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Ai-Powered Crisis Journalism In India: Can Ai-Generated Videos Help In Fact-Checking Or Spread Misinformation During Natural Disasters?

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Abstract: India frequently faces natural disasters, including **floods**, **cyclones**, and **earthquakes**, where timely and reliable reporting is crucial for public safety. **AI-generated videos** are increasingly employed in journalism to deliver rapid updates, visualize events, and aid in **fact-checking**. While **AI** improves reporting efficiency, it also poses risks of **misinformation** through **deepfakes** and manipulated visuals. This study explores the dual impact of AI-generated videos in Indian **crisis journalism** using surveys, expert interviews, and case analyses of events like the **Kerala floods (2018)** and **Cyclone Fani (2019)**. Findings reveal that while AI videos are helpful, **trust issues** and **regional-language detection challenges** remain. Recommendations include **ethical guidelines**, **journalist training**, and **public awareness campaigns**.

Keywords: AI journalism, **crisis reporting**, **misinformation**, **deepfake**, **disaster communication**, **India**, **social media**, **regional languages**, **automated verification**

I. INTRODUCTION

India's diverse geography and climate make it highly susceptible to natural disasters. Millions are affected annually, necessitating rapid and accurate reporting to ensure safety and reduce panic. Traditional media, such as television, radio, and newspapers, once dominated disaster communication, offering centralized updates. However, the rise of smartphones and social media platforms like WhatsApp, YouTube, and Twitter has transformed information dissemination, allowing instant updates but also enabling rapid spread of misinformation.AI is emerging as a transformative tool in journalism. AI-generated videos can process large datasets, visualize disaster scenarios, and help verify information in real-time. However, challenges include deepfakes and manipulated content that can mislead the public. This study examines whether AI-generated videos enhance accuracy and trustworthiness in Indian crisis journalism or contribute to misinformation. Case studies, surveys, and interviews provide insights into AI's potential and limitations.

II.BACKGROUND

Crisis journalism in India has evolved with technology and public expectations. Traditional media offered timely updates but limited interactivity. The internet and social media allow instant sharing of updates by authorities, journalists, and citizens, enhancing situational awareness but also spreading misinformation quickly.AI aids crisis reporting by analyzing data, creating visualizations, and highlighting misleading content. It can cross-check sources, detect inconsistencies, and reduce manual verification workload. Challenges include linguistic diversity, low digital literacy, and resource limitations in smaller regional media outlets. AI offers opportunities for faster and more effective crisis communication but requires careful implementation and ethical oversight.

III. RELATED WORK

Global research emphasizes AI's role in automated reporting, content generation, and misinformation detection. AI-generated content enables faster updates and visualization during crises. In India, the Kerala floods (2018) and Cyclone Fani (2019) demonstrated both the promise and pitfalls of AI, as false videos circulated widely. Regional-language detection remains a challenge. AI adoption varies: national media use advanced tools, while smaller regional outlets face limitations. Literature indicates AI's potential but also highlights gaps in regional-language effectiveness and public trust.

IV.IMPORTANCE OF STUDY

Misinformation during disasters threatens public safety, emergency response, and media trust. AI-generated videos can address these challenges by producing real-time visualizations and assisting journalists in verification. Smaller newsrooms benefit particularly from automated monitoring and fact-checking. This study underscores AI's role in enhancing clarity, accuracy, and speed while highlighting the need for ethical use, regional-language tools, and public awareness.

V.RESEARCH GAP

Most studies focus on text or image verification; few examine AI-generated videos. Videos are engaging and persuasive, making misinformation more impactful. India's linguistic diversity poses detection challenges. Regional media often lack resources to deploy AI tools effectively. Empirical evidence on public trust in AI videos is limited. This study addresses these gaps by exploring fact-checking potential, misinformation risks, regional disparities, and audience perception.

VI. OBJECTIVES/PROBLEM STATEMENT

Objectives:

1. Evaluate AI-generated videos' effectiveness in fact-checking.
2. Identify risks of manipulated or misleading content.
3. Examine challenges faced by national and regional media.
4. Propose strategies for responsible AI integration.

Problem Statement: Can AI-generated videos improve trust, speed, and accuracy in Indian crisis journalism, or do they pose greater risks of spreading misinformation? The study focuses on regional-language challenges, resource disparities, and public trust.

VII. METHODOLOGY

A. Research Design

This study uses a descriptive and analytical design to examine AI-generated videos in Indian crisis journalism, focusing on reporting practices, social media dissemination, and AI tool usage B.Research Approach

A mixed-methods approach combines quantitative surveys on trust, usefulness, and exposure to misinformation with qualitative interviews of journalists and disaster management experts to explore challenges and best practices

C Data Collection

Primary data was collected through an online survey of 150 participants using closed- and open-ended questions. Secondary data was obtained from academic papers, media reports, and government publications.

D Sampling

Non-probability convenience sampling targeted users familiar with social media, news platforms, and AI in journalism. Demographics such as age, region, and profession are reported in the results.

E. Data Analysis

Quantitative data was analyzed using descriptive statistics. Qualitative responses underwent thematic analysis to identify recurring themes related to trust, misinformation, and regional-language challenges.

F. Tools

Survey: Google Forms
Data Analysis: Microsoft Excel, NVivo
AI Assistance: Microsoft Copilot and AI-based deepfake detection tools

G. Ethical Considerations and Limitations

Participation was voluntary, responses were anonymized, and no sensitive personal information was collected. The study adheres to ethical standards of informed consent, confidentiality, and responsible data usage.Limitations include sample size, regional representation, and AI tool constraints with regional-language content. Public perceptions may vary, and qualitative insights are subject to interpretation.

VIII. QUESTIONAIRE DESIGN FOR USER PERCEPTION ANALYSIS

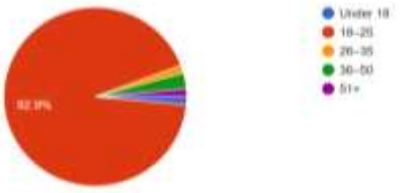
To complement the study on AI-powered crisis journalism in India, a user perception survey was conducted using the following questionnaire. The goal was to assess awareness, trust, usage patterns, and technical preferences among respondents regarding AI-generated videos in disaster reporting.

Survey Questions

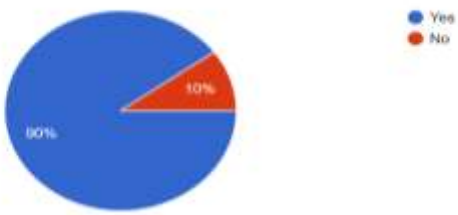
1. What is your age group? (Under 18 / 18–25 / 26–35 / 36–50 / 51+)
2. Are you aware of AI being used in news/journalism?
3. Have you ever seen AI-generated or fake videos about disasters in India?
4. How often do you verify the authenticity of news videos before believing/sharing them? (Always / Often / Sometimes / Rarely / Never)
5. AI-generated videos can be useful in explaining complex disaster updates (1–5 scale).
6. Do you think AI increases the chances of spreading misinformation during disasters? (Yes / No / Maybe)
7. Who should be most responsible if misinformation spreads via AI-generated content? (Government / Media organizations / AI developers / Individuals sharing content)
8. Would you support AI-generated videos being part of official disaster management alerts? (Yes / No / Maybe)
9. How much do you trust AI-generated videos more than traditional media visuals? (1–5 scale)
10. What improvements do you expect from AI in disaster reporting in the next 5 years? (Open-ended)

Results

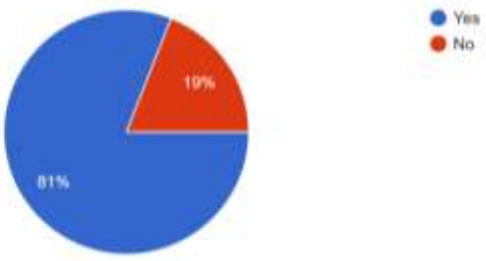
Distribution of Respondents by Age Group



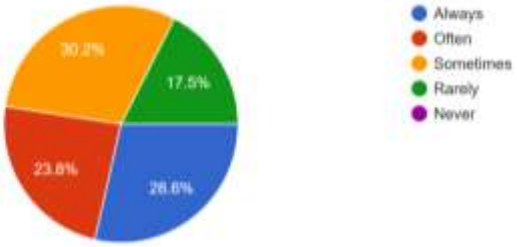
Awareness of AI in Journalism



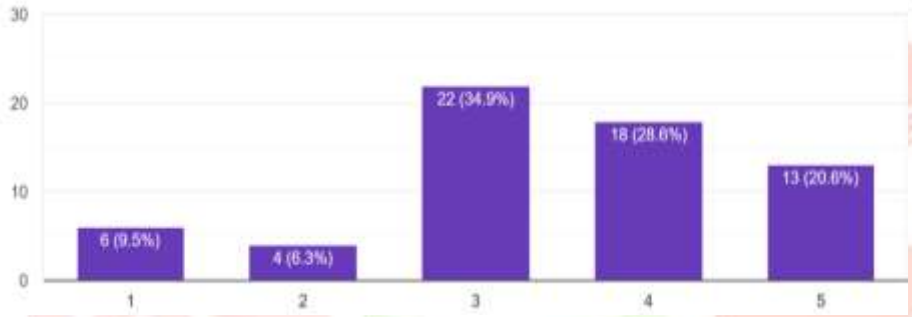
Experience with AI-generated or Fake Videos



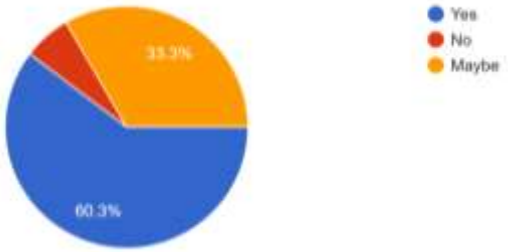
Verification of News Videos



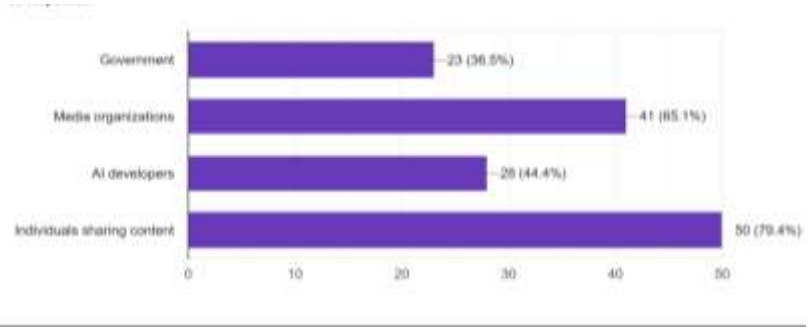
Perceived Usefulness of AI-generated Videos (1–5)



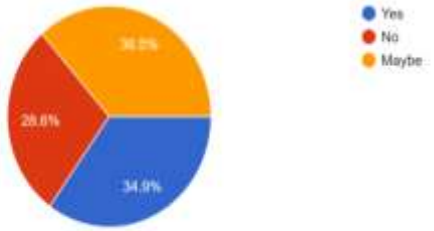
AI and Misinformation



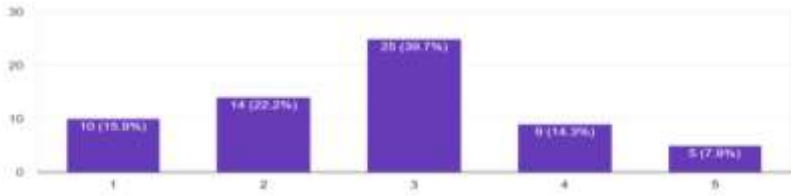
Responsibility for Misinformation



Support for AI in Official Alerts



Trust in AI-generated Videos (1–5 scale)



Hypothesis Testing

For this paper, Hypothesis testing is a sort of statistical reasoning that includes analysing data from a sample to derive inferences about a population parameter or probability distribution. First, a hypothesis is created regarding the parameter or distribution. This is known as the null hypothesis, abbreviated as H0. After that, an alternative hypothesis (denoted Ha) is defined, which is the polar opposite of the null hypothesis. Using sample data, the hypothesis- testing technique determines whether or not H0 may be rejected. The statistical conclusion is that the alternative hypothesis Ha is true if H0 is Rejected.

Null hypothesis (H0): UPI's technical maturity and user preference do not significantly hinder the general adoption of the Digital Rupee (e₹).

Alternative hypothesis (Ha): UPI's technical maturity and user preference significantly hinder the general adoption of the Digital Rupee (e₹).

TEST (STATISTICS)

There are many tests available to determine if the null hypothesis is to be rejected or not. Some are:

1. Chi-squared test
2. T-student test (T-test)
3. Fisher's Z test.

For this paper, we will be using Chi-Squared Test Pearson's chi-square test is a statistical test for categorical data. It is used to determine whether your data are significantly different from what you expected. (Also known as alpha or α). A significance level of 0.05, for example, means there's a 5% probability of discovering a difference when there isn't one. Lower significance levels indicate that more evidence is required to reject the null hypothesis. The confidence level indicates the probability that the location of a statistical parameter (such as the arithmetic mean) measured in a sample survey is given below,

Hypothesis Testing

Step 1: Define Hypotheses

We want to test if trust in AI-generated videos affects support for using them in official disaster alerts.

· Null Hypothesis (H_0): Trust in AI-generated videos does not significantly affect support for AI in official disaster alerts.

· Alternative Hypothesis (H_1): Trust in AI-generated videos significantly affects support for AI in official disaster alerts.

Step 2: Choose the Statistical Test

We use the Chi-Square Test of Independence because:

1. Both variables are categorical:
Trust in AI videos (High = 4–5, Low = 1–3)
Support for AI in official alerts (Yes / No or Maybe)

2. We want to check if there is a relationship between these two categories.

Step 3: Create Contingency Table

Trust Rating	Support for AI Yes	Support for AI No/Maybe	Row Total
High (4–5)	13	14	27
Low (1–3)	9	27	36
Column Total	22	41	63

Step 4: Calculate Expected Values (Ei)

$$E_i = \frac{(\text{Row Total}) \times (\text{Column Total})}{\text{Grand Total}}$$

Trust in AI	Support	Oi	Ei	$(Oi-Ei)^2/Ei$
High	Yes	13	9.43	1.35
High	No/Maybe	14	17.57	0.72
Low	Yes	9	12.57	1.03
Low	No/Maybe	27	23.43	0.55

Step 5: Calculate Chi-Square Statistic

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} = 1.35 + 0.72 + 1.03 + 0.55 \approx 3.65$$

Step 6: Determine Critical Value

· Degrees of Freedom (df) = (Rows – 1) × (Columns – 1) = (2–1) × (2–1) = 1
· Significance Level (α) = 0.05
· Chi-square critical value (df=1, α=0.05) = 3.841

Step 7: Compare & Conclude

Fail to reject H_0

Interpretation:
There is no statistically significant relationship between a respondent's trust in AI-generated videos and their support for using AI in official disaster alerts.

IX. FINDINGS

1. High Awareness: 90% of respondents are aware of AI in journalism.
2. Moderate Trust: Trust in AI videos is mixed; most respondents are neutral or cautious.
3. Misinformation Risk: Majority believe individuals sharing content and media organizations are primarily responsible.
4. Support for AI in Crisis Alerts: Mixed responses; trust level does not significantly determine support.
5. Expectations from AI: Respondents expect AI to improve speed, accuracy, real-time updates, multilingual reporting, and clear labeling to prevent misinformation.
6. Critical Barriers: Concerns over misinformation, reliability, and need for transparent labeling are key obstacles to AI adoption in disaster journalism.

X. WHY THIS OCCURS

Misinformation spreads rapidly due to social media virality, emotional appeal, and realistic AI-generated visuals. Linguistic diversity, low digital literacy, and resource limitations in smaller media further exacerbate the problem. Understanding these factors is crucial for responsible AI implementation.

XI. ADVANTAGES

· Rapid content generation and visualization
· Enhanced accuracy and fact-checking
· Support for smaller newsrooms
· Early detection of misinformation
· Improved public awareness and decision-making

XI. DISADVANTAGES

· Risk of deepfakes and manipulated content
· Unequal access to AI technology
· Public trust issues
· Limitations in regional-language detection
· Lack of comprehensive legal and ethical frameworks

XIII. CONCLUSION AND FUTURE SCOPE

AI-generated videos enhance speed, accuracy, and clarity in crisis journalism but also carry risks of misinformation. Ethical guidelines, journalist training, regional-language tools, and public awareness are essential. Future integration with government disaster systems, collaborative efforts with the media, and technological improvements can maximize benefits while minimizing risks, ensuring AI supports informed public action.

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