Leveraging Digital Technologies for Environmental Literacy among Nigerian Internet Natives.

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Abstract

The proliferation of the internet and emerging media has transformed the landscape of social action movements, enabling bottom-up transformations and fostering environmental activism. This study examines the challenges and opportunities for promoting environmental literacy among Nigerian internet users aged 18-35 in the digital age. Grounded in technological determinism theory, this study employed the survey method. The population for this study is the Yaba Local Council Development Area in Lagos State. A sample size of 400 internet users was determined for this study using Taro Yamane's formula. However, to ensure a broad and representative selection of participants, the study employed a random sampling technique. 1,000 individuals were simply selected for potential participation from the total population estimated at 483,600. This more extensive selection accounts for potential non-responses and ensures that at least the calculated sample size (400) was met to explore the role of digital technologies in environmental education. The findings reveal that environmental education plays a crucial role in fostering environmental literacy, critical thinking, problem-solving skills, and informed decision-making. However, the study also highlights the challenges of accurately assessing the impact of digital technologies on environmental movement tactics. To address this, the study recommends enhancing environmental education by providing accurate and trustworthy information on environmental issues and leveraging new media platforms to raise public awareness and concern.

Keywords: Communication, Clean Environment, Digital Age, Internet Natives, Internet Immigrants

1.1. Introduction

Background on Environmental Communication and the Digital Age

Environmental communication began in the 1980s, driven by the ingenuity of environmental activists who employed visuals and rhetoric to influence audiences in the United States. Since then, the practice of environmental communication (EC) has undergone significant development, with a specialised publication to show for it (Harris, 2017).

Environmental communication encompasses a broad range of topics, including the interactions between various actors, such as states, institutions, and individuals, on environmental issues, as well as the influence of cultural products on public opinion (William, 2022). EC includes visual, interpersonal, verbal, and nonverbal cues. Environmental communication also includes human interactions with the environment. This encompasses a range of potential interactions, including virtual communities, interpersonal communication, participatory decision-making, and environmental media coverage.

Meanwhile, a crucial component of environmental communication studies is the concept that nature "speaks." Whereby, the phrase "call to action" is unavoidable when discussing environmental communication, as it is intimately linked to issues such as pollution, climate change, and endangered species (William, 2022). Therefore, by applying knowledge to practice, environmental communication plays a crucial role in sustainability science (Lindenfeld et al., 2012). Environmental communication is thoroughly aware of the public discourse on environmental policy because it is centred on commonplace speech and collaboration practices (Lindenfeld et al., 2012). For this research, environmental communication refers to the exchange of knowledge and the application of techniques related to environmental issues and their management. Over time, new communication campaigns to support environmental policies and initiatives have evolved in response to global environmental challenges, such as climate change and the convergence of media enabled by the internet.

The democratisation of the internet and the expansion of social media platforms have been regarded as new potent instruments for social action movements, enabling extensive bottom-up transformation. In the same development, digital technologies changed the nature of environmental advocacy. As time and space boundaries disappear, the need to go through traditional news outlets would also disappear, making it more straightforward to interact with supporters and disseminate information to a large audience. Mass mobilisation through the conventional campaigning methods has equally changed (Elliott, 2020). On the other hand, digital technologies have enabled people who are physically separated but share similar interests to communicate more quickly through social media, and other internet-driven platforms. The success of activist activities now depends on effective communication powered by superhighway (Büssing, Thielking, and Menzel 2019, 12). Cooperative efforts among stakeholders are essential for sustainability, and to achieve sustainable change, these stakeholders must communicate constructively and effectively. Robert Cox is one of the most influential figures in environmental communication (Pedelty, 2015). Cox discusses the significance of environmental communication and its use in advocacy campaigns, journalism, policymaking processes, and environmental movements (Pedelty, 2015). He further recognises the significance of environmental communication in the public sphere, including the roles of electronic and digital media, visual and oral communication, and perhaps most obviously, popular culture driven primarily by new media (Pedelty, 2015).

Today, individuals utilise the internet and digital media for various purposes, providing them with clear advantages in the modern world. According to estimates from Statista.com (2025), there were 5.56 billion internet users worldwide as of February 2025 (Petrosyan, 2025), including 123 million in Nigeria (Statista.com, 2025). The internet has impacted every aspect of our lives since it is widespread. Critics counter that the internet is exploitative and yet bears colonial remnants despite its modern appearance. People now attribute it to modern imperialism by the Global North, just as they

did during the period of physical colonialism, as a result of the ways it has seized and exploited our everyday routine through the collection of personal data and the management of life. In sum, environmental communication is the planned, deliberate and purposeful application of media products and communication processes to promote successful policy development, public engagement, and the execution of environmental sustainability-focused projects. However, this study examined how Nigerian internet natives perceive and engage with clean environment communication in the digital age, the challenges and prospects.

1.2. Research Objective

1. Interrogate how Nigerian internet natives perceive and engage with environmental communication in the digital age

2. Identify the challenges and prospects of communicating clean environment with the Nigerian Internet Natives

2.0 Literature Review

2.1 Context of Nigeria's Digital Natives versus Digital Immigrants

The generation born into the internet age is known as "digital natives," a term coined by Mark Prensky in 2001. They grew up in an environment where the Internet was widely used and integrated into their daily social, intellectual, and emotional development. Those born in the 1980s and 1990s fall into this group; they can utilise all emerging technologies in their daily lives and have unhindered access to them (Prensky, 2001; Zur and Zur, 2011; Alexander, 2015; Ronchi, 2009). Moreover, rather than taking on complex tasks, they would rather play games online (Prensky, 2001a, 2001b). The internet has completely altered how this generation of netizens reacts to events, creates, and accepts new ideas. Typically, they consume a great deal of music, watch numerous film media, and are inventive with technology (Palfrey & Gasser, 2008). More importantly, Mark Prensky (2001) repeatedly emphasises these traits, pointing out that they are quicker to assimilate information, can multitask using both text and images, work best when online, and value instant satisfaction.

Various perspectives were embraced in numerous dialogues among experts, scholars, and educators concerning the challenges associated with digital natives. The digital divide exemplifies the inequalities present in the social, political, cultural, and economic classifications of individuals, families, communities, and races, distinguishing between those who possess resources and those who do not. This phenomenon stands as a paramount concern in contemporary society. In other terms, Van Dijk (2006) describes it as the disproportionate distribution of access to information and communication technology (ICT) between the privileged and the underprivileged in society. In light of the persistent challenges to digital dissemination, the notion of the digital divide has surfaced, underscoring digital inclusion as an essential approach to closing the digital chasm. It is worth noting that the concept of the digital divide extends beyond mere access to computers and the internet; it also includes the observation that a considerable portion of those identified as digital natives may not be represented within the framework of the digital divide, as their demographics do not align with the established criteria for digital nativity (Attewell, 2001). Prensky (2001b) articulately characterises Digital Natives as individuals who have been immersed in an environment replete with computers, video games, digital music players, video cameras, mobile phones, and a myriad of other contemporary technological devices and instruments from an early age. He asserts that they represent the progeny of a novel culture that has arisen from the assertive infiltration of digital technology into the lives of youth born in the final two decades of the 20th century, thus positioning 1980 as a pivotal year in this regard. He argued that they "are all 'native speakers' of the digital language of computers, video games, and the Internet" (p. 3) Moreover, they demonstrate a remarkable proficiency in digital literacy. To elucidate, Prensky (2001b) designates those born prior to 1980 as "Digital Immigrants" (p. 3). Consequently, they are acclimating to the contemporary technological landscape and acquiring a new linguistic framework, a process that is customary for all newcomers in their adopted country.

Prensky's Digital Natives have been further classified into many categories and designations by other industry professionals. Tapscott (1999) retrospectively designated their birth year as 1977 and termed them the "Net Generation" or "Net Geners." The "echo" generation of baby boomers, the initial cohort immersed in digital technology, was the Echo Boomers. Having been raised in a technological environment, they integrated it seamlessly. The new technology is instinctive for several Generation Net children. Howell (2012) identifies these cohorts as the "Internet Generation," "Gen Y," "Gen Z," "Gen C," "Gen I," and "Net Gen" (p. 6). The term "Digital Generation" is used by Jukes, McCain, and Crockett (2010) to describe these Digital Natives. Given the delayed introduction of the Internet in Nigeria, the categorisation of digital natives and immigrants may differ due to a unique collection of intervening variables. For example, in contrast to other digitally advanced nations, a substantial disparity in internet availability exists between rural and urban populations. Factors including literacy rates, electricity supply, security, and telecommunication network infrastructure effectively categorise Nigerians within the digital nativity and immigration.

2.2. Overview of environmental communication theories and models

Humanity and the environment face significant challenges due to the increasing frequency of natural and human-caused (anthropogenic) disasters in the twenty-first century. A disaster, by definition, is a serious issue that lasts for a short period and results in extensive loss of human life, property, economic resources, or the environment, more than the impacted community or society can manage on its own (IFRC, 2017). Natural disasters include avalanches, flooding, heatwaves, cold waves, droughts, earthquakes, cyclones, landslides, lightning, tsunamis, volcanic activity, wildfires, and pandemics. Conversely, anthropogenic risks include fire, engineering, industrial, transportation, and environmental dangers. The main goal amid these tragedies is to create responsible and informed societies. This has led to a significant increase in the amount of information being shared about environmental issues over the past ten years, with headlines discussing issues like cyclones, droughts, melting ice caps, rising energy and food prices, unpredictable weather patterns, and a warmer climate (Chung et al., 2020; IPCC, 2021; Lin, 2019; Park, 2013). Consequently, there has been a significant increase in interest in environmental communication.

To reverse the current unsustainable and harmful environmental trends, social, economic, and political action networks must be established. This requires access to adequate and effective environmental information, which is crucial for helping the public identify and define the most pressing issues and support those networks in their growth. The need to promote environmental policy, increase knowledge, alter societal behaviour, sway public opinion, work with others to resolve problems, enact laws, and disprove presumptions are some of the factors contributing to the growth of environmental communication. The high production costs, lengthy lead times, difficulty in identifying target audiences, inability to transmit messages frequently, and decreased information communication were some drawbacks of these conventional media. The digital environment, also known as New Media, and society's dependence on it have grown recently (Pavelle & Wilkinson, 2020). People can now readily communicate through websites, button clicks, SMS, tweets, podcasts, and other low-cost, real-time techniques. These platforms have evolved into crucial and decisive resources for the discussion and dissemination of news, the engagement and coordination of stakeholders, and the rapid launch of environmental communications campaigns.

An increasing number of scholarly works acknowledge the significance of social media in advancing environmental consciousness and community education (Bramwell-Lalor et al., 2020; Rahim & Jalaladeen, 2016; Saepudin & Mulyono, 2019). However, new media also presents obstacles to precise and successful environmental communication. Research on the impact of new media on spreading environmental concerns in the African setting remains limited despite the medium's widespread use in the current decade. However, Africa is not immune to the growing environmental complexity of the world, especially in terms of climate change.

2.3. Technological Determinism and the Nigerian Digital Natives

The import of Technological Determinism theory is that a technological environment shapes the society. According to Oladele and Asemah (2022), technology is the engine that propels a society's culture and shapes its history. Technological determinism theory posits that a society's technological capabilities determine its social structure, cultural values, and history (Aboh, Amah, & Asemah, 2021). The evolution of technology has transformed communication to the extent that citizen journalists have arisen. Social media is currently being utilised as a platform to influence people, and news reporting has become more democratic globally (Ajibulu & Asemah, 2021). The media convergence is no doubt influencing Nigerian society, like other countries. Moreover, like others, the availability and non-availability of technology determine the acceptance, engagement, or perception of Nigerian Digital Natives. Therefore, the digital divide, naivety, digital migration, and digital gaps, among others, play prominent roles in assessing the technological influence in Nigeria.

The German philosopher and economist Karl Marx argued that social relations and cultural practices revolve around a society's technological and economic foundation. Technological determinism canvasses that technology can influence social change and human interaction. Environmental communication through digital platforms has changed in principle and practice. According to technological determinism, media technology now influences how individuals think, feel, and behave as society transitions from one technological era to the next. Developments in communication technology are considered the primary drivers of human evolution. As the need to understand environmental issues rises, so does the emergence of digital media.

2.4. Digital Technology as Environmental Challenges

In the current digital era, the Internet has revolutionised human communication by offering numerous opportunities for connection. With social media, internet users, also known as "netizens," can share and exchange information globally, making it one of the most widely used resources for communication. Globally, social media users number 4.76 billion (Datareportal, 2023), making crossborder connections possible for people in minutes. However, the widespread usage of social media has also coincided with a startling increase in its abusive use and negative user habits. Despite substantial efforts to enhance social media interaction and enjoyment, there remains a need for further studies to identify and comprehend online toxicity. Over the past decade, social media's pervasive influence has profoundly altered the way we communicate, connect, and interact. Despite geographical restrictions, its immense power and reach act as a bridge to unite individuals worldwide. Accordingly, a school of thought holds that the use of new media is inherently harmful to the environment because technological advancements exacerbate existing environmental issues. Louv (2006) contends that people's perceptions of the world are altered by merely using technologies, hence upsetting humanity's ecosystem interaction. Some opponents concentrate on the kinds of media that can promote unfavourable environmental views. The use of minerals that cause conflict in the manufacturing of electronic media devices and workers' exposure to hazardous materials are additional concerns. All electronic equipment contains hazardous elements, therefore, improper recycling of this e-waste can pose a significant danger.

Air and water pollution occurs when the e-waste is transported to less-developed African nations. Additionally, technologies aggravate global warming, acid rain, air pollution, and resource depletion (William, 2022). Modern communication technologies leave an e-waste that travels across human and non-human ecosystems and other geographies. According to Christensen and Nilsson (2018), they are contaminated with persistent hazardous compounds and metals that harm humans, other living organisms, and the environment. Antonopoulos, N., et al. (2019) estimate that 1,838,596,056 websites, 214,036,874 unique domain names, and 7,290,968 web-facing PCs worldwide use significant energy. To address this issue, ideas such as green websites have been developed. Climate-friendly policies and attempts to improve the Earth's natural habitat are the subjects of Green Websites. Among the simplest and least expensive strategies to combat climate change are utilising renewable energy, emphasising environmental communication, and adopting

black practices. As Antonopoulos et al. (2019, P. 47) stated, "green computing" refers to a broader category that aims to minimise energy consumption while enhancing computer performance.

Similar conditions exist in Nigeria, where the situation appears even more hopeless because the country's digital natives are so engrossed in 'destructive' digital consumption that they are unaware of the challenges. Due to imperialistic systems that symbolize the continuation of mercantile colonialism, the majority of users are now compelled to follow the corporations' example. The use of the internet has evolved into a wilful continuation of offline colonialism for those who are socially colonised. Nigeria has had more extended interaction with the Western media in every sphere of life than most African nations (Omoera and Ibagere, 2010). Nevertheless, it is worth noting that due to its constancy, people in Western countries do not consider this an anomaly. Additionally, even if they are aware of the harm and exploitation, the digitally colonised regard this as usual and are helpless to stop the digital invasion since poverty and corruption are entrenched in the socio-political system. Nigerians are compelled to primarily rely on Western media products rather than local ones for domestic consumption, as the country has been unable to implement its media independence. As earlier established, digital colonialism is a reality that permeates the entire digital system and is even necessary for corporations to profit financially.

Digital instruments are believed to have a significant impact on every aspect of human activity, including modern communication. However, the Internet and other digital communication tools are relatively new, especially in Africa. For example, in 2000, the Internet started to gain popularity in Nigeria. Even after mobile phones were introduced in 2001 and the Internet began to gain popularity in Nigeria, many people remained apprehensive about their use until recently (Anunobi & Mbagwu, 2009; Ufuophu-Biri & Iwu, 2014). Research has revealed that a significant number of individuals in Nigeria, particularly the elderly population, are either doubtful of or unable to utilise the Internet efficiently. Regarding the Internet usage of young people, the situation appears to be different. Concerns over the generational divide influencing internet use have arisen due to the aforementioned scenario, which various authorities refer to as the "digital nativity" and "digital immigration" dichotomy. Numerous studies conducted in different regions, including those by Rikhve, Cook, and Berge (2009). Ufuophu-Biri and Ojoboh (2017), Prensky (2001), and Prensky (2009) have demonstrated that the concept of digital nativity and digital immigration is a factor of Internet usage. What is lacking, however, is information on how Nigerian internet natives discuss the challenges and opportunities of living in a digital age with clean environmental standards. Therefore, there is a need to close the knowledge gap. Hence, this study examined the challenges and prospects of communicating a clean environment in the digital age among the Nigerian Internet Natives.

3.1 Methodology

This study used a survey approach. The population is Nigerian internet natives between 18 and 35 years old. The population for this study is the Yaba Local Council Development Area in Lagos State. Based on projections from the 2006 population census by the National Population Commission (NPC), the estimated current population of Yaba LCDA is approximately 483,600. A sample size of 400 internet users was determined for this study using Taro Yamane's formula. This formula is commonly applied to calculate an appropriate sample size from a known population size, e = Margin of error (set at 5% or 0.05), n = 483,600 / [1 + 483,600(0.05²)], n = 483,600 / [1 + 483,600(0.0025)], n = 483,600 / [1 + 1,209], n = 483,600 / 1,210, n \approx 400.

Taro Yamane's formula calculates the appropriate number of respondents needed for statistical reliability. Given a population size of 483,600 (based on the 2006 Census projection) and a 5% margin of error, the formula produced a required sample size of 400 respondents. To enhance representation and account for potential non-responses, a total of 1,000 individuals were randomly selected using a simple random sampling technique, thereby exceeding the minimum required sample size. This more extensive selection accounts for potential non-responses and ensures that at least the calculated sample size (400) was met.

The research tool used was an online survey. The questions were based on the objectives the study sought to achieve. A 16-item structured online questionnaire, administered via Google Forms, served as the data collection instrument. The items were aligned with the study objectives and reviewed for content validity.

4.1 Result and Discussion

This section presents demographic data, including the respondents' gender, age, marital status, and religion.

No/S.	Gender	Frequency	Percentage
1.	Male	159	39.8%
2.	Female	241	60.2%
3.	Total	400	100%

Table 1: Gender Distribution of Respondents

Source: Survey, 2025

Table 1 shows the gender distribution of 400 respondents. Among them, 159 (representing 39.8%) are male, while 241 (representing 60.2%) are female. This indicates that the majority of the respondents are female.

Table 2: Perception and engagement of internet natives with environmental communication in the digital age

Response	Frequency	Percentage %
Positive	256	64%
Negative	51	13%
Indifferent	93	23%
Total	400	100

Source: Field survey 2025

The study reveals that 64% of the respondents agreed that Nigerian internet natives have a positive perception of the internet and use it to communicate within their environment. In comparison, 13% of the respondents reacted negatively. In comparison, 23% of respondents felt indifferent to how Nigerian internet natives perceive and engage with environmental communication in the digital age.

VARIABLE	FREQUENCY	PERCENTAGE
Broad reach and audience engagement	221	55
Creative and interactive content formats	129	32
Viral potential	40	10
Cost-effective	10	3
Influencer partnerships	0	0

 Table 3: The challenges and prospects of communicating a clean environment with the Nigerian Internet Natives.

Source: Field Survey, 2025.

The primary benefit identified by respondents is the internet's broad reach and audience engagement, as noted by 55% of the participants. This indicates the platform's capability to connect with extensive and diverse audiences, making it ideal for communicating effectively in a clean environment. Additionally, 32% of respondents recognise the value of the internet's creative and interactive content formats. This enables brands to create more compelling campaigns through platforms that focus on user-generated content and viral challenges, encouraging innovation that enhances clean environmental communication. The internet's potential to go viral is mentioned by another 10% of respondents as a significant benefit, confirming its role in increasing brand awareness, promoting a clean environment, and setting trends. Remarkably, only 3% of respondents consider cost-effectiveness a significant advantage, indicating that they may value the potential of internet engagement more than its financial benefits.

Perception and engagement of internet natives with environmental communication in the digital age

1. Improved connectivity and quick communication about environmental issues.

Social media platforms, including YouTube, Facebook, Instagram, WhatsApp, and Twitter, enable faster communication and excellent connectivity (Pavelle & Wilkinson, 2020). Citizen journalism has enhanced the speed of breaking news dissemination in Nigeria, particularly through social media, as demonstrated by the swift sharing of environmental issues across the country. The differentiation between local and global content has become less clear due to the substantial number of social media users worldwide, which is increasingly acknowledged as a vital factor in the co-creation and co-production of environmental and climate action in Nigeria.

2. Bringing attention to environmental issues.

The new media contributes to raising awareness of climate change and environmental issues in Nigeria. Raising awareness requires the exchange of information regarding the impacts of climate change in the country, discussions on strategies to address diverse environmental issues, and the planning and promotion of events and campaigns related to environmental and climate action. A substantial number of businesses and individuals in Nigeria employ social media to initiate campaigns and share information regarding climate change. Initiatives like the African Climate Reality Project

employ social media platforms, including Twitter and Facebook, to enhance awareness, galvanise support, and promote significant climate policy reforms throughout the continent.

3. Promoting cooperative efforts and environmental communication that involves participation.

New media in Africa facilitates cooperation and coordination among individuals, leaders, governments, and organisations in addressing environmental issues. The emergence of Web 2.0 and mobile technologies, particularly smartphones, is a significant contributor to this new participatory culture. The emergence of social media platforms has led to a decrease in production costs, an increase in content-sharing participation, and enhanced interactive engagement. Web 2.0 services emphasise social media. Web applications that are interconnected and where users' online presence is essential include wikis, blogs, photo and video sharing platforms, community media, participatory video, social networking sites, and podcasts.

4. Promoting dialogue and two-way communication on environmental issues.

New Media transformed communication from one-way to two-way, facilitating discussions on environmental issues (Harris, 2018). It is helpful to note that the definition of environmental communication is the intentional exchange of environmental information, knowledge, and even wisdom. People are engaged when knowledge is shared rather than when information is conveyed. People develop their ability to recognise the connections between environmental impacts and changes through conversation and debate on their energy supply and means of subsistence. This conversation about environmental issues in Nigeria is made easier by social media platforms. Features like "share," "follow," and "comment" are built into platforms like Facebook, Twitter, and YouTube to facilitate two-way communication.

Challenges of Communicating in a Clean Environment in the Digital Age among Nigerian Internet Natives.

1: Information overload and misinformation

According to the framework model by Eppler and Mengis (2008), information overload is influenced by several interconnected factors, including information technology, tasks and procedures, organisational procedures, the characteristics of the information, and the recipient of the information. The effects of information overload require the implementation of countermeasures that influence the sources of such overload. The relationship between information overload and ICT use is well-documented, leading to the concept of technostress.

Ragu-Nathan et al. (2008, p. 418) define technostress as the stress experienced by individuals due to the use of ICTs. One characteristic of technostress is information overload. Too much information and misinformation pose a significant challenge on social media, where information can be disseminated rapidly and extensively with a single click.

2. Social media's role in spreading environmental misinformation

Misinformation on social media spreads rapidly, often undermining effective environmental communication, complicating crisis response, and diminishing public trust in credible sources. Key components of online media platforms include amateur videos and documentaries, blogs, wikis, forums, educational portals, virtual worlds, e-museums, and e-learning, which offer a wealth of documented information (Saneh, 2018). With the help of this web-based platform, users can publish, post, and comment on social networking sites at an impressive internet speed. Of importance is the misinformation that culminates from the free access to digital platforms and the challenges of fact-checking. In the bid to create and monetise content, essential and authentic information becomes

difficult to access. It has become an extra task for internet natives to scrutinise every piece of online information and establish the facts from the fallacies.

3. Digital divide and access limitations

The concept of a digital divide is not a new notion. In the late 1980s and early 1990s, the terms information rich and information poor were widely used. The gap between the learned and the illiterate became more apparent with the widespread availability of the Internet (Cronin, 2002). Social inequality at both national and international levels has been highlighted by variations in computer ownership, access to information technology, and basic Internet connectivity measures. They provide the discourse of the information-rich/poor concrete shape, increasing awareness of distributive injustice among those who ought to be concerned (Cronin, 2002). For this reason, when discussing disparities in the use of digital technology, the term "digital divide" is often mentioned. Thus, some people believe that the digital divide can be attributed to factors such as location, income, and education, or they consider the digital divide to be the disparity between individuals who have access to computers and the Internet and those who do not.

4. Internet penetration and access disparities in Nigeria

Recent research has focused on the Internet's use in Nigeria and its related factors across multiple disciplines. Research indicates that young adults and single individuals constitute the primary demographic of Internet users. A different perspective analysed age, education, gender, marital status, and family size to explore the relationship between socioeconomic disparities and Internet usage in both urban and rural Nigeria. The difference in access to ICT infrastructure or the Internet for daily operations among Nigerian individuals, groups, or organisations is referred to as the "digital divide". The digital divide is associated with several issues, including the high cost of computer equipment, insufficient ICT proficiency, and limited familiarity with available search engines. The expanding digital divide in Nigeria is attributable to various social and political factors, such as poverty, illiteracy, urban migration, and inadequate electricity infrastructure. Government organisations and technology companies, such as Google, CCHub, Andela, StarBridge Africa, Microsoft, and Intel, are collaborating to mitigate the digital divide in Nigeria.

5. Environmental communication in local languages and cultural contexts

Language is a critical determinant of effective environmental communication, particularly in linguistically and culturally diverse societies such as Nigeria. Messages tailored in local languages often resonate more strongly, aligning with indigenous values, beliefs, and communication norms. The primary purpose of language is to facilitate communication or the transfer of meaning from one person to another. It does not, however, exist outside of culture. Stated differently, language is embedded in a community or socio-cultural context. It is an essential component of culture and a mirror of numerous aspects of a particular society. It is a learnt behaviour that can be supported or improved by enculturation and direct or indirect context, just like culture itself. Language is crucial for environmental communication because it is inextricably linked to culture. The belief is that speaking one's native tongue is essential for being complete and well, as it cures and favourably frames the mind for any activity. It is a known fact that the press in indigenous languages can be a powerful tool for encouraging the overwhelming majority of people—many of whom are illiterate in English—to participate in politics.

Prospects of communicating clean environment in the digital age among Nigerian internet natives.

1. Social media campaigns and online activism

The use of digital technology to promote social and political change is known as digital activism (Joyce, 2010). Activists, civil society organisations, and non-governmental organisations are collectively referred to as Social Movement Organisations (SMOS). Social movements are collective sentiments or actions that seek to alter social structures or interpersonal relationships. Online activism through social media and the internet is, therefore, a particularly pertinent topic on this subject. In this regard, social networks and human motivation have been the subject of contemporary scholarly study. Those who are interested in becoming activists can collaborate and communicate both online and offline, thanks to the digital world. As a result, new forums, venues, and avenues for communication between activists are constantly created. The ability for individuals to lead and reciprocate discussion between all parties participating in a communication process is another crucial component. Therefore, increasing one's motivation, awareness, and involvement in social activism causes is attainable.

2. Digital education and awareness initiatives

Digital education encompasses the innovative application of digital resources alongside advancements in teaching and learning and is also referred to as technology-enhanced learning (TEL) or e-learning. Educators can foster interactive learning environments in their classrooms by exploring the application of emerging technologies. The programmes and courses may be offered in a fully online or partially online format. The concept of virtual learning originated in 1840 with Sir Isaac Pitman, the English inventor of shorthand, who proposed the delivery of correspondence courses to students through the mail. The multibillion-dollar market for distance education has emerged primarily due to advancements in contemporary technology. The institution of "The University" becomes obsolete in contexts where instruction and content are disseminated through satellite television, intranet, extranet, Internet, and multimedia-enabled CD-ROMs. Consequently, the university adopts a more outward orientation, operating as an intermediary in the global context, fulfilling roles as a contractor, broker, client, and partner in delivering higher education services.

3. Collaborations and Partnerships

Through the user bases and engagement of social media platforms, partnerships provide news media organisations with access to a larger audience and improved reach. News organisations can more efficiently distribute news content thanks to platforms which provide them with access to various distribution channels. Working together to investigate revenue-sharing plans and advertising alliances can also help to monetise news content. Additionally, it helps foster reliable and trustworthy news. Scholarly works emphasise the importance of collaborative efforts in producing dependable and trustworthy news. By bringing their editorial standards, journalistic experience, and fact-checking skills to the relationship, news media organisations make sure that the news material is accurate and authentic. Social media platforms can effectively disseminate verified news and promote reliable sources, thanks to their large user bases.

Summary of findings

This study examined the challenges and prospects of communicating in a clean environment in the digital age among Nigerian internet natives. In this regard, social networks and human motivation have been the subject of contemporary scholarly study. Those who are interested in becoming activists can collaborate and communicate both online and offline, thanks to the digital world. The ongoing development of new information and communication technologies has an impact on this. As a result, new forums, venues, and avenues for communication between activists are constantly created. The ability for individuals to lead and reciprocate discussion between all parties

participating in a communication process is another crucial component. Therefore, increasing one's motivation, awareness, and involvement in social activism causes is attainable.

However, by developing the skills necessary for environmental responsibility, environmental education fosters environmental literacy. In addition to imparting the critical thinking, problemsolving, and decision-making abilities necessary to make environmentally conscious decisions, environmental education aims to raise public awareness, concern, and knowledge of environmental issues. Children have access to a multitude of resources for learning about their surroundings.

Conclusion

The advent of digital technologies has had a significant impact on the environmental movement, accelerating and expanding the reach of its messages globally. Although digital technologies have a potentially more expansive reach, their nature has meant that audiences reached online are often limited to those who are already interested in the environmental movement's messages, and offline engagement does not always translate into more diligent offline activism. Nevertheless, it is challenging to accurately describe the extent and kind of influence that the development of digital technologies has had on environmental movement tactics.

Digital platform algorithms reward these well-established news outlets to maximise online engagement. Environmental organisations are unable to produce entirely autonomous content due to the persistence of this elitist form of media power in the digital arena, which influences their behaviour and content. Furthermore, the neoliberal interpretation of nature undermines environmental objectives, as it seeks to profit from the preservation of nature, even while profit-seeking is perceived as encouraging overproduction and overconsumption that exceeds natural bounds.

Moreover, the difficulties and opportunities of communicating about a clean environment in the digital age to Nigerian internet natives have not received much attention up until now. The number of World Wide Web services has increased. Because they also emit greenhouse emissions, their operation needs to be considered if the world is to protect the environment. The concept of green websites is tied to climate-friendly practices and aims to protect the Earth's natural environment. Some of the simplest and least expensive methods to positively impact climate issues are the use of renewable energy sources, the colour black, and highlighting environmental news. However, even the world's most well-known international news outlets do not appear to take their responsibility for environmental issues seriously.

Consequently, most of them do not concentrate on these kinds of tales. Moreover, they make little effort to run their business using renewable energy sources or to use less power. Generally, very few of the most well-known news websites worldwide appear to be concerned with making changes to their websites to make them more ecologically friendly.

Recommendations for future Research and practice

This study recommends that the development of targeted and localised environmental communication messages is crucial, especially considering the diverse makeup of the Nigerian online audience. These messages should specifically address the environmental issues and concerns that are unique to various African communities.

Collaboration and participatory environmental communication can be encouraged by using new media. This is done by involving a variety of stakeholders in environmental communication discussions, questions, and debates. These stakeholders include the public, government agencies, journalists, the private sector, and local authorities.

Government censorship should be addressed, as the silencing of digital environmental activists by governments is a serious issue in Africa. Consequently, it is crucial to address government censorship of digital environmental communication.

Enhancing environmental education by providing accurate and trustworthy information on environmental issues and their impacts on the African community through the use of new media can help improve environmental awareness and understanding.

Considering the impact of digital media technology on the environment: Although new media presents several opportunities to enhance environmental communication in Nigeria, it is equally crucial to acknowledge how digital media technology affects the environment and promotes sustainable digital behaviours.

Further Research is needed to determine the most effective ways to utilise New Media for promoting Environmental Communication in the Nigerian context and to understand how New Media has impacted Environmental Communication in Nigeria.

Ethical Considerations: Ethical approval was obtained for the study, and participants were assured of anonymity, voluntary participation, and the confidentiality of their responses.

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