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Climate Change Photographs in Online Newspapers: A Visual Content Analysis

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ABSTRACT

Climate change has emerged as the most pressing concern for humankind, given the rapidly depleting natural resources and burgeoning issues of pollution and waste posing a grave threat to the planet's survival. While the magnitude of the problem has grown exponentially, there has also been a slight increase in the quantum of discussion on climate change in social circles. News media bear the onus of not only reporting on climate change to spread awareness, but they're in fact educators for a large part of the population. Photographs embedded in news stories have a profound effect on the audiences in that they immediately reduce the distance between the readers and ground zero. These photographs are chosen with great precision by editors, in order to evoke the desired sentiment. These news photographs can also have far-reaching effects on the promotion of gender equality, which is a key concern in sustainable development.

Objective: The present study has been designed to conduct a visual content analysis of photographs incorporated in climate change news stories in mainstream online newspapers in India. Online newspapers have been incorporated owing to the growing propensity of a large populace to receive their news through digital devices like smart phones, laptops and tablets. It would help in examining the climate change imagery being employed by online newspapers, which goes a long way in shaping readers' perceptions about the burning issue.

Methodology: The newspapers chosen are the online editions of *The Hindu*, *The Hindustan Times*, and *The Times of India*, keeping in view their wide reach and popularity. The newspapers are scanned for climate change stories over a period of two months (December 2020 and January 2021) with the

accompanying photograph of each news story as the unit of analysis. The stories with keywords 'climate', 'climate change' or 'global warming' in the headline or lead paragraph were selected for data collection.

The corpus of images thus obtained is quantified and analysed to ascertain the depiction of gender in terms of activity. Further, the data is scrutinised from several perspectives, ranging from analysing gender representation in the stories from various sources (internal staff, or national/international news agencies) to the spectrum of topics covered.

Implications: The study follows a unique approach as it inspects the climate change imagery along several dimensions not undertaken hitherto by any other study. It would also be pertinent to understand the visual representation of gender in people's daily dose of online news, which has strong agenda-setting influences on society.

Keywords: Climate Change, Online Newspapers, Gender, Photographs, Visual Content Analysis

Introduction

Posing a grave threat to the survival of planet earth, climate change has emerged as the most urgent concern of the present day and age. Unabated deforestation, never-ending fossil fuel consumption, ever-increasing pollution, agriculture and farming, etc. are considered to be some of the key causes of global warming (WWF-Australia, n.d.).

While the gradual warming and cooling of the Earth's atmosphere is a natural process, the significant rising of the temperature in recent years has sent alarm bells ringing. The rise till 1880 was relatively lower, but the last four decades have registered twice more than a hike in earth's temperature (Lindsey and Dahlman, 2021). Indeed, the year 2020 has reportedly figured among the three warmest years ever recorded; the economic slowdown owing to the COVID-19 pandemic, as well as a La Nina event notwithstanding (World Meteorological Organization, 19 April 2021). Scientists opine that increased emission of greenhouse gas at current levels is likely to result in irreversible repercussions (Smith and Joffe, 2009; Intergovernmental Panel on Climate Change, 2007).

Keeping in view the gravity of the problem, the responsibility automatically gets endowed to the news media to play its role in sensitising the public about the urgency of the issue. The content

related to climate change that makes its way into mass media discourse thus calls for research and exploration.

In the context of the role of media, it is a crucial factor in the creation, dissemination and transformation of the interpretations of social relations, influencing the social construction of problems (Carvalho, 2010). When it comes to sensitising people about something significant, the news media have always remained vital players in the arena. In the case of climate change too, the media's clout in spreading the requisite information far and wide, thus creating awareness, cannot be contested.

It plays a significant role when it comes to informing the public about climate change, especially in helping people to connect their personal experiences with climate change occurring at a larger scale (Parveen, 2017).

The internet has become an inseparable part of our present lives. The immediacy and easy access to information, the high level of interactivity and personalisation are some factors that have made the internet so popular. The new media are attracting the young and old alike towards a world of fast-processed information, packaged with several modes of communication, shaped into an appealing product. Rosenstiel and Mitchell (2012) posit that the users of smart phones and other gadgets, like tablets, rely heavily on these media as their source of news, whether they are moving or at home. In fact, users spend a considerable amount of time online for receiving their daily dose of news (Rosenstiel and Mitchell, 2012).

Nguyen & Western (2006) refer to various studies which establish that the new media (i.e. the internet) is slowly and gradually replacing the traditional ones, with people more inclined to use the internet for fulfilling their news and information needs, as against watching television or reading newspapers (Nguyen & Western, 2006).

While print newspapers are still in vogue, online presence has become a necessity for almost all of them to survive in the digital age. With online media gaining much popularity, the online counterparts of print newspapers have become all the rage, especially among the youth.

Andi (n.d.) reports that the youth frequently use new media – thrice that used by the elderly – to receive news about climate change (Andi, n.d.).

Schäfer (2012) argues that with regard to climate change information, online media have become preferred sources as they are deemed more credible. In case of doubt, the Germans were more in favour of the 'internet' as being trustworthy in the context of climate change. Interestingly, there also has been a steep rise in the amount of climate change content available online. Going to the Pew Research Center's 'New Media Index', many times 'climate change' and 'global warming' were the most searched keywords in Twitter feeds and English blogs that were studied.

Newman (2013) observed that there is a major division between those under the age of thirty-five who favour internet news and those over forty-five who prefer television news. The consumption of news for younger generations has been mediated by social networks such as Twitter and Facebook, either by entering fan pages or by interacting with peers who are part of the same social network. This relationship between social networks and the online press has evolved considerably in recent years.

India is a huge contributor to global greenhouse gas emissions, ranking fourth on the list of highest emitters (Showkat, 2017). During a period of 22 years (from 1990 to 2012), India's emissions went up by 67.1 per cent, and are further expected to register 85 per cent increase by 2030, if things go on as they are (Centre for Climate and Energy Solutions, 2015).

The data from Environment Ministry reveals that in 2018-19 there were 2400 deaths in India owing to several natural disasters which were a consequence of climate change. According to the India Meteorological Department (IMD), such extreme weather events have been rising in frequency as well as intensity. While these occurrences may be the immediate after-effects of climate change, rising temperatures are the long-term results posing another sinister challenge (Padmanabhan, Alexander & Srivastava, 2019).

The news media coverage of climate change in India is important given the pivotal role of the country in negotiations at

the international level as its economy and emissions continue to grow. Moreover, there have been conscious efforts from the Indian side to acquire issue leadership in global climate politics, alongside participating in coalitions like BASIC (Brazil, South Africa, India, and China) and G77 (Dubash,2012; Keller, Hase, Thaker, Mahl, & Schäfer, 2019).

Visual Analysis

According to Messaris and Abraham (2001), "Pictorial framing is worthy of investigation not only because images are capable of conveying unverbalised meanings, but also because awareness of those meanings may be particularly elusive." (Messaris and Abraham, 2001).

Wardekker & Lorenz (2019) contend that the framing of a visual is gauged by several parameters like scale, elements, colour, focal theme, etc. All these components taken together drive the way viewers look at a picture, highlighting certain aspects while rendering others ambiguous. Research has established that these choices of framing a picture have far-reaching effects not only on the viewers' perception of the message but on the decision-makers as well (Wardekker & Lorenz, 2019).

Boholm (1998) studied pictures of the Chernobyl tragedy to explore the quality of photographs in five European newspapers through content analysis of over 200 photos and associated newspaper headlines. The results suggested that pictures were more effective in conveying the desired information as the images made the viewers' experiences more personal and the threats more real.

While the textual part of media discourse has traditionally been at the centre stage of researchers' scrutiny, visuals have been comparatively under-studied.

The influence of images cannot be undermined, as they are carriers of enormous information and establish an immediate connection with the audience. The images that accompany a news story also contribute to shaping the discourse and creating an overall impression of the story. Indeed, the fact remains that in the digital age, the attention spans of audiences have shrunk

further, and they prefer to read lesser content and move on from one story to another, while only skimming through the headlines and looking at the photographs.

Analysis of these images can help uncover biases in the portrayal of gender since news images can be used even though the corresponding article is not read, and photos help viewers understand news reports (Messaris & Abraham, 2001).

Several studies that have used framing theory to understand visuals have established the existence of stereotyping in terms of gender and reinforcement of other biases like race and age (Fahmy, 2004; Entman, 1992; Rodgers & Thorson, 2000).

Based on a thorough review of the existing literature, it can be surmised that there is a dearth of a study focusing on climate change photographs, especially in Indian online news media. Thus, the current study aims to fill in this research gap and scrutinise these photographs from various viewpoints in order to gauge the existing trends and patterns. The analysis also includes portrayal of gender in the climate change images that are roped in by news editors and photographers.

Objectives

The study aims to examine how the climate discourse is being shaped by popular online media through imagery in its news articles. It tries to explore the images from novel perspectives, as to how the images in stories from different sources differ, especially with respect to gender depiction. The overall representation of gender through the photographs, their captions and foci is the object of enquiry. It would help in examining the climate change imagery being employed by online newspapers, which goes a long way in shaping readers' perceptions about the various dimensions of the issue.

In the context of understanding the aspects of the portrayal of climate change through news photographs, the following research objectives have been formulated:

1   To examine the climate change imagery in online English newspapers of India.
2   To identify various climate change issues depicted through images in online newspapers.

3 To analyse the sources and elements of such images.
4 To examine the gender depiction in images related to climate change.
5 To identify the aspect focused through images and their captions.

Research Questions

- RQ1: Which issues are highlighted through climate change news imagery online?
- RQ2: How does the visual representation of males and females differ in climate change news online?

The content analysis of visual images employed in the present study aims to derive meanings from the photographs that have been used in climate change news stories.

Theoretical Framework

Gender also has direct linkages with climate change, according to IUCN 2015 report men and women are facing climate change distinctly, as gender differences exist across the globe, impacting the willingness of people and societies to adjust. The responsibilities of women are gathering and producing food, collecting water and providing fuel for heating and cooking. These activities are getting more complicated with climate change. Extreme weather conditions, such as droughts and flooding, have a larger impact on the poor and the most marginalised – 70% of the world's poor are women (Aguilar *et al.*, 2015). Thus, it becomes a matter of investigation as to how the different genders are depicted through climate change images.

It is important to remember, however, that women are not only vulnerable to climate change but they are also effective actors or agents of change in relation to both mitigation and adaptation. Women often have a strong body of knowledge and expertise that can be used in climate change mitigation, disaster reduction and adaptation strategies. Furthermore, women's responsibilities in households and communities, as stewards of natural and household resources, positions them well to contribute to livelihood strategies adapted to changing environmental realities 52nd session of the Commission on the Status of Women, 2008.

This could be observed in the context of the theory of ecofeminism, which is based on the premise that women are perceived to be naturally closer to nature. This takes into account a quiet acquiescence on behalf of women, to their domination in a patriarchal society. The mass media imagery often reflects this perception, with men being projected as decision-makers, and women as quiet spectators or followers of instructions (Barad, 2016).

The theory of androcentrism applies here as well, as it evaluates the world from a male perspective and reinforces the centrality of men in society's standards and values. Interestingly, it does not overtly project women in a negative light, but rather considers the male population as the true representatives of human experience and conditions. While it exists in plain sight, it may not be very obvious, as it thrives on a "continuum which includes misogyny and patriarchal attitudes, but it is also informed by patriarchal cultures in which men are granted more power and influence, and thus the right to evaluate and interpret individuals and cultures" (Hibbs, 2014).

Considerable research has shown that while exposure to media-depicted stereotypes can increase stereo typical thinking by those who engage with them, exposure to counter-stereotypical images can reduce such attitudes (Ramasubramanian, 2011).

Though reports about lopsided gender representation in print media date back to the 1960s at least, more recent studies indicate an increase in such disparities with the deluge of digital media, which often claim to be liberating in nature (Baily, Steeves, Burkell, & Regan, 2013).

Studies guided by framing theory have used visual content analysis techniques and demonstrated that news photographs can communicate stereotypes and racial, gender, and age biases (Heuer *et al.*, 2011).

Methodology

The study employs the method of visual content analysis, in a bid to decode the images and understand their implied meanings, with specific reference to gender.

Sample: The online editions of three newspapers are chosen for the study: *The Times of India*, *The Hindu* and the *Hindustan Times*. These newspapers have been selected owing to their popularity as is reflected in the data compiled by the Audit Bureau of Circulations. The figures include normal print editions, branded print editions (e.g., regional editions or editions tailored for commuters), and digital subscriptions (e.g., for tablet computers or restricted access). The above-mentioned three newspapers figure in the list of "Highest Circulated Dailies, Weeklies & Magazines amongst Member Publications (across languages)", being the top three circulated English language dailies in India (Audit Bureau of Circulations, 2020).

Time Period: The time period of the study is from 01 December 2020 to 31 January 2021, wherein a total of 110 images were found for analysis.

Unit of Analysis: Each photo published accompanied bya news item related to climate change is the unit of analysis.

Criteria for selection: The story should focus on the issue of climate change. The search terms are 'climate change' and 'global warming'. The entire story needs to be read to see whether the topic pertains to climate change. Simply searching for the terms 'climate change' and 'global warming' in the headline or lead may not suffice, considering the issue is very wide and complex. Sometimes, the term appears later but remains the major focus of the story. The stories already appear sorted out by the search button on the web portal, as per their relevance to the topic, yet they need to be further assessed to assure that they fall in the specific ambit.

Criteria for exclusion: The stories which do not directly talk about the specified issue, or merely make a fleeting reference to it, are excluded from the sample. Also, in some stories, the specified terms may appear, but the focus of the story is something else. Such stories are also not included. The stories, if not accompanied by a photograph, are not considered.

Measurement: The unit of analysis in this study is the image accompanying news stories about climate change (N=110). To execute the analysis, a comprehensive coding tool was

developed with specific variables that were chosen to document and describe the portrayals of climate change in the photographs. The variables included the following:

1. Story credit: It refers to the source of the news story as mentioned in the credit line.
2. Story topic: It refers to the broad theme of the issue covered in the story.
3. Image credit: It refers to the source of the photograph being examined.
4. Image caption: It refers to the caption accompanied by the photograph.
5. Image type: It refers to the composition of the photographs, to determine which category the image fits in. For example, whether it depicts a landscape, or features people, both, or otherwise.
6. Gender Depiction: This variable was determined based on the following characteristics:
- Presence/absence of male & female subjects
- Role/action by male/female subjects as active or passive
- Male and female representation in the context of various topics
- Types of camera shots *vis-à-vis* male and female

Results

Story Credit

Photographs related to climate change from India's three most widely read English online newspapers — *The Times of India*, *Hindustan Times* and *The Hindu* — between 01 December 2020 to 31 January 2021 have been analysed. The corpus comprises a total of 110 images analysed based on several counts.

Credit line referring to the source of the story was divided into three categories as International Network, National Network and Internal network. Sources of stories which appear to be drawn from global news agencies were coded under 'international agencies' (for example, Reuters, Associated Press,

Agence France-Presse). Indian news agencies with a pan-India reach (like *Press Trust of India*, and *Asian News International*) were coded as 'national network'. Stories with bylines or the name of the indigenous network of the newspaper (like *TNN* for *The Times of India*, or *HT* correspondent) have been ascribed to the 'internal network' of the newspaper itself.

Table 1 — Story Credit					
	Total	**Internal**	**National**	**International**	**Others**
TOI	13	12	0	1	0
HT	79	17	16	36	10
TH	18	3	6	5	4
Total	110	32	22	42**	14
**Salient numbers are marked with two asterisks.					

Among the stories on climate change carrying an image 29.1% belong to internal networks, 20% come from national agencies, and38.2% are from international sources.

Story Topic

According to the issue covered, climate change news stories were classified into five categories, i.e. Policy, Discussion, Climate Change Performance, Research/Study and Protest.

Policy: This includes stories related to the government policies

Discussion: It pertains to any kind of talks or discussion regarding climate change

Climate change performance: It refers to any kind of performance indication regarding climate change

Research/study: It includes news about research related to the issue of climate change

Protest: It refers to any form of protest in the context of climate change

Table 2 — Story Topic										
	Internal		National		International		Others		Total	
	N	%	N	%	N	%	N	%	N	%
Policy	12	23.1	11.0	21.2	23.0	44.2	6.0	11.5	52	47.3**
Discussion	13	52**	3	12	4	16	5	20	25	22.7
Research	5	20.8	5.0	20.8	12.0	50.0**	2.0	8.3	24	21.8
CC Perf	1	20	2	40**	1	20	1	20	5	4.5
Protest	1	100							1	0.9
Others			1		2				3	2.7
	32		22		42		14		110	100.0
**Salient numbers are marked with two asterisks.										

Most of the climate change stories in online news pertained to policy decisions (47.3%). Stories focusing on discussion and research related to climate change were 22.7% and 21.8% respectively. However, other issues like a country or region's statistics on climate change or climate protests (4.5% and 0.9% respectively), among others, were quite minuscule in comparison.

Image Credit

Image credit is a note that acknowledges the origins of the released photograph. Copyright of the image belongs to an individual or the agency, which is given below the published news image. In this study, image credits have been classified into the following categories:

- International: News agency with a global network
- Internal: Newspaper's internal network
- National: India's news agency with national network
- Photographer: The name of the photographer who owns the copyright of the image.
- Stock Image: These images are published for representative purposes only.
- Social Media: Any image taken from social media platforms.
- None: Credit is not mentioned.

Table 3 — Image Credit		
Image Source	**N**	**%**
Internal	4	3.6
International	36	32.7*
National	1	0.9
Photographer	2	1.8
Stock Image	13	11.8
Social Media	3	2.7
None	51	46.4
Total	110	100.0
**Salient numbers are marked with two asterisks.		

The source of images in climate change stories was by and large not mentioned in *The Times of India*. This accounts for 46.4% of missing references for image credit. However, in the images where credits were available, most of the images came from international agencies (32.7%) like Reuters, Bloomberg, AFP, Associated Press, etc. The second largest share was that of stock images with 11.8% which often includes file photos and representative images. Images from internal sources were lesser in frequency (3.6%), while some were also credited to 'social media' (2.7%). Images from national agencies like *PTI*, *ANI*, etc. amounted to a diminutive 0.9%. Around 1.8% of images accompanied the name of the photographer.

Image Caption

Image captions and cutlines are the most commonly read body style in the publication. Of all the news content, only the names of the stories or the headlines have a higher readership than the captions.

The captions have been analysed in 3 categories: Cause, Impact, and Solution.

Table 4 — Image Caption		
	N	**%**
Cause	6	14.6
Impact	10	24.4
Solution	25	61.0*
	41	100.0
**Salient numbers are marked with two asterisks.		

Most of the captions focused on solutions to combat climate change (61%), followed by the impact of climate change (24.4%) and the least talked about the cause (14.6%).

Image Type

Table 5 — Image Type	
Image	**N**
Landscape	28**
LS with People	8
Logo/Graphic	9
People/Group	3
FP/RI	11
Others	51
Total	110
**Salient numbers are marked with two asterisks.	

An examination of the composition of the photographs reveals that in climate stories, apart from exclusive pictures of people (like close-ups or mid-shots), most of the photographs depict landscapes (25.5%). Some images show landscapes with human presence (7.3%). A large number of stories also employ stock images that go by the title 'File Photo' or 'Representative Image' (10%). The newspaper's logo or some other graphic has also been used in a good number of stories (8.2%), while some images are about groups of people not identifiable clearly (2.7%).

Gender Depiction

No individual across the world can escape the effects of climate change, yet there exists a stark contrast between the ways different genders experience climate change. The way different genders are depicted in climate change photographs has been analysed based on several parameters.

Table 6 — Depiction of Gender in Newspapers			
Name	**Male**	**Female**	**Both**
TOI	6	0	
HT	35	10	4

TH	10	3	2
Total	51**	13	6
**Salient numbers are marked with two asterisks.			

Of all the climate change stories with photographs, 72.9% featured males, 18.6% featured females, and 8.6% of images had both males and females.

Table 7 — Activity Depiction *vis-a-vis* Gender				
	Internal	**National**	**International**	**Total**
M/A	13	11	14	38
M/NA	1		3	4
F/A	1		7	8
F/NA	1	3		4

In terms of activity depiction, 68.8% of males were shown as active, while 10.9% as not active. In the case of females, 12.5% were shown active and 7.8% exhibited as not active.

Table 8 — Gender Depiction in the context of Story Topic						
	Male	**%**	**Female**	**%**	**Both**	**%**
Policy	33	47.1**	5	7.1	3	4.3
Discussion	16	22.9	5	7.1	1	1.4
Research	1	1.4	1	1.4	2	2.9
CC Perf	0	0.0	0	0.0	0	0.0
Protest	0	0.0	1	1.4	0	0.0
Others	1	1.4	1	1.4	0	0.0
Total	51	72.9**	13	18.6	6	8.6
**Salient numbers are marked with two asterisks.						

When gender is analysed against the story topic, it is found that in stories on policy, 47.1% of images have males while 7.1% of images show females, and 4.3% feature both.

Overall, in pictures which show people, 72.9% belong to male protagonists, while only 18.6% have an exclusive female presence. In stories on 'discussion' 22.9% show males, while 7.1% show females. The rest of the categories have little presence of either of the two genders.

The photographs were analysed based on the size of the shot. The images are classified into 3 broad categories: Close-Up Shots, Medium Shots, and Long Shots. Several others like extreme close-up, bird's eye views, and extreme long shots were accommodated within the broad categories. A category 'others' was also devised for shots which could not be labelled as any of the above-mentioned shots.

Table 9 — Shot Size and Gender					
Gender	CU	MS	LS	Others	Total
Male	24**	14	12	1	51**
Female	7	2	4	0	13
Both	0	1	5	0	6
Total	31	17	21	1	70
**Salient numbers are marked with two asterisks.					

The shots depicted that overall there were 44.3% close-ups, 24.3% mid-shots and 30% long shots in the corpus. Among the total photographs, 34.3% were close-ups of males and 10% were those of females. 20% were mid-shots of males and 2.9% were those of females; while among longer shots, it was found that 17.1% were long shots featuring males, while 5.7% depicted females.

What is noteworthy is that in pictures with both males and females, mostly males were depicted as active and females were rather passive.

Also, there are 34.3% of close-ups belong to males, and 10% to females. In mid-shots, 20% feature males, while 2.9% feature females. In long shots, 17.1% are males and 5.7% are females.

Discussion

The data analysis projects several trends with respect to the climate change images published in online newspapers. Broadly, it analyses certain aspects of climate change photographs through a different lens, taking into account where these images are sourced from, which stories they are included in, what captions they carry, and what are their compositional elements. These factors can be crucial to determine the editorial policies of

news organisations (about climate change), which affect the perceptions of the audiences.

The highest percentage of news stories on climate change carrying a photograph are sourced from international networks. The issues covered in climate change news stories mostly relate to policy decisions. Probably the growing relationship between politics and climate change could be the reason behind this coverage.

Hase *et al.* (2021) also posit that though frames or themes cannot be identified per se across various studies, existing research clearly betrays that most of the climate coverage pertains to the politics of climate change, climate science, environmental effects, and its socio cultural and economic impacts.

The study finds that most of the photographs in climate change stories come from international agencies. Stock images come second in line, while images from national agencies were rarely used.

McQuail (2005) also emphasises the dependence of news organisations on international wire agencies while foregoing their own resources for on-site coverage. In fact, even western news wires rather rely on local photo journalists and freelance stringers for the supply of images from ground zero.

It can be deduced that when it comes to climate change, most online newspapers turned to images supplied by agencies, while rarely investing their own staff to capture such photographs.

The results betray that image cutlines are mostly about solutions to combat climate change, while the cause is rarely mentioned. However, Keller *et al.* (2019) found that climate change impact (news stories) finds more coverage in Indian news media in comparison with other themes. Indeed, the occurrence of all themes varies throughout the years, coverage on "Climate Change Impacts", e.g. on animals or forests, has almost doubled between 2007 and 2016.

25.4% of all climate change photographs published feature landscapes without human presence. While landscapes and similar representations are crucial for the depiction of climate change, it is also a matter of concern that the readers perceive it

as an issue that influences their lives directly. It is not some alien phenomenon taking place somewhere far away, and not have an impact on their own lives.

As per 'Climate Visuals', a website and image library, which is a credible source of climate change photographs, "Imagery needs to embody people-centred narratives and positive solutions and must resonate with the identity and values of the viewer – not just environmentalists. Only then we can truly drive engagement and promote positive action against climate change." (Climate Outreach, n.d.).

Research conducted by Climate Visuals on a sample of 3000 people in London and Berlin revealed that regarding climate change images, people would empathise more with photographs that show real faces (actual people to identify with). Images that do not have people in them, fail to deliver a human story. (Ortiz, 2018).

The shot size is also a strong determiner of the framing of a photograph. While close-ups were the most recurrent shot size in climate change stories, most of them belonged to males. The shot type is denotative of the social distance between the image and the viewer. The analysis reveals that the social distance in maximum images is medium, i.e. neither too close nor too far away.

The analysis reveals that the majority of the photographs in climate change stories have the presence of males, while a few show both males and females. Furthermore, males are quite likely to be depicted as active in comparison to females.

It can be observed that the results are very much in consonance with the fact that mass media consciously or otherwise, reinforce the concept of masculine cultural hegemony. Cultural hegemony refers to "the phenomenon of a dominant and oppressive culture order being adopted by a majority of people because of the ubiquitous nature of mass media" (Malhotra and Rogers, 2000).

The activity depiction of masculine and feminine genders in climate change photographs also highlights disparity in the treatment of the genders. As there continues to be a domination of men in leadership roles across the globe, the masculine gender

has got the better of its counterpart in terms of representation in the media as well. It is not uncommon to find women being exhibited as 'passive or non-active' in media discourses, unlike men who are mostly portrayed as 'active' players in social circles (Ali, 2014).

It also finds support in Tuchman's concept of 'symbolic annihilation' which deals with how women are "condemned in, trivialised by, or simply invisible in the news" (Tuchman, 1978). While women are viewed as the ones who require support and are non-active, men are depicted as the ones undertaking responsible tasks in form of different roles in society (Ali, 2014).

Looking through the lens of the source of the story, stories from various sources are analysed based on the presence of men or women. It is found that in all three categories – internal, national and international network – the frequency of pictures carrying male presence is relatively higher (18.6%, 15.7% and 20% respectively).

In a study executed in 2020 by the Bill and Melinda Gates Foundation on news coverage of gender equality titled "Missing Perspectives: How women are left out of the news", it was found that in the US, UK and India, women were under-represented in overall reportage in the decades past by a ratio of around 1:5 (Kassova, 2020).

Research executed by AKAS, an international audience strategy consultancy, to examine women's representation as various players in climate change coverage found that while women constitute a huge chunk of influencers and advocates for climate risks globally (53%), they are highly under-represented in the news. Nonetheless, they are seldom quoted as experts or framed as protagonists in the stories (29%). In the period between 2017 and 2021, only a quarter of the online coverage of climate change reflected women. News media are repeatedly failing to appropriately mirror women's role in combating climate change (Kassova, 2022).

The study results have several policy implications for news organisations as well. Enough research has pointed out the significance of media portrayals of climate change, and the significance of visuals has been continuously ascending. As per

McCombs and Shaw (1972), news media coverage can have a strong influence on the agenda of policymakers. The results of this study would also help the "gatekeepers" review their decisions and make more focused and informed choices while including and rejecting climate change images for publication. The photojournalists and the editors need to be aware and cautious about the power that the visual content carries. These images can even mould the public perception of the issue and motivate it towards potential solutions and individual action (Stamm et al., 2000).

Conclusion

The present study is intended to explore the climate change imagery in online portals of mainstream newspapers in India.

The major findings point out the stronghold of international news agencies in providing not only climate news but images for such news as well. Keeping in view the global scale of the issue, the newspapers are rarely found to employ their own photographer or internal network for climate stories. The image captions talk about the solutions to the climate problem, as against its cause or impact. The climate stories that carry photographs majorly relate to policy issues and decisions.

With respect to the source of photographs embedded in climate change news stories, the study reveals that they often trickle down from international wire agencies, and news organisations rarely assign their own reporters/photojournalists to provide these images. With respect to composition, these images mostly represent landscapes, while some images show landscapes with human presence.

Climate change visuals in online newspapers when examined through gender perspective reveal that women are severely under-represented than men in all respects. The frequency of women featuring in a climate change photograph is far less as compared to men.

Furthermore, the images frame men as powerful decision-makers while women are sidelined as incapable, victims and in need of help. Men find themselves portrayed as active in the case

of climate change issues, while women do not make it to the images as key players in climate action.

Limitations

Every study has its limitations. A major limitation of this research is the relatively small sample size. Future research can be carried out on larger samples spread across different news portals.

Another limitation could be regarding the general is ability of the findings. The results may not necessarily be extrapolated to other media platforms. Also, it only represents the Indian context in the English language. It might be interesting to examine these gender depictions in news media in other languages within India, and outside.

With respect to gender representation, the climate change imagery in online newspapers can be understood in the context of the decisions of the picture editor, or choice of the photographer. Several levels of gate keeping might be responsible for the selection of such images, which may be used as a cue for further research.

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