



An Indigenous Study on Science Communication of Tribal Culture through Citizen Media Platforms

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Abstract

India is home to a rich diversity of tribal communities that possess valuable traditional knowledge related to medicine, agriculture, forests, biodiversity, climate adaptation, and sustainable living. For centuries, this indigenous knowledge has been transmitted by songs, stories, rituals, and community practices. However, modernization, globalization, and digital transformation have created both challenges and opportunities for preserving and communicating tribal knowledge. In recent years, citizen media platforms such as YouTube, Facebook, WhatsApp, Instagram, and community-based digital channels have emerged as important tools for documenting and sharing tribal scientific knowledge. The research examines how citizen media platforms contribute to the science communication of tribal knowledge in India. The study highlights case studies from tribal regions and explores the role of local communities, digital storytelling, and participatory communication in preserving indigenous scientific wisdom. This paper also discusses challenges such as misinformation, cultural exploitation, digital inequality, and loss of authenticity.

Keywords: *Science Communication, Tribal Knowledge, Indigenous Knowledge, Citizen Journalism, Digital Media, Traditional Knowledge.*



Introduction

India's tribal communities possess a vast body of indigenous knowledge developed through centuries of interaction with nature and the environment. This knowledge includes: Herbal medicine, Traditional healing practices, Water conservation techniques, Sustainable agriculture, Forest management, Weather prediction & Biodiversity preservation.

Tribal knowledge is not merely cultural heritage; it is also a form of practical science developed through observation, experimentation, and community experience. However, much of this knowledge remains undocumented and marginalized within mainstream scientific communication systems.

Tribal knowledge has traditionally been passed down orally from generation to generation through songs, rituals, storytelling, and social contact. In the digital era, citizen media platforms have started playing an important role in documenting and sharing these practices with wider audiences.

Citizen media refers to communication platforms where ordinary individuals actively create, share, and distribute content without depending entirely on professional media institutions. Through smartphones and social media, tribal communities and local citizens can now record videos, publish stories, share traditional practices, and preserve indigenous knowledge digitally.

This research paper explores how citizen media platforms contribute to the science communication of tribal knowledge in India and how digital participation is reshaping the relationship between traditional wisdom and modern communication.

Objectives of the Study

1. To understand the concept of tribal knowledge as a form of indigenous science.
2. To examine the role of citizen media platforms in communicating tribal knowledge.
3. To analyze selected case studies related to digital documentation of tribal practices.
4. To study the challenges involved in communicating tribal knowledge through digital media.
5. To explore the significance of participatory communication in preserving indigenous heritage.



Research Methodology

The study is descriptive in nature, and secondary data has been collected from research journals, government reports, academic books, news articles, digital platforms, and case studies related to tribal communication and citizen media. The sample selection was based on purposive sampling methods, where examples from tribal communities in India were selected to understand how digital technologies are helping preserve and communicate indigenous knowledge systems.

Tribal Knowledge as Indigenous Science

Indigenous tribal knowledge is often ignored in mainstream scientific discourse, yet it contains deep ecological and practical understanding. Tribal communities have traditionally relied on: Observation of seasons, Forest biodiversity, Animal behaviour, Soil patterns and Herbal resources.

To develop scientific practices suitable for local environments.

For example:

1. Many tribal healers use medicinal plants for curing illnesses.
2. Tribal farmers practice mixed cropping and organic farming.
3. Forest communities possess knowledge of biodiversity conservation and water management.

Scholars argue that indigenous knowledge systems represent “people’s science” because they are based on long-term community observation and lived experience.

Citizen Media Platforms and Science Communication

Citizen media platforms allow ordinary people to create and distribute content through digital technologies. In India, the growth of smartphones and affordable internet has increased digital participation even in remote areas.

Platforms such as: YouTube, Facebook, Instagram, WhatsApp, Community radio, and Local digital channels, which have become tools for:

1. Recording traditional practices
2. Sharing local knowledge
3. Promoting tribal culture
4. Creating awareness about indigenous science



Citizen media transforms communication from a one-way process into a participatory process where communities themselves become storytellers and knowledge producers.

Case Study 1: CGNetSwara and Tribal Voice Communication

One of the most important examples of citizen media in tribal communication in India is CGNetSwara, a mobile-based citizen journalism platform designed for rural and tribal communities. The platform was founded in 2010 by Shubhranshu Choudhary, an Indian journalist and social entrepreneur who worked extensively on issues related to tribal rights, media accessibility, and grassroots communication. He created CGNetSwara to provide marginalized tribal communities with a platform where they could freely express their concerns, share local knowledge, and participate in public communication.

The name *CGNetSwara* combines “CG” (Central Gondwana region), “Net” (internet/network), and “Swara” (voice), symbolizing “the voice of the people.” The platform enables tribal citizens, many of whom have limited literacy or internet access, to communicate through simple mobile-phone voice recordings. Users can call a number, record their messages in local tribal languages, and listen to reports uploaded by others. Through this system, tribal citizens can report local problems, share indigenous knowledge, discuss forest rights, and communicate social and environmental concerns. After moderation and verification, selected recordings are published on the platform and circulated through digital networks.

CGNetSwara plays an important role in addressing the communication gap between tribal communities and mainstream society. Traditional media often neglects remote tribal regions, resulting in the invisibility of local issues and indigenous perspectives. Through citizen media, tribal people become active producers of information rather than passive consumers. They are able to report issues related to forest rights, land disputes, education, healthcare, water scarcity, and environmental degradation directly from their communities.

The platform also serves as an important medium for preserving and sharing indigenous knowledge systems. Tribal communities possess generations of traditional knowledge related to agriculture, ecology, herbal medicine, and sustainable living practices. Through voice-based storytelling and local-language communication, this knowledge is documented and transmitted to wider audiences.

Science Communication Aspect: CGNetSwara is also an important example of grassroots science communication. Through local-language storytelling and oral communication, tribal



communities share valuable indigenous scientific knowledge developed through generations of interaction with nature and the environment. This includes:

1. Traditional herbal medicine and healing practices.
2. Indigenous farming and seed preservation techniques.
3. Water conservation and rainwater harvesting methods.
4. Forest management and biodiversity protection.
5. Seasonal and environmental observations based on ecological experience.

This form of communication is important because it presents science not only as laboratory-based or institutional knowledge, but also as practical knowledge developed through lived experience and interaction with nature. Tribal ecological knowledge often contributes to sustainable environmental practices and climate resilience.

Another significant aspect of CGNetSwara is linguistic accessibility. By allowing communication in local tribal languages and dialects, the platform removes barriers created by dominant languages and literacy requirements. This inclusive communication model ensures that tribal people can participate in knowledge-sharing processes without losing their cultural identity.

Researchers and media scholars have observed that CGNetSwara empowers marginalized communities by promoting participation, representation, and digital inclusion. It democratizes communication by giving ordinary citizens the ability to create, distribute, and access information independently. In this way, the platform not only strengthens tribal identity and cultural preservation but also redefines the role of citizen media in science communication and social development in Digital India.

Case Study 2: Documentation of Traditional Medicinal Knowledge in Tribal Regions

Several tribal communities in states such as Madhya Pradesh, Odisha, Jharkhand, and Chhattisgarh use social media and digital video platforms to preserve traditional medicinal practices. For example: Tribal healers and local youth record videos about medicinal plants; Community organizations upload digital archives of traditional remedies and Citizen volunteers document local biodiversity knowledge. In regions of Madhya Pradesh and Chhattisgarh, local media campaigns have documented the Baiga and Gond tribal cultures' utilization of plants for medical purposes. Some Indian influencers, activists, researchers, and



digital creators working on indigenous knowledge, tribal culture, environmental wisdom, and traditional medicinal practices through social media and digital platforms include:

1. **Archana Soreng-** A climate activist from the Kharia tribe of Odisha who uses platforms like Instagram, X (Twitter), LinkedIn, and public forums to promote indigenous environmental knowledge, tribal sustainability practices, and traditional ecological wisdom.
2. **Shubhranshu Choudhary-** As discussed above the founder of CGNet Swara (a voice-based citizen media platform) has contributed in documentation of tribal issues, local environmental knowledge, traditional medicinal practices, and indigenous communication systems through mobile technology.
3. **Ruby Hembrom-** Founder of Adivaani, a digital publishing and media initiative dedicated to preserving and promoting Adivasi voices, oral traditions, indigenous knowledge, and tribal cultural identity through online archives, publications, and storytelling.
4. **Hemchand Manjhi-** A Padma Shri awardee from Chhattisgarh known for preserving and promoting tribal herbal medicine and forest-based healing knowledge. His work is widely shared through digital media reports, YouTube videos, and documentary platforms.
5. Tribal youth creators and local citizen journalists associated with platforms such as YouTube, Facebook, Instagram, and WhatsApp are increasingly documenting medicinal plants, tribal farming techniques, biodiversity knowledge, and indigenous traditions through short videos, reels, podcasts, and community storytelling initiatives.

These creators and platforms are important examples of how citizen media and digital communication are helping preserve tribal culture, traditional medicinal knowledge, and indigenous scientific practices in Digital India.

Human-Centered Communication: One of the most important features of citizen-created content is its human-centered communication style. Unlike formal scientific research papers, which often use technical language, citizen media explains medicinal practices in simple and locally understandable ways. Tribal healers usually connect their explanations with everyday experiences, stories, cultural beliefs, and local environmental conditions.



This approach makes scientific and medicinal knowledge more accessible and relatable for community members, especially for people with limited formal education. Communication in local languages and dialects also increases participation and trust within tribal communities.

Significance in Digital India: This case study demonstrates how citizen media has become an important tool for preserving tribal culture, promoting indigenous science communication, and strengthening community participation in the digital age. It highlights the role of digital technology not only as a medium of communication but also as a platform for cultural preservation, environmental awareness, and knowledge democratization in Digital India.

Case Study 3: Community Radio and Tribal Science Communication

Community radio has emerged as one of the most effective citizen media platforms for communication in tribal and rural regions of India. Unlike mainstream commercial media, community radio focuses on local issues, local languages, and community participation. It provides tribal communities with a platform where they can share experiences, preserve cultural traditions, and communicate practical knowledge related to health, agriculture, environment, and sustainable living.

Community radio stations such as Radio Bundelkhand and Kumaon Vani broadcast programs in regional and local languages that are easily understood by rural populations. These stations mainly focus on issues directly connected to everyday life in tribal communities.

Their programs often include topics such as:

1. Sustainable farming practices
2. Health and nutrition awareness
3. Environmental conservation
4. Traditional healing systems
5. Water management
6. Climate adaptation and disaster awareness
7. Forest protection and biodiversity preservation

Role in Science Communication: Community radio acts as an important medium of grassroots science communication because it translates scientific and environmental information into locally understandable forms. Experts, agricultural scientists, doctors, environmental activists, and local practitioners participate in radio discussions and interact directly with community members.



For example, programs on agriculture may explain scientific farming techniques along with indigenous farming knowledge practiced by tribal communities for generations. Similarly, health-related programs often combine modern healthcare information with traditional medicinal practices familiar to local populations.

This communication model is highly participatory. Tribal citizens can ask questions, share local experiences, discuss problems, and contribute their own knowledge during radio programs. Such interaction creates a two-way communication process instead of one-sided information delivery.

Researchers and media scholars have noted that community radio is often more trusted than mainstream media in rural and tribal areas because it reflects local culture, traditions, language, and social realities. Since community members themselves participate in content creation, listeners feel a stronger sense of connection and credibility.

Digital Storytelling and Preservation of Indigenous Knowledge: Digital storytelling has also become a powerful tool for preserving tribal heritage and indigenous knowledge systems. With the increasing availability of smartphones and internet access, tribal youth are using citizen media platforms to digitally document cultural practices and traditional wisdom that were earlier transmitted mainly through oral traditions.

Through mobile phones, social media, podcasts, and digital video platforms, tribal communities are documenting:

- Folk songs and oral traditions
- Ecological and environmental knowledge
- Indigenous farming methods
- Rituals and festivals
- Traditional medicinal practices
- Stories related to forests, rivers, and biodiversity

This process not only preserves cultural heritage but also creates awareness and pride among younger generations about their identity and traditions. Digital storytelling allows tribal youth to become active cultural communicators and knowledge creators in the digital age.



Social Media and Wider Visibility: Social media platforms such as YouTube, Facebook, Instagram, and WhatsApp have further expanded the visibility of indigenous knowledge systems. These platforms help tribal communities connect with:

1. Researchers and academic institutions
2. NGOs and social organizations
3. Policy makers and government agencies
4. Environmental activists and sustainability groups
5. Journalists and digital audiences

As a result, indigenous knowledge that was once confined to remote communities now reaches national and global audiences. This visibility contributes to cultural preservation, environmental awareness, and recognition of tribal knowledge systems as valuable forms of scientific and ecological understanding.

Discussion

The study reveals that citizen media has transformed tribal communities from passive audiences into active communicators and knowledge creators. Earlier, mainstream media often ignored or misrepresented tribal voices, but digital platforms, community radio, and social media now allow tribal people to share their own experiences, traditions, and indigenous knowledge directly.

Through citizen media, tribal communities can preserve cultural identity, document traditional practices, share environmental knowledge, and raise social and developmental concerns. This has democratized communication by giving marginalized groups greater control over their representation and participation in public discussions.

The study also highlights that tribal knowledge and modern science should work together rather than be viewed as opposing systems. Indigenous knowledge related to climate adaptation, biodiversity conservation, sustainable agriculture, and natural healthcare can contribute significantly to sustainable development and scientific understanding. Humans spent decades treating indigenous wisdom like folklore, then climate crises arrived carrying a very awkward lesson plan.

Challenges

1. Limited digital literacy in tribal communities.
2. Poor internet access in remote regions.



3. Financial constraints and lack of digital resources.
4. Language barriers in digital communication.
5. Risk of cultural appropriation and misuse of indigenous knowledge.
6. Digital sharing may distort the cultural and ecological meaning of tribal knowledge.
Simplified online content can lead to misunderstanding of indigenous practices.
7. Inadequate legal protection for tribal intellectual property rights.
8. Unverified tribal remedies shared online may cause confusion or health risks.
Scientific guidance and responsible communication are important for safe information sharing.

Overall Significance

Despite these challenges, citizen media has emerged as a powerful tool for empowering tribal communities, preserving indigenous knowledge, and promoting participatory science communication in Digital India. It has created new opportunities for tribal voices to become visible in public discourse while strengthening cultural identity and environmental awareness. The study suggests that future policies and communication strategies should focus on digital inclusion, ethical documentation, protection of indigenous intellectual property, and support for local-language communication systems. Such efforts can help ensure that citizen media becomes a more inclusive, respectful, and sustainable platform for tribal knowledge sharing and science communication.

Conclusion

Citizen media platforms have created new opportunities for sharing tribal knowledge in India through digital storytelling, community radio, mobile journalism, and social media. These platforms give tribal communities the chance to preserve and express their cultural and scientific knowledge in their own voices and experiences. The study shows that tribal knowledge should not be seen simply as folklore or traditional beliefs. It is a valuable source of ecological wisdom, sustainable living practices, herbal medicine, biodiversity conservation, and environmental understanding that has been developed over generations. Through citizen media, these knowledge systems are receiving greater visibility, while tribal communities are gaining recognition, dignity, and a stronger platform to represent themselves.

At the same time, the study emphasizes the importance of ethical communication, digital inclusion, language accessibility, and the protection of indigenous intellectual property rights.



Without these safeguards, there is a risk of misuse, cultural exploitation, or loss of the original context of tribal knowledge in digital spaces. The future of science communication in India should therefore become more participatory and inclusive, where indigenous communities are treated as equal contributors to knowledge rather than only subjects of study. Citizen media has the potential to connect tribal communities with researchers, educators, policymakers, and society, helping to build a more democratic, culturally sensitive, and socially inclusive future for science communication in Digital India.

Strange and beautiful thing, really. Humans spent decades building digital technology, and one of its most meaningful uses may be helping ancient knowledge survive in a rapidly changing world.

Suggestions

The study highlights the growing importance of citizen media in preserving and communicating tribal knowledge in Digital India. However, for these platforms to become more inclusive, ethical, and effective, several important steps are necessary.

1. **Digital Literacy Programs in Tribal Regions:** Digital literacy programs should be introduced and expanded by governments, NGOs, universities, and media organizations in tribal areas so that community members can effectively use smartphones, social media, community radio, and digital platforms.
2. **Promotion of Tribal Languages in Digital Platforms:** Efforts should be made to include tribal languages and dialects in digital media systems, mobile applications, and educational content. Local-language communication not only improves accessibility but also helps preserve cultural identity, oral traditions, and indigenous expressions.
3. **Protection of Indigenous Intellectual Property Rights:** Strong legal and ethical policies are needed to protect tribal communities from commercial exploitation and unauthorized use of their medicinal knowledge, ecological practices, and cultural resources.
4. **Encouraging Academic Research on Tribal Science Communication:** Universities and research institutions should encourage more interdisciplinary research on tribal communication, indigenous science, and citizen media practices.
5. **Institutional Support for Community Media Initiatives:** Government agencies, universities, NGOs, and media organizations should collaborate to strengthen



Community radio stations, citizen journalism platforms, and tribal digital storytelling networks in tribal regions. Providing affordable internet access, equipment, training, and local media infrastructure.

6. Strengthening Collaboration Between Scientists and Tribal Communities:

Collaboration between scientists and tribal communities can combine modern science with indigenous knowledge to improve healthcare, climate resilience, sustainable agriculture, and biodiversity conservation.

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