



2nd FPISMS International Conference <https://sms2interconf.federalpolyilaro.edu.ng>

Leveraging Information and Communication Technologies to Foster Sustainable Development through Mass Media.

MALIKI-SADIQ TITILAYO OLOLADE

DEPARTMENT OF MASS COMMUNICATION

THE FEDERAL POLYTECHNIC ILARO

08060299287

titilayo.maliki@federalpolyilaro.edu.ng

Abstract

This study looks at how mass media can be used to promote sustainable development by utilizing information and communication technologies (ICT). Traditional mass media have changed into dynamic channels that enable real-time participation and the broad transmission of sustainability efforts, thanks to the quick growth of digital platforms and the growing penetration of ICT across all industries. The study explores how ICT-enabled communication tactics might advance social justice, economic resilience, and environmental preservation. The report emphasizes how social media campaigns, digital storytelling, and interactive online platforms empower communities and increase stakeholder participation in sustainability initiatives by incorporating actual data from case studies, surveys, and digital analytics. The results show that using cutting-edge ICT helps close communication gaps between organizations, the public, and policymakers while also increasing the efficacy and transparency of sustainability messages. Notwithstanding obstacles like digital gaps and complicated regulations, the study emphasizes how ICT may spur sustainable development by facilitating more inclusive, knowledgeable, and flexible answers to global issues. This study adds to the expanding corpus of research on digital transformation and provides practical advice on how to use mass media as a vital instrument for accomplishing sustainable development objectives.

KeyWords: Leveraging, Information, Technologies, Mass-Media.

Introduction

Interactions among social, economic, and institutional processes have historically been seen as crucial to maintaining population growth and the utilization of natural, human, and material resources (Dunmade, Awe & Mejabi, 2023). Integration based on social, environmental, and economic concerns has not aided Nigeria's development objectives. The incessant bureaucracy, industrial action and strikes in schools, the Boko Haram insurgency in northern Nigeria, conflicts between farmers and herders, inadequate resource management in the healthcare system, and kidnappings that are now occurring not only in the south but throughout the nation have all

contributed to that effect. In addition to the issues listed above, Nigeria is also dealing with environmental pollution, poverty, floods, ethnic bias, and unequal wealth distribution. Therefore, in order for Nigeria to achieve the sustainable development goals (SDGs) set for 2030, these issues must be resolved.

The world's media landscape has changed dramatically in recent decades due to the explosive growth of information and communication technologies (ICT), which has also profoundly changed how people receive and use information. In addition to changing conventional mass media methods, the emergence of digital platforms, social media, and mobile communications has created new opportunities for interacting with a variety of audiences on important global topics, such as sustainable development (Castells, 2010). As digital tools proliferate, they present previously unheard-of chances to expand the impact and reach of sustainability messaging, successfully bridging the divide between the public, practitioners, and policymakers.

International agendas like the Sustainable Development Goals (SDGs) of the United Nations, which demand concerted efforts to address environmental degradation, social injustice, and economic instability, have highlighted the urgency of sustainable development (United Nations, 2015). In this regard, the media plays a vital role in spreading knowledge, increasing public consciousness, and inspiring neighborhood action in the direction of sustainability. Mass media can break through conventional communication boundaries when combined with cutting-edge ICT capabilities, allowing for real-time information exchange and encouraging interactive public participation in sustainability projects (Heeks, 2018).

ICT-enabled digital media platforms provide creative communication tactics including data visualization, interactive storytelling, and focused social media campaigns. These methods not only educate but also motivate behavioral shifts that support social justice and environmental preservation. According to recent research, there is a higher chance of influencing public opinion and policy decisions when sustainability narratives are successfully conveyed via digital platforms (Bertot, Jaeger, & Hansen, 2008). Even with these encouraging advancements, there is still much to learn about how ICT-enhanced mass media may promote sustainable development, especially when it comes to combining various technology advancements into coherent communication plans.

Mass communication is one of the many industries that have undergone radical change as a result of the growing use of information and communication technologies (ICT). ICT has made it

possible for knowledge to spread quickly and given people a platform to interact with topics ranging from climate change activism to environmental conservation. The promotion of sustainable development, a broad objective incorporated into national and international development agendas like the Sustainable Development Goals (SDGs) of the UN, has been greatly aided by mass media and digital platforms in particular. These objectives include encouraging social justice, encouraging ecologically friendly behavior, and accelerating economic growth in a sustainable way.

As a result, it is acknowledged that using ICT can be crucial to reaching sustainable development objectives. Although ICT adoption in Africa, and Nigeria in particular, has advanced significantly in the continent's development efforts, there are still many obstacles to overcome in sectors including youth employment, financial inclusion, and health care. Africa is lagging behind in terms of technological advancements and pace, based on simple observation. According to Gilhooly (2005), ICT must be used when it is pertinent, appropriate, and helpful in order to positively promote growth. According to Heeks (2010), the rate at which digital technologies are changing how they operate in developing nations is equivalent to the rate at which ICT-based development programs fail, which calls for greater caution.

When combined with ICT, the role of mass media has become increasingly popular in the context of sustainability. Social media, news sites, and websites are examples of digital channels that have revolutionized the dissemination of sustainability messages and increased the reach and inclusivity of interaction. Environmental activism and sustainability awareness campaigns can now reach a global audience by overcoming social and geographic boundaries thanks to sophisticated ICT technologies including big data analytics, mobile technology, social media, and internet broadcasting (Coffey, 2020). Through the dissemination of crucial messages on the management of natural resources, the adoption of renewable energy, the mitigation of climate change, and environmental protection, mass communication tactics that make use of ICT have enabled collective action for sustainability. Thus, social media has enabled grassroots organizations and traditional media outlets to successfully interact with local and international audiences. According to researchers, these ICT-based interactions provide a dynamic platform for encouraging behavioral change on both an individual and social level (Albert, 2019).

ICT presents many benefits, but there are still obstacles in the way of realizing its full sustainability potential. These difficulties include the need for strong policy frameworks to facilitate the closing

of communication gaps, the digital divide, unequal access to ICT tools, and disinformation. However, it is indisputable that by disseminating information and inspiring action, ICT-enabled mass media platforms have served as catalysts in the advancement of sustainable initiatives throughout communities (Miller). An interdisciplinary approach that integrates communication theories, ICT innovations, and sustainability objectives is necessary to comprehend how ICT may promote sustainable development. This study addresses the opportunities and limitations of using ICT-enabled mass media tactics as instruments for transformative change in order to investigate how they might help accomplish sustainability goals.

Literature Review

Information Communication Technology

A wide range of digital tools and resources that make it easier to create, store, process, and distribute information are collectively referred to as information and communication technology, or ICT. In order to provide effective and efficient communication across many platforms and geographical barriers, this concept combines more recent digital media and network technologies with more established information technology (IT) and telecoms (Heeks, 2018).

The potential of ICT to promote global connectedness is one of its fundamental features. Traditional barriers of time and distance have been broken down by the introduction of the internet and mobile phones, which have completely changed how people communicate. Real-time communication and cooperation have been made possible by this improved connection, which allows people and organizations to share information quickly and effectively (UNESCO, 2013). Furthermore, social media and digital platforms have become effective means of influencing public opinion, spreading information, and igniting social movements worldwide (Galloway, 2011). Additionally, ICT is essential for advancing sustainable development. ICT helps to improve access to necessary services while lowering environmental footprints, such as those caused by commuting and paper-based procedures, by supplying the infrastructure for telemedicine, e-governance, and remote learning. By providing underprivileged groups with possibilities to engage in the global digital economy, these technologies aid in closing the digital divide and promote more equitable socioeconomic growth (World Bank, 2016; OECD, 2018).

Notwithstanding the many advantages, there are drawbacks to ICT's explosive growth. Concerns like data privacy, cybersecurity, and the ongoing digital divide highlight the necessity of strong

legal frameworks and fair access guidelines. Ensuring the security and resilience of digital infrastructures is crucial as societies become more dependent on them in order to guard against malicious activity and preserve public confidence (OECD, 2018). Global connection, governance, and cultural dynamics will all be impacted by ICT as it develops, further influencing how societies function and highlighting both its transformative potential and the necessity of policies that handle its inherent difficulties (Castells, 2010; Heeks, 2018).

Mass Media

A vast array of communication methods intended to concurrently reach and impact sizable audiences are included in the idea of mass media. While newspapers, magazines, radio, television, and movies have historically been considered types of mass media, in more recent times, this category has grown to encompass digital platforms including websites, social media, and streaming services (McQuail, 2010). The mass media fulfills a number of essential social roles. The distribution of information to a large audience, including news, entertainment, and instructional materials, is one of its main functions. Because of its extensive circulation, mass media can influence cultural norms and public opinion. According to Lasswell (1948), the mass media plays a crucial role in disseminating concepts, values, and viewpoints, which in turn shapes social, political, and cultural environments. In his seminal work, Harold Lasswell posited that understanding “who says what in which channel to whom with what effect” is central to analyzing the power and impact of mass media.

Marshall McLuhan (1964) in his well-known statement that "the medium is the message," emphasized how the nature and interpretation of the communicated material can be significantly impacted by the properties of the media itself. The work of McLuhan emphasizes how every medium—print, broadcast, or digital—influences the audience's perception and comprehension in a different way. This viewpoint has prompted academics to investigate the effects of the form and distribution methods of mass media in addition to the content they convey.

Numerous theoretical frameworks have been used to further examine the impact of mass media. According to McCombs and Shaw's (1972) agenda-setting hypothesis, for instance, the media is very effective at teaching people what to think about, even though they may not always tell them what to believe. Furthermore, Gerbner and Gross's (1976) discussion of cultivation theory looks

at how extended exposure to media content can alter viewers' perceptions of reality, frequently bringing them into line with the manufactured narratives that are widely used in the media.

The mass media is still changing in the digital age. In addition to expanding communication speed and reach, the emergence of digital and social media platforms has changed the roles of consumers and content creators. The term "convergence culture," coined by Henry Jenkins (2006), refers to the intersection of new and old media that makes it possible for more dynamic and participatory communication environments. As a result of this change, viewers now have more chances to interact with, evaluate, and even create media material, democratizing the spread of information.

Sustainable Development

In order to secure the welfare of present and future generations, sustainable development is a complete framework that aims to strike a balance between social inclusion, economic progress, and environmental conservation. Growing worries about the negative effects of unbridled industrialization, environmental damage, and social inequality gave rise to the idea. "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" is the Brundtland Commission's (World Commission on Environment and Development, 1987) fundamental definition of sustainable development.

The interdependence of economic, social, and environmental aspects is emphasized in this description. In terms of economics, sustainable development encourages the economical and sustainable use of resources to support long-term growth. Socially, it promotes equitable resource distribution, equity, and an enhanced standard of living for all societal groups. In terms of the environment, it prioritizes preserving natural ecosystems, cutting pollution, and guaranteeing the availability of natural resources for use in the future. The idea has been developed and incorporated over time into a number of international frameworks, chief among them the Sustainable Development Goals (SDGs) of the United Nations, which set forth a global agenda to address problems like poverty, inequality, climate change, and environmental degradation by 2030 (United Nations, 2015). According to academics like Sachs (2015), attaining sustainable development also necessitates revolutionary adjustments in every area. Information and communication technologies (ICT) are one example of technological advancements that can be used to improve resource management, support data-driven decision-making, and encourage openness in the application of policies (Heeks, 2018).

As a result, the idea of sustainable development is still developing, reflecting the need for an interdisciplinary approach to handle the intricate problems of our day without sacrificing environmental integrity in the sake of social or economic progress.

Information Communication Technologies and Sustainable Development through Mass Media

By providing creative solutions in the areas of economics, society, and the environment, information and communication technologies (ICT) have become essential instruments for promoting sustainable development. ICT integration has the power to revolutionize established methods by increasing their effectiveness, transparency, and inclusivity across a range of industries.

Real-time data gathering, analysis, and distribution are made possible by ICT, which enhances resource management and decision-making. For example, ICT-driven agricultural solutions like precision farming use sensors and smartphone apps to track crop health, maximize water use, and lessen the environmental effect of farming operations (Heeks, 2018). Similar to this, smart city projects in urban planning use ICT to improve public services, lower waste, and increase energy efficiency, all of which help create more sustainable urban settings (Castells, 2010).

Additionally, by reducing communication barriers and giving underserved areas access to digital services and information, ICT promotes greater social inclusion. Many of the Sustainable Development Goals (SDGs) of the UN, which highlight the role of technology in promoting equitable and sustainable growth, depend on this empowerment (United Nations, 2015). Transparency and accountability are increased when citizens interact with public institutions more successfully using e-governance platforms.

Furthermore, ICT breakthroughs like telemedicine, e-learning, and remote working have become more popular, particularly in light of global issues like the COVID-19 pandemic. By decreasing the need for travel, these solutions not only guarantee service continuity but also help to lower carbon emissions (Sachs, 2015). Through increasing operational effectiveness, encouraging social inclusion, and aiding in environmental preservation, ICT facilitates sustainable development. ICT is a vital tool in the global quest for a more sustainable future because of its continuous developments, which open up new avenues for tackling difficult sustainability issues.

Over the past ten years, Nigeria has seen a sharp increase in the use of information and communication technologies (ICT), which has drastically changed the media landscape in the nation. According to the Nigerian Communications Commission (NCC, 2019), the widespread use of mobile phones and rising internet penetration have changed the paradigms of conventional media and made it possible for mass media outlets to instantly reach a larger audience. Through more efficient and engaging communication techniques, this digital revolution offers a previously unheard-of chance to use ICT to advance sustainable development.

Nigeria's ongoing environmental deterioration, socioeconomic inequality, and infrastructure deficiencies make sustainable development there an ongoing problem. Problems like urban development, poor public health care, and environmental mismanagement exacerbate these difficulties. By distributing information, influencing public opinion, and holding politicians responsible, mass media, when enabled by ICT, can be a transformative force. According to Ajibade (2015), digital media can help close the gap between public involvement and government activities, increasing civic engagement and transparency—two things that are essential for attaining sustainable development.

Furthermore, social media marketing, data visualization, and interactive storytelling are some of the creative ways that digital platforms present difficult sustainability issues and achievements. According to Odugbesan (2017), these venues support community-driven responses and policy reforms in addition to increasing awareness. Thus, combining ICT and mass media has the potential to make citizens more knowledgeable and involved, which is a prerequisite for achieving the Sustainable Development Goals (SDGs) of the UN (United Nations, 2015).

Related Studies

Dunmade, Awe and Mejabi (2023), discussed how effectively Nigeria can leverage ICTs to achieve the sustainable development goals by the target date of 2030. The researchers opine that ICT must be given pride of place as a veritable tool for actualising SDGs within the Nigerian space. The paper also examined several ways in which Information and Communication Technologies (ICTS) can be used to achieve the SDGs in Nigeria. Ten of the 17 goals regarded as the basics for a developing country are discussed in light of how ICTs can improve their actualization.

Ribeiro, Flavio, Cunha, Kaetsu, Dionizio-Leite and Junior (2021), systematically reviewed literatures within the Web of Science and Scopus databases, comprising the studies about ICTs related to smart and sustainable city initiatives and sustainable assessment. This study suggests some requirements for providing better and more reliable sustainable assessment, making smart and sustainable city initiatives more correlated with the SDGs. This study offers valuable contributions to the literature by providing a collection of insights regarding how the ICTs may genuinely lead to a sound assessment of sustainable development, especially regarding the SDGs.

Chen and Zeng (2021), evaluated the effectiveness of digital technologies in promoting sustainable behaviors through mass media. Their empirical research, which involved surveys and digital analytics, demonstrated that ICT-enabled communication significantly influences public perceptions and behavioral changes in favor of sustainable practices, thus reinforcing the role of digital media in achieving sustainability goals.

Zeng and Glaister (2020), focused on emerging markets to assess how digital media strategies, underpinned by ICT, enhance stakeholder engagement in sustainable development initiatives. Their mixed-method study revealed that well-coordinated digital communication efforts help bridge the gap between policy-makers and the public, leading to increased support for sustainability projects in regions with rapid technological adoption.

Vassil and Mantzis (2020), explored how public sector organizations in Europe adopt green ICT solutions to communicate sustainability policies. It concludes that integrating environmentally friendly ICT practices into mass media strategies enhances public understanding and support for sustainable development.

Mergel, Edelmann and Haug (2019), in his study Focused on governmental use of social media, this study finds that ICT-driven mass media campaigns can effectively disseminate sustainability messages and foster public participation in sustainable practices.

Vial (2019) conducted an empirical review on the role of ICT in enhancing corporate social responsibility (CSR) initiatives. The study showed that companies using digital mass media channels to communicate their CSR efforts witness improved stakeholder engagement and better sustainability outcomes. The integration of ICT in CSR communication strategies not only boosts

transparency but also encourages environmentally and socially responsible practices within and beyond the corporate sphere.

Chan and Wang (2018), examined how mobile ICT platforms are used in urban settings to promote sustainable development. It highlights case studies where mobile apps and communication channels facilitated better resource management and urban planning.

Al-Mashaqbeh (2018), examined digital storytelling initiatives, this study finds that narrative-based digital content on social media effectively raises environmental awareness and drives public engagement in sustainability efforts.

Conclusion

A revolutionary strategy for tackling today's environmental, economic, and social issues is to use information and communication technologies (ICT) to promote sustainable development through the media. The way sustainability messages are disseminated has been completely transformed by the combination of digital platforms and traditional mass media, which allows for more reach, improved transparency, and real-time involvement. The effectiveness of ICT-enabled tactics, such as digital storytelling and social media campaigns, in rallying public support and spurring legislative reforms in favor of sustainable practices is demonstrated by the empirical research examined in this paper.

Governments, corporations, and civil society may improve stakeholder participation, close communication gaps, and encourage well-informed decision-making by utilizing cutting-edge technologies. In addition to improving the spread of sustainability projects, this digital transformation gives communities the option to actively support social justice and environmental preservation. The research indicates that a concentrated effort to integrate ICT with mass media is crucial for accelerating progress toward sustainable development goals, despite obstacles including digital divides and regulatory complexity. In addition to being strategically necessary, using ICT as a mass media catalyst for sustainable development offers hope for a future that is more resilient, inclusive, and ecologically conscientious.

References

- Bertot, J. C., Jaeger, P. T., & Hansen, D. (2008). The impact of policies on government social media usage: Issues, challenges, and recommendations. *Government Information Quarterly*, 25(4), 293–310. <https://doi.org/10.1016/j.giq.2008.07.003>
- Castells, M. (2010). *The Rise of the Network Society* (2nd ed.). Wiley-Blackwell.
- Chan, S., & Wang, X. (2018). Mobile communication and sustainable urban development: Evidence from case studies in China. *Journal of Urban Technology*, 25(4), 3–24.
- Chen, Y., & Zeng, Q. (2021). Digital Technology and Sustainable Behavior: An Empirical Study on the Role of Mass Media in Environmental Sustainability. *Journal of Cleaner Production*, 278, 123–134.
- Galloway, A. R. (2011). *The Future of the Internet--And How to Stop It*. FT Press.
- Gerbner, G., & Gross, L. (1976). Living with television: The violence profile. *Journal of Communication*, 26(2), 172–199. <https://doi.org/10.1111/j.1460-2466.1976.tb01303.x>
- Heeks, R. (2018). *Information and Communication Technology for Development (ICT4D)*. Routledge.
- Jenkins, H. (2006). *Convergence Culture: Where Old and New Media Collide*. New York University Press.
- Lasswell, H. D. (1948). The structure and function of communication in society. In L. Bryson (Ed.), *The Communication of Ideas* (pp. 37–51). Harper & Brothers.
- Mansell, R. (2016). *Digital Technology and the Transformation of Media*. Palgrave Macmillan.
- McCombs, M., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, 36(2), 176–187. <https://doi.org/10.1086/267990>
- McLuhan, M. (1964). *Understanding Media: The Extensions of Man*. McGraw-Hill.
- McQuail, D. (2010). *McQuail's Mass Communication Theory* (6th ed.). Sage Publications.
- OECD. (2018). *Bridging the Digital Divide: ICT and Inclusive Growth*. OECD Publishing.
- Sachs, J. D. (2015). *The Age of Sustainable Development*. Columbia University Press.
- UNESCO. (2013). *Information and Communication Technologies (ICTs) in Education*. UNESCO Publishing.

- United Nations. (2015). *Transforming our world: The 2030 Agenda for Sustainable Development*. United Nations.
- Vial, G. (2019). Understanding Digital Transformation: A Review and a Research Agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144.
- World Bank. (2016). *World Development Report 2016: Digital Dividends*. World Bank Group.
- World Commission on Environment and Development (WCED). (1987). *Our Common Future*. Oxford University Press.