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Editor's Note

Here is the first issue of the 10th Communication and Journalism Research volume. In the last decade, the journal has opened new vistas for communication research giving proper weightage to various subfields of Journalism and Mass Communication. It has presented a broad-ranging account of the fast-changing world of communication, bringing together a variety of studies in qualitative and quantitative approaches. As interdisciplinary research is gaining momentum, the CJR has also been focusing much on it. This issue covers indigenous knowledge systems, digital journalism start-ups, climate change awareness, menstrual hygiene product ads, user engagement of pre-roll ads, disaster management through social media, and mapping of data journalism research.

Nithin Kalorth and Malvika Sagar try to explore the challenges and opportunities of regional language digital journalism start-ups in India. The study aims to understand the workflow, style of content creation, feedback system, and economy of selected news portals. The theories of entrepreneurship mindset and digital media management are used to analyze the experiences of editors/founders of selected portals. The paper's outcome will help stakeholders and researchers understand India's regional digital independent media sphere. The article of Sikha N and Muhammadali Nellyullathil explores the existing research trends in data journalism in India. To better understand its current state in the country, the researchers observed and reviewed the published research literature and works that studied data journalism and related practices empirically. Further, it offers some suggestions for future research in data-driven journalism.

Rohan Pillay A and Lalmohan P undertake an inquiry to determine whether a consensus can be reached while also trying to understand the problems and challenges faced in understanding indigenous knowledge systems. Furthermore, the researchers also look at opportunities that can be leveraged to ensure the proper sustenance of these systems.

Anto P Cheerotha and Sapna M S see climate change as a subject of anthropogenic origin. They tried using an interdisciplinary lens by associating it with journalistic narrative in the regional media landscape of Kerala. Their study results show that a few professional variables had a

significant association with discussed knowledge scales, and the majority of the journalists had a moderate level of climate change awareness corresponding to each climate change knowledge scale discussed.

The paper of Sruthy CR and PP Shaju attempts to study how women's questions on female hygiene products in India are represented in advertisements. The study concludes that the meta-narrative of women empowerment hides the power dynamics within and how the capitalist economy and its marketing strategies appropriate feminist discourses. Women are invariably presented as protagonists in the advertisements, but the ultimate superhero is none other than the product, i.e., Whisper. At the same time, Dijil N tries to find out how young YouTube users engage and interact with the pre-roll advertisements benefiting from the dynamic nature of online media. A survey was conducted among the 150 youth (18-35) respondents from the Kozhikode district, and statistical techniques were used to determine engagement, action, and statistical significance with the variables.

The case study presented by Gayathri Baiju and Abdul Muneer V is of the flood relief activities held at the tribal village Kolathara near Ambalavayal, Wayanad. Focus group discussions and intense interviews were conducted among the people, including opinion leaders of the community. The study reveals that mobile phones and social media are used vastly in the village, which immensely helped during the floods. The study also highlights the importance of using social media for emergency responses, facilitating rehabilitation, crowdfunding, and relief activities in the remote tribal communities of Kerala. It further explores new trajectories by proclaiming that the planned use of social media can efficiently aid disaster management.

Indigenous Knowledge: Delineating the Systemic Notions and Interfaces

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Abstract

Although there has been an increased interest in indigenous knowledge systems, there still does not exist a consensus on what they mean and how they can be sustained. There is a need to see if such a consensus can be achieved or not and the reasons behind the same. Without undertaking such an endeavour, ensuring proper sustenance of indigenous knowledge systems would be a hefty task. In this light, the researcher undertakes an inquiry to determine whether such a consensus can be reached or not while also trying to understand the problems and challenges faced in understanding indigenous knowledge systems. Furthermore, the researcher also looks at opportunities that can be leveraged to ensure the proper sustenance of these systems.

Keywords

Indigenous Knowledge, Indigenous Knowledge Systems, Indigenous Peoples, Folk Knowledge, Traditional Knowledge.

Introduction

Although it had originally been denied a legitimate position as a knowledge system, indigenous knowledge (IK) has attracted a lot of attention in academia for various reasons (Simpson, 1999). However, most of these interests, especially from academia, have brought in Eurocentric frameworks. Would this juxtaposition of two knowledge systems be a fruitful endeavour? Can new avenues for understanding IK be developed and leveraged to better understand these knowledge systems?

Before we find answers to these questions, we need to understand how academia has tried to understand IK and the point it has reached. In this light, the researcher aims to investigate the indigenous knowledge systems, what they are, the problems present in the present-day understanding of them, the opportunities that can be leveraged to ensure their sustenance, and the challenges faced in understanding them.

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Demystifying the Concept of Indigenous Knowledge

One of the greatest challenges in answering the abovementioned question is the varying characteristics that underlie Eurocentric notions of knowledge and IK. It has been argued by many indigenous scholars that there is no short answer that can define what IK stands for. Furthermore, three key indicators that cause hindrances to the conventional constructs of IK have been identified (McGregor, 2004). The first and foremost issue in this regard lies in the imposition of a definition. This leads to the second issue: these imposed definitions present the idea as something universal across the different Indigenous peoples. Finally, IK and people are not separate and cannot be codified without the people coming up with a definition (Battiste & Henderson, 2000). Therefore, it can be argued that the effort to try and define IK is a counter-productive endeavour that would lead to more misunderstandings than giving a sense of meaning.

When trying to understand IK, Battiste (2005) offers some indicators that help gain a better understanding. One of the key characteristics of IK is that it is systemic and covers both what can be observed and what can also be thought of while comprising "the rural and the urban, the settled and the nomadic, original inhabitants and migrants." This knowledge embraces the context of about 20% of the world's population. Additionally, they are also referred to as "folk knowledge," "indigenous technical knowledge," "traditional ecological knowledge," "local knowledge," "traditional knowledge," and "non-formal knowledge." (2005)

IK cannot be considered to be merely a commodity. However, it is a process (McGregor, 2004). This process shares extremely close links with the people and the place in which it is rooted (Cajete, 1994) (Battiste & Henderson, 2000). Trying to sever these ties does not simplify IK, on the other hand, it gets obscured. In this light, it can be considered the integration of person, place, product, and process (McGregor, 2004). It has also been established that IK encompasses the entire knowledge of a particular group of people and the land they reside in, including the different elements passed on among them through the different generations. This also comprises the respective peoples' knowledge capital, including their agricultural, ecological, scientific, and technical knowledge (Daes, 1993).

The Conundrum of Sharing and Prevention of Exploitation

The inherent structural differences in IK and euro centric notions of knowledge have led to many issues in the preservation of IK. It is imperative to look at and understand these issues so they can be tackled, which would

help remove misunderstandings. This would, in turn, ensure that IK is preserved and understood in the right sense.

One of the first friction points in this respect is the outlook of indigenous peoples and eurocentric thinkers on the concept of IK. On the one hand, while the peoples see it as "a way of life" and consider it a relationship, others see it as a source of knowledge regarding the environment. They believe that this knowledge can be used for the benefit of the larger society as a whole. This lack of consensus in having a shared meaning between indigenous peoples and eurocentric thinkers creates a gap that is too wide to bridge (McGregor, 2004).

This large gap in understanding what IK means has also caused a sense of fear within the indigenous peoples. They are reluctant to share their knowledge as they fear that it will be used by others against them and exploit them (McGregor, 2004). Therefore, indigenous people realise the need to protect their intellectual property and ensure that the ownership of their knowledge rests within themselves (Battiste & Henderson, 2000). This mistrust has created various other issues regarding the protection of IK. However, it should not be understood that indigenous peoples are unwilling to share their knowledge. On the contrary, they wish to share their knowledge, but they realise that the context has changed and their knowledge should be protected to prevent exploitation (McGregor, 2004). Their concern is that IK is being labelled and sold by others (Roberts, 1996).

Another point of mistrust by the indigenous peoples is the treatment of IK compared to Western science and knowledge. Scholars and peoples opine that IK is not valued as highly as western methods. Moreover, IK is even judged on the standards of the western scientific methods, thereby creating a hierarchy that would sustain. IK is yet to receive the same footing as Western science (Roberts, 1996). Additionally, the spiritual foundations of IK and the different values that support it are sidelined since they oppose the worldviews and values of the hegemonic societies (Simpson, 2004).

Threat of Extinction

One of the common attributions given to the reason behind the threat to the survival of IK is that they are predominantly oral. However, this should be seen as an ignorance of the real reasons for the threat, and it arises due to the eurocentric models of analyses leveraged in this endeavour. It is imperative to note that indigenous knowledge systems have been able to thrive and continue and propagate for millennia from one generation to another. These

primarily oral cultures have sustained complex cultural, political, social, and spiritual systems (Simpson, 2004).

The answers to the threat to the survival of IK lie embedded in the crux of colonial infrastructure (Simpson, 2004). Cultural genocide, colonisation, and colonial policies that have been perpetuated in different ways and continue even today are some of the important driving factors that have been sidelining IK. This needs to be understood and negotiated, failing which, the infrastructure would continue to undermine the steps taken to strengthen IK systems and prevent decolonisation and self-determination of indigenous peoples (Simpson, 2004).

IK and the territory of the indigenous peoples share a very close relationship that cannot be separated. This relationship lies beyond the comprehension of eurocentric notions of knowledge. IK is part of the land that is formed through the relationships that the peoples develop and foster with the forces of nature (Battiste, 2000). These relationships are reflected in their political and spiritual systems and are practiced in the traditional forms of governance. However, in the absence of the ecological systems that they have been fostered in, IK ceases to exist (Simpson, 2004). The lands these communities reside in have been threatened by different vectors due to the actions of the hegemonic systems present globally. The destruction of the lands plays a significant role in pushing IK to the threat of extinction.

Issues of Dynamism and Fluidity

One of the most popular methods that have been undertaken for including IK in different areas, such as academic research, environmental policy, assisting in the recovery and protection of IK, and so on, is the documentation of IK (Simpson, 2001). However, what may look like a helping hand on the surface led to more problems than it may seem to solve. Documentation and digitisation have, for instance, increased access to IK, thereby increasing the possibilities for exploitation (Simpson, 2004).

When IK gets documented into written scripture, they are usually translated into languages other than what they are present in. This is because indigenous languages are oral and lack written text. This translation results in IK losing its dynamism and fluidity, thereby getting locked into a singular context devoid of its spatial relationships. It also gets generalised and depersonalised while being removed and separated "from the land, from the world of the spirits, from its source, and the methodologies for transmission"—all necessary factors that offer the rigor that facilitates proper communication (Simpson, 2004).

Modes of Engagement

One of the first and foremost steps to ensure that IK does not get threatened by extinction any further is to help facilitate indigenous self-determination and the recovery of indigenous national territories. The importance of self-determination of indigenous peoples has been acknowledged even by the hegemonic structures, as is evident from its presence in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) adopted by the United Nations General Assembly on December 13, 2007. Indigenous peoples have also been vocal about this demand (Simpson, 2004).

The recovery of the different aspects required to ensure the protection and conservation of IK must be a strategic endeavor. Care should be taken to ensure that this recovery does not merely mean the recovery of only those aspects that seem palatable to the hegemonic forces in play. Still, it encompasses the different elements of indigenous culture as a whole. It means that the foundations of the system and the inherently indigenous processes that facilitate the propagation and preservation of IK are also maintained (Simpson, 2004).

It has already been established that documentation of IK does more harm than good; therefore, the worldview regarding preserving culture through documentation needs to change. What needs to be done is the preservation of indigenous lands and the processes in place to transmit IK to the younger generations. One of the steps that can be leveraged to achieve this is by strengthening the oral tradition. Moreover, for indigenous communities, the learning method is as important, if not more important, than the content being learned. This learning should also be based on the lands they have lived in for centuries (Simpson, 2002). By removing IK from its land and peoples, it only gets destroyed.

Engaging with anticolonial strategies to recover traditional IK is quintessential to ensure that IK systems can resist the threat of extinction. It would require deconstructing the colonial thinking engrained in the settler governments in different countries and the relationship it shares with IK. This means that there need to be inquiries done that would critically analyse the role that colonialism has played in the current state of IK. Some of the steps in ensuring corrective action in this regard would involve recovering the various indigenous intellectual traditions, establishing indigenous control over indigenous national territories, protecting indigenous lands from ecological and environmental destruction, and realising educational opportunities that are anticolonial and align with their indigenous values and traditions (Simpson, 2004).

Leveraging these methods would ensure that instead of merely having a misunderstood replica of the IK system for the future, the peoples' knowledge is preserved and continue to thrive and resist extinction. It would also ensure that future generations have access to and proper understanding of IK and IK systems.

Conclusion

The need to understand IK has always been undertaken in a manner that tries to define what it is. This question has been generated because of the overlaying of eurocentric frameworks on an inherently anticolonial system in its political stance. The underlying structural differences that are present between the two prevent any fruitful action from taking place. This is why the definition of IK has been an unsuccessful endeavor and more and more indigenous scholars have raised their voices against such a notion. Therefore, it must be understood that such an endeavor would not bring forth any helpful results for indigenous knowledge systems.

The problems that exist in the methods utilised to understand and preserve IK have not been fruitful due to the reasons mentioned above. Therefore, care needs to be undertaken to ensure that indigenous peoples, their land, and their knowledge do not become extinct due to the failings of the hegemonic forces at play. Protection of IK does not merely mean the recording or documentation of a few parts of indigenous communities. It requires the preservation and recovery of indigenous peoples, their land, and their ways of life, to mention a few steps. Only such proper correction can ensure the sustenance of indigenous knowledge systems.

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Exploring Digital News Experiences: Challenges and Opportunities in Indian Regional Languages Digital Journalism Start-Ups

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Abstract

The digital technology opened various opportunities and challenges on each aspect of social life and the economy. It also revolutionised the way we interact and network with each other. The concept of digital journalism also came to prominence which redefined the way news is collected, created, distributed, and received. The liberated communication economy – where smartphones and data are available in low-priced helped the growth and increase in popularity of digital media content in India. After China, India is second in terms of the internet market in the world in terms of the number of users. Sen and Nielsen (2016) studied the growth of digital journalism in Indian regional language. Prasad (2019) studied editors and journalists of English language Indian news portals which focused on the concert with print media, ultimately offering not a disruption to the established order. The current paper aims to study the selected digital news portals of the Malayalam language. The current paper aims to understand the workflow, style of content creation, feedback system and economy of selected news portals. The theories of entrepreneurship mindset and digital media management are used to analyse the experiences of editors/founders of selected portals. The interviews of editors/founders are conducted, and it is correlated with the content analysis of portals and social media accounts. The outcome of the paper will help stakeholders and researchers to understand the regional digital independent media sphere of India.

Keywords

Design, Digital Media, Economy, Journalism, Online News Portals

Digital Journalism

The question of ‘journalism’ in digital journalism is there persistent from the beginning of online news. The nature of news, long features, multi-media, readership, and business models of digital journalism has much give and take from traditional mainstream media. In the inaugural issue of the Digital Journalism journal, editor Bob Franklin raised a serious question of “Who is a journalist?” and “What is Journalism?” in digital journalism (2013). He argues that digital journalism engages different types of journalistic organizations and individuals, embraces distinctive content formats, and

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styles, and involves contributors with divergent editorial ambitions, professional backgrounds, and educational experiences and achievements, who strive to reach diverse audiences. He further quoted the below observation of Peter Dahlgren who called digital journalism as “sprawling domain”. As per Dahlgren (2013) “Mainstream online media, alternative journalism sites, the blogosphere, social media, individual and group productions, including efforts by social movements and other activists and groups of every imaginable persuasion—political, religious, and lifestyle advocates, hobbyists and much more. All manner of “amateur”—as well as “para”—or “quasi journalism” are juxtaposing and blending. Facts and opinions, debates, gossip, nonsense, misinformation, the insightful, the deceptive, the poetic, are all mixed, scrambling the traditional boundaries between journalism and non-journalism” (160).

Digital journalism became popular when its democratic and independent forms starting up. When the digital platform of news creation and consumption became popular – the discussion on its model of business and economics also developed. Often, digital journalism is seen as an independent form of space where the agenda of mainstream media – which filtered – with editorial and advertorial interests. This became more accurate when independent websites booming and advocating for society. The aspirations of ‘alternative media’ of online or digital space (Natalie and Barassi, 2011) can be observable in such independent ventures. There are immense opportunities and an equal level of intense challenges for such spaces.

Within the given context, the current paper aims to study the selected digital news portals of the Malayalam language. The current paper aims to understand the workflow, style of content creation, feedback system and economy of selected news portals. The theories of entrepreneurship mindset and digital media management are used to analyse the experiences of editors/founders of selected portals.

Research Design

The current paper follows a qualitative method of research which mainly relied on personal unstructured interviews. By calling such digital journalism ventures as ‘start-up’ which is inspired by the works of Prasad (2019), the current paper tries to relate the opportunities in regional languages of India and digital spaces (Dhavala, 2017).

The interviews of editors/founders of selected Malayalam independent web portals are conducted, and it is correlated with the content analysis of portals

and social media accounts. The outcome of the paper aims to stakeholders and researchers to understand the regional digital independent media sphere of India. For privacy and confidentiality, the names of editors, journalists have been kept closed as per request and research ethics. The inputs of interviews have used across the paper to correlate the theoretical understanding and content analysis.

Internet Penetration in India

The popularity of digital platforms and spaces in India is often credited to subterranean penetration of the internet. According to the 2018 Internet and Mobile Association of India (IAMAI) report, India has the second-highest internet users (Mandavia, 2019) with 483 million internet users. This figure is projected to grow to 666.4 million internet users in 2023. Despite the untapped potential, India already is the second-largest online market worldwide. Most of India's internet users are mobile phone internet users, who take advantage of cheap alternatives like Jio (Curwen, 2019) comparing to expensive high-end broadband that requires a personal computer or laptop and infrastructure. As of 2016, India had 320.57 million mobile phone internet users and forecasts estimate 492.68 million Indian mobile phone internet users by 2023.

When the internet became popular in the early 2000s, user-generated or oriented content in the form of citizen journalism and blogging saw growth. There were instances where the breaking news appeared on such platforms and later adopted by mainstream media. Over time, all major media houses opened their digital platforms to attract more readership and negate temporal facets of the news. During this period, the birth and growth of independent digital news portals – which is the focus of the paper – redefined equations of news distribution and consumption. The blurred and vague cyber media laws in India gave provision to the flourishing of such independent portals.

Growth of Digital Journalism

Initially, the media houses used online platforms for publishing their newspaper's digital version (e-paper). The possibility and opportunity in online or digital journalism were revealed by the newspaper as a competing strategy against broadcast journalism in terms of breaking news.

An early example of an "online-only" newspaper or magazine was (PLATO) news report, an internet newspaper created by Bruce Parrello in 1974 on the PLATO System at the University of Illinois. starting in 1987, the Brazilian newspaper Jornaldodia ran on the state-owned Embratel network, moving to the web within the nineties. By the late nineties, many U.S. newspapers were

publishing online versions, however, they did not nevertheless supply a lot of interactivity.

In India, the Indian Express started its digital wing of news production in 1996. They introduced and regulated various subscription models.

“Malayalam Varika – the literary and social magazine of Indian Express uploaded PDF versions of the magazine with the subscription of INR 400 per year in 1998. The first year saw only 30 subscriptions – majorly from Malayalee readers from Middle East countries and Canada” (Shajan C Kumar – then design editor of Malayalam Varika, *personal Interview*, 2019).

Mainstream Media and Digital Platform

The entry and popularity of social media is a key element in analyzing the digital spaces of any media. Before, one could identify overlaps between digital (online) and printed (offline) news production and workflow, but now the game is between digital (website based) and social media.

The mainstream media which had experts in the writing and editing department were trained with new technologies. The role of the journalist was questioned and redefined in the process of digitization (Carlson, 2019). When most of them adapted to the new technologies – many took backend. The journalist was provided with a mobile kit to cover (taking pictures, recording audio, and video) of the news event. The trend of live streaming and social media updates became popular norms in digital media spaces of mainstream media.

“We often observe what mainstream follow – but when we follow the style and form of mainstream media in content reporting and presentation, we lose our identity and audience” (*Respondent 1, Senior Editor, Personal Interview, 2019*).

But most of the editors from the current study, agree that the web technology and stylesheet are inspired by mainstream media.

“The main reason for this is that most editors and technology head of independent Malayalam web portals were previously associated with mainstream media houses” (*Respondent 3, Sub Editor, Personal Interview, 2019*).

The adaptation measured by mainstream media on digital spaces can be studied and classified with the growth and development of web technology

(Franklin and Carter, 2019; Spisak, 2019;Khanzode and Sarode, 2016). The development of news media and journalism trends based on web technology can be understood from the following table:

Web Technology	Platform	Media
Web 1.0	The Read-Only Web	Uploading PDF of newspaper and digital-ready news stories.
Web 2.0	The Social (Read-Write) Web	The prominence of user-generated and oriented news stories with social media.
Web 3.0	The Semantic (Read-Write-Execute) Web	The emergence of the gate watching rather than gatekeeping.
Web 4.0	The Mobile Web	The entry of mobile-ready news reports and multimedia journalism.
Web 5.0	The Intelligent / Emotional (Symbiotic) Web	The use of artificial intelligence and robotic writing.

Global Trends in Digital Journalism

While focusing through the tough times of the news industry it has been observed that lack of trust in social media is affecting adversely directly on the traditional media which is becoming unpopular and the industry is sinking. The major global reports state that most of the audience also are now not trusting the news which is being disseminated through various medium. The deadly risk is shifting towards the journalists of the western countries. The advertisements were the major source of revenue which is now itself becoming weaker and is becoming for this department also to sustain the newsrooms. In January 2019, Gannett, an American mass media holding company laid off may journalists across the US, Vice Media, an American-based Canadian digital media and broadcasting company slashed 10% of its workforce. since 2005, 245 titles had to stop their printing and were closed in the UK. As per the Business Insider report, until March 2019,

2400 people have lost their job due to the shift in news media consumption patterns. While trying to cope up with the situation many publishing agencies and content developers have started charging to produce the content. But the question arises here is that is the solution being adopted is worth working. The focus of growth is only limited in few countries, like in people in Norway paying for online content has increased from 27 % to 34% and in the US, there has been seen an increasing demand for paid content (news) which has risen from 6% to 16% in March 2016. The New York Times, The Washington Post, Financial Times, The Guardian, etc. have emerged as the bigger players in the market and it has also been observed that the payers are only subscribing to the one title leaving no room for the smaller players to survive in this cut-throat competition of news consumption.

Start-up Models and Entrepreneurship

Max Weber and Schumpeter though they belong to sociology and economics respectively, have contributed to developing the theory to analyze entrepreneurship and its role in the development of capitalism in society. Both theorists concerning their ideas and theories have some consensus and some differences. Schumpeter paid attention to identifying pre-scientific vision; hence, he made the task rather easier and assumed entrepreneur merely a manager, circular flow development system. So far as Weber's ideas are concerned, it is a difficult task to make identification as his thoughts on entrepreneurship are often scattered in his all works (Swedberg, 2002).

There is some unresolved controversy in the meaning of entrepreneurship. There are some consensus about entrepreneurship which includes a part of the administration and its function in the decision-making process for regulating some types of organization. Some scholars refer to the term 175 for strategic or innovative decisions while others apply it for business organizations. The term can be clarified in the historical context. The genesis of the word is French which appeared long back particularly to denote "*to do something*".

During the early sixteen century, those who were engaged in leading military expeditions were labeled as entrepreneurs. After 1700, the word was frequently referred to by the French for government road, bridge, harbor and fortification contractors and later to the architects. By 1800, the word appeared in the academic discipline as it had been used by a considerable number of the French economists, who treated the word in a specific sense in the field of economics that has given special meaning to entrepreneur and entrepreneurship, with differences emerging mostly from the features of the

sector of the economy. And those economists who were interested in the Government treated the entrepreneur as a contractor, agricultural specialist (farmer) and industrialist as a risk-taking capitalist (Seligman and Johnson, 1967). However, entrepreneur and entrepreneurship have been used in various contexts by scholars at various points of time.

It is clearly understood from global trends and theoretical views on entrepreneurship that the independent ventured in digital spaces India can be termed as startups as they are entering the space by taking a significant financial risk hoping for a profit. But in the case of Malayalam media digital media space, we found most of the digital journalism start-ups were started of low budget.

“We had just two laptops with an internet connection at my home when I started our venture with my two friends. We were focusing on film-related news and updates. Initially, we stated on Blogspot for free later we converted to .com domain for INR 2000 per year. Today, we are having a profit of more than INR 340000 per year.”
(*Respondent 2, Founder and Editor, Personal Interview, 2019*).

The above said, venture now has 21 full-time employees such as reporters, sub-editors, video editors, cameraman, web developers, and publicists. While the average salary of an entry-level journalist in Kerala is around INR 22000 per month; the above-quoted founder pays from the range of INR 13000 to INR 43000 to its team members based on their work and experience.

“I have started by field reporting job after my graduation in journalism. After working for 3 years, I understood there is very little growth in the field. I am not interested in working inside the newsroom as editor (in Kerala news media hierarchy, editors are paid well than reporters and growth in the industry is also more in editorial jobs). This led me to start my digital venture which is based on mobile. Me, with my team eight-member team, covers various events in and around Cochin and upload on YouTube. We cover all major cultural and entertainment events – take interviews of guests, celebrity, and audience and try to provide information to viewers about the event. We get good viewership on YouTube and able to manage with the YouTube revenue” (*Respondent 4, Founder and Lead Journalist, Personal Interview, 2019*).

Workflow and Readership in Malayalam Digital Spaces

The workflow of the independent portals and platforms are quite different in terms of content collection and presentation. However, individual journalist aspires to establish his or her name in the industry. The major difference is in visual journalists. The use of mobile and its extended equipment make them different from other television channels in the field with big ENG cameras.

“Often, we feel like less privileged in terms of size. When we enter the press club or other public events, we were labelled as “new” media. There was a kind of discrimination between conventional media and new media” (*Respondent 5, Journalist, Personal Interview, 2019*).

“Things are different now. When I joined the web portal as a reporter from mainstream media, I wanted to do something outside of the frame. Here I enjoy freedom – there is less editorial and advertorial intervention. The media associations and press clubs are also taking motivates in regularize independent media houses. This is not in terms of paper regulations but the mindset” (*Respondent 6, Senior Journalist who is working with a social responsibility driven website, Personal Interview, 2019*).

The mindset among other journalists and mainstream media is also changing. There is more acceptability among the audience in recent times.

“Kerala, being the highest literate state in India, it is difficult to get genuine readership. There are less likely to revisit if our content is not unique or fresh. Earlier, most of the independent news portals relied on news from agencies and other mainstream news portals. But innovation in storytelling and interactivity in web spaces made the difference” (*Respondent 7, Editor and Web Traffic Analyst, Personal Interview, 2019*).

The storytelling is now moved towards more professional and objective oriented. There is a big give and take away between digital exclusive and mainstream media. The spaces are still different, but the lines are getting blurred.

“Earlier, the online news in Malayalam digital spaces were mainly considered as soft news-oriented. We used to get high clicks on health and family articles. We also used to get high reach when public exam results are announced. But now things are changed. There is major breaking news that appeared on such platforms and

later picked up by mainstream media. They also acknowledge it”
(Respondent 8, Journalist, Personal Interview, 2019).

The advertising in the form of Google Ad revenue, event promotion, and local advertising is not that enough for making a profit. All the respondents in this study agreed on one point that the initial investment and capital profit are key to sustain. The web design and other media technology-related elements were never financial or professional constrain to the founders, editors, journalist, or designers. There are variously free or limited access platforms like Canva, Adobe Spark, Kimemaster, NCH Videopad which allows them to work on less budget. These not only provide them financial freedom but also help them in building customized products for them. Most of these new media and multimedia platforms are social media friendly and build for digital-only platforms. But all the roads of success are leading to one answer – the content – with quality which is the soul of any media house.

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Knowledge Scale-wise Climate Change Awareness: An Analysis of Professional Characteristics of Journalists in Kerala

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Abstract

Undoubtedly, climate change as one of the most serious threats to humankind in the 21st century. This study primarily assumed climate change is largely as an anthropogenic origin and tried using an interdisciplinary lens by taken its association with journalistic narrative in the regional media landscape of Kerala. Journalistic news narratives and interpretations play a pivotal role in the public understanding of climate change. To measure journalistic knowledge scale-wise climate change awareness, study uniquely designed a conceptual model which incorporated four knowledge scales as casual & basic knowledge, effect knowledge, action-related knowledge and agreement/event knowledge (knowledge scales proposed by Tobler, Visschers & Siegrist, 2012). Each of these knowledge scales corresponded to respective four factors and 17 items. In light of this a survey instrument was developed and conducted it among 518 journalists in Kerala. Journalistic professional characteristics considered for the study were region, type of media, field of work, experience, media education, job designation, climate change news reporting and media awards. Study results showed a few professional variables had significant association with discussed knowledge scales and majority of the journalists (N= 325, 62.7%) had a moderate level of climate change awareness in corresponding to each climate change knowledge scales discussed.

Keywords

Climate Change, Climate Change Awareness, Knowledge Scale, Journalistic Professional Characteristics

Introduction

Climate change considered being one of the most serious challenges of 21st century and this is a broadest topic of interdisciplinary and multidisciplinary relevance ever studied by the academic community. Human induced climate change is a serious problem that must be addressed immediately (Houghton, 1992; Carte, 1995; Houghton, 1996; Watson, 1997; Nakicenovic and Swart, 2000; Houghton, 2001). The Intergovernmental Panel on Climate Change (IPCC) defines climate change as —a change in the state of average weather

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patterns attributed to both natural and human induced factors and which in addition to variability persists over long periods (IPCC, 2007).

Especially since the publication of Rachel Carson's famous book *Silent Spring* (1962), evidently environmentalism and environment journalism were became largely discussed and debated in the academic platforms. As climate change is an abstract, gradual, micro-level and complex phenomenon, it is not easily tangible for the common people. Many people find it hard to relate the problem to their everyday lives, where more immediate individual, social, political and economic issues compete for attention (Moser, 2010). Mass media have played a decisive role in determining public understanding of climate change and has been influential in shaping science and other strategies of policy related discourses. The mass-media is the key actors in the identification and interpretation of environmental issues (Schoenfeld et al., 1979; Spector and Kitsuse, 1977). Academic studies empirically observed that common people get a lot of information about science through the consumption of mass media (Wilson, 1995).

Media/journalists can act as intermediaries between scientific understanding and public understanding of climate change. Hence, media professionals form an interpretive community sharing the scientific consensus on human induced climate change. The journalists' attitudes towards climate change are depended with many factors like their self interest, usage of news sources, frequent interaction with scientists' community and many others. Climate change as a globally local phenomenon has the potential to cut across journalistic beats and includes journalists from different types of media outlets and countries.

Statement of the Problem

Study assumed that media plays an intermediary role between scientific understanding and public awareness of the phenomenon of climate change. Hence, journalists as media content makers, their knowledge scale-wise climate change awareness have to be thoroughly investigated. Based on the empirical data from the reviewed studies, there is a knowledge gap persist between scientific understanding and journalistic interpretation of the phenomenon climate change. In an effort to reduce this knowledge gap, this study examines knowledge scale-wise climate change awareness of journalists in Kerala, specifically with their professional characteristics.

Study Objectives

1. To understand the nature of linkage between knowledge scale-wise climate change awareness of journalists in Kerala and their professional characteristics.
2. To determine the level of knowledge scale-wise climate change awareness of journalists in Kerala.

Literature Review

There were only a few studies explored the knowledge of journalists about climate change. Wilson (2000) surveyed environmental journalists and found substantial deficits in their knowledge about the scientific consensus and the debates on par with the perspective of climatologists. If journalists underestimate the consensus in the research community, their coverage may over represent skeptical voices (Boykoff & Boykoff, 2004). In Wilson's study (2000), the climate journalists' level of knowledge depended on whether they were employed full-time and on their use of scientific sources. Peters and Heinrichs (2005) surveyed climate journalists in Germany and found that they formed a heterogeneous group that cut across beats. In another qualitative study, journalists expressed their awareness of climate change but identified ignorance about the issue as a major problem among their colleagues (Harbinson, 2006).

A recent study on climate journalists in Sweden drew a more positive picture (Sundblad et al., 2009). It found knowledge of climate change among journalists ranking second behind scientific experts but ahead of policy makers and laypersons. Research on climate journalists has been often based on studies in single countries. Berglez (2011) interviewed climate journalists in Sweden who struggled to overcome the constraints of media logic in order to adequately cover climate change. Elsasser and Dunlap (2013) showed that the conservative newspaper columnists in the US questioned anthropogenic climate change in their pertinent columns.

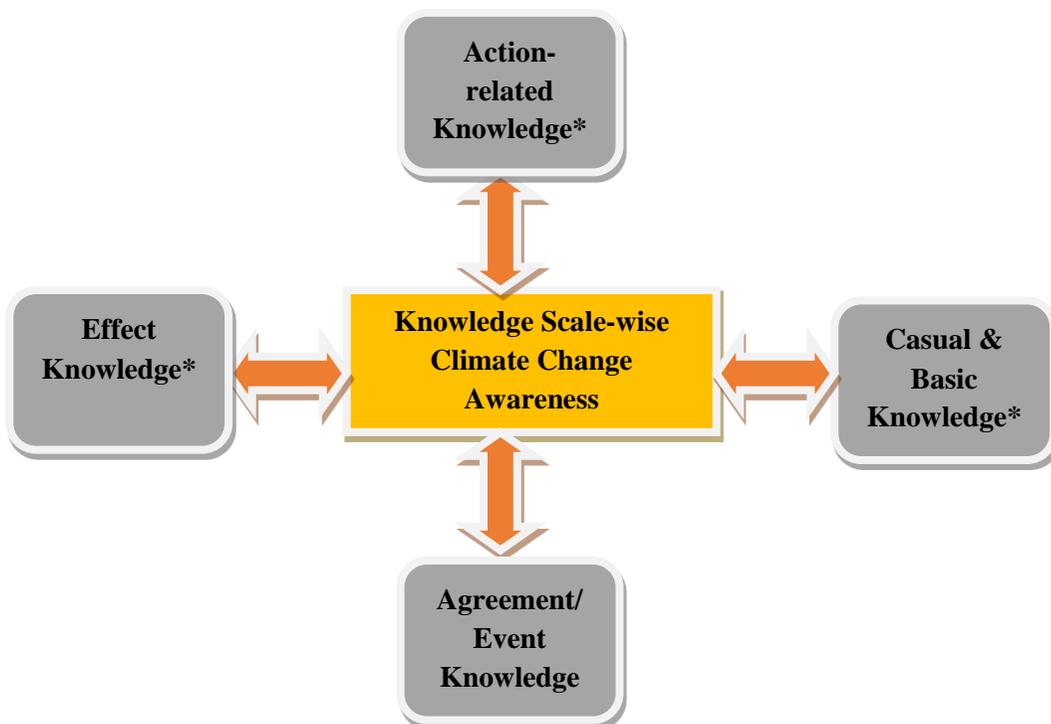
Here, quite interestingly W. Stoutenborough, Robert Nicholas Fette, Arnold Vedlitz and Carol L. Goldsmith (2014) analyzed media and climate change communication in the climate scientists' perspective. Climate scientists believe the media inaccurately report on scientific research regarding global climate change. Panos South Asia for the Climate and Development Knowledge Network (2014) prepared a project report with 49 of the best environment journalists from Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka. This project report analyzed the growth and stature of climate change awareness & understanding among journalists in South Asia.

Do you think mass media has an important role to play among common people's understanding of communication discourses of climate change issues? B.N.Neelima and R.Uttama Reddy (2014) focused on the issue of climate change as an emerging area of concern among citizens, governments and policy makers globally. At the same time, Martin Rice, Ann Henderson-Sellers and Greg Walkerden (2015) used a lens to focus on journalists and researchers at the forefront of communicating climate science. They conducted a survey to compare journalists' & researchers' attitudes on the performance of the media as a channel of information of climate change.

Conceptual Model of Knowledge Scale-wise Climate Change Awareness of Journalists

As an important construct knowledge scale-wise climate change awareness is conceived to have four unique knowledge scales: casual & basic knowledge, effect knowledge, action-related knowledge and agreement/event knowledge. Each knowledge scale is associated with their respective contributing factors like cause, consequence, adaptation & mitigation and climate change agreement.

Figure 1: Knowledge Scale-wise Climate Change Awareness (Conceptual Model)



**Knowledge Scales Proposed by Tobler, Visschers & Siegrist (2012)*

Methodology

The objectives of the study warrant a quantitative survey method. The study conducted a survey among journalists who were enlisted in the Public Relations Department (PRD) directory of Government of Kerala that constituted the population of the study. By adopting a multistage stratified random sampling method, study sample constituted of 518 journalists. Besides to this study designed a standardized survey instrument to measure knowledge scale wise climate change awareness. A 25 statement survey instrument consisted of two sections. First section of the questionnaire enquired the journalists about their professional characteristics (region, type of media, field of work, experience, media education, job designation, climate change news reporting and media awards). The second section consisted of 25 statements spread across four knowledge scales: casual & basic knowledge, effect knowledge, action-related knowledge and agreement/event knowledge with their respective four contributing factors. 17 items across four contributing factors under each knowledge scale were measured on a 3-point Likert scale (true/false/don't know) with item-wise scores as the 1 score for each correct response and 0 score for the wrong response. Both positive and negative statements were presented. The responses to the positive statements, 'true' indicates as 'informed', 'false' indicates as 'misinformed' and 'don't know' indicates as 'not informed' (for the negative statements 'true' & 'false' will denote vice versa).

For the study, the ranges of knowledge scale-wise climate change awareness score based on each knowledge scale were equally divided into three levels as 'High', 'Moderate' and 'Low'. For the study, the knowledge scale-wise climate change awareness score is greater than mean + standard deviation ($\mu + \sigma$), the awareness level will consider as High, whereas the score less than mean - standard deviation ($\mu - \sigma$), the awareness level will consider as Low. Since, the score value in-between mean + standard deviation ($\mu + \sigma$) & mean - standard deviation ($\mu - \sigma$) is considered as Moderate.

Population Profile

To describe the population, study used the enlisted journalists in the directory of Public Relations Department (PRD), Government of Kerala published in 2019. The total number of journalists in Kerala is 3,941.

Results

To find out the difference in mean scores of knowledge scale-wise CC (Climate Change) awareness with various professional characteristics such as region, type of media, field of work, experience, media education, job designation, climate change news reporting and media awards. Study used the statistical tests such as One-Way ANOVA and Independent sample t-Test, based on the case may be treated in the respective data frames. The results are reported in below tables.

Table 1: Knowledge Scale-wise Climate Change Awareness by Region

Knowledge Scales	Region	N	Mean Score	Std. Dev.	F	Sig.
Casual & Basic Knowledge	Southern	181	5.27	1.50	1.753	.155
	Central	138	5.46	1.41		
	Northern	170	5.38	1.41		
	Outside Kerala	29	5.89	1.11		
	Total	518	5.39	1.43		
Effect Knowledge	Southern	181	4.09	1.17	1.902	.128
	Central	138	4.21	1.01		
	Northern	170	3.94	1.14		
	Outside Kerala	29	4.31	1.07		
	Total	518	4.08	1.12		
Action-related Knowledge	Southern	181	4.25	1.23	.999	.393
	Central	138	4.29	1.18		
	Northern	170	4.15	1.23		
	Outside Kerala	29	4.55	.98		
	Total	518	4.25	1.20		
Agreement/Event Knowledge	Southern	181	4.79	1.88	2.100	.099
	Central	138	4.71	1.99		
	Northern	170	4.78	1.83		
	Outside Kerala	29	5.65	1.39		
	Total	518	4.81	1.88		

Journalists from outside Kerala had a greater CC Awareness mean scores in respect of Casual & Basic knowledge (M= 5.89, SD= 1.11), Effect knowledge (M= 4.31, SD= 1.07), Action-related knowledge (M= 4.55, SD= .98) and Agreement/Event Knowledge (M= 5.65, SD= 1.39). But the differences on knowledge scales were not statistically significant, since $p > .05$.

Table 2: Knowledge Scale-wise Climate Change Awareness by Type of Media

Knowledge Scales	Media	N	Mean Score	Std. Dev.	F	Sig.
Casual & Basic Knowledge	Newspaper	343	5.44	1.45	.686	.561
	Radio	17	5.23	1.52		
	Television	92	5.21	1.42		
	Online Media	66	5.40	1.31		
	Total	518	5.39	1.43		
Effect Knowledge	Newspaper	343	4.09	1.13	.444	.721
	Radio	17	4.17	1.18		
	Television	92	3.97	1.14		
	Online Media	66	4.16	1.03		
	Total	518	4.08	1.12		
Action-related Knowledge	Newspaper	343	4.25	1.26	.281	.839
	Radio	17	4.35	.93		
	Television	92	4.29	1.16		
	Online Media	66	4.13	1.05		
	Total	518	4.25	1.20		
Agreement/Event Knowledge	Newspaper	343	4.90	1.87	1.045	.372
	Radio	17	4.41	2.03		
	Television	92	4.56	1.88		
	Online Media	66	4.84	1.85		
	Total	518	4.81	1.88		

ANOVA results showed that Newspaper journalists had higher CC awareness mean scores in respect of Casual & Basic knowledge (M= 5.44, SD= 1.45) and Agreement/Event knowledge (M= 4.90, SD= 1.87), whereas Radio journalists had higher CC awareness mean scores in respect of Effect knowledge (M= 4.17, SD= 1.18) and Action-related knowledge (M= 4.35, SD= .93). Yet, differences on mean scores were not statistically significant, since $p > 0.05$.

Table 3: Knowledge Scale-wise Climate Change Awareness by Field of Work

Knowledge Scales	Field of Work	N	Mean	Std. Dev.	F	Sig.
Casual & Basic Knowledge	Reporting	243	5.37	1.40	7.057	.001*
	Editing	231	5.55	1.37		
	Others	44	4.68	1.65		
	Total	518	5.39	1.43		
Effect Knowledge	Reporting	243	4.09	1.16	7.912	.000*
	Editing	231	4.20	.99		
	Others	44	3.47	1.33		
	Total	518	4.08	1.12		
Action-related Knowledge	Reporting	243	4.33	1.21	1.950	.143
	Editing	231	4.22	1.18		
	Others	44	3.95	1.25		
	Total	518	4.25	1.20		
Agreement/Event Knowledge	Reporting	243	4.93	1.94	5.220	.006*
	Editing	231	4.86	1.78		
	Others	44	3.95	1.81		
	Total	518	4.81	1.88		

*p < 0.05

Journalists in the field of editing had higher CC awareness mean scores in respect of Casual & Basic knowledge (M= 5.55, SD= 1.37) and Effect knowledge (M= 4.20, SD= .99), whereas journalists in the field of Reporting had higher CC awareness mean scores in respect of Action-related knowledge (M= 4.33, SD= 1.21) and Agreement/Event knowledge (M= 4.93, SD= 1.94). ANOVA results showed that the differences on mean scores of Casual & Basic knowledge, Effect knowledge and Agreement/Event knowledge were statistically significant, since $p < 0.05$.

Table 4: Knowledge Scale-wise Climate Change Awareness by Experience

Knowledge Scales	Experience	N	Mean Score	Std. Dev.	F	Sig.
Casual & Basic Knowledge	Upto 1 Year	40	5.15	1.49	1.560	.184
	1 - 5 Years	137	5.24	1.47		
	6 - 10 Years	103	5.31	1.42		
	11 - 15 Years	87	5.55	1.45		
	Above 15 Years	151	5.56	1.36		
	Total	518	5.39	1.43		
Effect Knowledge	Upto 1 Year	40	3.92	1.28	3.199	.013*
	1 - 5 Years	137	3.91	1.07		
	6 - 10 Years	103	3.95	1.17		
	11 - 15 Years	87	4.24	1.03		
	Above 15 Years	151	4.29	1.10		
	Total	518	4.08	1.12		
Action-related Knowledge	Upto 1 Year	40	4.35	1.05	7.175	.000*
	1 - 5 Years	137	3.90	1.18		
	6 - 10 Years	103	4.03	1.17		
	11 - 15 Years	87	4.50	1.16		
	Above 15 Years	151	4.54	1.22		
	Total	518	4.25	1.20		
Agreement/Event Knowledge	Upto 1 Year	40	4.20	1.95	5.021	.001*
	1 - 5 Years	137	4.59	1.83		
	6 - 10 Years	103	4.50	1.73		
	11 - 15 Years	87	5.02	2.01		
	Above 15 Years	151	5.28	1.82		
	Total	518	4.81	1.88		

*p < 0.05

Journalists with more than 15 years of experience had higher mean scores of CC awareness in respect of Casual & Basic knowledge (M= 5.36, SD= 1.36), Effect knowledge (M= 4.29, SD= 1.10), Action-related knowledge (M= 4.54, SD= 1.22) and Agreement/Event knowledge (M= 5.28, SD= 1.82). Difference of mean scores of Effect knowledge, Action-related knowledge and Agreement/Event knowledge were statistically significant, since p < 0.05.

Table 5: Knowledge Scale-wise Climate Change Awareness by Media Education

Knowledge Scales	Media Education	Number	Mean Score	Std. Dev.	T	Sig. (2-tailed)
Casual & Basic Knowledge	Yes	436	5.41	1.37	.612	.541
	No	82	5.30	1.70		
Effect Knowledge	Yes	436	4.11	1.10	1.101	.272
	No	82	3.96	1.22		
Action-related Knowledge	Yes	436	4.30	1.20	2.175	.030*
	No	82	3.98	1.19		
Agreement/Event Knowledge	Yes	436	4.91	1.82	2.776	.006
	No	82	4.29	2.08		

*p < 0.05

Remarkably, journalists who possessed professional media education had better CC awareness mean scores in respect of Casual & Basic knowledge (M= 5.41, SD= 1.37), Effect knowledge (M= 4.11, SD= 1.10), Action- related knowledge (M= 4.30, SD= 1.20) & Agreement/Event knowledge (M=4.91, SD= 1.82) than journalists without professional education. T-test results showed that a difference in mean scores of Action-related knowledge was statistically significant, since p < 0.05.

Table 6: Knowledge Scale-wise Climate Change Awareness by Job Designation

Knowledge Scales	Job Designation	N	Mean Score	SD	F	Sig.
Casual & Basic Knowledge	Field	213	5.42	1.38	1.168	.312
	Desk	208	5.28	1.49		
	Supervisory	97	5.54	1.39		
	Total	518	5.39	1.43		
Effect Knowledge	Field	213	4.07	1.11	.987	.373
	Desk	208	4.03	1.14		
	Supervisory	97	4.22	1.11		
	Total	518	4.08	1.12		
Action-related Knowledge	Field	213	4.38	1.137	3.563	.029*
	Desk	208	4.08	1.19		
	Supervisory	97	4.34	1.34		
	Total	518	4.25	1.20		
Agreement/Event Knowledge	Field	213	4.80	1.93	.296	.744
	Desk	208	4.77	1.86		
	Supervisory	97	4.94	1.83		
	Total	518	4.81	1.88		

*p < 0.05

Data shows that journalists in supervisory position had higher CC awareness mean scores in respect of Casual & Basic knowledge (M= 5.54, SD= 1.39), Effect knowledge (M= 4.22, SD= 1.11), Action-related knowledge (M= 4.34, SD= 1.34) and Agreement/Event knowledge (M= 4.94, SD= 1.83). Yet, a difference on mean scores of action-related knowledge was only statistically significant, since p < 0.05.

Table 7: Knowledge Scale-wise CC Awareness by CC News Reporting

Knowledge Scales	CC News Reporting	N	Mean Score	SD	T	Sig. (2-tailed)
Casual & Basic Knowledge	Yes	423	5.55	1.32	5.657	.000*
	No	95	4.66	1.67		
Effect Knowledge	Yes	423	4.16	1.08	3.098	.002*
	No	95	3.76	1.24		
Action-related Knowledge	Yes	423	4.30	1.18	1.887	.060
	No	95	4.04	1.27		
Agreement/Event Knowledge	Yes	423	4.95	1.83	3.648	.000*
	No	95	4.18	1.94		

*p < 0.05

Similarly, journalists who reported climate change news had higher CC awareness mean scores in respect of Casual & Basic knowledge (M= 5.55, SD= 1.32), Effect knowledge (M= 4.16, SD= 1.08), Action-related knowledge (M= 4.30, SD= 1.18) & Agreement/Event knowledge (M= 4.95, SD= 1.83). Hence, differences in mean scores of three knowledge scales (Casual & Basic knowledge, Effect knowledge & Agreement/Event knowledge) were statistically significant, since p < 0.05.

Table 8: Knowledge Scale-wise CC Awareness by Media Award

Knowledge Scales	Media Award	N	Mean Score	Std. Dev.	T	Sig. (2-tailed)
Casual & Basic Knowledge	Yes	105	5.61	1.26	1.806	.072
	No	413	5.33	1.46		
Effect Knowledge	Yes	105	4.37	.91	2.905	.004*
	No	413	4.01	1.16		
Action-related Knowledge	Yes	105	4.65	1.14	3.894	.000*
	No	413	4.15	1.20		
Agreement/Event Knowledge	Yes	105	5.26	.80	2.750	.006*
	No	413	4.70	1.88		

*p < 0.05

Data shows that journalists with media awards had higher CC awareness mean scores in respect of Casual & Basic Knowledge (M= 5.61, SD= 1.26), Effect knowledge (M= 4.37, SD= .91), Action-related knowledge (M= 4.65, SD= 1.14) and Agreement/Event Knowledge (M= 5.26, SD= .80). Differences in mean scores of Effect knowledge, Action-related knowledge and Agreement/event knowledge were statistically significant, since p < 0.05.

Knowledge Scale-wise Climate Change Awareness Level of the Journalists

To determine the level of knowledge scale-wise climate change awareness of journalists in Kerala is one of the objectives of the study. The results are reported below (table: 9).

Table 9: Knowledge Scale-wise CC Awareness Level of the Journalists

Knowledge Scales	CC Awareness Level	N	Mean	Std. Dev.	F	Sig.
Casual & Basic Knowledge	High ^	108	6.64	.56	217.24	.000*
	Moderate^^	325	5.48	1.07		
	Low^^^	85	3.47	1.41		
	Total	518	5.39	1.43		
Effect Knowledge	High	108	4.77	.41	134.588	.000*
	Moderate	325	3.86	.87		
	Low	85	2.75	1.12		
	Total	518	3.87	1.04		
Action-related Knowledge	High	108	4.57	.51	213.737	.000*
	Moderate	325	3.24	1.00		
	Low	85	1.85	.92		
	Total	518	3.29	1.22		
Agreement/Event Knowledge	High	108	4.87	.37	172.330	.000*
	Moderate	325	3.50	1.10		
	Low	85	2.12	1.24		
	Total	518	3.56	1.32		

*p < 0.05

High^ = Awareness score value is greater than $\mu + \sigma$, *Moderate^^* = Awareness score value in-between $\mu + \sigma$ & $\mu - \sigma$ *Low^^^* = Awareness score is less than $\mu - \sigma$

In respect of casual & basic knowledge scale, data (table: 9) revealed that 108 journalists had higher level climate change awareness (M= 6.64, SD= .56) whereas majority of journalists (N=325) had moderate awareness (M= 5.48, SD= 1.07) & minority of them (N= 85) had low level of climate awareness (M= 3.47, SD= 1.41) level as well. But the difference on mean scores of three different levels of climate change awareness in respect of causal & basic knowledge scale was statistically significant, since $p < 0.05$.

On the other hand, 108 journalists with high level of climate change awareness in respect of effect knowledge scale (M= 4.77, SD= .41) whereas majority of journalists (N=325) had moderate awareness level (M= 3.86, SD= .87) & minority of them (N= 85) had low level of climate change awareness (M= 2.75, SD= 1.12) in the same knowledge scale. ANOVA results showed that the difference on mean scores of three different levels of climate change awareness in respect of effect knowledge scale was statistically significant, since $p < 0.05$.

Similarly, ANOVA results showed that the difference on mean scores of three different levels of climate change awareness in respect of action-related knowledge scale was statistically significant, since $p < 0.05$. Data showed

that 108 journalists with high level of climate change awareness in respect of action-related knowledge scale ($M= 4.57$, $SD= .51$) whereas majority of journalists ($N=325$) had moderate awareness level ($M= 3.24$, $SD= 1.00$) & minority of them ($N= 85$) had low level of climate change awareness ($M= 1.85$, $SD= .92$) in the action-related knowledge scale.

Remarkably, data shows that that 108 journalists with high level of climate change awareness in respect of agreement/event knowledge scale ($M= 4.87$, $SD= .37$) whereas majority of journalists ($N=325$) had moderate awareness level ($M= 3.50$, $SD= 1.10$) & minority of them ($N= 85$) had low level of climate change awareness ($M= 2.12$, $SD= 1.24$) in the agreement/event knowledge scale.

Discussion & Conclusion

Undoubtedly, empirical evidences from the academic reviews that media plays a significant role in the public understanding and their perception of climate change issues. Reflecting this, the last decade has witnessed a proliferation of research examining the coverage and framing of climate change in the media, with a strong focus on the science of climate change, impacts, and mitigation (Moser, 2010, 2014; Nerlich et al., 2010; Schmidt et al., 2013). One of the primary objectives of the study was to determine knowledge scale-wise climate change awareness level of journalists in Kerala. Study result emphasized that out of the total sample of the study ($N= 518$), majority of the journalists in Kerala ($N= 325$) had a moderate level of climate change awareness in respect of all four knowledge scales and significantly minority of them ($N= 85$) had low level of awareness as well.

Study also investigated nature of linkage between journalistic knowledge scale-wise climate change awareness and their professional characteristics. Journalists with more than 15 years of experience had higher mean scores of CC awareness in respect of casual & basic knowledge, effect knowledge, action-related knowledge and agreement/event knowledge. Weber (2013) asserts that personal experience only shapes the beliefs about climate change for individuals with no strong beliefs about the same but is less likely to influence the level of awareness for people with a firm belief on climate change. Similarly, journalists belonged to outside Kerala and those who work in supervisory position had higher CC awareness mean scores in respect of casual & basic knowledge, effect knowledge, action-related knowledge and agreement/event knowledge. When it comes to type of medium, Newspaper journalists had higher CC awareness mean scores in respect of casual & basic knowledge and agreement/event knowledge

whereas Radio journalists had higher CC awareness mean scores in respect of effect knowledge and action-related knowledge.

As this particular study is limited in the regional media landscape of Kerala, further extended studies can be done to have a deeper investigation on the various factors of journalistic awareness & their perspective and practice towards climate change as well. Especially in the context of climate change as a pressing threat of human existence, the research domain of media communication about climate change (MCCC) desperately needs continuous academic research interventions.

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“Is it that day of the month”? Women in Indian Menstrual Hygiene Product Advertisements

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Abstract

The paper is an attempt to study how women’s questions on female hygiene products in India are represented in advertisements. Four advertisements of menstrual hygiene product Whisper released from 2015-2018 are studied using content analysis methodology. Theoretical perspectives of Berger Joseph’s Social Expectation Theory, Judith Butler’s Social Theory of Gender Relation, and Laura Mulvey’s Male Gaze are utilized in the analysis. The Whisper advertisements had incredible story telling format exhorting to break the myths and taboos associated with menstruation. The study concludes that the meta-narrative of women empowerment hides the power dynamics within and the ways in which capitalist economy and its marketing strategies appropriate feminist discourses. Women are invariably presented as protagonists in the advertisements, but the ultimate superhero is none other than the product i.e., Whisper.

Keywords

Menstruation, Sanitary Napkin, Whisper and Taboo.

Introduction

Menstrual blood is the only source of blood that is not traumatically induced. Yet in modern society, this is the most hidden blood, the one so rarely spoken of and almost never seen, except privately by women. - Judy Grahn

A girl is conditioned to hide menstruation from the beginning of her menarche. Menstruation, most of the time, is considered a taboo and girls are subjected severe restrictions on those days. Challenging these restrictions and taboos are least welcomed in most societies. Girls are not allowed to refer to menstruation directly but they have to use euphemisms such as *moon thing* and *on that day of the month*. Unfortunately, the misconceptions on menstruation impose severe restrictions on women and their right to be self-reliant. Overcoming the age-old taboos of menstruation is a real challenge and the pace of change in this direction is slow.

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The present study is an attempt to explore the portrayal of menstruation by health hygiene products in India. The article will analyze the role of these products in triggering changes in the misconceptions of menstruation and the portrayal of gender in the promotion of the products. For a comprehensive understanding of the topic, a detailed discussion on menstruation, health hygiene products and advertisements are detailed below.

Menstruation as a Biological Phenomenon

Menstruation or menstrual period is the periodic shedding of the lining of a woman's uterus. The uterine lining breaks down into a bloody substance and then passes down through the cervix and exits through the vagina. The process usually lasts from three to five days. The volume of menstrual blood can vary from period to period and from woman to woman. The process menstruation is a natural phenomenon associated with the reproductive cycle that first occurs in an adolescent girl usually between 10 and 14 years and is one of the indicators of the onset of puberty among them. Biologically, a adolescent girl has a pair of ovaries, fallopian tubules, uterus, and a vagina by birth. When she enters puberty, the pituitary gland releases hormones and it stimulates the two ovaries to produce hormones like estrogen and progesterone. The hormones help in the further growth of a girl's body like physical maturation, emotions and mental ability. Ovulation is the process of leaving the tiny egg from one of the ovaries once in a month which travels from fallopian tubules to vagina. Before the ovulation days, the estrogen hormone stimulates the uterus to build up the lining with extra blood and tissues on the walls of the uterus to prepare it for pregnancy. If the egg produced by the ovary fuses with a sperm cell, it travels and attaches to the wall of the uterus where it slowly develops into a fetus. If the egg is not fertilized, it does not attach to the cushiony wall of the uterus, and the uterus sheds the extra tissue lining. The blood, tissue, and unfertilized egg leave the uterus, through the vagina. This process repeats about three decades or more depending on the nature of the female body(Chamberlain, 2018).

Menstrual Hygiene Products

Managing the outflow of menstrual blood has been a concern for woman in every society. Cloth menstrual pads, one of the common menstrual hygiene products, are used as undergarments to prevent menstrual blood from leaking onto clothes and body. These types of menstrual pads are reusable, less expensive, environment friendly and act as alternative to disposable sanitary napkins, tampons or menstrual cups. Sanitary napkins are absorbents used for the same purpose as that of cloth pads. A tampon made of rayon or

cotton, on the other hand, is used for absorbing the menstrual blood by insertion in to the vagina.

Menstrual cup is one of the menstrual blood prevention methods popularized nowadays. It is inserted into the vagina during periods. It is made up of flexible medical grade silicone and like a bell shaped with a stem. The stem helps the insertion and removal. The cup seals against the vaginal wall just below the cervix. Depending on the volume of flow, the cup is removed, unloaded, washed and reinserted. The cup is eco-friendly and reusable for up to five years or more.

Menstrual hygiene brand Whisper was chosen for the analysis, after a pilot study conducted among 25 female students' use of menstrual hygiene products. Similarly, four advertisements of Whisper broadcast between 2015-2018 were shortlisted based on popularity among the female students of the pilot study.

A Glimpse of Sanitary Napkin Advertisements

The first print advertisement for menstrual pads and belts was published by Kotex in Syracuse Herald Newspaper in US on April 29, 1920(Chattopadhyay, 2016). It promised discretion, convenience and solution to 'an intimate feminine problem.' In 1926 Johnson & Johnson introduced Modess Sanitary Napkin which eventually became a household name in US. The advertisements depicted fashion models, glamorous women with gorgeous gowns uttering the text message: "Modess...Because..." There was no narration about the product and what it was used for. The reason for the omission was that menstruation was considered a taboo. Actress Courtney Cox used the unmentionable word "period" for the first time in a television advertisement in 1985 (When 'that time of the month' was finally called 'period' on American TV, 2016). It took 65 years to utter the word period in sanitary napkin advertisements.

Procter and Gamble (P&G), an American based multinational company launched a sanitary hygiene product named Whisper in 1983 which became a leading world brand in a couple of years. In 1992, Procter and Gamble launched Whisper in India. It was one of the earliest brands that talked about menstruation and sanitary pad openly on a television commercial. In 2015, Whisper initiated a campaign to break the taboos surrounding menstruation through the commercial 'touch the pickle.'

The present study investigates the portrayal of menstruation and characters in Whisper ads. It also attempts to study the nature and characteristics of public awareness campaigns for women in India.

Review of Literature

Monthly cycle of menstruation is largely considered as repetitive validation of a woman's femininity. Biological process and cultural process are the major domains of menstruation. It acts as a bridge from girlhood to adolescence. Menstruation ushers in many changes on a girl's body by transforming her to a woman both physically and mentally. The society constructs so many meanings associated with menstrual cycle. Menstrual cycle is often followed by the terms like absenteeism, sanitary protection and mood swings to which social institutions and surroundings have much to influence upon. *The Language of Advertising* by Vestergaard Torban and Schroder Kim (1985)(Vestergaard & Schroder, 1985) reveals that Tampax tampons advertisement where a woman at her workplace states that tampons would help women in their work.

Media tries to construct meanings that are related to menstruation and the menstruating women, both reflecting and influencing their social or political status. Stereotypical representation of women solely for their sexual features is used as a strategy for the product promotion in advertisements. Courts Block (1993) in *The Portrayal of the Menstruating Woman in Menstrual Product Advertisements* asserts that these advertisements catch the attention of youngsters by relating the advertisement's message to contemporary women (Courts & Berg, 2009). At the same time, contemporary women try to hide their menstruation from others and frequently use codes for denoting the menstrual days. Advertisements convey such images by using codes like "Those Days". Thus, advertisements reinforce the complex menstrual management system in a society. If they reveal the truth, changes in perceiving menstruation may trickle down. But advertisers seldom show interest in changing the system and stick on to traditions.

Many women never want to change the rituals and beliefs associated with menstruation. Oxely (1998) conducted a study and found that undergraduate women and women who are working in medical profession have a high level of self-consciousness and hyper vigilance during their menstruation period. The menstruation taboo has negative impact on women's health, sexuality, well-being and social status. (Oxely, 1998)

In most advertisements, women will not display menstrual products for fear of menstrual status discovery. *Adolescence, Advertising, and the Ideology of Menstruation* by Merskin Debra (1999) based on her ten-year content analysis concludes that American advertisers in 1920 had recognized the taboos associated with menstruation and incorporated messages about social

consequences of “featuring” feminine hygiene advertising. Thus, advertisers selected white models and avoided blacks.(Merskin, 1999)

Men in Menstrual Product Advertising by Linton David (2008) described that period and its products are commonly thought to be solely the concern of women, yet the values that shape the attitudes and representation of menstruation are strongly influenced by men. In this study of advertisements from 1920s to 1949 men in uniform, doctors and post-war unhappy husbands sent unambiguous messages to women consumers about how men wanted them to behave in terms of their choice of pads and tampons. And these messages, in turn, reflected the larger social expectations regarding appropriate gender role behavior. (Linton, 2007)

A study conducted by Ingrid Johnston-Robledo and Joan C Chrisler (2011) titled *The Menstrual Mark: Menstruation as Social Stigma* revealed that menstruation was a social stigma that focused only on women. The word ‘stigma’ meant any stain or mark that made a person’s body or character defective. The taboo was transmitted through powerful socialization agents in popular cultures such as advertisements and educational materials(Robledo & Chrisler, 2011).

Research Questions

1. To study the representation of menstruation in selected Indian advertisements on female hygiene products.
2. To study the portrayal of gender roles in these advertisements.

Methodology and Sampling

The overall methodological approach of the present study is qualitative in nature. Four Whisper advertisements are studied using qualitative content analysis. This selection is based on pilot study conducted by the researcher. The present study of the advertisements would from the following aspects: cultural, socio-political, emotional, and individual. Four television advertisements of Whisper was chosen from 2015-2018 based on the pilot study and YouTube ratings.

Analysis

#Touch the Pickle -2015

Touch the Pickle was one of the famous campaigns by Whisper in 2015 which won the Glass Grand Prix award in gender equality category. The 32 second video advertisement depicts the story of a young adult girl who touches the pickle jar during her period. The girl wearing a white jeans and light peach top with a side bag walks towards the dining table and lays her hand on the pickle jar. In the next shot, the grandmother in hushed voice states “she touched the pickle”. The close up of girl on the next shot indicates that she did it deliberately and she once again places her hands on the jar and then goes out. The next shot is a morning walk of the girl with a white jeans and green and light green top. Seven senior citizen ladies watch her as she jogs in front of them. She touches the pickle jar held by one of the ladies and continues her jogging. One of the senior ladies tells others “are baba she touched the pickle”. The third scene is the girl playing badminton wearing a white skirt and green top and winning the game. The spectators mostly senior citizen ladies cheer the girl with a slogan: *she touched the pickle*. After that she holds the pickle jar from one of the ladies tells “I touched the pickle”. The entire crowd salutes her. The girl then states “periods ki dinom mem kehathe he, don’t wear white, don’t go out, don’t play and don’t touch the pickle... I say girls let’s break the taboos go ahead and touch the pickle.” She tears the additional paper cover of a whisper packet used to hide the identity of the product and throws it into the bin.

The girl breaks the customs and taboos associated with menstrual period by wearing white dress, going outside, playing matches and finally touching the pickle. The elderly women characters are featured as motivational forces collaborating with the breaking of these taboos. This advertisement features only fair women. The characters use modern and traditional apparels. Wearing white dresses during period was a taboo and the adult girl invariably depicted wearing white dress. Literally speaking this advertisement does not comply gender balance as Whisper is menstrual hygiene product.

Do you # Own Those 5 Days? - 2016

‘Do you #Own Those 5 Days?’ was another advertisement campaign by Whisper in India to mark the occasion of 2016 international women’s day. In this one-minute video advertisement, Whisper features the stories three young women professionals in India: Aswhini Ponnappa, badminton gold

medalist in 2010 Commonwealth Games, Anahita Dhondy, the youngest female chef and Ayesha Aziz, the youngest female pilot.

The advertisement starts with Ashwini Ponnappa sitting beside a tennis court in her jersey looking desperately at her racket. The voice over supported by her body language suggests that she is in her menstrual period. The question 'will I be able to...(play badminton in the five days of my period) makes the reason for her distress. The uncertainty of her response (may be or may be not today) is revealed in her soliloquy. She then thinks of packing up and leaving the court.

This scene is followed by Anahita Dhondy and Ayesha Aziz in their respective work places in similar situations. Both of them are in their menstrual period and the question haunts them: Will I be able to continue work in those "five days of...?" One of her male colleagues asks Anahita to stop PM sing and another female colleague asks 'is it that time of the month?' She is also asked to 'calm down' and 'take it easy' by her female colleagues. Ayesha's dilemma is portrayed through a question seemingly asked by her male colleague: 'are you unwell?' But the answer to that question is given by two of her female colleagues: 'today is not your day' and 'why don't you just go back?'

In the second part of the advertisement, the three women are again featured against the background of their respective work places: Ashwini in tennis court, Anahita in kitchen and Ayesha on-board. But as opposed to the first part of the advertisement, they are portrayed actively engaged in their professional activities. They appear thrice and in close up shots. They answer the question posed to them: five days of I can do it (Ashwini), five days of who can stop me?(Anahita), what five days? (Ayesha). In the second appearance they reveal the reason for the transition from uncertainty to certainty. They declare 'with Whisper five days of confidence' (Ashwini), 'of being unstoppable' (Anahita) and 'striding ahead' (Ayesha). In the final appearance they together ask their female counterparts to own those five days and exhorts women to share their experience by writing on a placard, taking a selfie and posting them on Facebook. In the last part of the advertisement, their images are cut to a Whisper packet.

The importance of this advertisement lies in the timing of its release: the international women's day. This advertisement released on a day selected to celebrate the social, economic, cultural and political achievement of women, it explicitly asserts women's right to work during their periods. The lead characters of Ashwini, Anahita and Ayesha have made remarkable presence in sports, cooking and aviation powerfully convey the empowerment

message. These and many other professional spaces are generally male bastions and women are generally denied entry on account of menstruation, social and cultural taboos. Ashwini, Anahita and Ayesha not only broke the taboos but also achieved success in their professions. Thus, the very selection of the characters and the timing of the advertisements fundamentally sets the tone of the message.

Menstrual period is a constrain even for these privileged women. This constrain is usually imposed by society. This theme is evident from the first part of the advertisement where Anahita and Ayesha are confused about what they are expected to do during the menstrual period. They are greeted with readymade solutions by colleagues. Thus, societal expectations from a woman are not limited to those five days, but extended throughout the life of a woman. Women are reminded that they do not own those days of period. A colleague of Ayesha tells her 'Today is not your day', 'Why don't you just go back?' These are normal expectations from society. The implication is that the days lost will be obviously owned by others.

In the first part of the video the three women are portrayed in blurred visuals that do not bring their faces into limelight. They also do not speak in their own voices. Voiceover speaks for them. The concerns of their menstruation are articulated through questions and instructions from faceless, abstract and unknown sources. They not only own those five days, but they do not own a name. They are belittled in their profession, and fail to live up to the demands of the profession. The lighting and the music used in the advertisement also contribute to this image construction.

Body Image Representation is portrayed positively in this commercial unlike other Whisper campaigns. The protagonists wear their daily life apparels. Ashwini wears light t-shirt and skirt. Anahita wears chef's white uniform and Ayesha is shown with white uniform. The advertisement states that light and white apparels are safe during menstrual days. The characters are not mere models but well-known women professionals sharing their real experiences intended to motivate women. Thus, the theme is women centric. The ad does not maintain gender balance and it is not required as the advertisement depict entirely the stories of women. Lack of representation from the less privileged is conspicuous.

Sit Improper-2017

Sit Improper was a digital campaign launched by Whisper in 2017. It was a sequence to 'touch the pickle' released in 2015. This one minute 15 second video advertisement features the stories of more than 10 young girls. They

are shown sitting as they wish. In India, society teaches how woman should talk to others, how to behave at home and in public, and what to wear at home and outside. Women are also expected to sit properly in front of others even when there is no one around. Improper sitting is alright for boys but not for girls. The advertisement defies this notion and promotes improper sitting. It is depicted as more fun, freedom and comfort than proper sitting.

There is variety of body image representation with mix of professions and normal activities. There is no evidence of any Dalit and minority representations in the advertisement. The characters are fair skinned except one medium complexioned reading girl. The advertisement primarily addresses women and as such there is no depiction of other gender.

Several events are portrayed in the advertisement. A ballet dancer in her costumes sits on the floor with legs wide open, reading girl wears blue jeans and shirt; drama practicing girls wear loose pants and shirts. Most apparel of the characters is of light shades. The pianist wears white dress and sits beside her piano. The trios celebrating with sparklers wear casual dress. Music listening girl is with white pants and light-yellow shirt. The lady on the sofa playing video game is portrayed in her nightdress. The female boxer sits on a bench outside the boxing ring with green t-shirt and blue shorts.

#Break The Silence -2018

Break The Silence was another video advertisement campaign by Whisper in 2018. In this one-minute advertisement starts with a female teenage student singing on a stage. She sings “Hum honge kam yaab”, a popular patriotic song with adapted lyrics. The next shot is of the teenager with sullen face as she tries to hide her back with her uniform jacket. The uneasy and embarrassed student leaves the staff-room. Her waiting father realizing the situation puts his hands on her shoulder to console and to reassure her. Next scene is the story of another teenage girl. She hides in embarrassment a reel of cloth, usually used by women during menstrual period, from her friend. This girl is definitely from a less privileged family. The teenage friend with the approval of her mother hands over a packet of Whisper and makes her happy from the embarrassing situation. The next scene is of a large number of girls confidently singing on a stage.

Break The Silence campaign is intended to create awareness and to break the taboo on menstruation. The catchword of the campaign states that ‘over a thousand whispers together can break the silence on menstruation.’ Hiding your menstruation from male colleagues, relatives, male friends and even girlfriends is a social norm. A girl does not disclose the period and keeps it

with herself. The message of Break The Silence is that ‘All you need is a whisper to break the silence.’ A whisper that comes from your father, teacher, mother or best friend telling you that, “You can and will be unstoppable.’ The adapted lyrics of the famous Scout and Guide prayer song ‘Hum honge kam yaab” meaning “we shall overcome some day” is powerful message to break the taboo associated with menstruation. A powerful message woven around to market Whisper.

Body image representation is varied in the advertisement. Only two characters are portrayed in their middle age and rest is adolescents. It is a marketing strategy to introduce Whisper to adults. The adolescent girls are of light makeup and seen with tiny black ear-rings. There are no heavy apparels. The adolescents are fair skinned. But the middle aged male character is brownish. The ad tries to be more inclusive.

Table 1: Cultural Aspect: Analysis of Whisper Advertisements

Whisper portrays women in relevant and significant ways. Whisper uses women more for its product promotion. In this brand’s advertisements use women’s body as a tool for product promotion. Taboo associated with menstruation is the common theme of Whisper advertisements.

Variables	#Touch the Pickle-2015	#Own those 5 Days-2016	#Sit Improper-2017	#BreakThe Silence -2018
Myth/Taboo	Yes	Yes	Yes	Yes
Apparels	Modern and Traditional	Modern	Modern	Modern
Gender Role Displayed	Women	Women	Women	Women and Men

Table 2 Socio-political Aspect: Analysis of Whisper Advertisement

Variables	#Touch the Pickle-2015	#Own those 5 Days-2016	#Sit Improper-2017	#Break The Silence -2018
Age	Young Adult and Senior Citizen	Young Adult	Young Adult	Young Adult and Middle Aged Man and Woman
Location	Outdoor, Indoor	Outdoor	Outdoor	Outdoor, Indoor
Occupation	No Reference	Employed	Employed, No Reference	Teenage Students

The advertisements give prominence to women and portray them as self-sufficient. The women featured are young female adults. Women are not

depicted as mere objects but as asserting individuals with independent personality.

Table 3 Emotional Aspect: Analysis of Whisper Advertisements

Advertisements	Register(Original Term/Euphemism)			Relationship			Mode of Communication(Verbal/Non-Verbal)		
	Queer	Women	Men	Queer	women	Men	Queer	Women	Men
#Touch the Pickle-2015	No One	Original Term	No Signs	No One	Grand Mother-Grand Daughter, Strangers	No One	No One	Verbal and Non-verbal	Verbal
#Own those 5 Days-2016	No One	Original Term	Euphemism	No One	Individual	Colleague	No One	Verbal and Non-verbal	No One
#Sit Improper-2017	No One	Euphemism	No Signs	No One	Strangers, Friends	No One	No One	Voice-Over Alone	Para Language
#Whisper Break the Silence-2018	No One	Euphemism	No Signs	No One	Strangers, Friends	Father	No One	Verbal	No Signs

Advertisement portrays women for product promotion. Every advertisement has female voice over and none of them has male voice over. The verbal communication shown at the end of the advertisement justifying the concept.

Table 4 Individual Aspects: Analysis of Whisper Advertisements

Advertisements	Status (Independent/Dependent)			Protagonist			Feeling (Embarrassment/Proud)		
	Queer	Women	Men	Queer	Women	Men	Queer	Women	Men
#Touch the Pickle-2015	None	Independent	None	None	Yes	None	None	Embarrassment	None
#Own those 5 Days-2016	None	Independent	None	None	Yes	None	None	Embarrassment	None
#Sit Improper-2017	None	Independent	None	None	Yes	None	None	Embarrassment	None
#Whisper Break the Silence-2018	None	Both	No Sign	None	Yes	None	None	Embarrassment	Proud

Women are shown mostly with casual and explicit dressings. Reference to occupation and education is subtle. The menstrual hygiene products give more importance to women’s identity. Body complexion is always fair and it reinforces the basic beauty concepts and ideology. The characters in Whisper advertisements are positioned as self-reliant and independent women.

Discussion and Conclusion

The study has prominence in contemporary India where most of commercials portray gender roles in a biased manner. Here most of the menstrual hygiene products portray women as empowered. Similarly, menstrual hygiene

products give importance to women as they are the only consumers of the products. “Touch the Pickle” is one of the progressive advertisement campaigns intended to break the taboos associated with menstruation. With increasing acceptance and popularity, Whisper has consistently modelled similar campaigns on menstruation.

Whisper features females and female voiceovers. Portrayal of minorities, Queer and Dalits are conspicuous by their absence. The product is primarily addressed to women and advertisements do not focus on gender equality and gender balance. Apart from promoting and selling the product, the advertisements call for breaking the taboos and myths associated with menstruation. Women are invariably presented as protagonists in all the advertisements, but the ultimate superhero is none other than the product i.e., Whisper.

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Abstract

Advertising culture and techniques around the globe have come across remarkable changes in the era of New Media. The streaming media including YouTube had revolutionized the viewing experience of the audiences. The enterprises have realized the impact and powerfulness YouTube advertising facilitated by its wide access to billions of people all around the world. Among them, pre-roll advertisements are most used by advertisers to reach their target audience. Internet has grown in recognition as an advanced advertising platform because it allows 24 hours' interactivity between the advertiser and the consumer. This particular study is to find out how the young YouTube users are engage and interact with the pre-roll advertisements benefiting from this dynamic nature of online media. A survey was conducted among the 150 youth (18-35) respondents from Kozhikode district and statistical techniques are used to determine engagement, action, and statistical significance with the variables.

Keywords

Pre-roll Advertisements, Media Engagement, User Interaction, Purchase Decisions

Introduction

Advertising plays a major role in modern life. It shapes consumer behavior and even influences attitudes of the society and the individual. Advertising in social media and online streaming media emerges as an important way of appealing to the viewers in recent years. Seamless access to the Internet and increases in data usage made the marketers concentrate and invest largely on social media and video streaming websites like YouTube. Advertising through this media is different from that of traditional advertising techniques. Interactivity is the key element that separates online video from other media. This considerable feature of YouTube and other online streaming services is also attributed and encompassed in advertising practices over the media. The impact, content and usage patterns of these advertisements are unique and paving the way for new innovations in the area of marketing.

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YouTube Advertising

There is no disagreeing that YouTube has become a legitimate source of entertainment for millions, all in just over a decade. YouTube is currently competing with a number of the most important TV programs and often it wins in terms of views. Most content uploaded to the YouTube is from individuals, many of whom consider it as their job and their channel a primary source of income. In fact, most entertainment and broadcast companies now have their own YouTube channel. Multiple abilities to be one of the largest search engines and as a video content provider to popular audiences make YouTube a very striking option for digital advertisements. YouTube allows the viewer to interact with the campaign and socialize with the brands from the video in an easier way. According to various studies, this video-sharing website has become an increasingly popular place to advertise. In 2017, 20% of all video ad revenues in America will go to YouTube, according to e-Marketer forecasts. Moreover, advertising accounted for more than 80 percent of Google's revenue in the first quarter of 2021, with YouTube in particular emerging as a growth driver. Advertising revenue generated on YouTube grew by 49 percent year-over-year (Richter, 2021). The trend shows YouTube advertising gives marketers an affordable and more effective alternative to television ads.

Nationwide and industry-specific targeting is easy with the suite of options available to advertisers. Because many viewers are logged into their personal YouTube accounts, advertisers can target specific populations based on their search history and other key data. Understanding audiences allow your business to target viewers based on categories of interests. Depending on search terms and video content, businesses can target customers with different types of videos. In brief, like the other online advertising platforms personalization is a key factor contributes to the growth of YouTube advertising. Unlike traditional advertising, online ads especially YouTube ads provide detailed information about the effectiveness of the campaign. Exposures, click-through rates, bounce rates can be identified that would be nearly impossible to objectively measure with radio, billboards and other alternatives. With data about which ads are most effective, the company's campaign is better able to modify promotional and marketing strategies.

Google offers several different video advertising options on YouTube. There are a variety of advertisement options that a business can utilize through YouTube. The major ones are in-stream advertisements, Overlay advertisements and Sponsored cards (YouTube, 2021). Skippable video advertisements is currently the most common ad format for YouTube advertisements with viewers being able to skip over your video after 5

seconds of viewing. Un-Skippable video ads, just as it sounds they must be fully viewed by the user before the video can be viewed. The user does not have the option to pass over the ad video. Bumper ads are Un-skippable but it is durable only of up to 6 seconds that must be watched before your video can be viewed. Bumper ads are a short video ad format that let you reach more customers and increase awareness about your brand by using a short, memorable message. These video ads can appear when a user initiates video play either in the beginning (pre-roll), at points in between (mid-roll), or after (post-roll).

Pre-roll Advertisements

The benefits of programmatic advertising, including advanced targeting, campaign measurement, and conversion optimization, companies can engage with their consumers and effectively allocate their message to large audiences through pre-roll advertisements. Pre-roll is great for augmented brand awareness, advertisement recollects, and purchase contemplation, mid-roll has advanced completion rates, making it a better option for a company who requires their whole ad to be viewed. Pre-roll video advertising is now commonly found on many websites, including YouTube. The effectiveness of pre-roll video advertising has been attributed to the fact that it's similar to what viewers are used to seeing on the video. Although pre-roll is used across various industries and many digital marketers have embraced the initiative, it is still an underutilized asset.

Pre-roll is potentially a great promotion opportunity for brands that can rise above the initial barriers to access and can pull the space that their competitors are gone out on. There are abundant ways to evaluate the impact of retargeted pre-roll video ads, such as evaluating the view rate, video ad close rate, visitor return rate, surveys and hours of brand engagement. While brand impact and alertness is the common goal for online video programs, smarter, tailored video ads should also be measured for things like conversions; average order value, incremental revenue and revisit on advertisement spend. As we said earlier pre-roll ads can be skippable, un-skippable or bumper ads. Most of the pre-roll ads accompany the link to the product or the business website and an option to share the video advertisement. Share enabled ads can be seen in the YouTube channel of the particular advertiser. Here the users can like or dislike the video ad and comment on them if the option is enabled.

Objectives of the Study

YouTube pre-roll ads have a greater reach to billions of all around the world. Here, the researcher checks the preferences for engagement and interaction of YouTube users with the pre-roll advertisements. This is done under the context of various demographic variables that may influence the engagement, and consumption of the Pre-roll ads. For materializing this general objective, the researcher set some specific objectives.

1. To find out the user preferences generating viewing engagement with pre-roll advertisements.
2. To identify the level of interaction of YouTube viewers towards the pre-roll Advertisements.
3. To find out whether there is any relationship between the YouTube users Pre-roll advertisement engagement, interaction and demographic variables.

Methodology

This study is an analysis of the engagement and interaction of YouTube pre-roll ads among youth. Considering the varied nature and level of exposure of the viewers, the researcher used the sampling method with an exception that it can represent the whole YouTube viewers in Kozhikode district. Purposive sampling method was employed among the youth respondents from Kozhikode district province. The criterion put in was that they are active viewers of YouTube within the age group of 18-35 and were inhabitants of Kozhikode district. Of the 178 total collected samples, 150 respondents with proper data were scrutinized for study.

Theoretical Background

The AISAS model of consumer behavior is applied in the study to analyze the engagement, and interaction patterns of pre-roll advertisements among the consumers. The linear classic AIDMA (Attention, Interest, Desire, Memory, and Action) model by Hall (1924) has played a central role in describing the psychological processes involved in a consumer's purchase of product. With this model, the buyer is depicted as passing through the stages of Attention, Interest, Desire, Memory, and Action. In the Digital era, where online advertising became a powerful and effective marketing tool, a new approach and model has been put forward by Dentsu (DentsuInc. is a Japanese international advertising and public relations joint stock company

headquartered in Tokyo) in 2004. The Attention, Interest, Search, Action, and share (AISAS) is actually derived from the original AIDMA model.

Attention ⇨ **Interest** ⇨ **Search** ⇨ **Action** ⇨ **Share**

It was developed to observe behaviors based on the understanding that the Internet has become prevalent, and that consumers now have access to environments in which they can obtain and transmit information themselves. In this model, the key processes are: Attention, in which the consumer first notices the product or advertisement, followed by Interest. After this, the consumer Searches for information, and then makes a purchase (Action), after which information is Shared with others (Dentsu, 2017).

Here in this study the researcher attempt to analyze how pre-roll ads are capable of attaining the YouTube viewers' attention and directs them towards the next steps in purchase. Since YouTube Pre-Roll advertisements is a powerful form of online advertisement, the digital advertising model AISAS is directly applied to the study. The study analyzes how pre-roll ads grab attention and generates viewing engagement (Analyzing responders' preferences) and whether they click the link Search or Share the advertisements or product (Interaction with pre-roll advertisements).

Findings

Sample Profile

The sample profile of the study is on the basis of the demographic variables gender, age, education and area of living. Out of the total of 150 samples, females contribute to a simple majority (50.7%) and 49.3% of male. A large majority of the sample is between 18-25 years of age (82.7%). In matters of Education about half of the population is PG qualified (49.3%). 35.7% of the respondents have degree qualification. A majority of (54.7%) respondents belongs to the rural areas and a minority (43.3%) lives in urban areas. Only 2% respondents are from the coastal areas.

Consumer Preferences in Engagement

In order to access the user preferences in consuming pre-roll advertisements, audience view on specific video advertisement elements have been analyzed. It includes Music, presence of celebrity, brand and storyline.

Music and Engagement

The following table shows the opinion of respondents towards the statement denoting music as an instrument to watch pre-roll ads. The analysis is based on the level of agreement given by the respondents.

Table 1 Preference for Music

Level of Agreement	Frequency (%)
Strongly Agree	10 (6.6)
Agree	40 (26.7)
Neutral	52 (34.7)
Disagree	39 (26.0)
Strongly Disagree	9 (6.0)
Total	150(100)

The study shows that a large minority (34.7) of the population doesn't convey any agreement or disagreement to the statement that they watch Pre Roll ads with interesting music. 26.7% of the respondents agreed and 6.6% strongly agreed to the statement that they watch pre-roll ads with interesting music. 26% of the population disagreed and 6% strongly disagreed with the statement.

Celebrity Presences and Audience' Engagement

This table shows the level of agreement of the population towards the statement that they watch Pre Roll ad acted by a celebrity.

Table 2 Celebrity Presence as a Preference

Level of Agreement	Frequency (%)
Strongly Agree	6 (4.0)
Agree	31 (20.7)
Neutral	52 (34.7)
Disagree	48 (32.0)
Strongly Disagree	13 (8.7)
Total	150 (100)

Here also a vast minority of the population (34.7) remained neutral to the statement that they will watch pre-roll advertisement acted by a celebrity. 32% of respondents disagreed and 8.7% strongly disagreed with the statement. Only a 20.7 agreed and 4% strongly agreed that showing celebrity will make them watching a pre-roll ad.

Preference to the Brand

The table below describes the respondent's level of agreement towards the statement of preference for watching the advertisements of a favorite brand.

Table 3- Preference to the Brand

Level of Agreement	Frequency (%)
Strongly Agree	7 (4.7)
Agree	58 (38.7)
Neutral	41 (27.3)
Disagree	35 (23.3)
Strongly Disagree	9 (6.0)
Total	150 (100)

The results show a large minority (38.7) agree that they don't skip the pre-roll ads of their favorite brand. 4.7% of the population strongly agrees with the statement. Neutral to the statement is opted by 27.3% of the respondents. Only a 23.3% opined that they don't watch the pre-roll ad even though it's on their favorite brand. Along with them a 6% population strongly disagreed to the statement.

Storyline and Audience Engagement

Here the researcher describes the role of storyline in engaging the YouTube audience to watch the whole pre-roll ad without skipping. The analysis is based on the level of agreement of the respondents to the statement that they watch the pre-roll ads with the good storyline.

Table 4- Preference to Storyline

Level of Agreement	Frequency (%)
Strongly Agree	26 (17.3)
Agree	70 (46.7)
Neutral	29 (19.3)
Disagree	18 (12.0)
Strongly Disagree	7 (4.7)
Total	150 (100)

According to the survey, a large minority (46.7) agree that they prefer to watch pre-roll ads with the good storyline. Along with them 17.3% of the population strongly agrees with the statement. 19.3% of respondents stay neutral. Only a few opined that story line doesn't influence them to watch the pre-roll ads. (12% and 4.7% respectively)

Engagement Level of Respondents

The below tables discuss the level of viewing engagement of respondents on pre-roll ads. It describes how different variables (Gender, Area of living) are related to the level of engagement. Level of agreement to the statements regarding ad viewing preferences (Music, Celebrity, Brand, Storyline) are used to identify the respondents' engagement.

Table 5- Viewing Engagement by Gender

Level of Engagement	Gender		Total
	Male	Female	
High	24 (32.4)	25 (32.9)	49 (32.7)
Medium	32 (43.2)	28 (36.8)	60 (40)
Low	18 (24.3)	23 (30.3)	41 (27.3)
Total	74	76	150
<i>Pearson Chi-Square= .870, df=2, P value=.647</i>			

As per the study, there is no major difference between males and females (32.4 and 32.9) in high-level engagement. A majority of people (43.2) who have a medium level of engagement are males, while females form the minority (36.8). Females are slightly higher (30.3) in low-level usage pattern when comparing to males (24.3). P value (.647) denotes that the association between level of engagement and respondent's gender is not significant.

Table 6- Viewing Engagement by Area of Living

Level of Engagement	Area of Living			Total
	Rural	Urban	Coastal	
High	26 (31.7)	21 (32.3)	2 (66.7)	49 (32.7)
Medium	37 (45.1)	23 (35.4)	0	60 (40)
Low	19 (23.2)	21 (32.3)	1 (33.3)	41 (27.3)
Total	82	65	3	150
<i>Pearson Chi-Square= 4.319, df=4, P value=.365</i>				

As per the findings there no major difference in high-level engagement of the rural and urban population (31.7 and 32.3). Considering the medium level of engagement, a majority of people (45.1) belongs to a rural area, while the minorities (35.4) comprise in the urban group. The majority of people who have a low level of engagement belong to the urban area (32.3) while the minority of people (23.2) belongs to the rural group. Since the P value is

.365, it is evident that there is no association between the level of engagement and respondents' area of living.

Audience Interaction with Pre-roll Ads

For identifying the audience interaction with pre-roll advertisements, respondents' attitude on generating actions with video ad elements has been analyzed. It includes click the links accompanying the pre-roll ad, sharing the video ads and search and visit the websites of product advertised.

Action with Links

Here the researcher describes the interactivity of pre-roll ad by analysing the respondents' attitudes towards clicking links in the pre-roll advertisement. This table shows the level of agreement of the population towards the statement that they prefer to click the links accompanying pre-roll ads.

Table 7 Click Links in Pre-Roll Ads

Level of Agreement	Frequency (%)
Strongly Agree	0 (0)
Agree	5 (3.3)
Neutral	16 (10.7)
Disagree	74 (49.3)
Strongly Disagree	55 (36.7)
Total	150 (100)

As per the study, 49.3% disagreed and 36.7 strongly disagreed that they prefer to click the link given in the pre-roll ads. Only a few (3.3%) agreed that they choose to click the link after watching pre-rolls. No one in the population strongly agreed with the statement. 10.7% neither expressed any agreement or disagreement with the statement.

Sharing Pre-roll Ads

The table below shows the respondents' attitude towards sharing pre-roll ads. The analysis is based on the respondents' level of agreement towards the statement that they prefer to share the Pre Roll ad if they found it interesting.

Table 8 Sharing Pre-roll Ads

Level of Agreement	Frequency (%)
Strongly Agree	4 (2.7)
Agree	12 (8.0)
Neutral	17 (11.3)
Disagree	70 (46.7)
Strongly Disagree	47 (31.3)
Total	150(100)

The result shows a large population disagrees or strongly disagrees (46.7% and 31.3% respectively) in sharing pre-roll ads. Only a few prefer to share pre-roll ads if they found it interesting (8% agree and 2.7% strongly agree). 11.3% remained neutral to the statement.

Search about the Product

The table below shows the respondents' attitude towards initiating search for the product advertised. The analysis is based on the respondents' level of agreement towards the statement that they prefer to search about the product shown in pre-roll ad.

Table 9 Search the Product

Level of Agreement	Frequency (%)
Strongly Agree	1 (0.7)
Agree	9 (6.0)
Neutral	41 (27.3)
Disagree	62 (41.3)
Strongly Disagree	37 (24.6)
Total	150(100)

As per the study, 41.3% disagreed and 24.6% strongly disagreed that they prefer to generate search on the product advertised. Only a few (6%) agreed that they choose to search about the product after watching pre-rolls. Only one respondent strongly agreed with the statement. 27.3% neither expressed any agreement or disagreement with the statement.

Interaction level of Respondents

The below tables discuss the interaction level of respondents on pre-roll ads. It describes how different variables (Gender, Device) are related to the level of interaction. Level of agreement to the statements regarding click links, share ad and product search are used to measure the level of interaction.

Table 10 Level of Interaction by Gender

Level of Interaction	Gender		Total
	Male	Female	
High	29 (39.2)	26 (34.2)	55 (36.7)
Medium	24 (32.4)	26 (34.2)	50 (33.3)
Low	21 (28.4)	24 (31.6)	45 (30)
Total	74	76	150
<i>Pearson Chi-Square= .417, df=2, P value=.812</i>			

Table 10 indicates how the level of interaction is related to gender. As per the results, there is no major difference between male and female in all these three levels. A narrow majority of people (39.2) who have a high level of interaction is males while 34.2 % are females. 34.2% females and 32.4 males have a medium level of interaction with pre-roll ads. Regarding the low level of interaction, a slight majority of people (31.6) are females while 28.4% are males. As the p-value (.812) denotes the association between the level of interaction and the respondent’s gender is not significant. In other words, gender is not a significant factor that contributes to the difference in the interaction level of pre-roll ads.

Table 11 Level of Interaction by Device

Level of Interaction	Device				Total
	Desktop	Laptop	Mobile	Tab	
High	1 (50)	12 (34.3)	41 (36.6)	1 (100)	55 (36.7)
Medium	1 (50)	10 (28.6)	39 (34.8)	0	50 (33.3)
Low	0	13 (37.1)	32 (28.6)	0	45 (30)
Total	2	35	112	1	150
<i>Pearson Chi-Square=3.629, df=6, P value=.727</i>					

It is evident from table , the majority of people who use a laptop (37.1) have a low level of interaction while the minorities (28.6) are those use mobile. In the case of medium level of interaction, majorities (34.8%) are mobile users while the minorities (28.6%) are laptop users. Considering the high level of interaction with pre-roll ads a narrow majority of people (36.6) are mobile users, while 34.3% are laptop users. As the tab and desktop users are just a few in the sample it's not included in the common comparison. The p-value (.727) indicates that the association between the level of interaction and device used for watching YouTube is not significant.

Discussion and Conclusion

People have varied preferences in the reception of advertisements. Their preferences depend on various factors. Pre-Roll ads reach almost every YouTube viewers when they click for their desired video. In an era where the numbers of online audiences emerge, YouTube pre-roll ads have an eminent position in the promotional campaigns. There are several factors that urge the viewers to watch an advertisement. The marketers will make use of these elements for better reaching their target audience. In YouTube pre-roll advertising where the audience has the freedom to skip the ad is also available; certain elements have a greater role in pursuing the viewer to watch the whole advertisement. Understanding viewing engagement of the YouTube viewers is one of the major objectives of the study.

The study indicated that a slight majority of the responders have a high level of engagement. Among Music, Celebrity, brand, and storyline the respondents opined that they wish to watch the ads of their favourite brand and ads with the good storyline. Music and the presence of celebrity are not considered by respondents as a motivating force to engage with an advertisement. In open-ended questions too, some of the respondents mentioned the ads of their favourite brand and ads with the good storyline. This indicates that most of the YouTube viewers will not skip the ad if it has a good starting an interesting story to tell. The responders recollected the pre-roll ads of Red Label campaigns due to the storyline that it follows. The concern towards the favourite brand in generating a viewing engagement is also evident. Here in this study to some of the respondents' recollected pre-roll ads of their favourite brands. The ads of Royal Enfield and KFC are being mentioned by a few respondents on these grounds. According to the both AIDMA and AISAS models, gaining attention is the first phase in the advertising process. As per the study using good storyline and utilizing brand image the advertiser can gain the attention and generate viewing engagement.

Interactivity is the most celebrated feature of online media. In its rising year's online advertising also developed as an area which offers interactive engagement with the audience. The study also focused on the level of interaction pre-roll ads has with the YouTube viewers. YouTube provides audiences the options to share and click links in the ad and visit website of the products. They can also search for the products immediately on web for making online purchase decisions. A vast majority of the responders opined that they do not prefer to click the link accompanying the pre-roll ad. Similarly, most of the population doesn't like to share the pre-roll ads even though they found it interesting. The same trend follows in search for products on internet.

The AISAS model explains the process in which consumers respond to communication is based on the sequence of cognitive, affective, and behaviour. Cognitive refers to consumer noticing the product and thus may have the motivation to seek additional information. Affective is the stage where the consumer gains the interest and desire to make the purchase whereas the final behaviour or action stage is the actual consumption. Since YouTube is used by the audience to access the desired video and the interaction they wishes do is with those videos. As we all know the YouTube users are highly active in liking, commenting and sharing these videos. Therefore their primary concern of engagement is with those videos and pre-roll ads are only secondary even though they found it interesting. The findings conclude that mobile YouTube viewers are more interacted with pre-roll ads than those who use other devices. Smartphones are more user-friendly and interactive than the desktop and laptop. The availability of various social media apps in smartphones helps in the sharing the interesting contents. According to the Media Richness theory, the feedback system is an important element in achieving high richness level. Therefore YouTube pre-roll ads are rich in the sense that it allows the audience to interact with the ad. Even though the option is available there most of the responders are not interested to try it.

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Social Media for Disaster Management in Tribal Communities of Kerala: A Case Study of Kolathara Adivasi Village

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Abstract

Kerala has been facing floods for the last two years. The media, government, and citizens collaborate to address this situation. Voluntary initiatives and action group-oriented movements play a protuberant role in relief activities. Social media helped a lot in mobilizing resources and social support. The government used social media as an instrument to reach out to cases. Many young people of Kerala worked on social media, verifying information and passing it to the rescue team during the floods. The current research is a case study of the flood relief activities held at the tribal village Kolathara near Ambalavayal, Wayanad. Tribes from the Paniya group inhabited the village and endured poor economic and social conditions. Many of the families lived in the houses built by the government after the previous year's floods. Focus group discussions and intense interviews were conducted among the people, including opinion leaders of the community. Mobile phones and social media are used vastly in the village, which immensely helped during the floods. The study reveals the use of social media for emergency responses, facilitating rehabilitation, crowdfunding, and relief activities in the remote tribal communities of Kerala. The study explores new trajectories by proclaiming that the planned use of social media can efficiently aid disaster management.

Keywords

Social Media, Tribal Communities, Disaster Management, Paniya Group, Kerala Floods

Introduction

Natural disasters are the consequences of natural hazards. It could be a flood, a tornado, a hurricane, a volcanic eruption, an earthquake, a heat wave, or a landslide. Recent years have witnessed a series of natural disasters around the world. Numerous regions of the world are struck by tsunamis, earthquakes, floods, and tornadoes, which cause severe economic and resource damage. Kerala had the worst flood in nearly a century on August

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2018. It secluded people in different areas of the state, which was not equipped to handle this massive damage to life and infrastructure.

The public authority affirmed 387 passings. The state government has assessed the starter misfortune at Rs 20,000 crore, which is around 15% of the state's Gross domestic product gauge for 2018-19. According to Mind Evaluations, the flooding has influenced multiple million individuals in the state. In August alone, individuals would lose compensation worth Rs 4,000 crore. More than 1,000,000 individuals were protected in help camps across the state. Harmed street framework generously influenced rapid alleviation and modifying activities.

Due to these occurrences, extended communication was required for people to interact with their loved ones in the disaster zone and to look for information regarding food, shelter, and conveyance. Social media has assumed a crucial part in spreading facts about these fiascos by permitting individuals to share data and request help. Social media are likewise becoming essential to recovery endeavours after crises and reconstructing basics.

The extensive scope of informal organizations allows individuals recovering from catastrophes to quickly interface with critical assets. There are many gatherings in the most famous long-range interpersonal communication locales, allowing people allied with diverse parts of disaster mindfulness and willingness to interface, mention, and share information in explicit arenas. The point of the paper is to break down the opportunities for utilizing web-based mass media in the administration of catastrophic events and recommend essential rules for sorting out interchanges and information trade between the members on such occasions.

The traditional modes of communication were ineffective during the flooding as telephone and mobile networks failed. This lacuna made it challenging to deal with requests for help and coordinate rescue efforts. At this point, people across the world turned to volunteers with social media platforms and instantly geared up rescue and relief operations.

Review of Literature

Communication is functional in all three administration phases: arranging, reaction, and recuperation (Houston et al., 2015). Alternatively, as Coombs

(2010) calls them, the pre-emergency stage, the emergency reaction, and the post-emergency stage. Communication inside the primary stage plans to forestall or set up; the subsequent one tends to an emergency and the third concern follow-up activity. Haddow, G. what is more, Haddow (2014) adds another stage. They discourse moderation, readiness, reaction, and recuperation.

While relief incorporates the activities taken to decrease the effect of possible fiascos, later on, readiness is about the activities engaged when a calamity is unavoidably approaching. Reaction alludes to the quick responses to the repercussions of a calamity and incorporates activities engaged in saving lives, assets, and requests. Recuperation is the last stage and incorporates all plans to return to ordinariness (Haddow, G. and Haddow, 2014). As needs be, Fiasco Communication incorporates both emergency and hazard Communication (Houston et al., 2015).

The increment in the degrees of precipitation in Kerala causes seriousness in floods. Kerala State Calamity, the executives' Plan Profile clarifies that recovering water bodies and wetlands increases the prospects of a flood. Right around 15 level of the all-out state is inclined to floods.

The crisis organizations act essentially and decrease the dangers of emergencies with the assistance of the data from various wellsprings of web-based media. Crisis occasions are told and tended to with the assistance of long-range informal communication stages. The input from the public is appropriately thought about before aiding them (Alexander, 2014).

Renn (2010) distinguishes four significant elements of hazard Communication: managing public insight, changing the singular conduct, acquiring trust and believability, and including partners in the Communication cycle. While the fundamental point is to ensure the partners, auxiliary objectives, such as securing reputational and monetary resources, assume extra generous parts (Coombs, 2010). The standing of an association can even be improved since a regularly expected incidental effect is to build up open trust in the capacity of an association (Carroll, 2013). Calamity Communication's viability may have positive and negative effects in the aftermath of the debacle. (Houston et al., 2015). Its turn of events and development ought to be exceptionally focused on by all partners included.

Gao et al. (2011) called attention to clients via online media stages who generally react very quickly to crises by posting data about those crises in informal organizations. Crisis offices could utilize that data to get convenient knowledge about a specific circumstance. This opportune obtaining of data is, without a doubt, essential, mainly because, in those circumstances, the absence of practicality could bring unsuitably severe and hazardous results.

Objectives and Methodology

The study's main objective is to give a brief account of the role of social media during the floods at the tribal settlements in Kerala. The study follows a qualitative case study. Qualitative research allows researchers to recognize the involvements of individuals and how people concept and understand their worlds (Merriam, 2009). According to Merriam (2009), "Engaging in systematic inquiry about your practice – doing research – involves choosing a study design that corresponds with your question; you should also consider whether the design is a comfortable match with your worldview, personality, and skills."

The study was conducted in Kolathara Adivasi village of Panamaram 19th ward. The village is situated in the middle of Wayanad and establishes approximately 300 people belonging to the Paniya Tribal sect. The Paniya community is the most significant single Scheduled Tribe in Kerala. They are seen in 25 panchayats, three municipalities in Wayanad district, the neighbouring Karnataka, and the Nilgiris district of Tamil Nadu. They speak a language of their own initiated by the South Dravidian family, closely related to Malayalam, with borrowings from Kannada and Tamil.

The study uses two methods: focus group discussion and intensive interview. A group of eight people, four female and four male residents of Kolathaara Adivasi village, were selected for the discussion. The Ward member and a volunteer from relief actions were interviewed.

Analysis

Kolathara tribal village has been familiar with floods for an extended time. Water bodies surround the place and must cope with the environmental issues during monsoons in Kerala. 2018 and 2019 were two years when the entire state confronted floods and had a considerable loss. Kolathara had to face the worst issues during that period.

The period of the flood is divided into three phases to examine the process.

Phase – 1

Planning

When many places reported heavy rain and floods, there were warning from the part of officials in the village. The main hardship was convincing people to evacuate houses. Traditional door-to-door communication was used for this. Volunteers aged 15 to 25 were identified and split into five groups. They went to each house and personally communicated.

Government officials gave speeches at junctions regarding the importance of moving to safe positions. Vehicle announcements played a prominent role in the phase. People who moved to camps accompanied the group in this process. The health and safety of cattle were addressed separately. Traditional communication methods played an essential role in this phase.

Most households in the village had televisions and cable connections, but only a few used them to obtain news about floods. The inability to comprehend the language and lack of interest were contributing factors. Radio stations available in the location gave important news and updates which were of the least use to the people in the village.

Even though social media helps provide efficient data about a crisis and how hands-on steps must be taken in tribal settlements in the initial stages of the floods. One house member was involved with social media; this had little use in the planning stage. The volunteers used the videos and photographs spread through social media while persuading people to move from houses to safe camps.

In Kolathara, people aged 18 to 35 were social media users and had a minor role in the family's decision-making process. This phenomenon was one of the reasons wherefore social media was not used in the persuasion and planning phases.

Phase – 2

Response

There are seventy families in the settlement. Once the rain worsened, the families started evacuating houses as per the initiatives from the first stage.

The ward member, an educated government employee, and an adult lady from the tribal group acted as opinion leaders. Electronic media were utilized. *Asianet News* and *Mathrubhumi News* were active in the coverage of the evacuation process.

Nine families were isolated and rescued with the fire force's help, which was given on Facebook live by an employee in the fire team. Radio and other media had significantly less role in the phase. Mobile phones were used to communicate with officials and political leaders. Interpersonal communication had a significant role in the whole process. Some individuals used social media in the settlement.

Phase – 3

Recovery

The major crisis faced by the settlement was rebuilding lives after the floods. The process involved materialistic, emotional, and financial rebuilding. During the past floods, 10000/- was issued immediately by the government to each household, making the process easy. The lack of this fund created a dilemma even among the village officials.

Eight groups came to the village with blankets and food kits. Each family received a steel cot from a private group. Another team provided tarpaulin and ropes. Clothes and stationery kits were also provided. This process significantly contributed to the reconstruction of life in Kolathara village. The failure of traditional methods and the immediate entry of a comparatively new and unfamiliar arena of communication by the tribal society were witnessed in this phase.

Conclusion

Social media is used by significantly fewer people in the tribal village but still greatly impacts events and happenings. It helps in connecting people across geographic boundaries and zones through collaborative platforms. Even in the remote villages of Kolathara, with the advent of smartphones, informing people and mobilizing are becoming more accessible and faster.

The effect of social media during the flood in a society can be broadly divided into three phases, Planning, Reacting, and Recovery. This phenomenon is different in the case of the tribal village Kolathara. Social

media does not directly impact people, yet the first two phases only matter a little in the village.

During the initial stage, direct door-to-door interpersonal communication effectively educated the people about the flood, passed related information regarding handling cattle and household accessories, and persuaded them to move to relief camps nearby. In the second stage, it was electronic media that was actively involved. The media gave the shifting process and the rescue operations much attention.

The final recovery phase has the most impact on social media in the village. Social media users mobilized recovery activities and long-term help to restore situations using social media. Likewise, as with any innovation, there are several obstacles between present use and ideal social media abuse. Perceive and investigate the innovation's restrictions in danger, weak populaces.

Right now is a perfect prospect to begin assigning these innovative advancements while producing significant capacities of their viability and the exactness and convenience of the information they give. Web-based media may well upgrade communication frameworks along these lines, considerably expanding the capacity to plan for, react to, and recuperate from compromising individuals and foundations.

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Mapping/Locating Data Journalism Research in India

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Abstract

Data Journalism has gradually appeared over the last decade, driven by the availability of enormous data in digital form. Currently, a considerable amount of data journalism projects are being produced all over the world. In recent years data journalism (DJ) has drawn significant attention both in academia and in media and as a result, this has generated a sizeable body of research literature focusing on various communication premises and approaches as well as social contexts. India is not an exemption to this trend. This article explores the existing research trends in data journalism in India. To better understand its current state in the country, the researchers observed and reviewed the published research literature and works that studied data journalism and related practices empirically. Analyzing these studies allows to map the development of the literature and identify gaps in data journalism research in the country. This article offers some suggestions for future research in the field of data-driven journalism.

Keywords

Data Journalism, Data Visualization, Algorithmic Journalism, Data Journalism Education, Data Ethics and Privacy, Data-driven Stories.

Introduction

With the rise of ICTs, our modalities for living and communication, settling on choices and understanding the truth are being changed. In like manner, the ordinary rationale of news coverage has also impressively been changed by inculcating computational speculation into the newsrooms. Having no ideal definition for what comprises data in journalism, tied with various labels (such as data journalism (DJ), data-driven journalism, database journalism, algorithmic and automated journalism, computational journalism, computer-assisted reporting (CAR), data visualization etc.) for data-related journalistic practices, understanding data's place inside journalism is challenging. Simon Rogers who built up the *Guardian's* Data Blog in 2009, contends that the newspaper has been doing data journalism since 1821 when its first edition conveyed a table of information about Manchester Schools (Rogers, 2013).

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The data journalism is a fairly new journalism wonder that started to appear in industry publications after 2006 however the idea has not been investigated scholastically that much. The practice of making data journalism has been vague even in recent times. One of the first vivid descriptions was portrayed in *Data Journalism Handbook* (Gray, Bounegru & Chambers, 2012), which was published as a collective effort where practitioners and researchers across the world contributed perspectives in the form of a workshop. It was a novel step and a sort of brainstorming effort, most suitable to identify the areas of focus in an emerging field with a serious note. Data journalism literature has concentrated on issues like the conflicts in Afghanistan and Iraq, Olympics, horse-meat trafficking, immigration, tobacco smuggling, crime in big cities, pollution in certain areas, and traffic jams (Bounegru et al 2012)

It is possible to date the beginning of computer-assisted reporting and data journalism to 1952 when Philip Meyer at *The Detroit Free Press* used a supercomputer to take a gander at an assessment of Detroit residents for the purpose of understanding and clearing up the serious riots that detonated in the city. The early years of the 21st century saw the Global Investigative Journalism Network begin to have a critical influence in the development, beginning with its first meeting in 2001 in Copenhagen that offered a strong computer-assisted reporting track and hands-on training. Considering all the elements included in data journalism, from computer-assisted reporting to data visualization, there is a final definition accepted by Veglis and Bratsas (2017): “Data journalism can be defined as the process of extracting useful information from data, writing articles based on the information and embedding visualizations (interactive in some cases) in the articles that help the readers understand the significance of the story or allow them to pinpoint data that relate to them.”

By the twentieth century, there was a perceptible move in the manner in which publishers utilize data. Rather than simply plotting trends, individuals also collected data to make predictions. For example, in 1952, Navy mathematician Grace Murray Hopper and a team of programmers used voting statistics from earlier elections to inside one percentage point. This enthusiasm to anticipate elections was carried into the 21st century by *Five Thirty- Eight* founder Nate Silver, who precisely anticipated 49 out of 50 states during Obama's first presidential bid. Toward the beginning of the 21st century, an upheaval in mobile computing, increases in online connectivity, access, and speed; and explosion in data creation in a general sense changed the landscape for computer-assisted reporting.

As opposed to the European and American instances, the influxes of data journalism practice has developed from numerous Asian nations. Afghanistan's biggest free news Pajhwok Afghan News is the nation's sole news source to utilize data to inform the public. It uses simple data visualization with a strong narrative to appeal to an audience with low data and digital literacy and is regularly referred to by advocates for instance of how data journalism should be possible significantly under incredibly troublesome conditions.

Data journalism is in a growing stage in India. There are as of now not many sites that are operating in this area, and news organizations still have far to go to arrive at the global benchmark. Fortunately, it has gotten and grabbed the eye and caught the attention of the Indian government, news organizations, analytics companies, and data visualization companies. DJ can be accustomed to realize about accountability and transparency among people, particularly in a democratic system. Be that as it may, this refinement about DJ is gradually drawing in open consideration as it requires different literacy levels. Then again, DJ is quick turning into a significant piece of Indian newsrooms as the industry internalizes global trends in mass communication particularly those in multimedia and digital reporting.

Research Background

Being an emerging area of study there are chances of uncertainty in clarifying terms and concepts in the data journalism discourses. Some scholars seek to clarify the meaning of these terms about to somewhat different practices of using data and computers in journalism while others position the entire conceptualization either in the domain of journalism or digital studies. However, the inter-disciplinarily approach seems to be more suitable to have a better understanding. Supporting this argument, Philip Hammond (2015) in his work *From Computer-Assisted to Data-Driven: Journalism and Big Data* argues that while journalism is for sure changing, digital data and computer technology are less fundamental to understanding this than is frequently expected. If one wanted to sum up this change in terms of a shift in terminology, then the contrast between journalism which is 'computer-assisted' and that which is 'data-driven' would be a good indicator: computers and data, rather than the human subject, have come to be understood as the active party in the relationship. Rather than digital data technologies simply causing changes in reporting, nonetheless, it is more that both Big Data and (data) journalism are increasingly understood in ways that are consonant with broader shifts in way we consider the human subject and his/her capacity to think about and follow up on the world as an item. These more extensive changes are additionally obvious in what is by all accounts a

developing agreement in the academic commitment with data journalism (Hammond, 2015).

Megan Knight in a preliminary survey of data-based stories presented in the national news in the UK lays the basis for examination and typology of the structures and organizations of data journalism as a media practice. The analysis shows that superficial data journalism is being rehearsed by UK national papers and is constrained in scope and format. No proof was found of a promise to data projects among the news outlets analysed, and just one occasion of plan of action to the Freedom of Information Act was seen. Most data presented were superficial, and sourced from conventional outlets. Data journalism is practiced as much for its visual intrigue with respect to its insightful characteristics, and the general effect, particularly in the newspaper position is as a lot of brightening as informative. This contention helps us to presume that epistemological lucidity essentially relies on the goal and nature of the act of DJ in a particular setting. (Knight, 2015)

Using semi-structured interviews with Australian data journalists, Scott Wright (2018) analyses how journalists view their role in news organizations; the structure of Australian data journalism inside and beyond Australian newsrooms; and how their practice has changed and identifies the elements that drive this change. This study finds that there has been a decrease in bigger tasks and in exploratory dashboards, just as in the active data journalists in Australia. Be that as it may, there stays a small core of data journalists close by certain moves to standardize data into everyday reporting. This proposes instead of purely a story of decline, how data journalism is institutionalised has begun to develop to adapt with these changes indicating its mainstream trends. (Wright, 2018)

Through Scenario Network Mapping, Florian Stalph and Eddy Borges outline the possible futures of data journalism practice by deciding its supportability in the present atmosphere of news coverage severity. Results propose three potential situations; Skill set Perspective, which recommends that data journalism will soon be regarded as fundamental for each journalist. Secondly, as a genre, data journalism will remain a niche storytelling format but will ultimately find its way into smaller newsrooms due to decreasing limitations. Lastly, because of money related and staff constraints, data journalism will be relinquished by the prevailing mainstream media, who will outsource data analysis. Inside this specific circumstance, it is not yet clear whether data journalism can keep enhancing to stay focused in the continually advancing environment of the present news creation. (Florian Stalph & Eddy Borges Ray, 2018)

Research Objectives

Against the background of the researches discussed above, this study focuses on mapping out the major research works conducted on data journalism practices and related aspects in India. This article attempts to map the research works on data journalism conducted in India. Therefore, this study pursues the following research objectives

1. To analyse the nature and framework of data journalism studies conducted in India
2. To trace out the research gaps identified and to provide propositions for future research on data-intensive journalism in India

Each of these objectives is materialized in the analysis section of this article

Method

In India, various books and reports are in circulation to provide practical knowledge and processes regarding data journalism, but very few researches cover the right aspects of the topic. Being a developing and innovative stream, genuine examinations ought to be led to propose different possibilities of data journalism in the country.

This article maps out trends in data journalism research conducted so far in India. The researcher selected fourteen papers published in research journals and were analyzed to identify and describe themes in data journalism research covered by these publications over the years. A systematic review of the selected articles has been carried out to find out the nature and framework of the selected studies. Analysis of titles, research objectives and methodologies applied allows the researcher to classify the selected papers under the following heads: Digitization and Convergence, Data Visualisation, Data Ethics, and Privacy, Big data sets and Indian politics, Data Journalism Initiatives & Platforms, Newsroom challenges with Data and Data Journalism Education. The research gaps in the field were also identified.

Digitization and Convergence

Data journalism in India has been driven and catalyzed by digitization initiatives by different platforms and the growing popularity of social media. Convergence is more than merely technological change rather it has distinctive cultural dimensions. The shift caused by convergence shapes the

“relationship between existing technologies, industries, markets, genres and audiences” (Jenkins, 2004).

The research article *Convergence of technologies and journalists: Translation of journalistic practices through ANT perspective* investigates how the convergent media and practices modify the journalistic system of news and production. Further, this research paper centres on how certain actors in the newsroom become an irreplaceable piece of the news generation procedure. It is evident from the investigation that news technologies are at work in and around the newsroom. The attendant practices of these technologies indicate a great deal of *translation* or *alteration* of the journalistic network in terms of how journalists do their work and how the resources of the organisation and the knowledge produced are coordinated. Since this paper is focused on exploring only the *translation* of the journalistic network, further focused research is expected to enquire how these new advancements are themselves getting adjusted or deciphered. (Kumar & Haneef, 2016)

Anoop Kumar & M. Shuaib Mohamed Haneef in another article *Digital Media Habitus, Agency and Structure: Convergence Practices among Journalists in Indian Newspapers* opines that intermingling procedure has corrected the 'rules of access' and 'rules of the game' for journalists. The article analysed assimilation of convergence practices into the media field by journalists, changes in journalistic values, changes in doxa of the field and agent's habitus through the lens of Pierre Bourdieu's field theory. The thematic analysis of the data reveals that journalists use appropriate new technologies to redefine the habitus and adapt to contemporary dominant work practices. (Kumar & Haneef, 2016).

Data Visualisation

As data become increasingly ubiquitous (Kitchin, 2014), so do data visualizations — that is, the visual representation of data and datasets which communicate precise information and values. Some DJ studies conducted in India focus on data visualisation mainly social media analytics and infographics. Social Media Analytics is all about collecting data produced from Social Media platforms like Facebook, Twitter, LinkedIn, WhatsApp, Wikipedia, YouTube, Pinterest, Instagram, Tumblr, Snapchat, Google+, WeChat, and many others.

Shweta Patnaik & Swati Sucharita Barik in their research article *Social Media Analytics using Visualization* discusses the work of visualization and analysis methods in data journalism. This paper gives an outline of various

phases in social media analytics and spotlights on different open-source tools useful for pre-processing, cleaning, and analyzing and visualization process. Researchers analyze various social media pages using visualisations, to know their popularity in the audience. Article detailed various data visualisation tools- Tableau, Trend Miner, TwitIE, and Twitter Zombie. Along with analytics and tools, the article explains the process included in data journalism like data mining, data identification, data cleaning, and extraction. (Barik, 2015)

Rajeev Ghode, Research Scholar, Department of Communication Studies, Pune University conducted a study on Infographics and visualisation in news presentation of dailies *Times of India and Indian Express explores* various parameters like importance, visual design, instructional approach, space and sections allotted, to use of Infographics with quantitative parameter like numbers of infographics used in both the newspapers' edition for six months. Overall, the study arrived at a conclusion that the Times of India has effectively used all levels of infographics over Indian Express. The quality of infographics is also appreciable in Times of India in comparison with Indian Express (Ghode, 2016).

But while speaking about DJ practice in India, only Indian Express achieves such a fame competing with international standards very recently through the Panama Papers investigations. Here the researcher focused on visualisation and infographics and even failed to address the data journalism perspective.

Data Ethics and Privacy

The ethical implications of collection, storage, and use of big data in the Indian context need to be investigated. An article titled *Privacy in India in the age of big data* discussed the issue of privacy in the present big data age, and how big data gathered through ICT tools and social media platforms can be used against citizens. The possible ways to protect citizens' private data on the Internet in India were also addressed in this article. The study recommended that the State should have a set of clear guidelines on the collection, monitoring, storage, and owning of data, for authorities, tech companies and other stakeholders which are in an area of collecting user data. A strong privacy policy and security measures to protect the citizens from potential cybersecurity threats and misuse of power in the hands of the government and private parties are needed. Users' consent is necessary for collecting data, storage, and use. (Halder, 2015)

Big Data Sets and Indian Polity

The Influence Industry Digital Platforms, Technologies, and Data in the General Elections in India is a research article by Elonnai Hickok (2018) tries to find out different types of companies, platforms, and techniques involved in the generation, collection, and use of data in elections with a focus on the 2014 and 2019 elections towards mapping the data ecosystem for elections. It also explores government regulations around the use of digital platforms and data in Indian elections. For this purpose, news items, academic articles, policy and legislation, company websites and promotional material, campaigning and election material such as advertisements and voter roll in the context of the 2014 and upcoming 2019 elections in India were identified and studied. The study concluded that the use of emerging technologies and data influence the impact on the fairness, independence, and impartiality of elections. It suggested that a Data protection law is needed in India that extends to the public and private sector and recognizes the evolving nature of data and rights

Data Journalism Initiatives

In India, data-intensive journalism is only more than just to fly. Big media outlets are investing heavily, but the real action is happening among the non-profits and start-ups in the country. Such initiatives are aiming to break new ground in public-interest journalism. More individuals depending on mobile phones and tablets for data, it is inescapable that more stories will be told through sophisticated data and visuals.

The availability of the data in reusable format works as a raw material for data journalism. It becomes important to study the data journalism platforms and initiatives available in India. A study was conducted to study the initiative taken by *indiaspend.com* on data journalism. Content analysis of the *indiaspend.com* website as a whole was carried out and along with it, two stories are picked from different beats. Stories from the year 2016 from January to March were selected randomly one each from the section 'Latest news stories' and 'Special section'. The Special section consists of one broader theme under which various related stories are covered regularly.

Bringing data into journalism: the Indiaspend project also investigates the trajectory of *Indiaspend's* growth and reach through analytics. Also, discuss the prospects of data journalism and computer-assisted reporting through interviews and views of the founder of the organization and the editor. s an attempt to study how public discourses drove the establishment of *Indiaspend* and the use of computer-assisted tools in reporting through

graphic visualizations, that *Indiaspend* specializes in. (Chaitanya Mallapur, 2015)

Newsroom Challenges with Data

Digital technology and new practices like data journalism made a huge impact

in Indian media organisations. While looking at the expertise with data journalism in Indian newsrooms, there are various hindrances and challenges journalists find to adapt themselves with data and its various implications. The finest way to integrate data journalism in Indian newsrooms is to provide ample acquaintance and knowledge on data extraction and analysis tools to deal with. The data extraction process still remains an obstruction for media persons. They considered the data extraction and visualisation process is out of their discipline. So simple and uncomplicated programming tools or apps need to be introduced in order to decode and analyse the huge open-source datasets available in our country. (Lakshmi, A,2020). Journalists also face the scarcity of resources while incorporating data in newsrooms. Data stories held as higher standards for accuracy and corrections in a newsroom. Data journalism practice will bring more traffic to news audiences.

Data journalism would help to build a more democratic, reliable, accurate and informing news cycle India. It would help to keep the Indian audience informed more and better than ever before and the people in a position of power accountable than ever before. Data Journalism is the need of the hour in our country, ie; data stories should act as a shift from fake news to confirmable and trustworthy news. It would allow the journalists to abide with news reporting based on the facts and also allows the audiences to scrutinize those facts. Every journalist can do low-tech DIY (Do It Yourself) data journalism and then only data journalism can transform the Indian media industry (Narula, 2019).

Data Journalism has found reflections in India in the form of organizations possessing data desks and implementing data segments in their news. Journalists have apprehensions towards the inadequacy of updated data and also with the data formats available. Even the data available in Indian government's *india.gov.in* is outdated. And also they are concerned about the data literacy on the part of authorities, mainly in the case of open data sources. Data is uploaded in PDFs, scanned and JPEG format which make the data complicated to clean and process. Data policy of our country looks gloomy and uncertain (Kashyap et al., 2020).

India is one of the first countries to join open data movement by introducing National Data Sharing and Accessibility Policy (NDSAP) in 2012. However, the open data policy by Indian government does not mention anything about promoting data literacy and data skills within government departments or any provisions for a capacity building mechanism. (Kashyap et al., 2020). Journalists have to depend on open tools as news organizations are unwilling to develop in-house tools for fetching and processing data. Data teams are small in number in legacy media organizations and they rely on freelancers and other data journalism platforms for data-based stories.

Data Journalism Education

Indian data journalists are heavily dependent on data aggregates and start-ups provided by the govt authorities. This reveals the lack of data sourcing methods prevalent in our country. In India, journalists hardly rely on crowd sourcing for data crawling. Media can also effectively use RTI act to get data. While looking at data analysis and visualisation context, free tools and less interactive maps and visuals are used. Using of coding language instead of DIY tools will definitely improve the data stories' standard.

An involvement is need from the part of journalism educators in India with a pedagogic approach to impart the entire data dissemination process and for developing and analysing data driven stories. They can highly contribute for bringing better data literate professionals. This pedagogic policy will make the legacy media organisations equipped for practicing data journalism and the over dependence on the data aggregates can be reduced. Such an approach improves the industry standards as well as the quality of journalism education in India.

(Kashyap & Bhaskaran, 2020)

Research Gaps Identified and Suggestions for Future Research

As the data journalism is still in its infancy in our country, same is the case of research related to data journalism. Almost all the articles selected for this study are exploratory in nature. The study recommends more research works should happen regarding various aspects of Indian data journalism ecosystem. Conceptualisation is very crucial for every field to flourish. More studies may explore the changing nature and conceptualisation of data journalism practices in India. This will help to understand the methods and techniques of data journalism.

Ethnographic studies could help in shaping diverse insights towards data journalism. It could even bring theories or new business models in data

driven journalistic practice. India being a place with varied cultural characteristics, regional media organisations and their dealing with data stories could be studied.

Some studies selected here discussed about the challenges faced by journalists while dealing with data. But no epistemological explanations were provided for combating the challenges faced in newsrooms. More comparative studies related to data journalism practice in different media organisations (legacy media and DJ platforms) should be initiated for conceptualising theories examining the data journalism practice in India. No studies tried to explore the quality of the data driven stories published in India so far. A comparative analysis is possible with data driven stories appeared in different newspapers or with newspapers and data news portals. Text, visualisations and multimedia content of the story may be explored. Future studies may explore data skill and knowledge of journalists in all broad processes of data journalism- data scraping, filtering, visualising and presenting.

Best thing to integrate data journalism in newsroom can be done only when the journalists have adequate knowledge on data. Data journalists have conclusively great part to play as a public service agent that changes the deluge of public data into findings and meaningful stories that facilitate a democratic society. However, in view of the challenges to extensive acceptance of data journalism, it is necessary that interventions are cautiously and deliberately planned. As data journalism is well known and highly prevalent in India, there is plentiful scope for research in this area in future. Future studies may look at how Data Journalism practices and evolved over a period since its adoption by various media organizations in India. And the changing nature in the practice of data journalism by different media firms could be enquired.

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