



EFFECTIVENESS OF SOCIAL MEDIA CAMPAIGNS AGAINST SINGLE-USE PLASTICS AND WASTE DISPOSAL IN ENUGU STATE

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Abstract

This study sought to ascertain how effective social media campaigns against single-use plastics have been on some residents of Enugu state, Nigeria. The study was anchored on technological determinism theory and planned behaviour theory. The technological determinism holds that social media post on the negative impact of single-use plastics would attract comments from users while the theory of planned behaviour affirms that people have the ability to act on the information they are exposed to, either develop a positive or negative disposition towards consumption and of single-use plastic or its waste disposal. Survey design was adopted by the researcher whereby the questionnaire was used as instrument to elicit information from 384 respondents who made up the sample size derived from the Wimmer and Dominick calculator. Data analysis revealed that the respondents at a mean value of 2.5 and 3.2 were aware as well as knowledgeable towards social media campaigns on single-use plastics that educate the masses on the indiscriminate disposal of plastic waste and the harm done to nature with plastic pollution in the environment as well as its dangers to human health. Further analysis showed that though the respondents at an average mean of 2.8 exhibited a positive attitude towards the care of environment, however at a mean value of 2.2 failed to put this into practice as they often dispose the plastic containers in drainage and equally burn them. The researcher therefore recommends that the social media platforms should constantly be used to create, raise and disseminate campaign message on single-use plastic.

Keywords: Social media, plastic, campaigns, waste disposal, single-use

Introduction

Single-use plastic is any plastic material or item that is used once, and then discarded, according to (GREENPEACE Africa, 2021). It goes on to list some ninety-two single-use plastic materials such as plastic bottles used in packaging drinks especially water, food takeaway packs, straws, plastic cutlery, water sachets, plastic shopping bags. A similar definition by NRDC, (Natural Resources Defense Council, 2024) described single-use plastics as goods that are made primarily from fossil fuel-based chemicals (petrochemicals) and are meant to be disposed of right after use—often, in mere minutes, and most commonly used for packaging and service ware, such as bags, bottles, wrappers, and straws.

Going by this, it would seem that an average Nigerian home uses at least five items of single-use plastic each day, most of which are water sachets or water bottles, and from shopping for the household in which almost every item bought in the markets is packaged with polythene bags, all of which have the tendency to generate huge amount of single-use plastics wastes and considering the population of Nigeria which according to the United Nations (World Population Prospects data for 2019); which stands at 216.7 million people. Food outlets and other businesses depend solely on single-use plastic packages because they are considered cheap and handy but often without thoughts to managing the wastes generated, or

conscious of the fact that these plastic materials litter the environment and are serious potential hazards to humans and the environment.

Unimaginable, it seems for the world presently to do without plastics, according to Oakes, (2022). Quest for quality living across the world is unending, leading to the rapid production of plastics and demands for usage. In the 1950s, production of plastic to a great extent outpaced that of any other material, with shift from the global production of durable plastic to single-use plastic (including packaging), becoming a household name in every manufacturer-abode based on the low cost of material and production, durability, light weight, cost of as well as availability (United Nations Environment Programme, UNEP 2018).

Marriage between jet age and discovery of plastic gave birth to the novel industrial revolution that has transformed the world we know. From computers to mobile phones, to home appliances to industrial packaging, cosmetics, and even space stations, all carry tangible amount of plastics. (Verma et al, 2016), explains that apart from their major usage in packaging, automotive and industrial applications, they play important role in medical delivery systems.

Unfortunately, the same properties that make single-use plastics valuable also contribute to the disposal problems because of its non-degradable nature.

This is a major environmental concern which contributes to health and environmental hazards. (Hopewell et al., 2009) observes that, in many cases, packaging and sheeting plastics are discarded after being used just once, and they persist in the environment. Some past and ongoing studies show that plastic production is to a great extent subject to a non-renewable resource known as fossil hydrocarbons. At this growth rate of plastic production, by 2050 the plastic industry may reach twenty per cent of the world's total oil consumption, according to (World Economic Forum, 2016).

Plastic pollution wherever it is found, at the beaches, along the coastlines, in the oceans contribute to climate crisis that impacts vulnerable communities first. For instance, Nigeria ranks high among nations globally for the pollution of the marine environment and with little or no government regulation on single-use plastic products, (Henderson and Dumbili, 2021). It is expedient that these problems be addressed consciously and even though a plastic free world may not be possible, its use can be controlled. While many people find single-use plastics useful, and in fact as a part of daily life, it appears as if not much thought is spared for its negative side due to ignorance on the part of the people and lack of enforcement of existing laws on plastic waste management, on the part of government. This is why many non-governmental organizations promoting environmental issues including fight against plastic pollution often adopt behavioural change campaigns in the media to push for change and to create awareness.

In the present age, the social media has become a converging point for all other media of communication and has the potential to reach a larger audience than any other media of communication. Zoha (2019), explains that social media can reach a large audience, raising awareness on issues of plastic pollution as environmental hazard. The social media has the power to push such campaigns in front of the people especially subscribers and with increased likelihood of arousing the interest of the masses and regulatory bodies to address the menace. The danger of single-use plastics to human health and the environment underlines the urgent need for the government, corporate organizations and citizens to collaborate in cleaning up the plastic clutter and reducing the dependence on single-use plastic products, and this work explored the effectiveness of social media in carrying out such a campaign focusing on Enugu state, Nigeria.

The appeal and wide acceptance of single-use plastics for almost all the sectors of the economy all over the world has made it unarguably, a utility product for all times. However, there's also a consensus on

the threat to human existence, which is succinctly summarized in a statement by the United Nations Programme on Environment on its website, “Our Planet Is Choking On Plastic”. It further explains that while plastic has many valuable uses, people all over the world have become addicted to single-use plastic products with environmental, social, economic and health consequences. In fact the danger posed by single plastics to living beings and the environments on the planet earth has been widely documented by researchers, organizations and entities.

Various local and international organizations have continuously embarked on campaigns in the mass media to raise awareness on the menace of single- use plastics. For instance, Free Plastic July is an initiative of an international organization, Plastic Free Foundation to focus and drive awareness on single-use plastics in the media all through the month of July each year since twenty-eleven. The campaigns are highlighted on the social media using #plasticfreejuly. There are many other such campaigns on social media, including #BeatPlasticPollution, and#PassOnPlasticEmoji.

In the search for solution to plastic pollution, efforts to curb the menace are often focused on awareness creation among members of the public expected to engender actions and attitudinal change towards single-use plastic in the society. On its website, campaignthatwork.org observes that campaigns around the world have undoubtedly increased awareness of plastic pollution in some cases, and in some others drive action. The question however, is whether the campaigns have effectively influence the people toward more environmental friendly consumption choices?

Statement of the Problem

Plastics are convenient for packaging and mostly in the manufacturing sector and in other areas; and the benefits are numerous, undoubtedly, fueling the dependence on single-use plastics even with the growing concerns about its effect on human health and the environment. Dumbili et al., (2020), put the quantity of single use plastics generated on daily bases in Nigeria from sachet water and bagging alone at sixty million, and these are mostly indiscriminately discarded. Due to poor waste disposal habit common among the citizens of throwing away the thrash on the roadsides, under bridges, and gutters especially during rainfall, these plastic waste materials end up on the land and marine environment.

While there have been various governments and organizations continuously carry out campaigns using both the old and new media to raise awareness and proffer solutions to the issue of single-use plastics, the problem seems to be worsening. The growing influence of social media on every facet of human life, especially in effectively shaping opinions and driving engagement and participation in areas such as politics, entertainment, religion, etc, motivated this study. It therefore explored the potential of the social media as an effective communication strategy in informing and educating the society about the downsides of single-use plastics to achieve the desired goal; that is mobilizing stakeholders to take responsibility in reducing the dependence on single use plastics, and ensuring proper disposal of the wastes. Also considering the fact that social media currently serve as the convergence point for all other media of mass communication Sacco, (2016), and the study sought to discover how effective the social media can be in educating and influencing the residents of Enugu state in southeast Nigeria in adopting a more responsible attitude towards the single-use plastics use and waste disposal through targeted campaigns by highlighting dangers of over consumption, poor disposal attitude and consequences to humans and the environment.

Research Question

In order to find answers to the issues raised by the topic of this study, the researcher developed the following research questions:

1. Do social media campaigns raise awareness on single use plastics among residents of Enugu state?

2. What is the level of knowledge of people of Enugu state to social media campaigns on single-use plastics?
3. What is the attitude of Enugu State residents' towards single-use plastic based on the campaign message on social media?
4. Do the social media campaigns on single use plastics influence the waste disposal habits of people of Enugu state?

Literature Review

Social Media: An Overview

The social media as the 21st century social and mass communication tools has to a great extent influenced the diffusion of information and social interactions. While the social media have been extensively discussed across various fields of human endeavour, there's yet to be a universally accepted functional and theoretical definitions of the term within communication studies, Achor, (2017); Carr et al, (2015); Lee et al, (2015) and Kent, (2015).

The rising popularity of the new media in the country has recently spurred researchers such as (Onyebuchi et al, (2016) and Okoli, (2019) to investigate its ripple effects on other fields of endeavours, education, politics, health, the economy, to mention but a few. Research evidence has shown that in these sectors, the social media platforms have the power to increase access to vital information that help people to make informed decisions. Social media is considered a shift in how people access information, including news and other and contents either in the form of text, audio, video or graphics, albeit a more interactive way of communication such as Facebook, Twitter, WhatsApp, Flickr, YouTube, Instagram, Google+ and so on.

The social media has gained wide acceptance in Nigeria, in spite of the nation's technological backwardness, thus increasing the awareness among the people on critical issues especially in politics across the country. Just as many other countries across the globe, Nigeria no doubt has achieved some significant presence in the online space or internet-based community going by the number of web blogs created and hosted by Nigerians to enable people to share their opinions or views on trending issues, (Nwabueze, 2014). Such blogs include Nairaland, Gistlover, Naija.com, Pulse Nigeria, Topic.net and Amana online. In fact, Nigeria was credited with an online population of 42 million people, as at July 2009, with about 475 Nigerian blogs, (Nwabueze, 2014) and the figure may have increased considerably over the years. Some of the popular social media platforms used in Nigeria are Facebook, twitter, Instagram, Whatsapp, Google plus, You Tube and blogs, Achor, (2017), Chukwuere et al,(2018). These forums are used not just by ordinary citizens, but also groups and organizations to discuss issues of personal interest or those that are of corporate, national or global importance.

In addition to the content in virtual networks and communities, social media is the social interaction among people where they produce, share, or trade ideas, thus creating significant and pervasive changes in how organizations, communities, and individuals interact. Many research works identify social media as apps on a smart phone or tablet, but the truth is that computers were the first communication instrument. This seeming misunderstanding originates from the fact that the majority of social media users utilize mobile phones to access their tools. Some other studies describe social media as a form of online social engagement that makes use of easily available publishing techniques. At the end of the day, social media is about users communicating with other users; it has no inherent good or negative qualities.

Social media is subset of the new media. It is a novel method of disseminating developmental information to individuals. "Those digital media that are interactive, feature two-way communication, and entail some type of transportation (Neese, 2016). These routes of communication have far-reaching

repercussions for society, including politics and business (Neese, 2016). The emergence of the social media has improved internet communication between people all over the world. Logan (2010), as mentioned in Neese (2016), backed up this claim by stating that "social media" refers to interactive digital media that feature two-way communication and some sort of computer, such as websites, streaming, chat rooms, audio and video, email, online communities, and so on.

Evolution of Plastic: An Overview

Modern plastics were derived from Bakelite, invented in 1907 by the Belgian- American named Leo Baekeland. Chronicling the origin of plastics, Chalmin (2019) believes that Leo Hendrik Baekeland may have first used the term "plastic materials" to refer to the products made from a combination of resins, elastomers and artificial fibers in 1909. (Chamin, 2019) further observed that the major inventions in plastics came between the two World Wars: the cellophane in 1913, and then polyvinyl chloride in 1927, followed by polystyrene and nylon in 1938, and polyethylene in 1942. It was the first synthetic plastic to be derived from fossil fuels.

Plastics have very important uses, especially in the manufacture of items such as surgical gloves, plastic cutleries, straws, etc. Tell (2022), referencing a 2017 study, observes that more than half of non-fiber plastic, excluding synthetic fabrics such as polyester and nylon, comes from plastic packaging alone, which are mainly single-use items. Simply put, single-use plastics are materials made basically with chemicals from fossil fuel, (petrochemicals) for just one single or one time use and then thrown away or discarded—often, in mere minutes. These materials are in most cases disposed indiscriminately, especially in developing countries.

The over consumption or addiction to single use plastic unarguably impacts negatively on the climate. A recent report, Plastic Waste and Climate Change - What's The Connection by Kerri Major, published in the wwf.org.au explains how the processes in the production of plastic contributes to greenhouse gas emissions resulting in earth-warming at every point in its life cycle. How the process through which materials for plastic production, oil and gas were sourced, leads to methane leaking and flaring, often resulting in the destruction of forests and wetlands. Lindwall (2020), observes that without reduction in plastic production, greenhouse gas emissions generated from the process could rise up to 1.34 gigatons per year by 2030.

According to Dumbili, (2020), Nigeria was ranked ninth among countries for pollution of marine environment, and believed to have released up to 0.34 million tonnes of plastic waste into the ocean in 2010, even as global plastic production is projected to rise in the next 10 to 15 years.

Despite the usefulness of the single use plastic products, there are growing concerns about its dangerously unhealthy for human life and the environment, succinctly summarized in a research by Rustagi et al, (2011) thus, "One of the most used materials in today's industrial world, plastic poses a serious threat to the environment and health of the consumers directly and indirectly in many ways". It further expatiated that, in addition to the harm caused by chemicals that escaped into the environment during production, the plastic materials leach into the food items stored in them, and their use are linked to some major adverse health issues such as cancers, birth defects, developmental and reproductive effects etc.

Globally, many countries are churning out or refining policies to cope with the huge and growing quantity of discarded plastic materials threatening to choke their environment, while most developing countries are yet to wake up to the danger that the mountains of plastic wastes pose to their overall wellbeing currently and in the future. Ultimately, tackling what experts have termed one of the biggest environmental menace of our time will require a paradigm shift and collaboration of governments, businesses and citizens. While there have been various efforts and campaigns in the media, such as Community Action Against

Plastic Waste, Single Use Plastic-2021, Pick Up Plastics Initiative, Plastic Tide Turners Challenge, etc, to raise awareness and subsequently seek solution to the problem; and with the growing influence of the social media on every aspect of human life, this study explored its potential as effective communication strategy in the campaigns on single-use plastics to achieve the desired goal, that is mobilizing every stakeholder to take responsibility in checking the dependence on single use plastics and the attendant problems.

Also considering the fact that the social media currently serves as the convergence point for all other media of mass communication, according to Sacco, (2016), this study therefore explored the effectiveness of the social media in the campaigns against single use plastics in Enugu state, Nigeria to not only prod policy makers into taking action, but also offer insights that may be useful to them in handling the plastic situation in other parts of the country. It would also provide a blue print for organizations and individuals who are considering policies to tackle the problem of single use plastics.

Single-Use Plastics

Any plastic product that can be used only once and thrashed or discarded is designated single use plastic, according to GREENPEACE.org. These include plastic materials used in packaging, plastic cutlery, plastic shopping bags, etc. The word was derived from a phrase in Greek, *plasticos*, meaning an attribute to its malleability but only at a certain high temperature.

Plastics are categorized into, natural, semi synthetic, and synthetic plastics. However, only one of these categories have relevance to this study and that is synthetic plastics.

Synthetic Plastics - these types of plastics are made from a process described as the decomposition or 'cracking' of molecular structure of carbon-based materials such as coal, crude oil or gas. This process involves subjecting such materials to pressure and heat to produce the type of plastics mostly in use today.

Two other categories of synthetic and semi-synthetic plastics are classified based on their reaction when heated, the thermoplastics and thermosetting plastics. Thermoplastics melt under heat and can be shaped or reshaped into a desired mold when cooled and can be reheated and remolded again and again. Styrene and acrylics are the most common and perhaps the largest occurring examples of thermoplastics.

Thermosetting plastics- this type of plastics do not soften or get molten when reheated, but would rather mellow and melt under high temperature, according to BBC Science. When molten they can be shaped into the molds into which they were placed before cooling but afterwards they become permanent in those shapes and any attempt to further subject them to heat will only make them brittle or burn. Polyester resins, used largely for glass reinforced plastics are a good example of thermosetting plastics.

Single Use Plastics and Human Health

Numerous earlier researches on single use plastics have highlighted the injurious nature of single use plastics to human health towards human directly or indirectly. Research by Gingery and Vyda, (2020) shows that plastics contain hazardous chemicals that can leach into water, food ingested by humans, such as endocrine-disrupting chemicals (EDCs) that negatively impact on human health. The report described huge evidence proving direct cause-and-effect links between the toxic chemicals in plastics, and specific health impacts to the endocrine system. According to Lindwall, (2020) exposure to microplastics, and chemicals used in manufacturing plastics are harmful to health as they can disrupt the endocrine, resulting in conditions such as hormonal imbalance, infertility, and even cancer.

Kenarlı (2022) citing an interview with head of the Turkish Institute of Environmental Sciences, Bogazici University, wrote: left unchecked, the world plastic production would hit one billion tons annually by 2050, with the attendant health and waste problems.

Though environmental experts have warned against the risks of single-use plastics use, to not just to public health but also the environment as well, they are proposing a shift to safer alternatives.

Single-Use Plastics and the Environment

Dumbili & Hendersson (2020) found that in Nigeria is grappling with widespread plastic pollution as a result of continued production of huge quantity of single-use plastics without effective disposal strategies for the resultant plastic wastes dumped on the land and marine habitats. The study records that, more than sixty million plastic sachet water bags and sachets are discarded as waste on daily basis in Nigeria, in addition to other single-use plastic materials. These materials find their way into the land marine environment because of the poor waste disposal culture of indiscriminate dumping of refuse on any available space.

The history of human development, progress of humans has often closely linked with the management of solid waste considering the implication for both public and environmental health, Nathanson, (2015). One of the earliest of waste management initiative dates back to the 4th century A.D. with the Ancient Greeks who were faced with the challenges managing the huge waste being generated as its population increased. Then, waste management practices were basically about collecting trash and conveying them to pits outside the city. However, with the urban population explosion and corresponding generated garbage such practice became ineffective. The plagues experienced in Europe between the 14th and 16th centuries were attributed to pests which thrived in the unsanitary urban conditions prevalent at the time. It was at this during this period that waste-management techniques began to be developed to check the spread of disease (Nathanson, 2015).

The rapid rate of the development in Europe and the United States resulted in an increasing amount of wastes. This raised huge concern enough to signal an era known as the “Age of Sanitation”. Communities got involved in managing wastes in order to maintain public health. It was only in the latter part of the 19th century and into the 20th century that technological advancement churned out garbage cans, incinerators, sanitary landfills and other waste management systems that replaced the practice of dumping wastes in the open, Hoorweg and Giannelli, (2007). Waste management systems continued to evolve, with the help of technology, policies and regulations, helped dramatically improve the waste management industry. Unfortunately, these evolution or revolution in waste management are still a mirage countries in the developing countries of world where management of waste is still quite dire, at a level that can be best described as crawling stage.

For instance, people in the developing countries are known to adopt waste disposal methods that have negative impact, if not outright destructive effect on human health and the environment, such as dumping waste in the open, burning and use of unregulated landfills due to their ignorance of other options for managing their solid waste, AlaviMoghadam et al., 2009; Narayana, 2009. Industrial development, matched with rapid urban growth, raised major concern for solid-waste management in many developing countries. With the world continuously developing and getting more urbanized with rapidly populations rising, consumption rate is shooting up to historic levels, and the vicious cycle is completed by the corresponding huge quantity of solid waste generated, (IPA, 2014).

Narayana, (2009), suggests that waste can have an unfavourable effect, on both environmental and human health going by a study conducted in India where discovered that people who stayed close to where wastes were dumped openly or burnt, developed some health conditions due to dangerous toxins that were released into the environment, such as dioxins, known to cause cancer and other health impairments.

Social Media Campaigns and Single -Use Plastics

Rapada et al, (2021) states that social networking sites have become popular for information sharing, including personal opinions, citing a study conducted by Borg et al, on the use of social media to publicize or disseminate policies on the ban the use of plastic bags in Australian supermarkets. According to study, announcement of the ban on single-use plastics was initially received positively, but at the implementation stage it recorded reduced support.

According to Obayi, (2022), the social media enhances awareness of people on various types of issues in the society through the internet, and further adjudged the social media as effective in enlightening the public on the downside of single-used plastic. A study by the Stockholm Environment Institute and the One Planet Network, “Reducing Plastic Pollution: Campaigns That Work”, with lead author,; Ellie Moss, states, “the power of individuals may be summed up best in a meme which shared on social media with the message, “Stop buying crap and companies will stop making crap”. While the message was not elegantly phrased, it aptly captures the inherent supply-and-demand dynamic that drives the market-based consumer economy. This goes to show that given sufficient information and transparency, people can choose a more sustainable product over a less sustainable one, whether it is just a product or an idea. According to the study, the ability of individuals to make decisions about plastic products consumption or packaging that consider characteristics such as reuse, use of recycling or other sustainably sourced feedstock is dependent on the individual’s access to information.

Zoha in Obayi, (2022) explains that social media is capable of reaching large audiences with the aim of highlighting plastic pollution as an environmental hazard. Further citing Phelan, Ross, Setianto, Fielding and Pradipta (2020), Obayi explains that though plastic pollution is clearly regarded as a world crisis, as many coastal communities still have huge quantities of plastics in the waters where they fish, and in their beaches. Nunna (2018) states “...several campaigns against single-use plastic at different times have been flooding the social media, such as #SayNotoPlasticFlag, #ZeroPlasticHero, #PlasticFreeJuly, #NoFilterNoFuture, #BeatPlasticPollution, #PassOnPlasticEmoji, #plastictideturners”, etc. Rapada, Yu and Yu, (2001), believes that such campaigns effectively promote pro-environment choices.

Empirical Review

Numerous studies have been carried out on media campaign of plastic pollution, solid management and environmental degradation. Various studies sought to identify the knowledge, attitude and practice of people towards the aforementioned subject. One of such studies was carried out by Nnadiukwu and Omeje (2019) to ascertain the effects of mass media campaigns against environmental degradation in Nigeria; Enugu State was used as a case for the study. It was found that the mass media campaigns were effective but not total in effect. Going by the findings from interactive sessions that the media stations in Enugu did not go beyond their news programmes in providing information on environment to the public, it was recommended among other things that they should mount standing programmes dedicated to the environment for adequate enlightenment and education of the public.

Akpoghiran (2015) in the study examined the influence of the broadcast media enlightenment campaigns on solid waste management for positive attitudinal change in the South-South Geo-Political Zone of Nigeria. In order to determine the relationship between public awareness of the broadcast media and attitudinal change towards solid waste management enlightenment campaigns, survey research and content analysis methods were adopted. Results obtained showed irregular and poor enlightenment campaigns by the broadcast media on solid waste management in all these states. This resulted to poor attitude to waste management by inhabitants. The result also showed that positive attitude towards solid waste management depended on regularly broadcast media enlightenment campaigns. However,

responsible environmental behaviour remains the best approach to solid waste management and other environmental problems.

Ben-Enukora et al. (2017) in their study on the awareness and perception of media campaign on E-waste effects among residents of Ado Odo-Ota, Nigeria investigated the level of awareness of the respondent's and knowledge of e-wastes through the media, and subsequent attitude towards the issue. Findings of the study revealed that while the respondents' knowledge of the dangers of e-waste through media exposure was significantly low, and the broadcast media and internet identified as key information sources, residents encountered e-waste issues less frequently in the news. Awareness of the effects of e-waste on health and issues about the environment were also low as they did not perceived them to be a serious consequence. This consequently resulted to an unresponsive attitude toward resolving the problem. So in addition to using the traditional media and the social media in enlightenment campaigns, the researcher recommended that interpersonal communication channels should also be adopted.

Akpoghiran & Okoro (2014) in their study on adopting broadcast media sensitization campaigns for solid waste management employed the questionnaire as instrument of data collection from respondents. Results of the study showed that the broadcast media carried out awareness campaigns on solid waste management, however, attitudes of residents towards solid waste management was found to be poor. The researchers therefore recommended that a more regular and aggressive campaigns should be done by the broadcast media to keep educating people on solid waste management.

Further, Uba (2021) examined the extent to which young people engage with and are influenced by issues of plastic pollution. Utilizing an online platform, the study conducted an anonymous survey of 43 Nigerian youth members of an environmental organization, aged between 18 and 24. According to demographic data, majority of the participants were actively involved in combating plastic pollution in Nigeria. The findings indicated widespread agreement among participants regarding the importance of employing awareness campaigns, peer influence, social and behavioral interventions, and economic incentives.

Srinivasan et al. (2019) carried out a study to find out the level of knowledge and practice on plastics among 563 students pursuing certain professional courses at Annamalai University, Tamil Nadu. The researchers assessed knowledge based on the ill effects and reuse, while practice was assessed in terms of usage and disposal. Findings of the study showed that while the students had adequate exposure on the negative effects of plastics, their practice and disposal habits of the plastic was poor.

Chin et al. (2022) in their study on the knowledge, attitude and practices toward plastic pollution among Malaysians and also the socio-demographic factors that influence their perception on plastic pollution. Using the online survey, the questionnaire was shared on Facebook, Messenger, WhatsApp, Instagram, and Telegram to elicit information from 302 residents in Malaysia. Result of the study indicated that majority of the respondents had poor knowledge and practice towards plastic pollution. However they had positive attitude towards the subject of discourse; age, education and occupation were found to be the socio-demographic factors that influenced them. The researchers thus recommended that authorities should create environmental awareness, incorporate plastic pollution topics in both formal and informal education, and provide recycling facilities nearby the localities and incentives to encourage residents' pro-environmental behaviors.

Study conducted by Hamza and Mahmoud (2023) takes a critical look at the knowledge, attitude, and practices of the public consumers towards the uses and health hazards of different plastic products in Assiut city. The study adopted cross-sectional study whereby a self-administrated questionnaire was adopted to gather information from the 477 participants. Findings from the study indicated that mass media served as the primary source of information on the uses and dangers of plastics. The study also found that

though the knowledge and practice of the respondents were low; their attitude was found to be high. The researcher recommended educating the public more on hazards inherent in single-use plastics use.

Arikenbi et al. (2023) assessed the effectiveness of mass media campaigns in promoting environmental sustainability in Nigeria. Survey method of data collection was adopted by the researchers, and data were collected using the questionnaire. Findings indicate that mass media campaigns are significant in raising the awareness of the public on environmental issues in Nigeria. The media thus has successfully communicated the urgency to protect the environment and the consequences of unsustainable practices.

Rapada et al. (2021), analyzed whether the influence of social media on consumer behavior towards plastic products. The survey included 213 individual observations wherein four information posts that represent the overall facets of plastic usage problem were presented. The scenarios included (1) a general information post on sachet use, (2) an information post discouraging use of plastic bottles in celebration of zero waste month, (3) an information post on the adverse health effects of plastic food storage and (4) an information post on the harmful effects of plastic use to marine life and its indirect effect to human health. Results show that, prior to any information, most participants consume products in plastic packaging except for the usage of single-use plastic containers for storing food. For the first three scenarios, it was found that social media intensified the probability of avoiding plastic consumption when the likelihood on the involvement of self-interest on the topic, as well as the ability to read the link attached to the post, increased. However, for the scenario that showed harmful effects of plastic use to marine life, the probability of avoiding the use of plastic packaged products after seeing the post was only affected by the likelihood that the respondent would recommend the link to friends or network. This study established that social media could effectively influence consumer behavior towards plastic consumption if the information presented are from confirmed studies that could easily translate to results based on their own action and has a direct impact on their health.

In the study, #PlasticFreeJuly – Analyzing a Worldwide Campaign to Reduce Single-use Plastic Consumption with Twitter by Heidbreder et al., the researchers analyzed the messages people spread within the scope of the campaign and presented the results of a Twitter analysis based on data from July 2018, which assessed 16,363 tweets linked to the hashtag #plasticfreejuly. User structure showed that private individuals and shops frequently used this hashtag. Simultaneously, a content analysis revealed that consumption patterns mentioned in the tweets referred not only to boycott (e.g. avoidance of plastic straws) but also to praising reusable coffee cups as forms of political consumption. The three R's of waste management – reduce, reuse, recycle – were frequently mentioned in the tweets. Thus, the empowerment of consumers was promoted by solution-based rather than problem-based communication.

Theoretical Framework

The researcher reviewed various theories that described the role of the social media in influencing attitudinal change and considering that the topic here is primarily concerned with the effectiveness of campaigns through the use of social media, the researcher adopted Technological Determinism Theory and Theory of Planned Behaviour as suitable theoretical framework for the study to be able to explain in detail the variables such as social media, and single use plastic in the study. Due to these variables using one theory would not be sufficient enough to explain the phenomena in the study hence the need for anchoring it on the above mentioned theories.

Technological Determinism Theory

The term ‘technological determinism’ was coined by Thorstein Veblen in 1929, and this theory proposes that technology in any given society defines its nature, the idea that technology defines the nature of a society.

According to McQuail (2005), Harold Innis was the first to establish this theory, which was then expanded and popularized by Marshall McLuhan. The theory's central thesis is that media are extensions of the human body. According to this hypothesis, the media not only affects people's environments, but also the messages they receive. New perceptual habits are introduced by the media, and new surroundings are created by its technologies. New media are not only an addition to existing media, they are also new technologies and therefore do have a deterministic factor as well. Marshall McLuhan made a famous statement that “the medium is the message.” This means that the medium used to communicate influences the mind of the receiver. The introduction of news print, television and the internet have all shown how technological advances have an impact on the society in which we live in.

At several levels, technological determinism reveals itself. It begins with the introduction of modern technologies, which introduce numerous changes and, at times, can also result in the loss of old knowledge. To illustrate the shift into each new epoch, McLuhan employs three different technology breakthroughs. Because of each new technical breakthrough, each new time was pushed from one to the next. Modes of communication, according to McLuhan, have revolutionized civilization. Scholars such as Giffin believe McLuhan linked the growth of western civilization to the mediums accessible for human communication, such as the tribal age, literate age, print age, and electronic age.

The theory is relevant to the study in that social media has made information easily accessible to members of the public. Not only that, the interactive nature of the social media platforms to gauge the opinions of social media users on the topic of discussion. For instance a social media post on the negative impact of single-use plastics would naturally attract comments from some of those who viewed the post. The overall objective of the various social media campaigns is to drive change for a better society, which is in line with the proponent of the Technological Determinism Theory, that the evolution of the media for instance, the newsprint, television, and the internet shows how technical advancements affect our culture. Also, supporters of technological determinism believe that any social changes are controlled by the technology, technological development, communications technology and media. The system of information dissemination in the modern society came to being as a result of the development of innovations, new technologies and their social and political implications. Presently, one can safely argue that the Internet and the nature of new media is fundamentally changing the structure of the society.

The Theory of Planned Behaviour

The Planned Behaviour Theory, TPB, developed by social psychologists Icek Ajzen in 1991; and Godin and Kok 1996 has been widely employed as a tool to aid our understanding of a variety of behaviors including health behaviors. The TPB details how the influences upon an individual determine that individual's decision to follow a particular behavior. According to Wayne and LaMorte (2019). The theory is effective in predicting individual intentions to engage in a behavior at a specific time and space.

Within the TPB, the determinants of behavior are intentions to engage in that behavior and perceived behavioral control (PBC) over that behavior. Intentions represent a person's motivation. The construct is conceptualized as an individual's conscious plan or decision to exert effort in order to engage in a particular behavior. Perceived behavioral control is a person's expectancy that performance of the behavior is within his/her control. Intentions are determined by three variables. The first is attitudes, which are an individual's overall evaluation of the behavior. The second is subjective norms, which consist of a person's beliefs about

whether significant others think he/she should engage in the behavior. The third measures the extent to which the individual perceives that the behavior is under their personal control and is labeled PBC.

The attitude, subjective norm and PBC components are determined by underlying beliefs. Attitude is a function of a person's salient behavioral beliefs; which represent perceived likely consequences of the behavior (e.g., taking exercise will reduce my risk of heart disease). Subjective norm is a function of normative beliefs, which represent perceptions of specific salient others' preferences about whether one should or should not engage in a behavior (e.g., my family think I should take exercise). PBC is based on beliefs concerning access to the necessary resources and opportunities to perform the behavior successfully (e.g., I have easy access to a place where I can exercise).

So, according to the TPB, individuals are likely to engage in a health behavior if they believe that the behavior will lead to particular outcomes which they value, if they believe that people whose views they value think they should carry out the behavior, and if they feel that they have the necessary resources and opportunities to perform the behavior.

The relevance of this theory to the study is that it tries to explain the fact that people can have the ability to act on the information they are exposed to in the social media to either develop a either a positive or negative disposition towards consumption of single-use plastic or its waste disposal.

Methodology

Research Design

The researcher adopted survey method, a quantitative data collection because it is most appropriate design for the study. surveys are commonly referred to the collection of standardized information from a specific population or samples, which in this study are some social media users exposed to campaigns on single-use plastics in Enugu state.

Method of Data Collection

The researcher used both the primary and secondary method in the collection of information for the study; the primary data collection for this study was gotten through the questionnaire. The questionnaire was distributed using google forms to respondents individually and in WhatsApp groups. The secondary data was based on related works gotten from books and journals to support or refute the work.

Population of the Study

The population of the study is social media users drawn from the 17 Local Government Areas of Enugu state which according to Demographic Statistics Bulletin (2017) is 4,411,119 where questionnaires were distributed and responses collected and analysed by the researcher. The respondents answered questions on issues relating to social media campaigns on single use plastics on Twitter, Instagram and Facebook. Such campaigns include, #ecocyclersbeatplasticpollution, #ecocyclersbeatsingleuseplastic #EnuguRecycle, #PlasticFreeJuly.

Sample Size and Sampling Techniques

The sample size is 384, calculated using Wimmer and Dominick online sample size calculator with a 95% confidence level and a 5% margin of error as follows:

For this study, multi-stage sampling techniques were employed by the researcher which according to Obayi et al, (2016) is a type of technique that uses two or more stages in the sampling procedure. Enugu state is made up of 17 local government areas or clusters. To ensure that all the local government areas that make up Enugu state were adequately represented in the study, cluster and simple random sampling techniques were used.

Stage One: The researcher at the first stage clustered the three senatorial districts that make up Enugu State. They include:

- Enugu North
- Enugu East
- Enugu West

Stage Two: At this stage, the seventeen local government areas that make up Enugu State were clustered according to their senatorial district.

Senatorial District	Local Government
Enugu North	Igboeze North, Igboeze South, Igbo Etiti, Nsukka, Udenu, and UzoUwani.
Enugu East	Enugu East, Enugu North, Enugu South, Isi Uzo, Nkanu East, Nkanu West.
Enugu West	Awgu, Aninri, Ezeagu, Oji River, and Udi.

Stage Three: The researcher at this stage purposively selected two local government areas each from the senatorial districts based on their cosmopolitan nature, where the residents most likely to have mobile network coverage and access to the internet, for exposure to social media. The areas are also considered due to their urban outlook that largely contribute to single use plastic waste and are equally affected by the situation.

Senatorial District	Local Government
Enugu North	Igboeze North Nsukka
Enugu East	Enugu North Enugu South
Enugu West	Awgu Udi

Stage Four: The quota sampling technique was adopted in the distribution of 64 copies of the questionnaire each to the six (6) selected local government areas.

Validity/Reliability of the Instrument

The researcher used the face validity for this study. The researcher contacted experts in the field of communication who examined the instruments in order to ensure that the questionnaire was in line with the objectives of the study. Also the researcher gave the instrument to the project supervisors for validity check and necessary corrections were made. The supervisor who is an expert in the field of research vetted the coding sheet and guide to ensure that it generated sufficient and appropriate data for the study.

Reliability deals with the consistency of variables to enable the study to achieve its desired impact if the measure endures various reliable tests. To check for consistency of the research instrument in answering the research questions of the instrument, the researcher carried out a pilot study by sharing 20 copies of the questionnaire to respondents. Their responses were collated in an interval of two weeks and analyzed after the first and second responses.

Method of Data Analysis

The researcher employed mean analysis to analyse the data generated from the respondents. The decision rule states that “If the calculated mean is equal or greater than the criterion mean (2.5), then the decision is accepted but if the calculated mean is lower than the criterion mean (2.5), the decision is rejected”.

Data Presentation and Analysis

This section focused on the analysis of items in the questionnaire which were drafted to address the research question in the study. Out of the 384 copies of questionnaire administered in this study, 26 (6.77%) were found to be invalid due to mutilation of data and incomplete data in some copies of the questionnaires, while 358 (93.23%) were valid and found useable for this study. The questionnaire data was divided into two segments; the demographic (section A) and psychographic data (section B).

Analysis of psychographic data

The questionnaire was developed using the four point Likert scale where SA stand for Strongly Agree, A - Agree, D- Disagree and SD-Strongly Disagree.

Criterion mean: 2.5

Decision Rule: *If the calculated mean is equal or greater than the criterion mean (2.5), then the decision is accepted but if the calculated mean is lower than the criterion mean (2.5), the decision is rejected. Also, let 1-1.6 (very low extent), 1.7-2.4 (low extent), 2.5-3.2 (high extent) and 3.3-4.0 (very high extent).*

Research Question One: What is the awareness level of residents of Enugu State on social media campaign against single-use plastics?

Table 1: Respondents’ responses on the awareness level of residents of Enugu State on social media campaign against single-use plastics

Option	SA	A	D	SD	Total	Mean	Decision
I have seen, listened to and read about single-use plastics	128	145	50	35	358	3.0	Accepted
I obtained information on single-use plastics from Facebook	49	109	132	68	358	2.3	Rejected
I have seen single-use plastics tweets on Twitter	32	115	138	73	358	2.2	Rejected
WhatsApp has been widely used to disseminate information on single-use plastics	82	110	103	63	358	2.5	Accepted
Grand Mean						2.5	Accepted

Source: Field Survey, 2023

Communicating the result in research question one, it could be deduced that the respondent have truly heard about single-use plastics however their awareness at a mean value of 2.5 on the subject matter was slightly created by Whatsapp among other social media platform.

Research Question Two: What is the knowledge level of residents on social media campaigns of single-use plastics?

Table 2: Respondents' responses on the knowledge level of residents on social media campaigns of single-use plastics?

Option	SA	A	D	SD	Total	Mean	Decision
Single-use plastics are product that are used once before being discarded	126	150	57	25	358	3.0	Accepted
The plastic that are littered round the environment creates unpleasant sight for the people	187	171	0	0	358	3.5	Accepted
The campaign on single-use plastics is geared towards educating the masses on the indiscriminate disposal of plastic waste	131	209	13	5	358	3.3	Accepted
The campaign fight against harm done to nature with plastic pollution in the environment	140	176	32	19	358	3.2	Accepted
The campaign aims at preventing and reducing the impact of single-use plastics on human health	173	144	30	11	358	3.3	Accepted
Single-use plastic product that are not recyclable can cause environmental degradation	148	161	39	10	358	3.2	Accepted
Indiscriminate disposal of plastic endangers human lives	157	172	23	6	358	3.3	Accepted
Grand Mean						3.2	Accepted

Source: Field Survey, 2023

Analysis from the table indicates that at a mean value of 3.2 the respondents demonstrated a high knowledge towards social media campaigns of single-use plastics through educating the masses on the indiscriminate disposal of plastic waste and the harm done to nature with plastic pollution in the environment as well as it dangers to human health.

Research Question Three: What is the residents' attitude towards the social media campaign message of single-use plastic?

Table 3: Respondents response on residents' attitude towards the social media campaign message of single-use plastic

Option	SA	A	D	SD	Total	Mean	Decision
I think that single-use plastic product should be discouraged by government through regulation	166	154	27	15	358	3.3	Accepted

I think that consumers should buy products that are environmentally friendly	140	175	25	18	358	3.2	Accepted
I think it is important for companies to reuse and recycle single-use plastic	168	131	43	16	358	3.2	Accepted
I think that single-used plastics should be properly disposed by consumers	183	161	11	3	358	3.4	Accepted
I think single-used plastic is harmful to the body and people should avoid products in plastic containers	62	80	151	65	358	2.3	Rejected
I think that burning the plastics is better than picking them around for recycling	18	37	163	140	358	1.8	Rejected
Grand Mean						2.8	Accepted

Source: Field Survey, 2023

Analyzing the result in the table above, it could be seen that at an average mean of 2.8 the respondents' showed a positive attitude towards human health and the environment. This was revealed as they preferred picking of plastics around for recycling other than burning the plastics. Also they suggested that consumers should buy products that are environmentally friendly and dispose the single-used plastics properly after use.

Research Question Four: What is the practice of residents in Enugu towards single-use plastics product and waste disposal?

Table 4: Respondents' Responses on the practice of residents in Enugu towards single-use plastics product and waste disposal

.Option	SA	A	D	SD	Total	Mean	Decision
I throw plastic containers away after usage	100	106	63	89	358	2.6	Accepted
I dispose the plastic containers in the drainage when it rains	47	55	121	135	358	2.0	Rejected
I burn the plastics containers after usage rather than picking them around for recycling	21	75	143	119	358	1.9	Rejected
I do not buy products in single-used plastic containers	10	31	200	117	358	1.8	Rejected
I reprimand people for the indiscriminate disposal of single-used plastics	110	213	21	14	358	3.1	Accepted
Grand Mean						2.2	Rejected

Source: Field Survey, 2023

Communicating the analysis here, the result disclosed that at a mean value of 2.2 the respondents' rejected the idea of disposing the plastic containers in the drainage especially when it rains as well as burning the plastics containers after usage rather than picking them around for recycling to avoid air pollution. The result revealed that the respondents take action whereby they reprimand people for the indiscriminate disposal of single-used plastics in the environment.

Discussion of Findings

Communicating the result in research question one, it could be deduced that the respondent have truly heard about single-use plastics however their awareness at a mean value of 2.5 on the subject matter was slightly created by Whatsapp among other social media platforms.

This is in line with Akpoghiran&Okoro(2014) study who revealed that broadcast media carry out sensitization campaigns on solid waste management as a form creating awareness. Study conducted by Hamza and Mahmoud (2023) disclosed that mass media served as the primary source of information used in educating the public on the uses and harms of plastics. Arikenbi et al. (2023) disclosed that mass media campaigns are significant in raising the awareness of the public on environmental issues in Nigeria. The media also communicate the urgency to protect the environment and the consequences of unsustainable practices.

The findings mentioned earlier differs from that of Nnadiukwu&Omeje (2019) which stated that mass media campaigns was not totally effective as media stations in Enugu did not go beyond their news programmes in providing information about the environment to the public. Akpoghiran (2015) revealed that there was the existence of irregular and poor enlightenment campaigns by the broadcast media on solid waste management in the state studied. Ben-Enukoraet al. (2017) findings showed that the awareness of health and environmental effects of e-wastes among the residents of Ado Odo-Ota was extremely low as the menace was not perceived as a serious problem.

Analysis from the table indicates that at a mean value of 3.2 the respondents demonstrated a high knowledge towards social media campaigns on single-use plastics that educate the masses on the indiscriminate disposal of plastic waste and the harm done to nature with plastic pollution in the environment as well as it dangers to human health.

This finds it relation to the study of Srinivasan et al (2019) on the good knowledge of Medicine, Dentistry, Physiotherapy, Agriculture and Engineering students in Annamalai University, Tamil Nadu on the ill effects of plastic. In Kathmandu, undergraduate students were found to have a sound knowledge on plastic use (Tharu& Shrestha 2022).

Contrary to the finding, Ben-Enukoraet al (2017) noted that in as much as the broadcast media and the internet were identified as significant sources of information on health and environmental effects of e-wastes among residents of Ado Odo-Ota; exposure to the media on the e-waste hazards was found to be critically low as the residents were less frequently exposed to e-waste issues in the news. Chin et al (2022) in their study revealed that respondent in Malaysia had a poor knowledge towards plastic pollution. To Hamza and Mahmoud (2023) resident in Assiut city had a poor knowledge towards the uses and health hazards of different plastic products.

Analyzing the result in the table above, it could be seen that at a grand mean of 2.8 the respondents' showed a positive attitude towards human health and the environment. This was revealed as they preferred picking of plastics around for recycling other than burning the plastics. Also they suggested that consumers should buy products that are environmentally friendly and dispose the single-used plastics properly after use.

Agreeing to the above, Chin et al (2022) disclosed that Malaysian resident's attitude towards plastic pollution was relatively higher as socio-demographic factors age, education and occupation were found to be the socio-demographic factors that influences them. Tharu and Shrestha (2022) disclosed that student in Kathmandu Valley showed a positive attitude towards the usage of plastic products. This is

similar to the findings of Hamza and Mahmoud (2023) as residents in Assiut city attitude towards the use of plastic use was relatively high.

This differs to the study of Akpoghiran (2015) who revealed that the irregular and poor enlightenment campaigns on solid waste management by broadcast media resulted to poor attitude to waste management by inhabitants. Ben-Enukoraet al (2017) disclosed that Ado Odo-Ota residents' attitude towards resolving the problem of health and environmental effects of e-wastes was not impressive. Akpoghiran & Okoro (2014) revealed that despite the sensitization campaigns on solid waste management by the broadcast media; the attitude of respondents towards solid waste management was found to be poor.

Communicating the analysis here, the result showed that at a mean value of 2.2 the respondents' rejected the idea of disposing the plastic containers in the drainage especially when it rains as well as burning the plastics containers after usage rather than picking them around for recycling to avoid air pollution. The result revealed that the respondents take action whereby they reprimand people for the indiscriminate disposal of single-used plastics in the environment. This clearly shows that they have a positive practice towards single-use product plastic and waste disposal habits.

This finds it relation to the study of Uba (2021) who noted that most participants in their study were actively involved in fighting plastic pollution in Nigeria. They attributed the source of their participation to awareness exercises, peer influence, use of social/behavioural applications and economic incentives. Tharu and Shrestha (2022) affirmed that undergraduates in Kathmandu Valley had a good practice towards the use of plastic products.

This differs from the study of Srinivasan et al (2019) on the low practice of Annamalai University student towards the effective disposal of the plastic. Malaysian residents' practice towards plastic pollution was found to be poor (Chin et al 2022). In Assiut city, Hamza and Mahmoud (2023) disclosed the resident had unfair practices on the use of plastic containers and bags as they use it to keep food in the freezer and make pickles at home.

Conclusion

The social media since its emergence has served a vital purpose as it aids in the ease distribution of information and creation of awareness campaign. These campaigns help users to be aware, educated and enlighten on current trend especially as it relate to single-use plastics. This is geared towards promoting a better and healthy life for individuals in the society. Social media campaign on single-use plastics in the study have not been fully explored as only one platform has been seen to be effective in sharing information on single-use plastics to users.

Recommendations

Based on the findings, the following recommendations were made:

1. The frequency and type of information about single use plastics and waste disposal in the mass media such as radio and television are often determined by the organization or sponsors, and may be inadequate and also inaccessible to the people, compared to the social media which not only have features that put such information in front of the subscribers more often and giving them the option to reject or explore further, but also provides opportunity for interaction, participation and feedback. This no doubt underscores the potential of the social media to effectively drive successful campaigns on the subject matter. However, campaigners need to create messages that are easily understood and relatable to various specific audiences.

2. The campaign by the Nigeria Girl Guides Association, where it had a number of people on WhatsApp group and extensively shared information including pictorials and videos on single use plastics before asking them to share what they learnt on other social media platforms, especially Facebook, Instagram and Twitter seemed effective because it gave the participants adequate information to take personal decisions about single plastic use. However, there was no way to guarantee that all would participate in furthering the campaigns in the other social media spaces.
3. The popularity and success of the social media in driving all manner of campaigns, be it marketing, political, religious, etc, is ever growing and could also be leveraged by the relevant agencies, non-governmental organizations and social media campaigners on single use plastics to achieve their objectives.
4. It is equally necessary for social media users to maintain a positive attitude towards the use and disposal of single-use plastics.

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