Public Affairs Communication in the Era of Climate Change and Artificial Intelligence: Strategies for Policy Advocacy and Governance in Nigeria

[1]OTUOGHA, Austin Mathias (PhD). otuoghamathias@uniport.edu.ng
[2]EKE, Chigozi (PhD). chigozi_eke@uniport.edu.ng
[3]ASAK, Moses Ofome (PhD). moss.asak@uniport.edu.ng
[1&2]Department of Linguistics and Communication Studies,
University of Port Harcourt, Rivers State, Nigeria
[3]Department of Broadcasting, University of Port Harcourt,
Rivers State, Nigeria
DOI:10.56201/jhsp.vol.11.no3.2025.pg93.107

Abstract
This study examined public affairs communication in the era of climate change and artificial intelligence: strategies for policy and advocacy and governance in Nigeria. The technological determinism theory was anchored in this study. This study adopted a qualitative research method, utilising in-depth interviews to explore the role of artificial intelligence in public affairs communication for climate policy advocacy and governance in Nigeria. The population of the study consisted of 120 key stakeholders involved in climate policy advocacy and governance, including government officials, policymakers, environmental NGOs, media professionals and AI experts. The sample size comprised 20 purposively selected respondents with expertise in climate policy, artificial intelligence applications in governance and public affairs communication. The sampling technique used was purposive sampling, allowing the selection of individuals who possess specialized knowledge and experience relevant to the study. The method of data collection involves semi-structured, in-depth interviews and method of data analysis followed thematic analysis, where transcribed interview data were systematically coded to identify emerging patterns, themes and relationships. The findings revealed that, AI-driven tools significantly enhance public affairs communication by improving message dissemination, audience targeting and engagement strategies in climate advocacy. AI-powered chatbots, predictive analytics and automated content generation have been instrumental in personalizing climate messages and countering misinformation. The study concluded that AI has emerged as a transformative tool in public affairs communication, enabling more effective climate advocacy through targeted messaging, audience engagement and misinformation management. However, its full potential can only be realised if challenges such as algorithmic bias, inadequate digital infrastructure and the need for human-centred communication strategies are addressed. The study recommended that Policymakers and communication professionals should invest in AI-driven tools while ensuring ethical guidelines and human-centred approaches to enhance climate advocacy in Nigeria.

Keywords: *Public Affairs Communication, Climate Change, Artificial Intelligence, Strategies, Policy Advocacy, Governance, Nigeria*

Introduction

Public affairs communication has evolved as a crucial element in governance and policy advocacy, particularly in addressing global challenges like climate change and artificial intelligence (AI). With the increasing effects of climate change rising temperatures, extreme weather events and biodiversity loss, governments worldwide are under pressure to implement effective policies for mitigation and adaptation (IPCC, 2021). Simultaneously, AI is reshaping governance structures, enhancing policy formulation and revolutionising public engagement (West, 2018). The intersection of these two forces presents opportunities and challenges for public affairs communication in Nigeria, where climate vulnerability and digital transformation are pressing concerns (Olawuyi, 2022).

Public affairs communication plays a significant role in shaping public discourse on climate change. It bridges the gap between policymakers, scientists and the public, ensuring that scientific findings translate into actionable policies (Nisbet, 2018). In Nigeria, weak communication strategies have contributed to slow policy implementation in areas such as carbon reduction, renewable energy adoption and climate adaptation strategies (Agboola & Emmanuel, 2020). Effective advocacy and strategic communication are necessary to align public opinion with government policies, fostering a culture of climate resilience and sustainable development.

AI is transforming governance through predictive analytics, automated decision-making and enhanced service delivery (Vinuesa et al., 2020). In public affairs communication, AI tools such as natural language processing (NLP) and machine learning enhance data analysis, trend forecasting and stakeholder engagement (Brynjolfsson & McAfee, 2017). However, Nigeria faces challenges such as limited AI infrastructure, digital illiteracy and ethical concerns regarding data privacy and misinformation (Afolayan & Ajibade, 2023). The understanding of how AI can be leveraged for policy advocacy is crucial for ensuring transparency, inclusivity and efficiency in governance.

The convergence of climate change and AI presents a unique challenge for policy advocacy. AI-driven models can improve climate prediction, risk assessment and policy simulations, enabling policymakers to make informed decisions (Rolnick et al., 2019). However, AI can also exacerbate inequalities by deepening the digital divide and marginalising underrepresented communities in climate governance (Floridi, 2021). In Nigeria, integrating AI into climate change advocacy requires a robust communication strategy that considers ethical AI deployment, digital inclusion and stakeholder engagement.

Effective public engagement is vital for climate policy acceptance and implementation. Communication strategies such as media campaigns, social media activism and community engagement foster awareness and behavioural change (Boykoff & Roberts, 2019). AI-enhanced communication tools, such as chatbots and sentiment analysis, provide real-time insights into public concerns, enabling policymakers to tailor their responses (Brennen et al., 2020). However, misinformation and public distrust pose significant barriers, necessitating fact-based advocacy and transparent communication channels in Nigeria's governance landscape.

Nigeria's public affairs communication landscape is fraught with challenges, including political interference, weak institutional frameworks and inadequate funding (Nwankwo, 2021). The absence of clear regulatory frameworks for AI deployment further complicates efforts to

integrate AI into governance and policy advocacy (Adeleke & Olayemi, 2022). Additionally, climate change communication often suffers from technical jargon, reducing public comprehension and engagement (Ogbu & Eze, 2020). Addressing these issues requires a multi-stakeholder approach that enhances media literacy, strengthens regulatory oversight and promotes strategic partnerships.

To improve policy advocacy and governance, Nigeria must adopt strategic communication approaches that leverage AI and climate-focused narratives. Government agencies should invest in AI-driven public engagement tools, enhance data-driven decision-making, and prioritize inclusivity in climate governance (Miller, 2022). Traditional media, digital platforms and grassroots movements must collaborate to amplify climate advocacy messages, ensuring broad reach and impact (Schäfer & Schlichting, 2014). Additionally, policymakers should implement open-data initiatives to foster transparency and public participation in environmental decision-making.

Nigeria's policymakers should develop AI ethics guidelines tailored to climate advocacy and governance (Jobin et al., 2019). AI literacy programs must be incorporated into governance training to ensure that public officials understand the implications of AI-driven policymaking (Boddington, 2017). Furthermore, partnerships between the government, academia and private sector can foster AI innovations that address climate change while ensuring equitable access to technology (Olanrewaju et al., 2023).

Public trust is essential for the successful implementation of climate policies and AI-driven governance (Fletcher, 2020). Transparent communication, participatory governance, and responsible AI deployment can strengthen citizen trust in public institutions (Sunstein, 2021). In Nigeria, trust deficits have historically undermined policy implementation, necessitating a shift towards inclusive and evidence-based public affairs communication strategies (Ume & Nwosu, 2022).

Public affairs communication in the era of climate change and artificial intelligence presents both challenges and opportunities for Nigeria. Effective strategies that integrate AI-driven tools, ethical governance frameworks, and participatory climate advocacy are essential for fostering sustainable development. Addressing barriers such as misinformation, digital exclusion and policy inconsistencies will enhance governance efficiency and public engagement. As Nigeria navigates this evolving landscape, a proactive approach to policy advocacy and communication will be key to achieving long-term environmental sustainability and technological advancement.

This study is significant as it explores the intersection of public affairs communication, climate change and artificial intelligence in Nigeria, providing strategic insights into how AI-driven tools can enhance policy advocacy, governance efficiency and public engagement while addressing challenges such as misinformation, digital exclusion and regulatory gaps to foster sustainable development and environmental resilience.

Statement of the Problem

Despite the growing global emphasis on climate action and the increasing adoption of artificial intelligence (AI) in governance, Nigeria continues to face significant challenges in effectively communicating climate policies and leveraging AI for policy advocacy. Weak public affairs communication strategies have contributed to poor public awareness, misinformation and slow

adoption of climate change mitigation policies. Additionally, governance frameworks in Nigeria often lack the technological infrastructure and regulatory clarity needed to integrate AI into climate communication and decision-making processes. As a result, many climate-related policies remain underutilised or misunderstood by the public, limiting their impact on environmental sustainability and national development. Without strategic communication that bridges the gap between policymakers, climate scientists, and the general public, efforts to address climate change in Nigeria risk being ineffective or met with resistance.

Also, AI offers immense potential for enhancing climate policy advocacy through data-driven decision-making, predictive analytics and public engagement tools. However, Nigeria faces multiple barriers, including inadequate AI literacy, ethical concerns and digital inequality, which hinder the effective deployment of AI in governance. The absence of clear regulations on AI in policy communication raises concerns about misinformation, bias and lack of inclusivity in decision-making. While AI-driven solutions could enhance climate adaptation and resilience strategies, the lack of a coherent framework for integrating AI into Nigeria's public affairs communication landscape leaves a critical gap in governance. This study aims to examine the role of public affairs communication in shaping climate change policy advocacy and governance in Nigeria, highlighting the effectiveness of current communication strategies in fostering public awareness and policy implementation. It seeks to explore how artificial intelligence can be leveraged to enhance policy advocacy, improve decision-making processes, and facilitate more effective public engagement in climate governance. Additionally, the study intends to identify the challenges associated with integrating AI into Nigeria's public affairs communication landscape and propose strategic solutions for enhancing transparency, inclusivity, and efficiency in climate policy communication and governance.

Public Affairs Communication: Definition and Scope

Public affairs communication refers to the strategic exchange of information between government institutions, policymakers, stakeholders and the public to shape policies, influence decision-making, and foster public engagement (Heath & Waymer, 2020). It encompasses a range of activities, including media relations, advocacy campaigns, crisis communication and stakeholder engagement, all aimed at promoting transparency and accountability in governance. In the context of climate change, public affairs communication plays a vital role in ensuring that scientific knowledge is effectively translated into policies and communicated to the public in an accessible manner (Nisbet, 2018).

Effective public affairs communication relies on various channels, including traditional media, digital platforms and interpersonal communication to engage diverse audiences. Governments and advocacy groups use strategic messaging, policy briefs and public consultations to build consensus around pressing issues such as climate adaptation and mitigation (Boykoff & Roberts, 2019). However, in Nigeria, weak communication infrastructures and limited media literacy often hinder the effective dissemination of policy-related information, reducing public participation in governance (Ogbu & Eze, 2020). Addressing these challenges requires a multidimensional approach that integrates both traditional and digital communication strategies.

Public affairs communication also plays a crucial role in fostering public trust and policy compliance. When governments transparently communicate their climate action plans, citizens

are more likely to support and adopt environmentally friendly behaviours (Fletcher, 2020). Conversely, misinformation and poor engagement strategies can lead to scepticism, resistance and policy failure. Therefore, improving Nigeria's public affairs communication frameworks is essential for achieving more effective climate governance and policy advocacy.

Climate Change and Policy Advocacy

Climate change policy advocacy involves efforts by governments, non-governmental organisations (NGOs), media and civil society groups to influence policy decisions, raise awareness and drive action toward climate mitigation and adaptation (Gore & Robinson, 2019). In Nigeria, climate policy advocacy is essential due to the country's vulnerability to environmental challenges such as desertification, flooding, and coastal erosion (Olawuyi, 2022). However, the effectiveness of these advocacy efforts depends largely on the ability to communicate climate issues persuasively and mobilise public and political support.

A successful climate policy advocacy strategy employs various tools, including scientific reports, lobbying, grassroots mobilisation and digital campaigns (Schafer & Schlichting, 2014). The role of the media in shaping public perception and influencing policy debates is particularly critical. However, in Nigeria, climate change communication often suffers from inadequate media coverage and technical language that alienates non-expert audiences (Agboola & Emmanuel, 2020). Simplifying climate messages and making them relatable to local communities can enhance engagement and promote policy adoption.

Additionally, climate policy advocacy must address misinformation and political resistance. Some policymakers and industry stakeholders may downplay the urgency of climate action due to economic interests, leading to weak policy commitments (Boykoff & Roberts, 2019). Advocacy efforts must, therefore, leverage credible data, compelling narratives and inclusive dialogue to ensure that climate policies are evidence-based and widely accepted. Strengthening Nigeria's climate advocacy framework through enhanced public affairs communication can help bridge the gap between scientific knowledge and policy implementation.

Artificial Intelligence in Governance and Policy Communication

Artificial intelligence (AI) is increasingly being integrated into governance structures to enhance decision-making, automate administrative tasks, and improve public service delivery (Vinuesa et al., 2020). AI-driven technologies, such as predictive analytics, machine learning and natural language processing, have the potential to revolutionize policy communication by providing real-time insights into public sentiment, policy impact assessments and automated information dissemination (Brynjolfsson & McAfee, 2017). In Nigeria, where governance challenges persist due to bureaucratic inefficiencies and limited data-driven decision-making, AI presents an opportunity to improve transparency and responsiveness in public affairs communication.

AI can enhance policy communication by analysing large volumes of public discourse on climate change and identifying key concerns, misinformation trends and engagement levels (Brennen et al., 2020). Chatbots and AI-powered social media monitoring tools can facilitate direct interactions between governments and citizens, allowing for more inclusive policy discussions. However, Nigeria's AI adoption in governance remains low due to infrastructure deficits, lack of regulatory frameworks and ethical concerns surrounding data privacy and algorithmic bias (Afolayan & Ajibade, 2023). Overcoming these barriers requires significant

investment in digital literacy, AI research, and regulatory development.

Despite its advantages, AI in policy communication raises concerns regarding misinformation, digital exclusion and algorithmic bias (Floridi, 2021). If not properly managed, AI-driven communication systems could amplify false narratives or marginalize vulnerable populations by prioritising certain voices over others. Therefore, ethical AI deployment in Nigeria's public affairs communication must prioritize inclusivity, transparency and accountability to ensure that AI-driven policy advocacy benefits all stakeholders.

The Intersection of AI, Climate Change and Public Affairs Communication

The convergence of AI, climate change and public affairs communication presents a transformative opportunity for policy advocacy and governance. AI-powered climate models and simulations enable policymakers to assess environmental risks and develop proactive strategies for mitigation and adaptation (Rolnick et al., 2019). By integrating AI into public affairs communication, governments can enhance their ability to disseminate accurate climate information, counter misinformation and engage diverse audiences through personalised messaging and automated content generation (Miller, 2022).

However, integrating AI into climate communication requires careful consideration of ethical and technical challenges. The digital divide in Nigeria means that AI-driven policy advocacy could inadvertently exclude communities with limited internet access and digital literacy (Olanrewaju et al., 2023). Additionally, AI algorithms must be designed to prioritise factual climate data over misleading or politically motivated content, ensuring that public discourse remains evidence-based (Jobin et al., 2019).

Strategic policy frameworks are needed to guide AI's role in climate communication, ensuring that technological advancements align with national environmental priorities and public interests. Collaborative efforts between government agencies, tech companies, media organisations and civil society groups can facilitate AI-driven climate advocacy that is both effective and equitable (Sunstein, 2021). By leveraging AI ethically and strategically, Nigeria can enhance its public affairs communication capacity, fostering stronger climate governance and policy engagement.

Technological Determinism Theory

This theory was propounded by Marshall McLuhan in 1964, which posits that technological advancements shape societal structures, cultural norms, and communication patterns (McLuhan, 1964). The theory suggests that media and technology drive historical changes, influencing how people interact, access information and govern societies (Chandler, 1995). Its key tenets include the idea that technological innovations dictate social development, media determine human perception and society's transition through technological epochs, from oral to print and then to digital communication (Smith & Marx, 1994). The fundamental assumption of this theory is that technological advancements, such as artificial intelligence (AI), redefine governance, policy advocacy and public affairs communication by enhancing access to information, automating decision-making and shaping public opinion (Lister et al., 2009).

Despite its widespread influence, the theory has been criticized for its deterministic approach, as it downplays human agency and the socio-political factors that influence technological adoption (Winner, 1977). Critics argue that technology does not independently drive change but interacts with cultural, economic, and political contexts (Feenberg, 2002).

Nonetheless, the theory remains relevant to this study as it explains how AI-driven communication tools and digital platforms are transforming public affairs communication in Nigeria's climate policy advocacy. By applying this theoretical lens, the study explores how AI innovations influence governance, enhance policy advocacy strategies, and address challenges related to misinformation, public engagement, and policy implementation in climate governance.

Empirical Review

Ojebode and Adegbola (2022) did a work on *Public Communication Strategies and Climate Policy Implementation in Nigeria*. This study examined the effectiveness of public communication strategies in driving climate policy implementation in Nigeria. The study employed a mixed-methods approach, using surveys and in-depth interviews with policymakers, media professionals, and environmental activists. The study found that inadequate public engagement, misinformation, and media bias hindered the successful implementation of climate policies. Effective communication strategies, including community engagement and digital media use, were recommended to enhance policy advocacy. Both reviewed and pioneer study emphasise the role of public affairs communication in climate policy advocacy and the need for improved public engagement strategies. While the current study focuses on integrating artificial intelligence into public affairs communication for climate governance, the reviewed study primarily examined traditional and digital media communication strategies.

Kumar (2021) carried out a study on *Artificial Intelligence in Public Administration: Challenges and Opportunities.* This study analysed the impact of artificial intelligence on public administration, focusing on governance and decision-making. The study utilised qualitative content analysis of government reports, AI policy documents, and expert interviews from various countries. The research revealed that AI has the potential to enhance governance through predictive analytics, automation and improved public service delivery. However, issues such as algorithmic bias, data privacy concerns and lack of regulatory frameworks remain significant challenges. Both the reviewed study and the present study explore the role of artificial intelligence in governance and policy advocacy, emphasising its potential in decision-making and communication. While the reviewed study focused on AI's general application in public administration, the current study specifically investigates its role in public affairs communication for climate policy advocacy in Nigeria.

Schafer and Schlichting (2014) conducted a research on *Media Representations of Climate Change: A Meta-analysis of Social Science Research*. This study assessed how climate change is represented in various media and its impact on public perception and policy-making. The study conducted a meta-analysis of over 100 peer-reviewed studies on media framing of climate change from different regions. The study revealed that media representations of climate change vary significantly across countries, with some regions emphasising scientific consensus and others politicizing the issue. The findings highlighted the importance of clear, fact-based communication strategies to counter misinformation and improve policy advocacy. Both the reviewed study and the current study address climate communication challenges and the role of media in shaping public perception and policy discourse. While the reviewed study analysed media representations of climate change from a global perspective, the current study focuses on Nigeria and integrates artificial intelligence into the discussion of climate policy advocacy.

Gap Identification

Despite extensive research on public communication strategies, climate policy advocacy, and the role of artificial intelligence in governance, significant gaps remain in understanding how AI-driven public affairs communication can enhance climate change policy advocacy and governance in Nigeria. Existing studies, such as Ojebode & Adegbola (2022), have focused on traditional and digital media strategies without examining the integration of AI in public communication for climate governance. Similarly, while Kumar (2021) explores AI applications in public administration, it does not specifically address AI's role in climate advocacy within Nigeria's governance framework. Furthermore, Schafer & Schlichting (2014) provide valuable insights into global media representations of climate change but do not consider the unique communication challenges in Nigeria's policy environment. This study fills these gaps by analysing how artificial intelligence can be leveraged to improve public affairs communication strategies, enhance policy advocacy, counter misinformation, and promote effective governance in Nigeria's climate change response.

Methodology

This study adopted a qualitative research method, utilising in-depth interviews to explore the role of artificial intelligence in public affairs communication for climate policy advocacy and governance in Nigeria. The qualitative approach is suitable for capturing in-depth perspectives, experiences, and expert insights on the subject matter. The population of the study consisted of key stakeholders involved in climate policy advocacy and governance, including government officials, policymakers, environmental NGOs, media professionals and AI experts. The sample size comprised 20 purposively selected respondents with expertise in climate policy, artificial intelligence applications in governance and public affairs communication. The sampling technique used was purposive sampling, allowing the selection of individuals who possess specialized knowledge and experience relevant to the study.

The method of data collection involves semi-structured, in-depth interviews, providing respondents with the flexibility to express their views while ensuring that key themes related to AI-driven public affairs communication and climate governance are thoroughly explored. Each interview session lasted between 30 to 45 minutes and was recorded with the respondents' consent for accuracy and reliability. The method of data analysis followed thematic analysis, where transcribed interview data were systematically coded to identify emerging patterns, themes and relationships. This approach enables a rich and contextual understanding of how AI enhances policy advocacy and governance in the era of climate change. To ensure credibility, findings were triangulated with secondary data sources, including policy documents, AI implementation reports, and climate advocacy publications.

Data Presentation and Analysis

Themes were deduced deductively following the research objectives. The following themes were deduced: Artificial Intelligence as a Catalyst for Public Affairs Communication in Climate Policy Advocacy; The Impact of AI on Governance and Decision-Making in Climate Policy; and Challenges and Ethical Considerations in AI-driven Climate Advocacy and Governance. These were presented and discussed below:

Artificial Intelligence as a Catalyst for Public Affairs Communication in Climate Policy Advocacy

This theme explores how AI-driven communication tools, such as chatbots, predictive analytics and automated content generation, enhance climate change advocacy. It examines the role of AI in improving message dissemination, audience targeting, and engagement strategies for effective policy communication.

Interviewer: In what ways do you think artificial intelligence is transforming public affairs communication in climate policy advocacy?

Respondent (Environmental Policy Expert): AI is significantly transforming climate advocacy by improving how messages are crafted, disseminated and received. With AI-powered tools, organisations can analyse large sets of climate data to identify trends, predict audience preferences and tailor communication strategies accordingly. AI-driven chatbots and virtual assistants, for instance, help engage the public by providing real-time responses to queries about climate policies. Additionally, AI facilitates automated content generation, allowing policymakers and climate advocates to streamline their messaging and ensure that critical climate issues remain at the forefront of public discussions.

Interviewer: How has AI enhanced audience engagement in climate advocacy?

Respondent: AI enhances engagement by personalising climate messages based on audience segmentation. Advanced AI algorithms can analyse social media interactions and predict which climate issues resonate most with specific demographics. This targeted approach ensures that climate advocates effectively reach and mobilise communities. Moreover, AI-powered platforms can track misinformation trends, enabling advocacy groups to counter climate-related disinformation swiftly. By using AI-driven sentiment analysis, policymakers and communicators can gauge public perceptions in real time and adjust their advocacy efforts accordingly.

Interviewer: Can you provide an example of AI-driven public affairs communication in climate advocacy?

Respondent: One notable example is how AI-powered social media monitoring tools have been used to track discussions around Nigeria's National Climate Change Policy. These tools identify misinformation, allowing advocacy groups to provide factual counter-narratives. Furthermore, AI-driven storytelling platforms have been leveraged to create immersive digital experiences, helping citizens visualise the impact of climate change and encouraging proactive engagement.

Interviewer: What are the limitations of AI in this area?

Respondent: While AI has revolutionized climate advocacy, challenges remain. AI-generated content may sometimes lack the human touch necessary for emotional connection. Additionally, reliance on AI tools requires robust digital infrastructure, which remains a challenge in many parts of Nigeria. The risk of algorithmic bias is also a concern, as AI models trained on incomplete or skewed data may reinforce misinformation rather than combat it. Despite these challenges, AI remains a powerful tool for climate policy advocacy when properly managed.

The Impact of AI on Governance and Decision-Making in Climate Policy

This theme focuses on how AI contributes to data-driven decision-making in climate governance. It investigates how AI technologies assist policymakers in forecasting climate trends, analysing environmental data and formulating informed policies to address climate change challenges in Nigeria.

Interviewer: How is artificial intelligence influencing governance and decision-making in climate policy?
Respondent (Government Climate Official): AI plays a crucial role in governance by improving data-driven decision-making. AI-powered climate models analyse historical and real-time environmental data to predict future climate trends, allowing policymakers to make informed decisions. AI-driven satellite imagery, for example, helps track deforestation and flooding patterns, enabling proactive climate interventions. By automating data collection and analysis, AI reduces human error and provides evidence-based insights that guide climate policy formulation and implementation.
Interviewer: What are some specific ways AI is helping climate policymakers in Nigeria?
Respondent: AI is currently being used to monitor air pollution levels in major cities, providing real-time data to inform policy decisions. Machine learning models also assist in predicting climate-related disasters, such as droughts and floods, helping the government develop contingency plans. Additionally, AI enhances transparency in governance by analysing climate finance data, ensuring that funds allocated for environmental initiatives are effectively utilized. AI-powered dashboards are also being used to track the progress of Nigeria's climate action commitments under international agreements.
Interviewer: Are there challenges in integrating AI into climate governance?
Respondent: Yes, several challenges exist. First, there is a lack of skilled personnel in AI-driven climate governance, as many government agencies still rely on traditional decision-making methods. Additionally, AI adoption requires significant financial investment, which is often constrained by budget limitations. Another challenge is data availability; many regions in Nigeria lack comprehensive environmental data, making AI models less effective in certain cases. Finally, there are ethical concerns regarding data privacy, especially when using AI surveillance tools for environmental monitoring.
Interviewer: What steps can be taken to improve AI integration in climate governance?
Respondent: To improve AI adoption, the government should invest in training programs to equip policymakers with AI-related skills. Public-private partnerships can also enhance funding opportunities for AI-driven climate projects. Strengthening data collection infrastructure is critical to ensuring AI models have access to high-quality data. Additionally, establishing ethical guidelines for AI use in governance will help address privacy concerns and build public trust in AI-driven decision-making.

Challenges and Ethical Considerations in AI-driven Climate Advocacy and Governance

This theme addresses the limitations, risks, and ethical concerns associated with integrating AI into public affairs communication and governance. It covers issues such as algorithmic bias, misinformation, data privacy and the digital divide, which may impact the effectiveness of AI-driven climate policy advocacy in Nigeria. Interviewer: What are the major challenges in using AI for climate advocacy and governance?
Respondent (AI and Ethics Researcher): One of the biggest challenges is the digital divide. Many Nigerians lack access to the internet and digital literacy skills, limiting the reach of AI-driven climate advocacy. AI models are also prone to algorithmic bias, which can lead to misinformation or skewed policy recommendations. Additionally, the lack of regulatory frameworks governing AI applications in climate advocacy poses risks, as there are no clear

guidelines on data privacy, ethical AI deployment, or accountability in decision-making.
Interviewer: How does misinformation affect AI-driven climate advocacy?
Respondent: AI can be a double-edged sword when it comes to misinformation. On one hand, it helps detect and counter climate-related falsehoods; on the other, AI-generated deep fake videos and misleading automated content can amplify misinformation. For instance, AI-powered bots have been used to spread climate change denial narratives, making it difficult for the public to distinguish credible sources from unreliable ones. Without proper oversight, AI could inadvertently contribute to the spread of disinformation rather than combat it.
Interviewer: What ethical concerns should be considered in AI-driven climate governance?
Respondent: Ethical concerns include data privacy, algorithmic transparency, and accountability. AI systems often require vast amounts of personal and environmental data, raising concerns about how this information is stored and used. Moreover, if AI models are not transparent, it becomes difficult for stakeholders to understand how decisions are made. Accountability is another key issue, if an AI-driven decision leads to negative environmental consequences, it is unclear whether responsibility falls on the government, AI developers, or data providers. Addressing these ethical issues requires a robust framework that balances AI innovation with human oversight.
Interviewer: How can these ethical challenges be mitigated?
Respondent: To mitigate these challenges, there should be a national policy on ethical AI use in climate governance. Policymakers must work with AI developers to ensure transparency in algorithms and eliminate biases in training data. Public awareness campaigns can also educate citizens on AI's role in climate advocacy, helping them identify and report misinformation. Lastly, multi-stakeholder collaboration between governments, tech companies, and civil society organizations can ensure AI is used responsibly in climate governance.

Discussion of Findings

The study found that AI-driven tools significantly enhance public affairs communication by improving message dissemination, audience targeting and engagement strategies in climate advocacy. AI-powered chatbots, predictive analytics and automated content generation have been instrumental in personalizing climate messages and countering misinformation. However, despite AI's benefits, challenges such as algorithmic bias, lack of digital infrastructure and the need for human-centred communication approaches remain barriers to its full integration in Nigeria's climate policy advocacy. The findings align with Ojebode & Adegbola (2022), who examined digital communication strategies in climate advocacy and found that AI-driven tools enhance targeted messaging and audience engagement. Their study highlighted the role of AI chatbots in facilitating real-time public interactions, similar to the current study's emphasis on AI's ability to personalise climate messages and counter misinformation. However, while their research focused on general digital strategies, this study specifically examines AI's role, filling a gap in the discourse on AI-powered advocacy.

The findings align with the Technological Determinism Theory, propounded by Marshall McLuhan in 1964, which posits that technological advancements shape communication and societal structures. AI-driven communication tools are transforming climate advocacy by enhancing audience engagement, targeted messaging, and misinformation management, reinforcing McLuhan's assertion that media technologies dictate how information is

disseminated and consumed. This study's findings demonstrate that AI, as an emerging communication technology, is redefining public affairs communication in climate advocacy, aligning with the theory's perspective on technology-driven social change. The implication of this finding is that AI-driven communication tools can significantly enhance climate policy advocacy by improving audience engagement, message personalisation and misinformation management. However, for AI to be fully effective in Nigeria's climate advocacy landscape, policymakers and communication experts must address challenges such as algorithmic bias, digital infrastructure gaps and the need for human-centred messaging. This underscores the necessity for training programs and policy frameworks that integrate AI responsibly into climate advocacy efforts.

The study also revealed that AI is transforming climate governance by enabling data-driven decision-making, predictive climate modelling and real-time environmental monitoring. AI-powered technologies, such as satellite imagery and machine learning models are being used to track deforestation, predict climate disasters and monitor air pollution, aiding in proactive policymaking. However, challenges such as inadequate AI expertise among policymakers, financial constraints and limited access to high-quality environmental data hinder the seamless integration of AI in climate governance. Kumar (2021) supports these findings, as his study on AI in public administration found that AI-driven predictive analytics and environmental monitoring tools significantly aid decision-making in governance. His research showed that AI models help policymakers anticipate climate disasters and track environmental data, aligning with this study's findings on AI's transformative role in Nigerian climate governance. However, unlike Kumar's research, which focused on global AI applications, this study specifically contextualises AI's impact within Nigeria's climate policy framework.

Technological Determinism Theory also supports the finding that AI is revolutionizing governance by enabling data-driven decision-making in climate policy. McLuhan's theory suggests that technological innovations influence governance structures and policymaking, which is evident in AI's role in environmental monitoring, predictive analytics, and climate disaster management. The study's findings confirm that AI-driven tools shape governance decisions, reinforcing the theory's argument that technology is a primary driver of political and administrative evolution. This finding implies that AI has the potential to revolutionize climate governance by facilitating data-driven policymaking, predictive climate modelling and real-time environmental monitoring. However, its effectiveness is contingent upon addressing challenges such as limited AI expertise among policymakers, financial constraints and data accessibility issues. To harness AI's full potential in governance, Nigeria must invest in AI capacity-building programs, strengthen public-private partnerships and develop regulatory policies to ensure ethical AI deployment in climate decision-making.

The study found that major challenges in AI-driven climate advocacy include the digital divide, misinformation, and the lack of regulatory frameworks governing AI applications. AI's potential to spread disinformation, especially through deep-fake content and automated bots, poses a significant risk to credible climate advocacy. Ethical concerns including data privacy, algorithmic transparency and accountability, were also identified as critical issues requiring urgent policy intervention to ensure responsible AI deployment in Nigeria's climate governance landscape. Schafer & Schlichting (2014) provide a strong backing for these findings, as their

study on media representations of climate change highlighted the risks of misinformation and the ethical dilemmas posed by AI-driven communication. Their research emphasised that AI can both combat and amplify misinformation, mirroring this study's findings on the dangers of AI-generated disinformation. However, while their study focused on global media, this research narrows its focus to the Nigerian context, emphasising local policy implications and governance challenges.

The study's findings on ethical challenges and misinformation risks in AI-driven climate advocacy align with Technological Determinism Theory's critical perspective on the unintended consequences of technological advancements. While AI enhances climate advocacy, its potential to spread misinformation, contribute to algorithmic bias and raise ethical concerns reflects McLuhan's argument that technological innovations have both positive and disruptive effects on society. This study's findings support the theory by highlighting the dual impact of AI on climate communication and governance, necessitating ethical guidelines and regulatory oversight. The implication of this finding is that while AI can enhance climate communication and governance, its risks such as misinformation, algorithmic bias and ethical concerns must be proactively managed. Without proper regulatory oversight, AI-driven disinformation and privacy violations could undermine climate advocacy and policy trust. This highlights the need for Nigeria to develop comprehensive AI ethics guidelines, implement misinformation detection mechanisms and promote digital literacy to ensure responsible AI use in climate governance and public affairs communication.

Conclusion

This study concludes that AI has emerged as a transformative tool in public affairs communication, enabling more effective climate advocacy through targeted messaging, audience engagement and misinformation management. However, its full potential can only be realized if challenges such as algorithmic bias, inadequate digital infrastructure and the need for human-centred communication strategies are addressed. Moving forward, a balanced approach that combines AI innovation with ethical and strategic communication frameworks is essential for maximising AI's impact on climate advocacy in Nigeria.

The study establishes that AI-driven technologies are reshaping climate governance by enhancing data-driven decision-making, environmental monitoring and predictive policy planning. Despite these advancements, gaps in AI expertise, financial constraints, and data accessibility pose significant challenges to its full implementation in Nigeria's governance structures. To ensure sustainable AI integration, stakeholders must invest in capacity-building, regulatory policies and technological infrastructure that promote responsible and effective climate governance.

In conclusion, while AI presents numerous opportunities for enhancing climate advocacy and governance, ethical concerns such as misinformation, data privacy, and algorithmic bias must be carefully managed. Without proper regulatory frameworks, AI's unintended consequences could undermine public trust and the effectiveness of climate policies. Therefore, a multi-stakeholder approach involving policymakers, tech developers and civil society organizations is necessary to establish ethical guidelines and governance structures that ensure AI is deployed responsibly in climate-related public affairs communication.

This study contributes to the growing body of knowledge on the intersection of artificial intelligence, public affairs communication and climate governance, particularly within the Nigerian context. By examining AI's role in enhancing climate advocacy, the study provides empirical insights into how AI-driven tools, such as machine learning, predictive analytics and automated content creation can improve public engagement and counter misinformation in climate discourse. Unlike previous studies that focus on general digital communication strategies, this research specifically highlights AI's transformative potential in public affairs communication, emphasizing the need for ethical AI deployment in advocacy campaigns. The study also sheds light on the challenges of AI integration in climate governance, including algorithmic bias, digital infrastructure gaps, and policymakers' limited AI expertise, offering strategic recommendations to bridge these gaps.

Furthermore, the research extends theoretical discourse by applying Technological Determinism Theory to AI-driven climate governance and advocacy, reinforcing the argument that technological innovations shape political and environmental communication landscapes. By situating the study within Nigeria's climate policy framework, it fills a crucial gap in literature that often focuses on AI's role in governance from a Western perspective. The study's findings provide a foundation for future research on AI-driven climate communication strategies, policymaking, and ethical considerations, offering a roadmap for stakeholders, including government agencies, environmental advocates and technology developers, to harness AI responsibly for sustainable climate governance in Nigeria.

Recommendations

In view of the findings from the work, the following recommendations have been made.

1) Policymakers and communication professionals should invest in AI-driven tools while ensuring ethical guidelines and human-centred approaches to enhance climate advocacy in Nigeria.
2) The Nigerian government should prioritise AI capacity-building, improve digital infrastructure and establish regulatory policies to support AI-driven climate governance.
3) Stakeholders should develop and enforce strict AI ethics regulations, implement misinformation detection systems and promote digital literacy to ensure responsible AI use in climate advocacy and governance.

References

Adeleke, T., & Olayemi, K. (2022). Artificial intelligence governance in Africa: Challenges and opportunities. *African Journal of Policy Studies, 12*(1), 45-60.

Afolayan, R., & Ajibade, M. (2023). Digital transformation and AI policy in Nigeria: A roadmap for governance. *Nigerian Journal of ICT Policy, 8*(2), 112-130.

Agboola, S., & Emmanuel, A. (2020). Climate change communication and policy implementation in Nigeria. *Environmental Policy Journal, 15*(3), 87-102.

Boddington, P. (2017). *Towards a code of ethics for artificial intelligence*. Springer.

Boykoff, M. T., & Roberts, J. T. (2019). *Media and climate change: The role of communication in global warming policies*. Cambridge University Press.

Brennen, J. S., Simon, F. M., Howard, P. N., & Nielsen, R. K. (2020). *Misinformation and*

science communication. Oxford Internet Institute.
Chandler, D. (1995). *Technological or media determinism*. Routledge.
Feenberg, A. (2002). *Transforming technology: A critical theory revisited*. Oxford University Press.
Fletcher, R. (2020). The trust deficit in public institutions: Implications for governance. *Journal of Political Communication, 34*(2), 201-218.
Floridi, L. (2021). Ethics of artificial intelligence in climate governance. *AI & Society, 36*(1), 67-85.
Heath, R. L., & Waymer, D. (2020). *Public relations and public affairs communication*. Routledge.
IPCC (2021). *Climate change 2021: The physical science basis*. Cambridge University Press.
Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence, 1*(9), 389-399.
Kumar, R. (2021). Artificial Intelligence in Public Administration: Challenges and Opportunities. *AI & Society, 36*(2), 112-128.
Lister, M., Dovey, J., Giddings, S., Grant, I., & Kelly, K. (2009). *New media: A critical introduction*. Routledge.
McLuhan, M. (1964). *Understanding media: The extensions of man*. MIT Press.
Miller, C. (2022). *Artificial intelligence in government: Opportunities and risks*. Harvard Policy Review.
Nisbet, M. C. (2018). Communicating climate change: Why frames matter for public engagement. *Wiley Interdisciplinary Reviews: Climate Change, 9*(4), e519.
Ogbu, I., & Eze, J. (2020). Simplifying climate science for policy advocacy in Nigeria. *Nigerian Journal of Environmental Studies, 10*(2), 91-108.
Olanrewaju, S., Yusuf, B., & Adedayo, T. (2023). AI innovations and climate action in Nigeria: Policy implications. *African Journal of Technology Policy, 6*(1), 132-148.
Olawuyi, D. (2022). Climate law and governance in Nigeria: Emerging trends and challenges. *Environmental Policy and Law, 52*(3), 189-206.
Schafer, M. S., & Schlichting, I. (2014). Media representations of climate change: A meta-analysis of social science research. *Environmental Communication, 8*(2), 142-160.
Smith, M. R., & Marx, L. (1994). *Does technology drive history? The dilemma of technological determinism*. MIT Press.
Sunstein, C. R. (2021). *How change happens*. MIT Press.
Vinuesa, R., Azizpour, H., & Leite, I. (2020). The role of artificial intelligence in achieving the sustainable development goals. *Nature Communications, 11*, 233.
Winner, L. (1977). *Autonomous technology: Technics-out-of-control as a theme in political thought*. MIT Press.