, and is subjected to the density and complexity of the journalistic interaction with social, technical and digital component at each stage of news reporting process.

Conclusion

In contrast to the traditional models explaining the rise and fall of news coverage based solely on social processes and actors within the national borders, the cosmo journalistic relational model suggests that rise and fall in climate change news coverage is the result of both local and global social processes and actors. By applying such a model, future media scholars may analyse both local and global processes and actors who shape the news media curve of climate change coverage in the past, present and future eras. The model also gives practical recommendation to nation, states, and

global bodies like UNO to improve global and public perceptions of climate change by encouraging different forms and types of journalistic actoral interactions. The research implied that the discussed models and methods might improve the climate change news coverage around the world in both developed and developing regions and save the future of mother Earth.

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