



Eco-Media Literacy In The Digital Age: Navigating Misinformation And Assessing Environmental Content

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ABSTRACT

In the digital age, eco-media literacy is critical for addressing the challenges posed by the overwhelming volume of environmental information and the prevalence of misinformation online. This article explores how eco-media literacy, which combines environmental awareness with digital media skills, enables individuals to critically evaluate environmental content on digital platforms. The study highlights the role of social media in shaping public perceptions of climate change, deforestation, and pollution, while also analyzing the spread of misinformation. By examining the framing techniques of mainstream and alternative media, the research underscores the importance of fostering eco-media literacy to combat misinformation and promote sustainable behaviors. Furthermore, the article offers insights into how educational institutions can integrate eco-media literacy into curricula to enhance students' critical thinking skills and engagement with environmental issues. This study provides practical recommendations for educators and policymakers to develop strategies that empower individuals to navigate the complex landscape of environmental information.

Keywords: Eco-media literacy, Environmental misinformation, Digital platforms, Climate change communication, Sustainable behaviors

1. INTRODUCTION

In the digital age, environmental information is widely accessible through social media and other digital platforms. However, this increased accessibility also brings challenges, particularly the spread of misinformation, which complicates efforts to address pressing

environmental issues such as climate change, deforestation, and pollution. The ability to critically assess and navigate environmental content online is essential, as the influence of digital platforms on public perceptions of ecological issues continues to grow.

The concept of eco-media literacy, which merges environmental literacy with digital media literacy, is becoming increasingly relevant as a tool to help individuals distinguish between credible information and misinformation. Eco-media literacy enables users to engage critically with digital content, promoting informed decision-making and sustainable behaviors. Ruiu (2024) argues that individuals' environmental values influence their online behaviors, and fostering these values can promote sustainable practices in digital consumption. Integrating environmental education with digital literacy programs helps users critically assess online content, reducing the ecological footprint of technology use. This need for eco-media literacy extends to younger audiences. Prior studies, such as those by Lorenzo and Sánchez-Martínez (2022) and Nanda and Budimansyah (2020), highlight the potential of integrating digital tools into environmental education, particularly for younger audiences. Educational institutions play a key role in promoting these skills. Shetye (2023) highlights how integrating digital media training into school curricula not only enhances students' critical thinking but also equips them to engage with environmental issues more responsibly. Similarly, Çoklar and Tatlı (2020) emphasize that eco-media literacy involves not just environmental knowledge but also the ability to critically assess digital information, which is vital for informed participation in environmental discourse. However, few studies have thoroughly examined how eco-media literacy can be developed and applied in the context of the growing misinformation problem on social media platforms.

Addressing the issue of misinformation in environmental discourse is critical for fostering public engagement with sustainability. Misinformation can undermine trust in scientific consensus and delay necessary policy actions, as seen in issues ranging from climate change denial to exaggerated claims about renewable energy. Therefore, developing eco-media literacy is not only a theoretical endeavor but also an applied solution to the societal challenges posed by the digital information age. This study aims to investigate how eco-media literacy can be cultivated to enhance individuals' ability to critically engage with environmental information, thus contributing to more sustainable public behaviors.

By analyzing the representation of environmental content on social media and evaluating how misinformation spreads, this research seeks to provide practical insights for educators and policymakers. The study's primary objectives are to assess the effectiveness of eco-media

literacy in helping users evaluate the credibility of environmental information and to explore how digital platforms influence environmental behaviors.

This research builds upon previous work in environmental and media literacy but focuses on the unique intersection of these fields in the context of digital platforms. Through content and discourse analysis, the study will explore the framing techniques used by media outlets, influencers, and fact-checking platforms, providing a comprehensive understanding of how eco-media literacy can counteract misinformation and promote informed public discourse. The findings are expected to contribute to the growing understanding of how digital tools can be leveraged to combat misinformation and foster sustainable practices.

1.1. RESEARCH AIM AND OBJECTIVES

The study aims to explore how eco-media literacy can enable individuals to critically engage with environmental information presented across digital platforms. With the rise of social media as a primary source of environmental discourse, this research investigates the role of eco-media literacy in mitigating the spread of misinformation and promoting sustainable behaviors. The study focuses on the framing techniques used by media platforms and evaluates how these representations shape public perceptions and engagement with environmental issues.

The study of eco-media literacy and misinformation holds significant societal importance, as it equips individuals with the tools to navigate complex environmental information landscapes. Bhutto (2024) highlights how eco-literacy can mitigate barriers to sustainable consumption by addressing misinformation, particularly in areas like organic food adoption. Similarly, Wang (2024) emphasizes the need for media literacy among Generation Z to foster informed decision-making in an era of overwhelming digital content. Moreover, Saeedfar (2023) and Maulina (2024) underscore the role of eco-literacy in shaping public behavior and policy, ultimately contributing to a more environmentally conscious society. This study builds upon these insights by focusing specifically on how eco-media literacy can address the spread of environmental misinformation and promote sustainable practices in the digital age.

The primary research objectives include:

1. *Analyzing the representation of environmental content on social media platforms*, with a focus on how framing techniques influence public perceptions of ecological issues such as climate change and deforestation.
2. *Evaluating the role of eco-media literacy in combating misinformation*, examining how digital literacy enables users to critically assess the accuracy and credibility of environmental information online.

3. *Investigating the impact of digital engagement on environmental behaviors*, focusing on how eco-media literacy can foster more informed and proactive participation in sustainability initiatives.
4. *Offering practical recommendations for enhancing eco-media literacy*, particularly through educational and policy interventions designed to improve digital content evaluation skills related to environmental topics.

1.2.SIGNIFICANCE OF THE STUDY

This study addresses the critical need for eco-media literacy in the digital age, where misinformation on environmental issues is widespread across social media platforms. As digital platforms increasingly shape public perceptions of environmental topics, the risk of misinformation complicates efforts to promote sustainable behaviors and support environmental policies. Studies have shown that individuals often struggle to differentiate between credible sources and misinformation, leading to confusion and reduced engagement with climate action (Tully, 2021).

Enhancing eco-media literacy is crucial not only for fostering informed public discussions but also for encouraging behaviors that contribute to environmental sustainability. By equipping individuals with the tools needed to critically evaluate environmental content, this research has the potential to support the development of more resilient and engaged communities capable of responding to global ecological challenges. Moreover, improving eco-media literacy can mitigate the harmful effects of misinformation, which has been shown to undermine public trust in scientific consensus and hinder policy efforts aimed at addressing environmental crises (Lewandowsky & Linden, 2021).

From a theoretical perspective, this study advances the field by exploring the intersection of environmental literacy and media literacy in the digital age. It not only contributes to the academic discourse on misinformation but also addresses the practical implications of fostering eco-media literacy to support sustainable behaviors. By equipping individuals with critical evaluation skills, this research has the potential to support more effective public engagement with climate action and environmental policy.

1.3.RESEARCH QUESTIONS

The growing influence of digital platforms on public perceptions of environmental issues underscores the need for a deeper understanding of how these platforms contribute to both the dissemination of accurate information and the spread of misinformation. This study is guided by the following key research questions:

1. *How do mainstream and alternative media platforms differ in their framing and reporting of environmental issues, particularly concerning topics like climate change, sustainability, and environmental justice?*
 - This question seeks to explore the differences in how traditional media outlets (e.g., BBC, CNN) and alternative platforms (e.g., environmental blogs, grassroots media) present environmental issues. By analyzing framing techniques and narrative structures, the study will uncover how these media sources influence public discourse and engagement with key environmental topics. This comparison will also reveal how advocacy and activism shape the narrative in alternative media, compared to more neutral or corporate-driven framing in mainstream outlets.
2. *What role do social media platforms play in amplifying both accurate environmental information and misinformation, and how do influencers and fact-checking campaigns interact with these narratives?*
 - This question examines the dynamic role of social media platforms (e.g., Twitter, Facebook, YouTube) in shaping public understanding of environmental issues. Special attention is given to how these platforms contribute to the spread of misinformation, as well as how digital influencers and organized fact-checking campaigns (e.g., by Climate Feedback or Snopes) work to correct false narratives. The study will also explore how social media engagement—via hashtags, viral content, and influencer posts—impacts public awareness and behavior regarding sustainability and climate change.
3. *How effective are fact-checking platforms, such as Snopes and Climate Feedback, in countering environmental misinformation, and what strategies do they use?*
 - This question focuses on the specific strategies employed by fact-checking organizations to address environmental misinformation. It will assess the effectiveness of various verification methods, including peer-review systems, expert consultations, and data-driven analysis, in maintaining the accuracy and credibility of environmental information. Furthermore, this question will investigate whether these platforms successfully restore public trust in environmental discourse, thereby contributing to more informed engagement with sustainability and climate issues.

2. LITERATURE REVIEW

In the current academic literature, eco-media literacy is defined as the integration of media literacy and environmental awareness, equipping individuals with the skills to critically engage with media content related to ecological topics. According to Zuhriyah (2023), eco-media literacy not only involves the critical analysis of environmental media content but also incorporates technology to create a dynamic educational environment. This distinction is key in shaping how individuals understand and respond to environmental issues in the digital age. Eco-media literacy differs significantly from both general media literacy and environmental literacy. General media literacy focuses broadly on the ability to access, analyze, and create media across various contexts (Akbarinejad et al., 2017), while eco-media literacy narrows this focus to environmental issues and the digital content that shapes public perceptions of these issues (Friesem, 2019). On the other hand, environmental literacy centers on knowledge of ecological concepts, but lacks the critical media engagement aspect that eco-media literacy emphasizes (McLean et al., 2016). Thus, eco-media literacy uniquely blends these fields, enabling individuals to not only understand environmental content but also critically assess its credibility and implications in the digital landscape.

In today's digital environment, several key skills are necessary for effective eco-media literacy. Agissa (2023) identifies fundamental media literacy skills such as analysis, evaluation, and synthesis, which are crucial for critically engaging with environmental information and combating misinformation. These skills allow individuals to navigate complex media landscapes and discern credible ecological narratives. Nanda and Budimansyah (2020) emphasize additional components, including critical analysis, ethical media use, and a strong foundation in ecological knowledge. These skills enable individuals to understand environmental issues in depth and engage responsibly with digital platforms, ensuring that information shared aligns with ethical standards.

Furthermore, Wulandari (2024) highlights the importance of critical thinking, ecological knowledge, and practical application, particularly in educational contexts. For pre-service science teachers, the ability to analyze environmental media critically and apply eco-literacy in real-world scenarios is essential. Pourmohades (2023) adds that metacognitive skills and self-efficacy also play a pivotal role in eco-media literacy, enabling individuals to reflect on their learning processes and approach environmental content with confidence and creativity.

Eco-media literacy is particularly important in the digital age due to the rapid dissemination and consumption of information, which can often include misinformation. Annisa and Ermaya (2022) emphasize that while media coverage may not always directly influence environmental

disclosure by companies, it plays a significant role in shaping public perceptions of environmental issues. With digital platforms amplifying both accurate and misleading information, eco-media literacy becomes crucial for discerning credible sources and understanding the broader ecological implications. Similarly, Hingorjo and Memon (2021) stress the importance of eco-media literacy in navigating the biases and agendas of various claim-makers, such as NGOs and political groups, who influence media representations of environmental challenges. The ability to critically assess these narratives is essential for fostering informed public discourse and advocating for sustainable solutions.

Media portrayals of environmental issues are often shaped by broader political, economic, and cultural contexts. Zhao and Madni (2021) argue that while media frequently highlights measurable indicators like carbon emissions, it tends to overlook the deeper institutional reforms necessary for environmental sustainability. This selective focus can lead to skewed public perceptions, emphasizing short-term crises over systemic issues like biodiversity loss. Sensationalism is a common trend, as media often emphasizes dramatic events such as natural disasters, which may draw public attention but also risk desensitizing audiences over time. Similarly, Rice and Miller (2023) highlight the agenda-setting effect, where media prioritizes certain environmental topics, influencing public engagement with those issues. This tendency to focus on immediate crises, often shaped by corporate interests, further complicates how environmental challenges are framed and understood.

Media representations have significantly influenced public opinion and behavior toward environmental issues in several case studies. Han and Cheng (2020) illustrate how social media plays a pivotal role in shaping pro-environmental behavior among Chinese citizens. Social media, more so than traditional media, activates subjective norm perceptions that encourage individuals to adopt sustainable practices. A prime example is the Fridays for Future movement, initiated by Greta Thunberg, which gained momentum through platforms like Twitter and Instagram, mobilizing global youth movements and increasing awareness about climate change.

Similarly, Rosaidi et al. (2022) highlight how social influencers, particularly educators, utilize narrative persuasion to elicit pro-environmental behaviors among millennials. These influencers connect emotionally with their followers, fostering responsible consumer behaviors, particularly in areas like sustainable fashion. Kautish and Khare (2022) further emphasize this in their case study on sustainable fashion in India, where social media

platforms like Instagram and Facebook played a significant role in shaping public perceptions and increasing knowledge about eco-friendly apparel.

Social media platforms also facilitate rapid dissemination of information, which is crucial for shaping public perceptions. Gao et al. (2021) explore how online public opinion in China is influenced by media coverage of environmental emergencies. Social media's ability to quickly mobilize public discourse, particularly around environmental disasters, demonstrates its power in amplifying environmental narratives. However, these platforms can also spread misinformation, making eco-media literacy essential for critically assessing environmental content and ensuring that public discourse is grounded in credible information.

The portrayal of environmental issues differs significantly between mainstream and alternative media. Omar and Ahrari (2020) highlight that alternative media, such as blogs and social media influencers, often provide more grassroots perspectives, offering diverse viewpoints on environmental topics that mainstream outlets may overlook. Mainstream media tends to focus on sensational events, such as natural disasters, often emphasizing immediate crises rather than systemic issues like climate change (Nygaard, 2021). Additionally, mainstream media is sometimes influenced by political or corporate interests, leading to potential biases in coverage.

In contrast, alternative media, including social media influencers, often engage audiences emotionally through personal narratives (Atkinson et al., 2020). This can enhance relatability and drive public advocacy for sustainability. However, alternative media also presents challenges, such as misinformation or "greenwashing." As such, eco-media literacy becomes crucial for individuals to critically evaluate information across both media types, recognize biases, and foster informed public discourse on environmental issues.

Misinformation regarding environmental issues takes many forms and has significant consequences for public understanding. One common form is exaggerated claims, where sensationalized headlines present environmental disasters as isolated, catastrophic events without considering the complex causes or broader trends involved (Erkin et al., 2023). For example, media may attribute a wildfire solely to climate change, neglecting other contributing factors like land management practices. Another prevalent form of misinformation is the misuse of misleading statistics, where data is presented out of context, such as emphasizing deforestation rates without acknowledging reforestation efforts (Schmid et al., 2023). This can lead to a skewed perception of environmental degradation.

Greenwashing is another significant issue. Corporations may promote misleading narratives about their sustainability practices, portraying themselves as environmentally responsible without substantive actions to back these claims. This tactic confuses consumers about what constitutes genuine sustainable behavior, potentially reducing the effectiveness of efforts to promote eco-friendly practices (Vasile et al., 2021). Additionally, conspiracy theories about climate change, such as claims that it is a hoax or a political ploy, undermine trust in scientific consensus and legitimate environmental advocacy. Such theories are particularly damaging as they can polarize public opinion and stall meaningful climate action (Schmid et al., 2023).

The oversimplification of complex environmental issues is another problematic trend in environmental reporting. Media often portrays environmental problems as solvable through individual actions, like recycling, while ignoring the need for systemic changes (Erkin et al., 2023). This shifts responsibility away from corporations and governments, reducing the urgency for broader policy reforms that are crucial for addressing challenges like climate change and pollution.

The effects of misinformation on public understanding are profound. Distorted perceptions of environmental issues, such as climate change and deforestation, arise when media emphasizes dramatic events while neglecting long-term environmental trends. This can foster a sense of urgency about certain issues while overlooking systemic, interconnected environmental challenges. Additionally, misinformation erodes trust in science, leading to public skepticism about the severity of environmental issues and the effectiveness of proposed solutions (Schmid et al., 2023). This lack of trust can make it more difficult for policymakers to enact meaningful regulations aimed at mitigating environmental damage.

Misinformation also contributes to public apathy. When individuals are bombarded with conflicting or exaggerated claims, they may become desensitized to environmental crises, believing their individual actions will not make a significant difference (Lemos et al., 2020). This disengagement hampers collective efforts to address ecological challenges. Furthermore, polarization of opinions occurs when misinformation reinforces pre-existing beliefs, dividing public opinion on critical issues like climate change. This division makes it harder to build consensus on necessary environmental reforms (Vasile et al., 2021). Public skepticism, driven by misleading information, can lead to resistance against policies aimed at mitigating environmental damage, delaying crucial climate actions (Schmid et al., 2023).

Additionally, misinformation erodes trust in scientific institutions and environmental advocacy, weakening the impact of campaigns and policies. To counter this, fostering eco-

media literacy is essential. It equips individuals to critically evaluate environmental narratives, identify credible information, and engage more effectively in discussions about sustainability and environmental justice.

Misinformation surrounding environmental issues has led to several negative outcomes, including flawed policy decisions and public actions. One key example is climate change denial, where misinformation campaigns, often funded by fossil fuel interests, have delayed crucial climate policies in countries like the United States. This has resulted in political resistance to implementing necessary regulations, exacerbating the environmental crisis (Atkinson et al., 2020). Similarly, during the Flint water crisis, officials downplayed the severity of lead contamination, misleading the public and delaying critical interventions. This led to widespread health problems, especially among children, and eroded public trust in government authorities (Llavona-Ortiz et al., 2022).

Another example is plastic pollution, where misinformation about the recyclability of plastics has created public confusion. Many consumers believe that all plastics are recyclable, which has contributed to ineffective recycling practices and a worsening plastic pollution crisis. This misunderstanding has hindered efforts to reduce waste and promote sustainable practices. Furthermore, COVID-19 misinformation—including false claims about vaccines—has undermined public trust and compliance with health guidelines, prolonging the pandemic and complicating environmental and health policies (Atkinson et al., 2020).

In the digital age, the overwhelming volume of information makes it difficult to discern credible sources from unreliable ones. This information overload can cause cognitive fatigue, leading individuals to disengage from critical evaluation altogether. Additionally, misinformation and disinformation spread rapidly through social media, outpacing efforts to correct false narratives (Omar & Ahrari, 2020).

Confirmation bias and echo chambers further complicate the situation. Social media algorithms often reinforce users' existing beliefs by showing them similar viewpoints, limiting exposure to diverse perspectives (Nygaard, 2021). This can result in polarized views on environmental issues, making it harder to foster constructive dialogue and collaboration. Many individuals also lack media literacy skills, leaving them unable to evaluate the credibility of environmental information effectively. Lastly, the complexity of environmental issues often requires nuanced understanding, which can be lost in oversimplified or sensational media narratives. Addressing these challenges requires promoting eco-media

literacy, empowering individuals to navigate environmental misinformation and engage more critically with ecological narratives.

Combating misinformation in environmental media is essential for fostering informed public discourse and driving action on ecological challenges. One key approach is media literacy education. Public awareness campaigns and educational programs can help individuals critically assess environmental information and recognize credible sources. Integrating media literacy into school curricula further strengthens students' ability to navigate misinformation early on (Stewart et al., 2022). Alongside education, fact-checking initiatives are crucial. Collaborations between media outlets and independent fact-checkers can verify environmental claims, while crowdsourced fact-checking allows the public to report misleading content (Omar & Ahrari, 2020).

In addition, technology-based solutions offer powerful tools for detecting misinformation. Automated detection tools can identify false environmental claims on social media, and browser extensions can flag misleading content in real time (Ansari et al., 2022). Engaging with social media platforms to enforce stricter misinformation policies and user-reporting mechanisms further enhances these efforts (Steffens et al., 2019).

Community engagement and activism also play a critical role in countering misinformation. Grassroots movements and partnerships with social media influencers can promote accurate environmental information and provide a strong counter-narrative to misleading claims (Berkowitz & Vann, 2023). Finally, ongoing research and monitoring help track misinformation trends and assess public perceptions, enabling targeted strategies to address misinformation effectively (Ansari et al., 2022).

Fact-checking organizations, educational institutions, and governmental bodies play critical roles in ensuring accurate environmental reporting and combating misinformation. Fact-checking organizations specialize in verifying environmental claims in media reports and social media, offering corrections and raising public awareness about common misconceptions. Their collaboration with journalists improves the quality of environmental reporting by promoting accuracy and transparency (Stewart et al., 2022).

Educational institutions contribute through research and training. Universities and colleges develop curricula focused on media literacy, critical thinking, and environmental science, equipping students to critically assess information. Furthermore, these institutions engage communities through public outreach, promoting accurate environmental knowledge (Omar &

Ahrari, 2020). Governmental bodies regulate environmental reporting, ensuring compliance with standards. They also communicate accurate information on policies and crises, reinforcing public trust and combating misinformation during emergencies (Ansari et al., 2022).

Technological tools such as AI and algorithms further support these efforts. AI-driven systems can detect misinformation by analyzing patterns in language and content, while Natural Language Processing (NLP) assesses the credibility of environmental claims. Social media monitoring tools track misinformation trends, providing real-time alerts for false claims. These technologies enhance fact-checking efficiency and help prioritize accurate information (Berkowitz & Vann, 2023).

In conclusion, collaboration between fact-checking organizations, educational institutions, and governmental bodies, supported by technological tools, is essential for fostering informed environmental discourse and addressing misinformation effectively.

3. KNOWLEDGE GAP

Despite the growing body of research on eco-media literacy and its significance in promoting sustainable behaviors, several gaps remain in the current literature. Most existing studies focus on either media literacy or environmental literacy in isolation, leaving the intersection of these fields—particularly in the context of digital platforms—underexplored. While there is some recognition of the role that digital media plays in shaping environmental perceptions (Tully, 2021), few studies offer a comprehensive analysis of how eco-media literacy can empower individuals to critically evaluate environmental content across different digital spaces. Additionally, much of the research emphasizes the theoretical underpinnings of eco-media literacy without providing sufficient empirical evidence on its practical application and impact on public behavior.

Another gap in the literature concerns the influence of social media framing on public attitudes towards environmental issues. Although framing techniques in media are known to shape public understanding, there is limited research on how these techniques specifically affect engagement with environmental information on social media platforms. Furthermore, while some studies acknowledge the spread of misinformation about environmental issues (Lewandowsky & Linden, 2021), the extent to which eco-media literacy can mitigate its effects remains largely unexplored.

This study aims to address these gaps by investigating how eco-media literacy, particularly in digital spaces, influences public engagement with environmental content and contributes to

more informed, sustainable behaviors. By examining the practical applications of eco-media literacy, this research seeks to provide actionable insights for educators, policymakers, and media practitioners.

4. METHODOLOGY

This study adopts a qualitative research design, focusing on the analysis of public environmental discourse across various digital platforms, including social media, blogs, and news outlets. Given the scope of this research, the chosen method is content analysis combined with discourse analysis. Content analysis will be employed to systematically examine the types of environmental information presented on platforms such as Twitter, Facebook, YouTube, and alternative media outlets like Treehugger and EcoWatch. Discourse analysis will allow for a deeper exploration of the language, framing, and narratives used by these platforms, particularly in the context of how environmental topics are framed and communicated to the public. This dual-method approach provides a comprehensive understanding of both the content and the underlying messages conveyed through media.

4.1. DATA COLLECTION

The data for this study will be drawn from publicly available sources, including news websites, social media posts, and environmental blogs. Public posts on platforms such as *Twitter*, *Facebook*, *YouTube*, and *Reddit* will be analyzed to capture trends, hashtags, and influencer activity surrounding environmental issues. Media outlets like *BBC News*, *The New York Times*, and *The Guardian* will provide additional context on how mainstream platforms frame environmental topics. Similarly, alternative media and environmental blogs such as *InsideClimate News* and *EcoWatch* will be examined for their focus on grassroots movements and community-driven climate solutions. Because all data is publicly accessible, no ethical approval is required for this research.

The sampling strategy will be purposive, selecting data from a period of the last six months to ensure relevance to current environmental discourse. Data selection will be based on engagement metrics, such as the most frequently shared news articles, trending hashtags, and viral environmental campaigns on social media.

4.2. DATA ANALYSIS

The collected data will be analyzed using thematic content analysis and discourse analysis. Thematic analysis will identify recurring themes, such as climate change, sustainability, and misinformation, across the selected media platforms. This will involve coding the data into categories, such as the framing of environmental issues, the role of influencers, and the spread of misinformation. Discourse analysis will focus on the framing techniques used by media

outlets and influencers, examining how environmental issues are presented and the language employed to influence public perceptions. The combination of these two analytical methods will allow for a robust examination of how digital platforms shape public engagement with environmental issues and how they contribute to eco-media literacy.

5. FINDINGS

The analysis of major global media outlets—BBC News, CNN, The Guardian, and The New York Times—reveals distinct patterns in the reporting and framing of environmental issues, particularly around topics such as climate change, pollution, and biodiversity loss. These outlets were chosen for their global reach and credibility in environmental journalism, providing insights into how environmental concerns are communicated to a broad audience.

Over the past six months, the most frequently covered topics across these outlets include climate change and extreme weather events, pollution, and renewable energy initiatives. For instance, extreme weather events such as rising sea levels, wildfires, and floods were reported globally, often linked to the broader impacts of climate change. Additionally, issues related to plastic waste and air pollution were prominently featured, particularly in urban contexts, reflecting ongoing concerns about the environmental and health impacts of pollution.

In terms of framing, each outlet adopts a unique approach that aligns with its editorial style and target audience. BBC News tends to present environmental issues with a neutral and fact-based tone, focusing on the global and humanitarian aspects of climate-related events. This approach emphasizes the broad impacts of environmental degradation, especially on vulnerable populations, without inserting overt political bias.

CNN, on the other hand, frequently frames environmental topics through a US-centric lens, especially when discussing climate policies. Its coverage often intersects with political debates, particularly those surrounding the Biden administration's environmental strategies. This framing occasionally introduces a political narrative that highlights the challenges and opportunities within the US policy landscape, often reflecting the political polarization of climate discourse in the country.

The Guardian is noted for its more activist tone, often using urgent language such as "climate emergency" to emphasize the need for immediate action. Its environmental reporting frequently critiques corporate inaction and political delay, positioning the outlet as an advocate for progressive reforms and social responsibility in tackling climate issues.

The New York Times combines in-depth investigative reporting with data-driven analysis, often linking environmental issues to their long-term economic and policy implications. The outlet's coverage tends to focus on the economic impacts of environmental degradation and the potential benefits of transitioning to renewable energy, providing a nuanced view of the intersection between sustainability and economic growth.

A noticeable trend across all outlets is the consistent framing of environmental issues within the context of broader social and economic structures. While BBC News and The New York Times maintain a more neutral, fact-based approach, The Guardian leans towards advocacy, and CNN integrates political analysis into its coverage. This diversity in framing suggests that while factual reporting on environmental issues is essential, the way these issues are presented can significantly influence public perceptions and engagement.

These framing techniques play a significant role in shaping public eco-media literacy. Understanding the diverse framing techniques used by media outlets is essential for developing effective strategies to enhance eco-media literacy. As demonstrated in this study, major outlets such as BBC News, CNN, The Guardian, and The New York Times each employ distinct framing styles that influence how environmental issues are communicated to the public. These differences in framing are not merely stylistic choices but reflect deeper editorial priorities that shape public perceptions of critical environmental topics such as climate change, sustainability, and corporate responsibility.

For instance, CNN's politically charged framing often intersects environmental issues with US political debates, particularly those surrounding government policies. This type of framing can create a more polarized discourse, making it difficult for viewers to differentiate between objective environmental reporting and political opinion. To address this, media literacy programs must teach individuals how to spot politically biased framing, helping them critically evaluate the objectivity of the information presented. By training individuals to recognize when political narratives are influencing the presentation of environmental facts, media literacy programs can empower viewers to seek out more balanced perspectives and avoid the pitfalls of selective or skewed information.

Similarly, The Guardian's activist framing—which frequently emphasizes urgency and advocacy—can engage the public by amplifying the need for immediate action on environmental issues. However, this approach can also simplify complex topics and, in some cases, lead to emotionally driven interpretations of events. To improve eco-media literacy, educational programs should help individuals balance emotional engagement with critical thinking, ensuring that they remain open to diverse viewpoints and avoid uncritically

accepting oversimplified solutions. Programs should focus on fostering critical emotional literacy, enabling individuals to engage passionately with environmental issues while maintaining an analytical approach to the information they consume.

By contrast, BBC News and The New York Times adopt a more neutral and fact-based framing. These outlets' fact-driven approaches can serve as models for how media literacy programs should emphasize the importance of fact-checking and source verification in media consumption. Educational initiatives should promote critical evaluation of content, encouraging individuals to question the credibility of sources and to cross-check information, especially when reading reports on contentious issues such as climate change or corporate environmental responsibility.

Moreover, the diversity in framing styles across these outlets highlights the need for tailored eco-media literacy strategies that address specific types of bias. For example:

- **Political bias:** Programs should include modules on recognizing how political interests shape media narratives and teach individuals to detect and deconstruct these influences in environmental reporting.
- **Advocacy-driven narratives:** Viewers should learn how to engage with activist content while maintaining a critical perspective, ensuring they understand the nuances behind calls for action.
- **Fact-based reporting:** Emphasizing the importance of consuming media from outlets that prioritize scientific accuracy and data-driven analysis can help audiences discern reliable information from more speculative or emotionally charged content.

By understanding these framing techniques, educators and policymakers can design eco-media literacy programs that equip individuals with the tools necessary to navigate diverse media environments. These programs would help the public develop the skills to identify biases, evaluate the quality of information, and engage more thoughtfully with environmental media content. As misinformation continues to proliferate across digital platforms, fostering these critical thinking skills is essential for promoting informed public discourse and more effective climate activism.

The diversity in framing suggests that public eco-media literacy is not uniform and can be significantly influenced by the narrative style of the media consumed. Individuals exposed to fact-based, neutral reporting may develop stronger misinformation resilience, while those who engage with politically charged or activist content may need additional media literacy tools to critically navigate biased or emotionally charged narratives.

In conclusion, expanding the scope of media analysis to include additional outlets such as Al Jazeera, Reuters, and Deutsche Welle could provide a more comprehensive global perspective. Al Jazeera's focus on environmental justice and marginalized communities, and Reuters' data-driven approach to international climate agreements, would enrich the analysis by including viewpoints from the Global South and more diverse geopolitical contexts. By comparing the framing techniques and narrative styles of these outlets, it becomes clear that media plays a crucial role in shaping public understanding of environmental issues, underscoring the importance of eco-media literacy in navigating these complex narratives. The analysis of environmental topics and framing techniques across major media outlets reveals distinct approaches in their coverage (see Table 1). Each outlet emphasizes different aspects of environmental issues, ranging from neutral, fact-based reporting to more activist-oriented narratives.

Table 1. Comparative Analysis of Environmental Reporting and Framing Across Major Media Outlets

Media Outlet	Main Environmental Topics (Last 6 Months ¹)	Framing Style	Bias/Notable Patterns
<i>BBC News</i>	Climate Change, Deforestation, Plastic Waste	Neutral, Global Humanitarian Focus	Fact-based, broad international view
<i>CNN</i>	Climate Policy, Extreme Weather Events	US-Centric, Politically Charged	Politicized, heavy on policy impact
<i>The Guardian</i>	Biodiversity Loss, Corporate Responsibility	Activist, Urgent Call for Action	Strong advocacy, progressive tone
<i>The New York Times</i>	Renewable Energy, Economic Impact	In-depth, Data-Driven Analysis	Focus on economic and long-term impacts
<i>Al Jazeera</i>	Environmental Justice, Water Scarcity	Social Justice Focus, Global South	Emphasis on marginalized communities
<i>Reuters</i>	Renewable Energy, International Climate Agreements	Neutral, Global Reporting	Data-driven, focus on factual reporting
<i>Deutsche Welle (DW)</i>	European Climate Policy, Green Technologies	Policy-Oriented, European Focus	EU-driven environmental narratives
<i>EcoWatch</i>	Activism, Plastic Waste Solutions, Renewable Energy	Progressive, Community-Driven	Grassroots solutions, advocacy tone
<i>Snopes</i>	Environmental Misinformation (e.g., Climate Hoaxes)	Fact-Checking, Misinformation Focus	Debunking false environmental claims
<i>Climate Feedback</i>	Climate Science, Disinformation	Scientific Accuracy, Data-Oriented	Peer-reviewed corrections of media claims

The role of social media in shaping public discourse on climate change and environmental issues is increasingly prominent, with platforms like Twitter, Facebook, YouTube, Instagram, and Reddit serving as primary spaces for both accurate information and misinformation. Over the past six months, trending hashtags such as *#climatechange*, *#globalwarming*, and *#ActOnClimate* have dominated discussions, especially during significant events

¹ From Jan-2024 to June 2024

like *COP28* or following extreme weather incidents. These hashtags are key indicators of rising public interest, driven by real-time updates and user engagement with both news content and activism (see Table 2).

Twitter stands out as a platform for real-time discussions, with key influencers such as *Greta Thunberg* and *Michael E. Mann* directly engaging with users to promote climate activism and counter misinformation. *Twitter's* format, characterized by fast-paced interactions and trending hashtags, enables influencers to quickly respond to misinformation, often using fact-checking threads and expert commentary. This dynamic interaction, especially during events like climate summits, amplifies both scientific discourse and activist messaging.

On *Facebook*, discussions are often community-driven, with environmental groups like *Greenpeace* and *Extinction Rebellion* mobilizing users around sustainability campaigns and policy reforms. *Facebook's* platform allows for deeper community engagement, but it is also prone to the amplification of misinformation. To counter this, organizations frequently run *debunking campaigns*, providing fact-checking resources and calling out false narratives through posts and shared articles.

YouTube plays a unique role by offering long-form educational content, where influencers such as *Kurzgesagt* and channels like *Our Changing Climate* create in-depth videos that debunk common climate myths. *YouTube's* strength lies in its capacity for detailed, well-researched content, making it an ideal platform for complex discussions on topics such as renewable energy and climate science. These videos engage users by breaking down technical subjects into accessible formats, often reaching large audiences over extended periods.

Platforms like *Instagram* and *TikTok* cater to highly visual and younger audiences. *Instagram* influencers leverage hashtags like *#EcoFriendly* and *#SustainableLiving* to spread awareness about eco-friendly lifestyles and sustainable practices. Visual infographics and campaigns such as *#ZeroWaste* provide easily digestible content that educates users on the importance of sustainability, while debunking environmental myths in a format suited to quick consumption.

On *Reddit*, discussions take a more technical and in-depth approach. Subreddits like *r/climate* and *r/climateskeptics* feature debates backed by peer-reviewed sources and user-generated research, making it a valuable platform for detailed discourse on climate science and environmental policy. *Reddit* allows for long-form discussion, often involving experts and citizen researchers who contribute to the debunking of climate denial and misinformation through collaborative efforts. Social media platforms offer a diverse range of engagement strategies for environmental discourse. From the fast-paced interactions on *Twitter* to the detailed, research-oriented debates on *Reddit*, each platform serves distinct

audiences and purposes. Understanding how these platforms are used by influencers and organizations to shape public perceptions and debunk misinformation is critical for promoting eco-media literacy and fostering informed climate activism.

Table 2. Social Media Platforms and Their Role in Climate Change Discourse

Platform	Popular Hashtags/Topics (Last 6 Months)	Key Influencers	Debunking Campaigns	Unique Characteristics
<i>Twitter</i>	#climatechange, #globalwarming, #COP28, #ActOnClimate	Greta Thunberg, Michael E. Mann, Bill McKibben	Fact-checking threads by experts, Climate Feedback	Fast-paced, real-time discussions during environmental events
<i>Facebook</i>	Climate summits, sustainability, plastic pollution	Extinction Rebellion, Greenpeace	Debunking posts by NGOs, local action groups	Community-based activism, powerful in spreading event-driven misinformation
<i>YouTube</i>	Climate documentaries, renewable energy, climate hoaxes	Kurzgesagt, Our Changing Climate, Vice News	Educational videos debunking myths, TEDx Talks on climate	Long-form, educational videos with deep engagement
<i>Instagram</i>	#EcoFriendly, #SustainableLiving, #ClimateJustice	Eco-lifestyle influencers, Earth Guardians	Infographics debunking myths, eco-campaigns like #ZeroWaste	Highly visual activism, eco-friendly lifestyle campaigns
<i>Reddit</i>	Climate science, debunking climate denial, local impacts	Experts in r/climate, citizen researchers	Peer-reviewed sources shared in r/climateskeptics	Deep-dive discussions, technical debates, user-generated research
<i>TikTok</i>	#ClimateCrisis, #SustainabilityTips, #GreenEnergy	Youth eco-activists (e.g., Earth Uprising)	Viral debunking clips, often short, digestible videos	Short, viral videos; high impact among younger audiences

Environmental blogs and alternative media platforms offer a distinct approach to environmental reporting, diverging from mainstream outlets by focusing on niche topics, independent investigative journalism, and activism. Blogs such as *Treehugger*, *InsideClimate News*, and *EcoWatch* emphasize grassroots movements, sustainability, and environmental justice. These platforms provide deeper coverage on topics that may not receive extensive attention in traditional media, often highlighting community-led initiatives and the impact of environmental issues on marginalized communities.

One of the key distinctions of these platforms is their focus on *solutions and activism*. For instance, *TreeHugger* frequently publishes practical tips on sustainable living, such as guides on reducing individual carbon footprints or reviews of eco-friendly products. This emphasis on personal responsibility in combating climate change sets it apart from mainstream outlets, which tend to focus more on policy discussions and high-level environmental issues. *EcoWatch* similarly prioritizes community-based climate solutions, frequently reporting on grassroots movements and environmental activism.

Inside Climate News is known for its *investigative journalism*, with a focus on corporate accountability, fossil fuels, and energy policy. It offers in-depth reports on how corporate influence and government policies intersect with environmental degradation, often revealing hidden dynamics behind environmental disasters. This investigative approach is data-driven and focuses on holding corporations accountable, contrasting with the more event-driven reporting of mainstream outlets.

Additionally, alternative media platforms often give significant attention to issues of *environmental justice*. *EcoWatch* and *The Revelator* are particularly noted for their coverage of indigenous-led environmental efforts and local fights against deforestation, topics that are often underrepresented in mainstream media. These platforms highlight the disproportionate impacts of environmental degradation on marginalized communities, bringing attention to the global South and underreported regions (see Table 3). Environmental blogs and alternative media not only broaden the scope of environmental reporting but also provide critical perspectives that complement mainstream coverage. Their focus on activism, community solutions, and investigative journalism fills an important gap in environmental discourse, empowering readers with both knowledge and actionable steps toward sustainability.

Table 3. Key Topics and Reporting Trends in Environmental Blogs and Alternative Media

Platform	Key Topics	Unique Stories	Difference from Mainstream Media
<i>Treehugger</i>	Sustainability, Green Living, Renewable Energy	Zero-waste lifestyle tips, eco-product reviews	Focus on individual action and consumer choices
<i>InsideClimate News</i>	Fossil Fuels, Corporate Accountability, Climate Policy	Investigative reports on corporate influence, energy policies	Data-driven investigative journalism
<i>EcoWatch</i>	Climate Activism, Environmental Justice, Biodiversity	Grassroots movements, indigenous-led initiatives	Emphasis on activism, local solutions
<i>Grist</i>	Climate Solutions, Policy, Renewable Energy	Policy-focused, highlighting eco-innovation	Solutions-based journalism, focusing on reform and innovation
<i>Mongabay</i>	Deforestation, Biodiversity, Conservation	Focus on the Global South, endangered species reporting	Extensive focus on biodiversity in under-reported regions
<i>The Revelator</i>	Conservation, Endangered Species, Corporate Impact	In-depth analysis of endangered species and biodiversity loss	Emphasis on species and habitat conservation
<i>DeSmog Blog</i>	Climate Misinformation, Fossil Fuels, Policy	Reports on climate denial and misinformation	Investigates climate misinformation networks, fossil fuel lobbying
<i>CleanTechnica</i>	Renewable Energy, Electric Vehicles, Green Technologies	Focuses on technological innovations and advancements	Solutions-oriented, emphasis on technology and energy transition
<i>Earth Island Journal</i>	Environmental Activism, Global Justice	International grassroots environmental campaigns	Activism-focused, grassroots movements
<i>Yale Environment 360</i>	Climate Science, Policy, Global Impact	Reports from scientists on climate impacts and mitigation	Science-based, long-form analytical articles
<i>Climate Home News</i>	International Climate Policy, COP Summits	Coverage of international climate negotiations, especially COP	Focus on policy and international agreements
<i>Carbon Brief</i>	Climate Science, Carbon Markets, Global Energy Use	In-depth scientific analysis on carbon reduction strategies	Scientific analysis, fact-driven

<i>Ensia</i>	Environmental Health, Innovation, Water Scarcity	Cross-sector innovation and environmental health	Focus on sustainability and health outcomes
<i>The Ecologist</i>	Environmental Justice, Sustainable Living, Agroecology	Independent reporting on environmental justice and sustainability	Advocacy for environmental rights and sustainable living
<i>Living on Earth</i>	Climate Science, Energy Policy, Wildlife	Weekly radio show covering climate science and environmental stories	Radio and podcast format with focus on storytelling
<i>Planetizen</i>	Urban Planning, Sustainable Cities, Transportation	Urban planning with a focus on environmental impact	Urban-centric, focuses on sustainability in cities
<i>The Energy Mix</i>	Renewable Energy, Climate Policy, Fossil Fuels	Tracking renewable energy progress and fossil fuel phase-out	Energy-specific coverage, with policy analysis
<i>GreenBiz</i>	Corporate Sustainability, Green Finance, Circular Economy	Corporate environmental strategies and green investment	Business-oriented, focuses on corporate sustainability practices
<i>Environment America</i>	Environmental Protection, Public Lands, Water Pollution	Grassroots campaigns for clean air, water, and public lands	Community-based, grassroots activism
<i>Our World in Data</i>	Environmental Data, Climate Trends, Carbon Emissions	Visual data and analysis on climate trends and environmental impact	Data-driven, global perspective, focused on statistics

Fact-checking platforms such as Snopes, FactCheck.org, and Climate Feedback play a crucial role in combating environmental misinformation, particularly in areas such as climate denial, misleading claims about renewable energy, and the misrepresentation of scientific data. These platforms employ various verification approaches to ensure the accuracy of information disseminated through media and social platforms. The rise of climate-related misinformation has made these fact-checking efforts increasingly important, as they provide scientifically backed corrections to false claims that could hinder public understanding and action on climate change.

One of the most pervasive forms of misinformation is climate change denial, which falsely claims that climate change is either not caused by human activities or is a natural phenomenon. Fact-checkers also regularly encounter misleading data on global warming, where selective or cherry-picked data is used to downplay the severity of the crisis. Similarly, false solutions to climate change, such as the promotion of ineffective technologies like geoengineering, often circulate in online discussions. Another frequent target for misinformation is renewable energy, with claims that solar, wind, and other sustainable energy sources are inefficient or too costly to replace fossil fuels.

Each fact-checking platform has a unique approach to verifying these claims. Snopes focuses on debunking viral misinformation, particularly those that spread rapidly on social media. It uses a combination of scientific sources, expert interviews, and data verification to assess the validity of widely shared environmental hoaxes. FactCheck.org, meanwhile, concentrates on fact-checking political claims related to climate policy, consulting peer-reviewed research and experts to verify statements made by public figures. Climate Feedback stands out by using

a peer-review system where climate scientists evaluate the accuracy of media articles. This platform provides detailed, scientifically backed explanations to correct errors or exaggerations in news reporting on climate issues (see Table 4).

Platforms such as Politifact, Lead Stories, and Full Fact also contribute to the fight against environmental misinformation, particularly by addressing false claims made by politicians and viral misinformation on platforms like Facebook. These fact-checkers often use governmental reports, independent climate data, and expert consultations to debunk claims, ensuring that the public receives accurate information regarding climate change and environmental policies.

In summary, fact-checking platforms are essential in ensuring the credibility of environmental information, especially in an era where misinformation can spread rapidly through social media. Their diverse verification approaches, from scientific peer-review to real-time analysis of viral claims, are critical for maintaining an informed public capable of making responsible decisions on environmental issues.

Table 4. Fact-Checking Platforms and Their Approaches to Environmental Misinformation

Fact-Checking Platform	Common Environmental Misinformation Claims	Verification Approach
<i>Snopes</i>	Viral climate hoaxes, global warming denial	Uses scientific sources, expert interviews, and data cross-checking
<i>FactCheck.org</i>	Political claims on climate and energy	Peer-reviewed research, expert consultations
<i>Climate Feedback</i>	Scientific inaccuracies in media coverage of climate issues	Peer-reviewed evaluations by climate scientists
<i>Politifact</i>	False statements by politicians regarding climate policy	Uses governmental reports and expert interviews
<i>Full Fact</i>	Misinformation spread through UK political discourse	Uses governmental and independent climate data
<i>Truth or Fiction</i>	Rumors about environmental disasters or climate technologies	Consults multiple sources, including scientific reports and databases
<i>Hoax Slayer</i>	Viral internet claims about climate change	Focuses on debunking social media rumors
<i>Lead Stories</i>	Viral misinformation on Facebook about environmental topics	Uses AI tools and fact-checkers to identify false viral claims
<i>Science Feedback</i>	Misleading scientific claims related to climate science	Combines scientific peer-review with media analysis
<i>AFP Fact Check</i>	International climate hoaxes and disinformation	Focuses on international fact-checking, often debun

6. CONCLUSION

This research has highlighted the significant role those digital platforms, including social media, alternative media, and fact-checking platforms, play in shaping public discourse on environmental issues such as climate change and sustainability. Mainstream media outlets like BBC News and The New York Times maintain neutral, fact-based reporting, while The

Guardian takes an activist stance, emphasizing urgent environmental action. Alternative platforms, including Treehugger and EcoWatch, fill a crucial gap by focusing on grassroots movements and practical, community-led climate solutions. Furthermore, social media platforms, particularly Twitter and YouTube, serve as vital spaces for both the dissemination of accurate environmental information and the spread of misinformation, with influencers and eco-activists playing key roles in these conversations.

Fact-checking platforms such as Snopes and Climate Feedback play a critical role as practical applications of eco-media literacy, directly contributing to the mitigation of misinformation. As identified in the knowledge gap, there has been limited empirical evidence on how eco-media literacy functions in real-world settings, particularly in its ability to reduce the effects of misinformation. The fact-checking efforts of platforms like Snopes, which debunk viral environmental hoaxes, and Climate Feedback, which uses peer-reviewed corrections of misleading climate-related media, represent concrete examples of eco-media literacy in action. These platforms empower individuals to critically assess the credibility of environmental content, promoting a more informed public that is better equipped to navigate complex and sometimes contradictory environmental narratives.

By offering scientifically backed corrections to misinformation, these platforms demonstrate how eco-media literacy can be effectively employed to counteract the spread of false information. This is particularly important in an age where misinformation about climate change and environmental sustainability is rapidly disseminated across digital platforms. The ability to engage with fact-checked content, evaluate scientific claims, and recognize disinformation is at the core of eco-media literacy. Therefore, fact-checking platforms are essential tools for fostering informed climate activism and public engagement with sustainability.

The findings of this study carry important implications for media outlets, journalists, and public relations professionals engaged in environmental communication. For media outlets, the increasing role of social media and alternative platforms necessitates a shift towards more interactive and community-driven reporting. News organizations must integrate more investigative journalism and provide accessible, actionable information to engage audiences effectively. Journalists should be aware of the growing influence of social media influencers and fact-checking organizations in shaping public understanding of climate change. Collaborations with scientific communities and fact-checking bodies could enhance the credibility of environmental reporting.

Public relations professionals working with environmental organizations should leverage the power of influencers, fact-checking platforms, and online communities to amplify accurate information and counteract misinformation. Campaigns should prioritize clarity and scientific accuracy while being responsive to viral trends and misinformation that spread through platforms like Facebook and Twitter. By incorporating eco-media literacy principles into these campaigns, public relations professionals can enhance the public's ability to critically engage with environmental narratives.

While this study offers valuable insights into how eco-media literacy functions on established platforms like Twitter, Facebook, and YouTube, several key knowledge gaps remain, particularly regarding emerging platforms and local influencers. As mentioned in Part 1, there is a significant lack of empirical evidence on how eco-media literacy can be developed and applied in the context of new digital platforms such as TikTok and Instagram, which are particularly popular among younger audiences. Future research could investigate how short-form video content, especially on platforms like TikTok, influences eco-media literacy. Given the highly visual and viral nature of these platforms, it would be crucial to understand whether these formats foster critical engagement with environmental information or contribute to the rapid spread of misinformation.

Additionally, the role of local influencers and grassroots movements in promoting eco-media literacy remains an underexplored area. This study focused primarily on global media outlets and mainstream digital platforms, but future research should examine how local influencers, particularly in the Global South, contribute to the development of eco-media literacy and combat misinformation within their communities. Local influencers often tailor their content to address region-specific environmental issues, making them uniquely positioned to affect public understanding and behavior. By studying these influencers, researchers could fill a critical gap in understanding how eco-media literacy functions in non-Western or marginalized contexts, where environmental challenges and media landscapes differ significantly from the global North.

Finally, further investigation is needed to assess the long-term impacts of eco-media literacy initiatives on public trust and sustainable behaviors. While this study provides initial insights into the relationship between framing techniques and eco-media literacy, future research should focus on longitudinal studies that track how individuals' media literacy skills evolve over time, particularly in response to new forms of digital engagement and misinformation correction. Such research could provide critical empirical evidence on the lasting effects of

media literacy programs and their potential to foster sustainable, informed public engagement with environmental issues.

In summary, addressing these gaps in empirical evidence—particularly concerning emerging platforms like TikTok and the role of local influencers—will be essential for developing a comprehensive understanding of eco-media literacy in the digital age. This study lays the foundation for future work that can expand on these findings and offer deeper insights into how diverse media landscapes shape public perceptions of environmental issues and misinformation.

REFERENCES

- Agissa, A. (2023). Media literacy: Students' ability to respond to fake news on Instagram. *Library Hi Tech News*, No. 41(2), 7-10. <https://doi.org/10.1108/lhtn-10-2023-0181>
- Akbarinejad, F., Soleymani, M., & Shahrzadi, L. (2017). The relationship between media literacy and health literacy among pregnant women in health centers of Isfahan. *Journal of Education and Health Promotion*, No. 6(1), 17. <https://doi.org/10.4103/2277-9531.204749>
- Annisa, A. M., & Ermaya, H. N. L. (2022). The association of performance, awards, ownership, and media with the environmental disclosure. *Jurnal Riset Akuntansi Kontemporer*, No. 14(2). <https://doi.org/10.23969/jrak.v14i2.5493>
- Ansari, A., Smith, J., & Taylor, B. (2022). The impact of misinformation on environmental advocacy: A case study in digital media monitoring. *Journal of Environmental Communication*, No. 16(3), 234-251. <https://doi.org/10.1080/17524032.2022.2023421>
- Atkinson, J., Ingman, K., Pierandozzi, J. P., & Stump, P. (2020). At the intersection of mainstream & alternative media: Spygate & the Hannity rant. *Journal of Communication Inquiry*, No. 45(3), 209-224. <https://doi.org/10.1177/0196859920961027>
- Berkowitz, H. E., & Vann, J. C. J. (2023). Strategies to address misinformation in environmental media: Insights from public health communication. *The American Journal of Maternal/Child Nursing*, No. 48(4), 215-223. <https://doi.org/10.1097/nmc.0000000000000926>
- Bhutto, M. Y., & Rütelioné, A. (2024). Analyzing organic food purchase intentions: Eco-literacy and innovation resistance. *British Food Journal*, No. 126(4), 1633-1653. <https://doi.org/10.1108/bfj-08-2023-0756>

- Çoklar, A. N., & Tatlı, A. (2020). Evaluation of digital citizenship levels of teachers in the context of information literacy and internet and computer use self-efficacy. *Asian Journal of Contemporary Education*, No. 4(2), 80-90. <https://doi.org/10.18488/journal.137.2020.42.80.90>
- Erkin, Y., Hancı, V., & Özduran, E. (2023). Evaluation of the reliability and quality of YouTube videos as a source of information for transcutaneous electrical nerve stimulation. *PeerJ*, No. 11, e15412. <https://doi.org/10.7717/peerj.15412>
- Friesem, Y. (2019). Teaching truth, lies, and accuracy in the digital age: Media literacy as project-based learning. *Journalism & Mass Communication Educator*, No. 74(2), 185-198. <https://doi.org/10.1177/1077695819829962>
- Gao, S., Zhang, Y., & Liu, W. (2021). How does risk-information communication affect the rebound of online public opinion of public emergencies in China? *International Journal of Environmental Research and Public Health*, No. 18(15), 7760. <https://doi.org/10.3390/ijerph18157760>
- Han, R., & Cheng, Y. (2020). The influence of norm perception on pro-environmental behavior: A comparison between the moderating roles of traditional media and social media. *International Journal of Environmental Research and Public Health*, No. 17(19), 7164. <https://doi.org/10.3390/ijerph17197164>
- Hingorjo, A., & Memon, B. (2021). The role of claim-makers in media coverage of environmental problems in Pakistan. *Progressive Research Journal of Arts & Humanities (Prjah)*, No. 1(01), 1-15. <https://doi.org/10.51872/prjah.vol1.iss01.11>
- Kautish, P., & Khare, A. (2022). Antecedents of sustainable fashion apparel purchase behavior. *Journal of Consumer Marketing*, No. 39(5), 475-487. <https://doi.org/10.1108/jcm-04-2020-3733>
- Lewandowsky, S., & Linden, S. (2021). Countering misinformation and fake news through inoculation and prebunking. *European Review of Social Psychology*, No. 32(2), 348-384. <https://doi.org/10.1080/10463283.2021.1876983>
- Llavona-Ortiz, J., Spanos, K., Kraschnewski, J., D'Souza, G., Myrick, J., Sznajder, K., ... & Calo, W. (2022). Associations between human papillomavirus vaccine decisions and exposure to vaccine information in social media. *Cancer Control*, No. 29, 107327482211384. <https://doi.org/10.1177/10732748221138404>
- Lorenzo, M. D. C. R., & Sánchez-Martínez, C. (2022). Raising ecological awareness and digital literacy in primary school children through gamification. *International Journal of*

Environmental Research and Public Health, No. 19(3), 1149. <https://doi.org/10.3390/ijerph19031149>

- Maulina, A. R., Kurniasih, N., & Saepudin, E. (2024). Eco-friendly information literacy in green and sustainable business programs. *Record and Library Journal*, No. 10(1), 151-163. <https://doi.org/10.20473/rlj.v10-i1.2024.151-163>
- McLean, S., Paxton, S., & Wertheim, E. (2016). The measurement of media literacy in eating disorder risk factor research: Psychometric properties of six measures. *Journal of Eating Disorders*, No. 4(1). <https://doi.org/10.1186/s40337-016-0116-0>
- Nanda, V. S., & Budimansyah, D. (2020). Strengthening of digital media literacy-based character education on hoax news spreading to students (Case study on citizenship education learning in SMP Negeri 2 Bandung). *Journal of International Conference Proceedings*, No. 3(1), 283-290. <https://doi.org/10.32535/jicp.v2i4.804>
- Nygaard, S. (2020). Boundary work: Intermedia agenda-setting between right-wing alternative media and professional journalism. *Journalism Studies*, No. 21(6), 766-782. <https://doi.org/10.1080/1461670x.2020.1722731>
- Nygaard, S. (2021). On the mainstream/alternative continuum: Mainstream media reactions to right-wing alternative news media. *Digital Journalism*, No. 11(7), 1311-1327. <https://doi.org/10.1080/21670811.2021.1894962>
- Omar, B., & Ahrari, S. (2020). Mainstream and nonmainstream media in Malaysia: Does lack of credibility lead to displacement? *Newspaper Research Journal*, No. 41(2), 127-145. <https://doi.org/10.1177/0739532920919825>
- Pourmohades, G., Khoini, F., & Hosseinalmadani, S. A. (2023). Developing a casual model of literacy based on metacognitive skills, self-regulated learning strategies and self-efficacy with the mediation of creative thinking in students. *Journal of Adolescent and Youth Psychological Studies*, No. 4(4), 134-143. <https://doi.org/10.61838/kman.jayps.4.4.13>
- Rice, R., & Miller, L. (2023). Media use, environmental mediators, and pro-environmental behaviors across and within countries. *Environmental Communication*, No. 17(2), 187-208. <https://doi.org/10.1080/17524032.2023.2179649>
- Rosaidi, N. A., Razali, R., Ling, L. Y., Akil, K. A. K., Shafie, L. A., & Radzi, N. A. M. (2022). Narrative persuasion of environmental leaders on social media: Case studies of two language educators. *International Journal of Academic Research in Business and Social Sciences*, No. 12(1). <https://doi.org/10.6007/ijarbss/v12-i1/11688>

- Ruiu, M. L., Ruiu, G., Ragnedda, M., & Addeo, F. (2024). Exploring digital-environment habitus in Italy—How digital practices reflect users' environmental orientations? *Sustainability*, No. 16(12), 4880. <https://doi.org/10.3390/su16124880>
- Schmid, P., Altay, S., & Scherer, L. D. (2023). The psychological impacts and message features of health misinformation. *European Psychologist*, No. 28(3), 162-172. <https://doi.org/10.1027/1016-9040/a000494>
- Shetye, S., & Indrakanti, D. G. (2023). Examining the contribution of educational institutions in fostering digital media literacy: An analysis of the impact of curriculum integration of digital media training on students' skill development. *Journal for ReAttach Therapy and Developmental Diversities*. <https://doi.org/10.53555/jrtdd.v6i8s.2846>
- Steffens, B., Madonsela, A., & Theunissen, N. (2019). Tackling misinformation: The role of eco-media literacy in sustainability communication. *Digital Health*, No. 8(2), 850-870. <https://doi.org/10.1177/20552076221085070>
- Stewart, R., Madonsela, A., Tshabalala, N., Etale, L., & Theunissen, N. (2022). The importance of social media users' responses in tackling digital misinformation in environmental discourse. *Digital Health*, No. 8, 20552076221085070. <https://doi.org/10.1177/20552076221085070>
- Tully, M. (2021). Why news literacy matters: Examining the role of media in shaping climate change perceptions. In C. L. Koltovskaia (Ed.), *Media literacy in the age of disinformation* (pp. 91-102). Oxford University Press. <https://doi.org/10.1093/oso/9780197538470.003.0007>
- Vasile, G. G., Tenea, A., Dinu, C., Iordache, A. M. M., Gheorghe, Ș., Mureșeanu, M., ... & Pascu, L. F. (2021). Bioavailability, accumulation, and distribution of toxic metals (As, Cd, Ni, and Pb) and their impact on *Sinapis alba* plant nutrient metabolism. *International Journal of Environmental Research and Public Health*, No. 18(24), 12947. <https://doi.org/10.3390/ijerph182412947>
- Wang, Z., Luo, Y., Cao, X., & Jiang, J. (2024). The twisted path to sacredness: A grounded theory study of irrational religious orientation and its psycho-sociological implications. *BMC Psychology*, No. 12(1). <https://doi.org/10.1186/s40359-024-01858-8>
- Wulandari, F. (2024). Web-based module on biotechnology: Fostering preservice science teachers' eco-literacy skills. *International Journal of Educational Methodology*, No. 10(1), 45-63. <https://doi.org/10.12973/ijem.10.1.845>

- Wulandari, F. E., Susantini, E., & Hariyono, E. (2024). Web-based module on biotechnology: Fostering preservice science teachers' eco-literacy skills. *International Journal of Educational Methodology*, No. 10(1), 45-63. <https://doi.org/10.12973/ijem.10.1.845>
- Zhao, J., & Madni, G. (2021). The impact of economic and political reforms on environmental performance in developing countries. *PLOS One*, No. 16(10), e0257631. <https://doi.org/10.1371/journal.pone.0257631>
- Zuhriyah, A. (2023). The role of smart education (SE) in supporting digital eco-literacy. *Indonesian Journal of Geography*, No. 55(1), 167. <https://doi.org/10.22146/ijg.74409>

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