

Climate Crisis and Media: A Meta-Analysis

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Abstract

The current study is based on a meta-analysis of 31 research articles to evaluate the global media's part in the portrayal of climate change, disseminating the opinions of ecologists and environmentalists and enhancing the active role of citizens to cushion climate change's impact on the universe. A quantitative study explains the geographic Centre, research techniques, theories, authorship, media genera, and specific years of relevant printed articles. A qualitative study examined the highly prominent studied themes. The research outcomes propose that a good number of researches covered European countries, while Asian countries and Asian media have been less studied. The researcher also documented an apparent dearth of comparative analysis, limited studies of illustrations (photographs, caricatures), likewise a deficiency of studies on virtual media. The researcher observed that most research articles examined the content published in print media. Additionally; the meta-study displays that in some countries, the climate risk tends to be negatively framed as "exaggerated theoretical discussion". Suggestions; for these outcomes are discussed.

Keywords: Climate change, climate crisis, Meta-Analysis, Media, climate risk management

Introduction

The Climate crisis is one of the gravest issues of the current century. Climate; action is a pressing need in the world. The current climate breakdown and its drastic effects have alarmed the world to take action to conserve nature and its sustainability for the next generations. From; 2000-2010, Media representation of climate change and its drastic effects was not a well-investigated issue in the scholarly community. Nevertheless, highly-anticipated United Nations environment discussions in "Copenhagen, Denmark (COP15)", 2019, hacked emails of UAE scientists enhance the climate tasks news in media (Boykoff,2010). The study of penned articles in The New York Times from 1994 to 2010 seemed to decline in the volume of writings about climate change (Kirilenko & Stepchenkova,2012). The; mass media have been known as a special instrument in enabling basic information regarding environmental issues (Carvalho, 2010; Moscovici, 2000).

Traditional and new media can play an active part not only in disseminating the highly recommended scientific information about sustainability but also through public awareness campaigns; enhancing the citizens' role to manage the climate crises. The researchers proved through a survey that US citizens frequently grabbed information about global warming from mainstream media and reacted to climate crises on social; media platforms, specifically Twitter, through anomalies (Kirilenko, Molodtsova &Stepchenkova,2015).

Objectives of this meta-analysis are multifarious: Mainly, in the previous two decades, numerous researchers have explored climate change, global warming and the climate crisis in the media, to launch that public awareness, coupled with expert opinion and social media platforms, has led to mounting pressure at developed countries. The current study considers the diverse methods, viewpoints, and outcomes from all this research to offer an associated depiction of the contemporary research studies. Next, the researcher examines the media's part in the treatment of climate emergency-related information across societies.

Literature Review

The earlier two decades have perceived a renaissance of concern, as specified by comprehensive academic studies probing the associations between media depiction of climate change and topics about climate risk management, global warming, saving the earth, and solution-oriented approach. The Public; relies on media to magnify their understanding regarding the realm beyond the direct horizons of lived experiences; as the terminologies of risk management associated with global warming and climate change are to a vital degree mediated by the sources of mass communication (Smith,2005)

Several academics across disciplines have studied media depiction of climate change and climate risk management through many lenses of critical review and across variable geo-political perspectives, which comprise: the USA (Sonnett, 2009; Kirilenko, 2015; Knowles, 2020, 1980), Europe (Atanasova, 2015; Smith, 2005, BoykoV, 2007, Veltri a, 2015), Asia (Shrestha, 2014, Mavrodieva 2019; Green, 2013), and Oceanian countries (Schweinsberg, 2007; Robie, 2020, 2011; Patil, 2015). Despite; the diversified studies, the researcher is still deficient in a logical examination of research studies providing, us with a thorough indulgence of general outcomes and tendencies.

Mass media play a significant part in the spreading of information about the climate crisis, climate crisis management and the reception of the audience regarding the above-mentioned issue (Shrestha, 2014). Nepalese; community radios aired the program about the environmental crisis and frequently mentioned their country (Nepal) as a victim, with a rare contribution to the global climate crisis. Social media, especially the analysis of tweets, provides a perfect opportunity for researchers to grab the public opinion of social media users about climate change (Veltri, Atanasova, 2015).

The stories and images in the political, scientific and environmental news magazines provide resources (synonyms) through which the researcher identifies how climate risk narrates differently; proactively, actively and passively in journals of different disciplines (Sonnett, 2009). Numerous, studies have shown that social media articulate soft power, through sharing information and innovative solutions, and that these characteristics often lead to force politicians and policymakers to reflect the insertion of climate change policies more systematically into the domestic agenda (Mavrodieva, Rachman, Harahap & Shaw, 2019).

Indian; mainstream English dailies reflect elite perceptions regarding environmental crisis issues, in the recent few years, academicians have studied social media descriptions of bushfires through the frames of the critical relationship between bushfires and climate change and disaster. Smits, Justinussen, and Bertelsen (2016), for instance, investigated the social media commentators who highlighted the risk of travelling, and it potentially discourages tourism during bushfires in different areas of Australia. Such an overview may offer an ample understanding of how climate change, global warming and climate risk management are treated in the mass media, and in what way this issue is examined by researchers. The researcher investigates the utmost shared themes described in the literature. Moreover, the researcher thoroughly analyzes the geographic Centre, research approaches, theories, origin of authors, media genera, and years of available researches. The current Meta-analysis consequently, enhances to the prevailing scholarly literature by providing an impression of how researchers have examined the portrayal of climate change. These perceptions can be considered a roadmap for upcoming studies.

Methods

Meta-analysis is an organized; quantitative research approach "it allows researchers to arrive at conclusions that are more accurate and more credible than can be presented in any one primary study or a non-quantitative, narrative review" (Rosenthal and DiMatteo, 2001:61). The current meta-analysis; was performed in 02 stages. At; the main stage, the researcher applied a quantitative data examination, coding the utmost significant features of the selected research that are argued comprehensively beneath. In; the next phase, a qualitative study was lead to categorize, the utmost shared themes examined in research articles of media coverage of climate change.

The researcher applied the succeeding arrangement of keywords: 'climate crisis', 'climate change', 'climate risk management', 'climate emergency', 'climate breakdown', 'climate Catastrophe', 'global heating', and 'Media' 'social media depictions', 'digital media depiction', 'media treatment', were searched at The Google Scholar. The researcher; initially identified (69) articles that were published from 2000-2020. However, the researcher overlooked the Book analyses. The abstract of all research papers was keenly studied to monitor if it examined or discoursed media treatment of climate change issues. Our ultimate measures for insertion in the sample ensued in 31 studies (good cited). The selection of the above-mentioned time frame was chosen by the research to expose how studies on media depiction of the global threatening issue have been compiled in the previous years. Due to the dearth of acquaintance with numerous languages, only the research articles in the English language were selected; this is, though, a frequent technique for meta-studies (Ahmed & Matthes, 2016; Matthes, 2009).

Methods

Quantitative analysis Details

At the quantitative analysis level, each research study was coded for the following sections:

1. Time of published article;

2. State;

3. Continent;

4. Researcher affiliation

the researchers' affiliation section was coded for the principal researcher's state of associated academic institute.

5. Methodologies

The researcher coded three procedural methodologies: quantitative study, qualitative study, and cross-examination. A study was coded quantitatively if "the consequences determined involved mathematical or counting measures and statistics were applied to demonstrate the data" (Kamhawi and Weaver, 2003: 11); else, a study was considered qualitative. If both methods were implemented, it was characterized as mixed.

6. Data-collection tools

Each quantitative research was coded for the succeeding subgroups of tools: i). "Content analysis", ii) "Experiment" iii) "Survey", iv) "Secondary Data", v), Mixed (if more than one instrument was used), and vi) other. Every qualitative analysis was coded for the succeeding subgroups of tools: i) "interview", ii) "focus group", iii) "reviews" iv). "Textual analysis", v) "mixed", and vi) other. Every article which shadowed the diverse methodology was coded compatibly for both the quantitative and qualitative tools applied.

7. Theoretical framework

The research also monitored the specific theoretical framework that researchers applied in their study for empirical evidence.

8. Genre; of Media examined

The diverse genre of media studied were i) TV programs, ii) dailies, iii) social & digital media, iv) radio, v) more than one, and vi) other.

9. Environmentalists/ climatologists PerspectiveThe researcher was interested in examining whether the research articles reflected the Environmentalist/ climatologist's viewpoint in their studies. To do so, the researcher tested whether the research articles based on i) complain about the global heating/climate crisis ii) highlight the possible solutions, or iii) both (a) and (b).

Analysis of Quantitative Data

Research by Years (2000-2021)

Table 1 displays the marginal attention in this range of research from 2021 to 2010, however, 2020(N=5, 16.3%) seemed comparatively to be the most productive year. Whereas, 2011(N=3, 9.67%), followed by 2015 (N=3, 9.67%), 2017 (N=3, 9.67%), and 2019 (N=3, 9.67%).

Table 1.

Research by Years (2000-2021)

Years	2000-02	2003-05	2006-2008	2009-2011	2012-2014	2015-2017	2018-2020	2021
Publications	00	03	02	08	03	06	08	01

State and Continents emphasis; out of 12 countries under study, the results of all countries under study, and their share in climate change and global warming, are mentioned in Table 1. The USA was the highly studied state as compare to rest of others, having ten research articles (32.5%), Britain was the following most researched country with 06 studies (19.4%) concerning the countries that had one (or few) studies on the said topic. Examining continents, the current study emphasized, that the researchers mainly were engrossed in Europe (N=14, 45.2%), and a good number of studies from America (N=10, 32.5%). Only (N=04, 12.90%), and (N=02, 6.45%) were found in Asia and Australia, respectively.

Research Methodologies; Out of 31 papers under review 51%, (N-16) of the researches preferred a quantitative method, whereas 25.8% (N-08) of the research articles applied a qualitative methodology. The outcomes matched the results of other studies that highlighted that media researchers mostly applied quantitative methodologies (Li and Tang, 2012, Ahmed, & Matthes,2017). Researches that applied Mix approach were limited (N-06, 19.4%). The researcher further studied the tools used in each of the methodological approaches. As Table 2 displays, among quantitative studies, content analysis was applied remarkably (N-14, 45.22%), whereas the application of experiment method (N 01, 3.2%) and 02 (6.45%) was minimal. For qualitative studies, the common was Critical Discourse

Analysis (N-09, 29.03%), followed by a literature review (N04, 12.91), while in-depth interviews were under-applied (N 01, 03.22%).

Table 2.

Quantitative	Qualitative	Mixed	Other
16	08	06	01
51.61%	25.8%	19.4%	3.2%

Table 3.

Data Gathering Tools.

Content analysis	Survey	Literature Review	In-depth interviews	Critical Analysis	Discourse	Others
14	02	04	01	09		01
45.2%	6.45%	12.90%	3.2%	29.03%		3.2%

Theoretical framework

Most, of the studies built their research on the theoretical framework. On the whole, 22 researchers applied theories. The Framing was most frequently (29.03%) applied as compared to other theories; Agenda setting (16.2%), discourse theory (6.45%) and Gatekeeping (6.45%), Hypodermic needle theory (3.2%), Coverage theory(3.2%), political economy (3.2%), and semantic (3.2%) respectively.

A Genre of media analyzed; The result indicates that (N=19, %), more than half of the researchers focused on analyzing the print media content about climate change-related issues. The research found that focusing on Radio (12.90%) and Television (03.2%) is marginal, respectively. A small number of studies put attention to the internet and; the discourse of tweets.

Authorship; The research indicated that the authors were mainly from Europe (N=14, 45.2%), and a good number of researchers from America (N=10, 32.5%). However; Very few researchers from Asia and Australia (N=04, 12.90%) and (N=02, 6.45%) respectively. Only; one researcher was from Africa.

Environmentalists/ climatologists Perspective; The researcher found that 61.3% (N-19) research articles highlighted that media disseminated news and information about global warming, climate change and crisis without any Environmentalist's/ climatologist's viewpoint. whereas 22.5% (N-07) papers reflected that media discussed climate challenges, its disastrous effects through the Environmentalist's/ climatologist's point of views. Whereas, only 16.12 %(05) of research found that media both highlighted environment-related issues and provide valuable solutions through the Environmentalist's/ climatologist's point of view.

Qualitative Analysis

In this segment, the researcher shared some of the most frequently arising themes in the selected articles.

National policy regarding the portrayal of climate crisis in media

During the analysis, it becomes apparent that diversified media gamers and time frames in different countries of the world concluded that mainstream media frequently follow the national policy regarding its portrayal of climate change. This is yet a vital sign that human deeds are causing planetary scale variations on earth, in the marine, in the air, with harmful and long-lasting complications, for sustainable growth, ecosystem by World Metrological Organization May 2022. Though, Media; is a dynamic force for providing vital information about finance, climate and culture of the country and universe. Nevertheless, the comparative analysis of US, New Zealand and Finland dailies revealed that US media states that climate change is a controversial and theoretical approach, potentially not associated with human actions. Whereas, New Zealand and Finland media covered it with the support of scientific journals (Dispensa &Brulle,2003). In US and Uk, readers consider that the media exaggerate the scale of the threat. Likewise, Indian; leading English dailies scientifically explain climate change and its disastrous impacts but the general perception is that there is a neo-colonial craving to subdue Indian industrial progress, through hidden policies of following global

policies to minimize climate crisis (Billett, 2010). Celebrities' engagement in the climate crisis campaign enhanced the mobilization but did not make an unusual change in public opinion (Anderson, 2011).

Limited views of Environmentalists/ climatologists in the Media,

The appearance of environmentalists/ climatologists is limited in media, particularly marginalized in Asian countries. Radio is a famous media in Nepal, and its FM radio stations disseminate ample information on environmental issues. However, the listeners did not pay attention to these campaigns eagerly as these programs were not well planned, and Nepal is a country with limited resources, so the researchers suggested that their respective governments hire the services of experts to disseminate valid information (Paudel, Bastola & Lopchan, 2020).

The Western print media on environmental crisis provides inconsistent silence to distance environment-associated measures. These frames of media treatment may contribute to an individual's alienation about environmental issues, despite obstructing citizens from adopting current, climate risk-managing measures and solution-oriented approaches (Tavares, et, 2020). Environmentalists and experts should be more available in media sources to engage the common people towards awareness campaigns about climate risk management (Smith, 2005).

Potential threats to the Tourism industry

Discussions on social media about climate change associated with bushfires in certain areas foreshadow, a potential threat to the tourism industry highly criticized by researchers that the tourism industry will certainly suffer as active social media users alarmed tourists regarding climate crisis (Schweinsberg, Darcy & Beirman, 2020). Media, not only cover the immediate and short-effect events; for example bushfires and climate crises but also discuss the root cause of the events (Lyytimäki, Kangas, Mervaala & Vikström, 2020).

Results

In 2020, more researchers examined the media content regarding media content about the climate crisis, global warming and climate emergency. The USA was the most highly studied country in the world, whereas, African research on the above mention topic was marginalized. The researchers frequently applied quantitative analysis (51%), by gathering data through content analysis (45.4%) as compared to qualitative analysis (25%). Researches that applied Mixed approach were few (N=06, 19.4%). More than 50% of researchers analyse the projection of climate crisis in the content of print media. There is a dearth of studies on social media. The qualitative findings reveal that the European, American and Asian mainstream media frequently follow the national policy regarding its portrayal of climate change. If the depiction of the climate crisis affects their economic factor, then the leading media gave it less coverage. Environmentalists and experts should be more available in media sources to engage the people towards awareness campaigns about climate risk management (Smith, 2005). The Australian tourism industry and the ski industry categorically condemn social media influencers for disseminating information about bushfires, treating social media platforms as a potential threat to the tourism and ski industry.

Discussion

The researchers found that US mass media from, 1988 to 2004 ignored the drastic issue (Boykoff, 2007). Mainstream media should mount pressure on the public to actively participate in managing the climate crisis. It is very significant to study the nexus between diversified media as much dissemination of information and sharing scientific news online, it will enhance the possibilities to comprehend the context of public opinion dynamics associated with public understanding of science (Veltri, Atanasova, 2015). Media capture climate change and global warming in the context of a global issue, local participation of the citizens in minimizing climate crisis and marginalized in media (Carvalho, 2010). The ski industry was drastically affected by media coverage of the climate crisis; reports about cloud bursts, global warming and unusual thunderstorms. The researchers considered that climate reporting would be fatal for the ski industry (Knowles, Scott, 2020). Climate change is a significant food threat for many areas of the world. The indigenous radio stations should air programs for farmers' awareness about global warming and its impact on their crops (Nwagbara, 2017). The researcher noticed that most Nigerian radio stations either ignore or provide marginal coverage of climate issues. More studies should be done to analyze the role of opinion leaders in engaging their followers in positive activities and appreciate them to engage others in discussion of climate change.

Conclusion

The current Meta study consequently, adds to the prevailing scholarly literature by providing an impression of how researchers have examined the portrayal of climate change, climate crisis, and global warming in global media. These perceptions can be considered a roadmap for upcoming studies. Media students should be empowered to understand

climate change urgency truly, moreover also empathetically disseminate information for the well-being of the community (Robie, 2020). Journalists; filmmakers and documentary makers should engage in mind full communication in the range of climate crises, a participatory approach is required for environmental issues (Harris, 2019; Hackett et al., 2017). If; all genres of media enthusiastically portray environmental issues and their solutions, then public opinion mounts pressure on policymakers for favourable solutions. News articles, Television, Radio programs, and social media active participants should curb human activities contributing to the environmental crisis.

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