

Disinformation Resilience Model for Evidence-Based Communication in ESIA



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Introduction



- Disinformation in Environmental and Social Impact Assessment (ESIA) processes weakens: public trust, stakeholder participation, decision legitimacy, and acceptance of project outcomes.
- Environmental and Social Impact Assessment (ESIA) processes increasingly face challenges from misinformation and deliberate disinformation that can distort public understanding, weaken stakeholder trust, and compromise decision-making outcomes.
- The Disinformation Resilience Model for Evidence-Based Communication in ESIA is a structured framework designed to strengthen the integrity, clarity, and credibility of environmental reporting by prioritizing verified data sources, transparent methodologies, and proactive information verification mechanisms.

Research Gap

Most ESIA studies discuss communication generally, but very few: statistically measure disinformation impacts, quantify resilience, or develop predictive communication models.

Research Aim

To develop and statistically validate a Disinformation Resilience Model (DRM) for evidence-based communication in ESIA in South East and South-South Nigeria.

Research Objectives

- To identify major forms and channels of disinformation in ESIA processes.
- To assess the relationship between communication strategies and stakeholder trust.
- To examine the effect of disinformation on participation and satisfaction outcomes.
- To develop a statistical Disinformation Resilience Model (DRM).
- To validate the model using ESIA case studies across Nigerian states.

Research Questions

1. What forms of disinformation commonly affect ESIA communication?
2. How does communication transparency influence stakeholder trust?
3. What relationship exists between digital literacy and resilience to disinformation?
4. Which communication strategies significantly improve participation outcomes?
5. Can resilience to disinformation be statistically predicted?

Hypotheses

- H1: Disinformation exposure negatively affects stakeholder participation in ESIA.
- H2: Transparent communication significantly increases stakeholder trust.
- H3: Multimodal communication reduces vulnerability to misinformation.
- H4: Digital literacy moderates the relationship between disinformation and participation.
- H5: Participatory monitoring significantly predicts resilience scores.

Risk Communication Theory (Covello & Sandman, 2012)

Risk Communication Theory is an interactive process of exchanging information, opinions, and advice between experts and the people facing a hazard. Its primary goal is to help communities make informed decisions to mitigate threats

Stakeholder Theory (Parmar et al., 2010)



Stakeholder Theory proposes that an organization's ultimate goal is to create value for *all* of its stakeholders (e.g., employees, customers, suppliers, the local community, and shareholders), rather than prioritizing only financial returns.

- ✓ This study is anchored on Risk Communication Theory and Stakeholder Theory, which explain how environmental information is communicated and how diverse stakeholder interests influence decision-making processes.



Research Theory

Research Methodology

Research Design

Mixed-Method Explanatory Sequential Design.

Quantitative Component

- Surveys
- Statistical modeling
- Communication audits

Qualitative Component

- Interviews
- Focus groups
- Document analysis

ESIA Case Studies

- Oil and Gas,
- Infrastructure,
- Mining,
- Renewable Energy

Study Area & Sample Size (n)

- Abia (70)
- Anambra (70)
- Imo (70)
- Ebonyi (70)
- Enugu (70)
- Rivers (70) **Total=420**

Data Collection Instruments

A. Questionnaire

B. Communication Audit Template

C. Interview Guide

- ESIA consultants,
- Regulators,
- NGOs,
- Community Leaders.

Statistical Tools:

- Descriptive Statistics
- Inferential Analysis

Correlation Analysis

Disinformation Resilience
Model (DRM)

Descriptive Results

Sex	frequency	Percentage %	Recieved ESIA-Related Information	frequency	%
Male	281	67	Never	126	30
Female	139	33	Rarely	155	37
Age	frequency	%	Sometimes	105	25
21-30	67	16	Often	34	8
31-40	155	37	Communication Channels for ESIA-Related Information	frequency	%
41-50	76	18	Community meetings	8	2
51-60	67	16	Radio	13	3
60+	54	13	whatApp	21	5
Education Level of Respondents	frequency	%	Television	4	1
Primary	21	5	Printed Material	25	6
Secondary	34	8	No Channel	349	83
Diploma	55	13			
Bachelor	197	47			
Master	67	16			
Doctorate	46	11			

Results Contd....

Forms of Disinformation that Commonly affect ESIA Communication

- Selective disclosure of information
- Exaggeration or Understatement of Environmental risks
- False scientific claims
- Rumours
- Political Manipulation
- Greenwashing
- Fake Stakeholder Consultation Claims,
- Social Media Misinformation
- Suppression of Indigenous Knowledge

Communication Transparency Influence Stakeholder Trust

Communication transparency strongly influences stakeholder trust by:

- promoting openness, honesty, accountability, and credibility in organizational or project-related interactions.

Relationship Exists Between Digital Literacy and Resilience to Disinformation

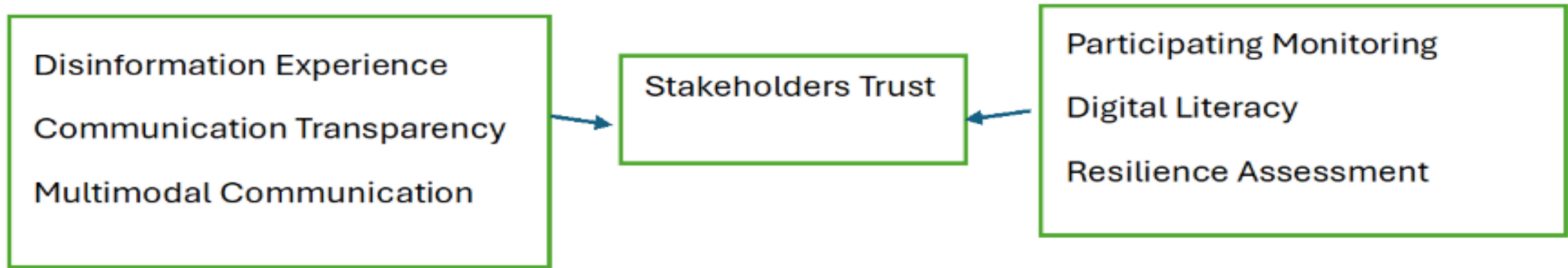
- Individuals with higher levels of digital literacy are generally better able to identify, evaluate, and resist false or misleading information circulated through digital platforms.
- Digital literacy equips people with critical thinking skills, fact-checking abilities, and the capacity to assess the credibility of online sources, thereby reducing susceptibility to disinformation

Communication Strategies Significantly Improve Participation Outcomes

Communication strategies that significantly improve participation outcomes include:

- Transparent Communication,
- Early Stakeholder Engagement,
- Two-way Communication,
- Culturally Sensitive Messaging,
- Community-Based Participation,
- Digital Engagement, and Feedback Mechanisms.

Results Contd.... Disinformation Resilience Model



$$ST = \beta_0 + \beta_1(DE) + \beta_2(CT) + \beta_3(MC) + \beta_4(PM) + \beta_5(DL) + \beta_6(RA) + \varepsilon$$

- H1:** Disinformation exposure negatively affects stakeholder participation in ESIA. P= 0.001<0.05 **Significance**
- H2:** Transparent communication significantly increases stakeholder trust. P= 0.003<0.05 **Significance**
- H3:** Multimodal communication reduces vulnerability to misinformation. P= 0.004<0.05 **Significance**
- H4:** Digital literacy moderates the relationship between disinformation and participation. P= 0.012<0.05 **Significance**
- H5:** Participatory monitoring significantly predicts resilience scores. P= 0.005<0.05 **Significance**

Conclusion

The findings demonstrate that disinformation poses a significant challenge to the effectiveness and credibility of Environmental and Social Impact Assessment (ESIA) processes by weakening trust, reducing stakeholder participation, and influencing public perception.

The proposed **Disinformation Resilience Model** (DRM) provides a practical framework for assessing and enhancing communication resilience through transparency, digital literacy, and participatory monitoring mechanisms. Ultimately, strengthening communication systems within ESIA is essential for promoting informed decision-making, improving public confidence, and advancing more inclusive and sustainable impact assessment practices.

Recommendation

- The recommended that ESIA practitioners and policymakers institutionalize evidence-based communication frameworks that incorporate transparency, digital literacy initiatives, and
- Participatory stakeholder engagement mechanisms to strengthen resilience against disinformation and improve the credibility and effectiveness of impact assessment processes.

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Let's continue the conversation!

Message me your questions or comments in the IAIA26 app.

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