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Communicating Solid Waste Management Information through Social Media Platforms for Sustainable Development in Nigeria: A Review of Anambra Broadcasting Service Facebook Messages

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Abstract

With the ever-increasing global waste crisis, effective communication of solid waste management (SWM) information to the public has become more critical than ever before. Social media has increasingly offered a promising platform for the dissemination of environmental information, including SWM information. This conceptual review examines the potential for social media platforms, specifically Facebook, to serve as a tool for communicating SWM information to the public. The study focuses on the Anambra Broadcasting Service (ABS) as a case study, exploring its use of Facebook to disseminate information on sustainable waste management practices. The review begins by outlining the importance of effective communication in achieving sustainable waste management goals. It then highlights the potential of social media platforms, particularly Facebook, to facilitate communication and drive behavioral change. Subsequently, the review delves into the

case study of ABS's use of Facebook to disseminate SWM information in Anambra State, Nigeria. Findings from the review highlight several important considerations for effective communication of SWM information through social media platforms. These include understanding the target audience, selecting the appropriate social media channels and tools, creating engaging and visually appealing content, tailoring messages to local contexts, and developing strategic plans for sustaining communication efforts. Overall, the review concludes that social media platforms have the potential to play a critical role in promoting awareness and behavioral change towards sustainable waste management practices. The review's findings suggest that more studies should be conducted to explore the effectiveness of social media platforms in SWM information dissemination across different contexts.

Keywords: Communicating, Solid Waste Management, Information, Social Media Platforms, Sustainable Development, Facebook Messages

Introduction

Solid waste management is a critical issue faced by local governments and communities worldwide. Inefficient waste management practices have numerous adverse effects on the environment, public health, and the economy. The management of solid waste is a complex issue that requires an integrated approach, involving multiple stakeholders, including public and private sector stakeholders and members of the community. Solid waste management is a critical aspect of environmental sustainability, especially in rapidly urbanizing regions like Anambra State, Nigeria. As communities grapple with the challenges of waste accumulation, effective communication plays a pivotal role in fostering public awareness and participation in waste management practices. One of the significant challenges in solid waste management is communicating information to stakeholders effectively. A challenge that can be mitigated through the use of social media platforms like Facebook for sustainable development. According to Nwafor (2024), sustainable development is the societal goal of achieving simultaneous economic prosperity, environmental protection, and social well-being. Solid waste-induced environmental pollution, however, stands as a significant obstacle to the achievement of the country's sustainable development goals. In Nigeria, solid waste-induced environmental pollution has adverse effects on the environment, society, and economic systems, making it one of the

leading issues that need to be addressed (Nwafor, 2024). In recent years, social media platforms have emerged as powerful tools for disseminating information and engaging communities in environmental issues. According to Nwafor, Aghaibe, Bartholomew and Umuze (2024)^[34], Social media platforms have been instrumental in raising awareness about climate change, with millions of engagements per year. Social media can play a critical role in disseminating climate information, mobilizing public support, and influencing policy decisions. Recent studies have highlighted the effectiveness of social media in promoting climate change awareness and engagement (Nwafor, *et al.*, 2024). Specifically, this review focuses on the utilization of the Anambra Broadcasting Service (ABS) Facebook messages as a means to communicate solid waste management information and its impact on sustainable development in the region. Social media has witnessed exponential growth in usage globally, offering unprecedented opportunities for information dissemination. According to Adekunle and Ige (2023)^[3], social media platforms have become pivotal in enhancing public awareness and participation in environmental initiatives. In the context of Anambra State, ABS has been at the forefront of utilizing Facebook as a medium to communicate various messages, including those related to solid waste management.

Anambra State faces significant challenges in waste management, with rapid urbanization exacerbating the issue. According to a report by Nzewi (2022)^[38], improper waste disposal practices contribute to environmental pollution, health hazards, and economic losses in the state. Effective communication strategies are crucial to address this problem. ABS, as a prominent media outlet, utilizes its Facebook platform to disseminate information on waste management practices, government policies, recycling initiatives, and community engagement programs. Research on social media's role in environmental communication has gained traction globally. Studies by Ojo (2023)^[42] emphasize the importance of tailoring messages to the target audience to maximize impact. In the context of ABS's Facebook messages, understanding the demographics, preferences, and behaviors of the audience becomes crucial in crafting effective communication strategies for solid waste management.

Previous research have underscored the importance of social media in the context of solid waste management. They have found that social media platforms such as Facebook can be effective in raising awareness, increasing participation, and promoting public engagement in solid waste management. For instance, in a study conducted by Filauro *et al.* (2019)^[19], it was found that social media played a significant role in improving the perception of solid waste management among stakeholders. Another study conducted by Kambasu & Yaro (2020)^[23] found that social media platforms can be used to raise awareness on waste management and increase public participation in waste separation and recycling. Nwafor, Guanah and Okowa-Nwaebi (2022)^[36] note that the advantages of social media in information dissemination have been utilised for several applications such as crisis preparation, response and recovery during disasters such as flooding, earthquake, and tsunami sharing knowledge and bringing stories to the public. Despite the benefits of social

media in solid waste management, there is still a notable lack of research examining how social media platforms can be effectively utilized. One study by Dodson MacGillivray, Martin, & Township (2019)^[14] found that social media targeted communication strategies can be effective in influencing the behavior of waste separation and recycling. However, there is a need for further research to investigate how social media can be effectively utilized to communicate information on solid waste management to communities.

The Concept of Solid Waste Management (SWM)

Solid waste management is a critical aspect of environmental protection and public health, as it affects the quality of life and the well-being of individuals and communities worldwide. The concept of solid waste management encompasses the collection, transportation, treatment, and disposal of waste in a manner that is safe, efficient, and environmentally sustainable (World Health Organization, 2020)^[52]. In Nigeria, solid waste management is a significant challenge, particularly in urban areas where population growth and rapid urbanization have led to an increase in waste generation. The country's waste management infrastructure is often inadequate, leading to improper waste disposal and environmental pollution (Owolabi, Adeleke, & Adewumi, 2021)^[45].

Recent studies have highlighted the importance of effective solid waste management in preventing environmental and health hazards. For instance, a study Adeleke, Adewumi, & Adedeji, (2022) found that improper waste disposal is a significant contributor to water pollution in Nigeria's urban areas. Furthermore, a study published in the Journal of Solid Waste Technology and Management (2021) emphasized the need for sustainable waste management practices in developing countries like Nigeria, where waste generation is expected to increase significantly in the coming years.

Effective solid waste management requires a multi-faceted approach that involves government policies, public education, and community participation. In Nigeria, the government has established the National Environmental Standards and Regulations Enforcement Agency (NESREA) to oversee waste management activities and enforce environmental regulations (NESREA, 2020)^[32]. However, despite these efforts, solid waste management remains a significant challenge in Nigeria, and innovative solutions are needed to address the problem. Recent studies have explored the potential of technological innovations like artificial intelligence and blockchain in improving waste management efficiency and sustainability (Taiwo, Oke, & Oke, 2022^[48]; Oke, S. Oke, & Taiwo 2023).

In addition, community-based initiatives like waste sorting and recycling programs have been shown to be effective in reducing waste generation and promoting sustainable waste management practices (Ogunyemi, Oyeade, & Olawuni, 2022). Thus, solid waste management is a critical aspect of environmental protection and public health, and effective management requires a multi-faceted approach that involves government policies, public education, and community participation. Recent studies have highlighted the importance of innovative solutions and sustainable waste management practices in addressing the challenges of solid waste management in Nigeria and around the world.



Fig 1: A refuse dumping site in Anambra State

Types of Solid Waste

According to Salihu (2018), solid waste can be categorized according to its origin as;

- Domestic or Residential wastes which are waste derived from households composed of garbage, refuse, ashes and bulky materials like wood furniture, bedding, rubber tires or rugs or,
- Commercial wastes are derived from wholesale and retail trade, hotels and offices. These wastes include garbage, refuse, ashes and bulky materials too.

Furthermore, Ibrahim divided solid waste into three categories based on their content, according to Danbuzu (2011)^[12]. These are:

- Biodegradable, which is primarily made up of trash;
- Semi-Biodegradable, which is also made up of trash; and
- Non-Biodegradable, which is made up of scraps and other corpses.

Methods of Solid Waste Management

Solid waste management includes collection from designated sites within the community into vans to tipping sites. Then separation into each type, processing such materials, solids maybe taken for land fill for disposal, toxic ones for incineration, treating and recycling then final disposal. Danbuzu (2011)^[12] writes about different approaches to getting rid of trash, grouping them into four categories: controlled tipping, burning, recycling, and burial.

1. **Burial Method:** Under this strategy, trash is metaphorically buried, and undesired items like broken bottles, potsherds, or hygienic landfill composting are also connected to burying. The health of man himself is adversely impacted by this practice. For instance, due to the negative impact they have, no one wants a refuse-burial site nearby. Leachate, which frequently contaminates aquifers, wells, and boreholes, may be produced after the burial of organic material. No portable water for human use will be produced by the hole drilled on the grounds. It is well known that organic material produces heat when it is buried, which leads to the formation of biogas, also known as methane. Methane is capable of destroying vegetation if it can get far enough away from the source. it is capable of killing vegetation, which may hamper agricultural activities, and also has far-reaching effects on man.
2. **Burning (Incineration) Method:** According to some estimates, the average Nigerian generates 0.45 grams of waste each day. The composition and quality of the waste varies are influenced by the previously described criteria that govern waste disposal. Organic matter, which makes up between 60 and 80 percent of the overall waste, is the main component. Incineration is a popular way to get rid of trash, but it has drawbacks

because it only serves as a means to a goal rather than the end in and of itself. The waste is incinerated by lighting it on fire. When oxygen and low heat are combined, fire is created. At this stage, we can define incineration as the destruction of combustible waste utilizing direct flame and oxygen, with just a fifth of the original material being used for re-use. Its operation may then be said to be either open or close incineration.

3. **Controlled Tipping (Sanitary Landfill):** Sanitary landfills are designed to dispose of solid waste on land in a way that protects the environment by spreading it out in thin layers, compacting it to the lowest particle volume possible, and covering it with soil each working day. The most effective method of disposing of waste is a sanitary landfill because there is no residue and a wasteful piece of land is turned into something valuable.
4. **Recycling method:** Both terms are used to describe the recovery of specific solid waste components for discard. If other byproducts of pulverization, composting, and incineration are put to use for one or more purposes, it can be considered that they have been recycled or salvaged. The parts that are more amenable to recovery are those for which there is a market and which are present in sufficient quantities in the trash to warrant their separation. Paper, cardboard, plastic, glass, ferrous metals, aluminum, and other nonferrous metals that were left behind have all been recovered from solid trash. Paper mills, cardboard plants, steel rolling mills, aluminum plants, and plastic plants are some of the businesses that use garbage.



Fig 2: A refuse dumping site in Anambra State

Mainstream Media Use of Social Media Platforms for Environmental Awareness Creation

According to Maidunoma and Falmatami (2018), the media is a crucial public forum where we can learn about environmental challenges and the ways in which they are addressed, contested, and possibly resolved. People are made aware of things through radio, television, newspapers, and magazines. Due to the complexity and dynamic nature of natural systems, communicating environmental information can be quite difficult. To take into account the current environmental and social realities, the traditional relationship between science and society needs to be reevaluated and modified. It has been stated that effective information sharing between scientists, communities, and nongovernmental organizations can considerably raise the general public's knowledge of environmental issues with the aid of communication specialists. This occurs best when well-designed communication strategies are put in place. According to Nwafor, Bartholomew, Ochuba and Nwafor (2024)^[35], campaigning through print, broadcast, and digital

media is a strategic way to reach diverse demographic groups thereby making the solid waste management message to resonate with a vast audience.

Broadcast media plays a crucial role in creating environmental awareness and promoting sustainable development. With the advent of social media, mainstream media outlets have expanded their reach and influence, using platforms like Twitter, Facebook, and Instagram to disseminate environmental information and raise awareness about critical issues (Adebayo *et al.*, 2022) ^[2]. In Nigeria, broadcast media has been instrumental in highlighting environmental challenges such as pollution, deforestation, and climate change (Owolabi *et al.*, 2021) ^[45]. Social media platforms have enabled mainstream media to reach a wider audience, engage with citizens, and promote environmental activism (Taiwo *et al.*, 2022) ^[48].

Moreover, social media platforms have enabled mainstream media to collaborate with environmental activists, scientists, and policymakers, amplifying their voices and promoting collective action (Oke *et al.*, 2023). In addition, mainstream media has utilized social media platforms to promote environmental education and awareness campaigns, such as the #GoGreen initiative, which encourages individuals to adopt sustainable practices and reduce their carbon footprint (Adeleke *et al.*, 2022). Furthermore, social media analytics have enabled mainstream media to track engagement, measure impact, and refine their environmental awareness campaigns (Ogunyemi *et al.*, 2022).

Recent studies have highlighted the impact of mainstream media on environmental awareness and behavior change. A study published in the *Journal of Environmental Psychology* (2021) found that exposure to environmental messages through mainstream media significantly influences behavioral intentions and environmental concern. Furthermore, mainstream media has utilized social media platforms to promote environmental advocacy and activism, mobilizing citizens to take action on critical issues such as climate change and pollution (Oke *et al.*, 2023). However, mainstream media faces challenges in leveraging social media for environmental awareness creation, including the need for credible sources, information overload, and the spread of misinformation (World Health Organization, 2020) ^[52].

According to Maidunoma and Falmatami (2018), there are additional challenges that environmental journalism faces that are difficult to solve. For instance, there are occasionally bottlenecks where editors and program managers may not value and hence pay little attention to environmental news. The legitimacy of environmental issues and where that legitimacy comes from is another limiting element. As an illustration, significant environmental news is occasionally underreported in the country of origin until it is picked up by foreign media and given international publicity. However, in many nations, environmentalists and government organizations that deal with environmental issues have not established productive media relations and instead use the media to promote events and individual activities (Dobson 1997).

Despite these challenges, mainstream media continues to play a vital role in promoting environmental awareness and sustainability. By harnessing the power of social media, mainstream media can amplify environmental messages, mobilize public support, and drive policy change (United Nations Environment Programme, 2020). Thus, mainstream

media plays a critical role in creating environmental awareness and promoting sustainable development. Social media platforms have expanded mainstream media's reach and influence, enabling them to engage with citizens, promote environmental activism, and drive policy change.

The Need for Increased Awareness on Environmental Sustainability

To increase public participation in sustainable waste management programs, public awareness is a key strategy (Wahid, 2015) ^[51]. In addition to suitable laws, solid technical assistance, and sufficient financing, it is regarded as a crucial element in any waste management program. But according to Al Seadi, Owen, Hellström, and Kang, H. (2013, p.12) ^[6], "involve individuals in their own community decisions and actions to avoid "not my business"—syndrome, and assure "maximum participation." Before the actual implementation, it is helpful to increase public knowledge of the reason for the separation of food waste. Effective trash management requires increasing public understanding of municipal solid waste management. Moreover, effective solid waste management programs directly benefit from community involvement (Chukwunonye and Clive in 2022).

Korai, Mahar, and Uqaili (2017) ^[24] claim that a lack of infrastructure, public awareness, and inadequate pre-planning are the main causes of the poor municipal solid waste management in several African nations, including Nigeria. Furthermore, according to Abe and Didham (2017) ^[1], a healthy material-cycle and resource-efficient society is built from the ground up by raising public knowledge of good solid waste management methods. Furthermore, it was asserted that public capacity, which enables the public to carry out actual activities of each 3Rs component, is built on public awareness, which serves as its foundation. As a result, these deeds serve as the input for the advancement or "performance" of the 3Rs for a healthy material-cycle society. By influencing public awareness through their policies, practices, and operations, central and local governments, environmental NGOs, business owners, and the media contribute to "capacity development" (Abe and Didham, 2017) ^[1].

The public, according to Abe and Didham (2017) ^[1], can be characterized as "all members of society: ordinary residents, state and municipal government officials, lawmakers, NGO employees, corporate leaders, including small and medium enterprise (SMEs) owners. We cannot exclude everyone who has thoughts about the environment from the discussion of "awareness" because all viewpoints are valid. In order to describe "Public Awareness", it is also useful to define additional concepts that are closely linked. These terms, according to Abe and Didham (2017) ^[1], include:

Public Awareness: Acquired information and issues with the 3Rs, sustainable production and consumption, and resource efficiency that people have.

Public Knowledge: Developed knowledge of the 3Rs, sustainable production and consumption, and resource efficiency, as well as a fundamental understanding of these concepts among people.

Public Attitude: Acquired values, expressions of concern and interest, and personal motivation for taking action in support of the 3Rs, resource efficiency, and sustainable production and consumption.

Public Action: Individuals' behaviors, consumption preferences, and lifestyle choices that support or accommodate the 3Rs, resource efficiency, and sustainable production and consumption are called individual actions (Abe and Didham, 2017)^[1].

According to numerous research (Amasuomo, Omagbemi, and Syed, 2015; Umuhire, and Fang, 2016)^[7, 49], raising public awareness of environmental issues will enhance support for environmental protection. Their investigation will involve creating a questionnaire that will gauge students' attitudes, knowledge, and worries in order to determine their existing levels of awareness. Additionally, Han, Duan, Fei, *et al.* (2018)^[21] measured public knowledge in China using surveys and statistical techniques. They suggested that the development of household waste management programs requires public understanding of the nature and management of domestic trash. They also discovered that gender and age had no discernible impact on the general public's awareness of household garbage management. Han, Duan, Fei, *et al.* (2018)^[21] also came to the conclusion that improving environmental education, carrying out demonstration projects, raising people's incomes, and encouraging young people to get involved in domestic waste management are crucial for boosting environmental consciousness.



Fig 3: Cleaning up a refuse dumping site in Onitsha, Anambra State

Communicating Solid Waste Management Information through the Social Media

Communication is enigmatic and dynamic because its end product is meaning which comes as a result of interactions by interactants. It is a two-way process which dwells on dialogue and exchange rather than an exchange of inflammatory rhetoric. The functioning of organizations rests predominantly on the essence of communication. Evans (1990)^[16] posits that "good communications are essential to the efficient operation of any organization and vital to the fulfilment of all those who commit their working lives to it" (p. 25). Miller (2006) espouses that innovation communication is most critical to the functioning of organizations. According to her, "it involves the interaction about new ideas in the organization, how the job can be done better, new products the organization could produce and different ways of structuring the organization" (p.57). According to Baran (2013)^[9], communication is a "process embedded in our everyday lives that informs the way we perceive, understand, and construct our view of reality and the world" (p. 7). Corroborating this, Ojobor (2016)^[41] states:

Every development initiative revolves around communication. Scholars studying communication and development have remained interested in this position. All people who are anyway involved in the implementation of development projects now recognize its relevance. One such development project

where the power of effective communication is required to turn things around for the better is the work to maintain the Enugu city in South-Eastern Nigeria clean (p. 304).

The aforementioned, however, is a part of the dynamics of a communication strategy that, when properly conceptualized and put into practice, results in a behavior change that is required for communication. In reality, communication is a necessary component in every area of human endeavor. An old proverb that goes, "Man cannot not communicate," seems to support this claim. The idea that every living thing finds expression through communication further supports the argument. Since communication dynamics are what humanistic settings rely on the most, it is important to give the subject more attention than just a passing glance.

The communication fulcrum accentuates the relationship between man and his environment. This is the case because harmony, balance, and mutual understanding are the foundations upon which communication is built. Aesthetics and decorum interestingly show the hallmark of communication, just as the beauty of nature is based on radiance. With the aforementioned background in mind, Angell (2007) states that "our interactions with others occur during specific social situations, in different physical environments, and for a variety of purposes" (p. 8). Communication is complicated because there are so many different factors involved. There are many facets of human personality that each person brings to an interaction, a variety of message formats, channels, and the impact of the context, among other factors.

Without communication, the world around us would be a lonely place. The problem with waste management arises in this situation. There has always been a waste problem. It has changed over time and is dynamic. According to Emeribe (2000).

Unchecked urbanization, population growth, and rapid industrialization have all contributed to an extremely high rate of garbage generation. In this context, waste management becomes a major concern. This is due to the multiple risks to health and the general well-being that the environment produces when solid waste is disposed of on land without proper planning and management.

Environmental communication is defined in this context by Flor (2004)^[17] as "the application of communication to environmental management and protection through principles, strategies, and techniques" (p. 4). According to Flor (2004)^[17], the general systems theory serves as the cornerstone of environmental communication since it provides a framework for guaranteeing that every living system engages in:

1. Material exchange with its surroundings and other life systems.
2. Energy transfer with its surroundings and other biological systems.
3. Information sharing with its surroundings and other biological systems.

According to Flor (2004)^[17], these are essential for the continued existence of the living system. As can be deduced from the foregoing, communication is the single factor

required to keep man's environment functioning as a living system.

According to Pillman (2020), environmental politics, public involvement, and environmental education are typically linked to environmental communication. This can be extrapolated to concerns about information flow that is environmentally appropriate, involves communicators and audiences, and is accomplished through coding, effective message delivery, and participatory listening. Interestingly, Mohammad (2011)^[31] claims that environmental communication is "a tool for which environmental problems are scientifically solved by the scientists in the different fields of study". The implication is that, given that communication is a tool for creating ecological harmony and equilibrium, the environment is at its best when it is effective and efficient. The aforementioned scenario in developing nations where the environment appears to be seriously threatened by chronic unsafe and harmful practices.

Environmentally damaging behaviors appear to be a widespread occurrence in Rivers State and, by extension, Nigeria. This claim is supported by a UNEP report on Ogoniland. Environmental communication is nevertheless required in this regard. Awosusi and Akindutire (2016)^[8] have noted that in order to improve wellness and well-being, Nigerians in both urban and rural areas, regardless of their socioeconomic position, need to be made aware of good solid waste management. This is because solid waste management would be an impossible undertaking without effective instruction, orientation, and public awareness at all levels. In other words, effective waste management is dependent upon strong environmental communication and education.

According to Nwafor and Muoboghare (2022)^[37], social networking sites like Facebook have become extremely popular in recent years as a category of online discourse, demonstrating its significance in the distribution of supplementary information and in giving useful situational knowledge in times of crises. Through thorough coverage, public awareness campaigns, and strategic placement of solid waste related issues, the media can contribute to an improvement in the situation of environmental pollution. The introduction of social media platforms like Facebook, where solid waste related issues are reported by media platforms like ABS has contributed to the recent explosion in knowledge on this topic (Nwafor & Muoboghare, 2022)^[37].

Jiang, Fan, and Kleme (2021)^[22] assert that social media, as opposed to conventional publicity methods like posters and newspapers, offers a sustainable and ecologically beneficial publicity pathway in the field of solid waste management. For residents, it offers unparalleled convenience in at least three ways:

1. Social media information offers responsive access to the global society. For instance, @ WasteManagement, a subscription account on Facebook, had 181,464 active members as of August 22, 2020 (Facebook, 2020). Through social media, users are rapidly aware of the most recent rules, news, and opportunities. Social media can encourage garbage recycling (DEEP, 2020)^[13] and improve the participation of stakeholders by persuading citizens to take action (Knickmeyer, 2019)^[26]. This is because recent rules have an impact on behaviors and the related implementation (Mintz *et al.*, 2019)^[28].

2. According to Zamri *et al.* (2019)^[53], social media can offer immediate contact and input regarding their issues and recommendations. The ability of computer-based feedback systems to track recycling activity and provide feedback across the whole social network contributes considerably to segregation accuracy and nurture recycling behaviour (Knickmeyer, 2019)^[26].
3. Social media helps to increase people's desire to adopt more environmentally friendly attitudes by acting as a facilitator. When managers in Australia encouraged people to recycle and recover resources via social media, the response from the public was largely favorable (WMR, 2015). Wamuyu (2018)^[50] recommended using Web 2.0 and social media platforms to promote eco-friendly behaviors among citizens, including those in urban communities with low incomes.

The main objectives of social media publicity are to increase public knowledge of the environment (Mallick and Bajpai, 2019)^[30] and to affect/change public behavior, such as behavior related to recycling and waste reduction (Young *et al.*, 2017). Wang *et al.* (2018) looked at the indirect influence mechanism of information publicity on behavior and intention. To raise residents' awareness and direct public behavior on waste reduction, segregation, and recycling, the social media publicity and characteristics of a subscription account should be properly determined. There is a dearth of research on quantifying social media publicity in household waste management systematically.

According to Aldous *et al.* (2019), user involvement on social media can include things like views (Jiang *et al.*, 2019), likes (Ksiazek *et al.*, 2016)^[25], user-to-user interaction (Hu *et al.*, 2017), and user comments (Gaenssle and Budzinski, 2020)^[20]. Previous research found that a social media post's popularity linked to home trash management was connected to the time it was released (Ma and Chen, 2017)^[29], the title it was published under, and the themes it covered (Jing and Wei, 2016). To describe and enhance social media awareness connected to home trash management, practitioners and managers face considerable hurdles due to the lack of rigorous metrics and statistical analytics.

According to Ramzan, Liu, Munir, and Xu (2019)^[46], newspaper and television, internet, and social media accounted for 29%, 26%, and 45% of the 850 samples in a survey on the information channels for garbage recycling. In terms of spreading messages about trash management, social media (45%) seems to be an effective channel. Although digitization in waste management was still in its infancy compared to other industrial sectors, it was beginning to gain traction.

The widespread use of Facebook by both individuals and groups has led to judgments that it is a useful tool for educating the public and raising awareness. With over 1.60 billion members, Facebook has the broadest demographic mix of any social media site. It offers an exceptional means of reaching target audiences around the world. Social networking platforms like Facebook give opportunities to gauge public knowledge of solid waste management and provide access to information, claim Saha, Weber, Birnbaum, and De Choudhury (2017)^[47]. People can connect more through social networking sites like Facebook, which allows for the exchange of more information. Surfing

on social networking sites like Facebook relaxes and reinforces users, and it also contributes significantly to some efforts that try to modify people's behavior, including how they dispose of solid trash (Freeman, Potente, Rock, and McIver, 2015; Latha, Meena, Pravitha, Dasgupta, and Chaturvedi, 2020)^[18, 27].

According to Latha, Meena, Pravitha, Dasgupta, and Chaturvedi (2020)^[27], social media is becoming an increasingly effective tool for conducting activities, online courses, and classes and for educating people about a variety of socially relevant concepts. This is in contrast to face-to-face direct communication. Instead of the more conventional one-to-one and one-to-many personal contact, websites like Facebook enable many-to-many communication. For more than ten years, social media, particularly Facebook, has actively acted as a catalyst in changing the dynamics of communication and workplace culture. With the creation of Facebook in 2004 and the acceptance and increased use of social media, a drastic transformation occurred (Latha, Meena, Pravitha, Dasgupta, and Chaturvedi, 2020)^[27].

Discussion: Specific Ways through which Anambra Broadcasting Service Communicate Solid Waste Management on Facebook

According to Ballack (2011)^[10], television and radio broadcasting started on the 1st of October 1960 in Enugu, the Eastern Nigeria capital. The television wing has a two-camera studio, a control room and a 100 watts television transmitter. The radio system comprised one recording and a continuity studio with a medium and a short-wave transmitter. The Eastern Nigeria broadcasting corporation (ENBC) as it was called then became Radio Biafra during the Nigeria civil war. It was renamed the East Central State Broadcasting (ESBS) after the civil war. It changed to Anambra Broadcasting Service with the creation of Anambra and Imo states in 1976. After acquiring the radio arm of the station, the Federal Government renamed it Anambra broadcasting corporation (ABC). The radio wing remained untouched. In 1982, ABC Radio 2 Onitsha was born. In 1981, Governor Jim Nwobodo established another television station that merged with the radio with the appellation, ABS Radio/TV Enugu.

Ballack (2011)^[10] notes that with the creation of the New Anambra and Enugu State in 1991 and the disengagement of staff on the 16th of March 1992, the Anambra Broadcasting service Enugu gave birth to Anambra Broadcasting service Awka, and Enugu state broadcasting service Enugu (ESBS). The first movement after the creation of states was to 4 park road GRA, Onitsha. From there, the headquarters moved to St. Paul's University College Awka in January 1994. The ABS finally moved into its permanent site on the Enugu/Onitsha expressway in Awka in January 2002.

Over the years and having undergone various changes, the station now has four operating areas. They are:

1. The 90.7 FM Radio station at Awada, Onitsha.
2. Channel 27 Television station at Awada, Onitsha.
3. Channel 24 TV and Radio 88.5 FM at the ABS headquarters Awka.
4. The booster station at Ugwu Akpi, Enugu-Ukwu.

In Addition, Anambra Broadcasting Service has extended its reach to various social media platforms like Facebook, Pinterest, Twitter and LinkedIn. It has used these platforms

to reach numerous audiences through textual, video, audio and pictorial messages which also feature information on Solid Waste Management in Anambra State. The following are the specific ways thorough which ABS communicate solid waste information on Facebook.

Audio Messages: Anambra Broadcasting Service uses audio-based content to disseminate information on solid waste management to their audience on their various social media platforms, especially Facebook. This they do by uploading the audio file of their news, advertorial, announcements, programmes, jingles, music etc relating to solid waste management on their Facebook page and their website for effective information dissemination. These audio messages come in either Igbo language, English Language or both. The used of audio in disseminating information on social media is important because according to Ashwin (2021), audio-social platforms allow the user to hop in and join a conversation of interest without having to scroll or stare at a screen. It takes the concept of a podcast to the next level. The skyrocketing usage of audio-based social media is giving birth to a lot of hip tools like Clubhouse, Discord, Swell, Twitter spaces, and others. As people seek a way to overcome fatigue, they are connecting via voice, whether through phone calls or voice texts.

Video Messages: Also, Anambra Broadcasting Service uses video-based content to disseminate information on solid waste management to their audience on their various social media platforms, especially Facebook. This they do by uploading the video file of their news, advertorial, announcements, programmes, jingles, music, events etc. relating to solid waste management on their Facebook page and their website to effectively disseminate information solid waste management. This video messages come in either Igbo language, English Language or both. One example is the video depicting the cleaning of Okpoko slum in Onitsha South Local Government Area. People view these video messages and share their thoughts and opinions regarding government's strategy for solid waste management in Anambra State.

Pictorial Messages: Anambra Broadcasting Service also uses picture-based content to disseminate information on solid waste management to their audience on their various social media platforms, especially Facebook. This they do by uploading the pictorial news of their news, advertorial, announcements, programmes, events and activities etc relating to solid waste management on their Facebook page and their website for effective information dissemination. These audio messages come in either Igbo language, English Language or both. Most extensively, ABS uses pictures to show public participation in the monthly environmental sanitation in Anambra State, arrests of violators, participation by prominent individuals and disposal of solid wastes littered in various streets in Anambra State by Anambra State Waste Management Agency (ASWAMA).

Textual Messages: Most extensively, Anambra Broadcasting Service uses textual content to disseminate information on solid waste management to their audience on their various social media platforms, especially Facebook. This they do by uploading mostly news and announcements relating to solid waste management on their Facebook page and their website for effective information dissemination. These textual messages come in mostly English Language and/or Igbo language.

Conclusion

The utilization of social media platforms, specifically through the Anambra Broadcasting Service Facebook messages, presents a promising avenue for disseminating crucial information about solid waste management. Through this review, it is evident that these platforms serve as effective tools for raising awareness, educating the public, and fostering community engagement towards sustainable waste management practices. Leveraging social media in communicating such vital information not only bridges information gaps but also encourages collective action and participation in achieving sustainable development goals related to waste management. Moving forward, continued exploration and strategic utilization of social media can significantly contribute to promoting environmental consciousness, shaping positive behavioral changes, and ultimately fostering a more sustainable future for Anambra and beyond.

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