

The Implication of Social Media as a Tool for Environmental Management

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Abstract

This paper is an advocacy call on all stakeholders in environmental management to adopt the social media networks for solid waste management. There are many users of the social media especially Facebook in Nigeria. On social media networks, social issues such as politics, entertainment, sports, economy and so on dominate the daily discourse. However, attention has not been given to issues bordering on environmental management like solid waste management. In order to determine how social media could benefit environmental management, 400 respondents from higher institutions of learning in Delta state were surveyed to find out their view of social media use in environmental management. Percentages, mean scores, and standard deviation were the statistical analyses used to describe the data gathered. Findings show that solid waste management campaigns did not appear significantly on many of the social networking sites and when they do appear, the focus is usually about flooding, oil spills, and erosions. We therefore recommend that in this age of global warming and climate change, more attention and efforts should be directed to environmental management as much as it has been directed to politics.

Keywords: Awareness, Facebook, Social media, Solid Waste Management, Environment.

Introduction

Social media have become the in-thing in this attention-getting age. Social media or social networking is one of the most intriguing phenomena of our times. Its rapid growth has been the subject of numerous discussions, literature, and research studies (Ali, 2011). Social media means many things to different people, and they are used for various reasons especially sharing ideas and information among friends.

There are, however, few studies on social media or networking sites on environmental studies. For example, Ifenkwe (2012) had researched on Social Networking and Eco-Vigilance for Effective Environmental Management in Nigeria and on the basis of the research outcome, concluded that social networking could help provide opportunity for stakeholders in environmental management to share ideas and information, ask questions, and voice concerns about such environmental issues. Researchers have expressed concern over the rapid rate of environmental degradation in Nigeria.

Bolorunduro and Kwari (2003) identify two major factors responsible for this phenomenon (social media): natural and anthropogenic factors. Anthropogenic factors include effect of socio-cultural practices, agricultural activities and industrialisation. They believed that a viable means of reducing this environmental degradation is by maintaining social networking service at various levels in Nigeria. A network is a functionally specialised social organisation that links together numerous associations.

Surprisingly, there are limited studies to show that social media have been used to create awareness campaigns for environmental management (Wilson, 2010; Ali, 2011; Mooney, Winstanley & Corcoran, 2013; Nalewajek & Macik, 2013). Wilson (2010) for instance, discovered that environmental groups are using social websites such as Twitter and Facebook to raise awareness on environmental problems, to encourage environmentally responsible behaviour, to get petitions signed, to provide news, to motivate and also, to a lesser extent for fundraising. Wilson believes that social media are currently one of the most effective ways for a group to raise awareness of environmental problems quickly and extremely cheaply. Ali (2001) had examined the usage of Facebook to increase climate change awareness among employees in Singapore. Mooney, Winstanley and Corcoran (2013) evaluated how Twitter had been used for environmental awareness campaigns in Ireland. In the same vein, Nalewajek and Macik (2013) have worked on the role of social media in building awareness of responsible consumption towards environmental behaviour.

At the moment social media are invaluable tools for environmental groups. This implies that social media can be used not only to physically stop environmentally damaging practices but also to draw attention and improve environmentally responsible behaviour.

The existing solid waste management system in Nigeria is very rudimentary, inefficient and unsustainable. Accurate data on the quantities of municipal solid waste generated are not easy to come by (Afun, 2009). Proper dump sites and containers are not adequately provided by the appropriate authorities. Even when provided, poor public attitude of improper disposal and utilisation of these containers as well as lack of self-consciousness of a clean environment, constitute one of the greatest problems of solid waste management in Nigeria. Solid wastes generation exceeds collection capacity.

Zurbrugg (2003) as cited in Ogwueleke (2009) believes that one to two thirds of the solid waste generated in developing countries is not collected. Also, local agencies do not have adequate capacity to handle the increasing solid waste mainly due to limited budgets. Solid waste collection efficiency in Nigeria ranged from 5 percent in some semi-urban areas to 50 percent in urban areas (Ogwueleka, 2009, p.175). The poor state of waste management has been attributed to inadequately formulated and poorly implemented environmental policy, among other factors (Agunwamba, 1998).

It should be noted, however, that this study was limited only to Facebook social network site because it has the highest users in Nigeria of all the social network sites like twitter, Instagram, WhatsApp and so on. At present, over 66% of Nigerians on Facebook are males with the most popular age of 25 with over 5.6 million Nigerians are in this demography (www.cp-Africa.com, 2013). This further explains why Facebook was selected for this study as a preferred strategy for environmental management like solid waste.

The unprecedented rise of the social media has been directed to virtually all issues in life, but, individuals, governments and other environmental stakeholders have not directed much attention towards environmental management through the social media in Nigeria. While there are many studies of the use of the social media for environmental awareness campaigns, the area- solid waste management has not been adequately studied as at the time of this research. This perhaps formed the basis of this study.

Objectives

The general objective of this study is to examine the efficacy and appropriateness of social media as tools for environmental awareness. Specifically, this paper aims to:

1. Evaluate the use of social media (Facebook) for environmental awareness campaigns,
2. Determine the categories of issues posted and shared on social media (Facebook) and,
3. Ascertain the extent of usage of social media for environmental management of solid waste

Literature Review

Since 2005, the use of social networking sites has risen rapidly and the major sites, especially Facebook, Twitter, MySpace and LinkedIn continue to attract new users at an astounding rate. The social media revolution has not only been directed to many social and political issues but environmental ones. The application of social media to environmental subjects has attracted the attention of some researchers. Ali (2011) observes that the application of Facebook for instance, on climate change awareness campaigns by employees in corporations, was very successful. Findings from Ali's study revealed that 75.0% of the respondents believed that the new media can be used as effectively as conventional face-to-face means to increase employees' awareness about environmental concerns. In addition, the findings also show that there was a substantial relationship between the perceived richness of social media and the perceived climate change awareness among participants.

There is a study showing that online social networking site like Twitter and environmental issues such as climate change and pollution are both inextricably linked with popular culture and mass media (Mooney *et al*, 2013). Since the end of 2006, climate change has been on the front-pew amongst all other environment problems. As Tan, Ogawa and Matsumur (2008) had observed, public awareness is key to making a real difference in fighting environmental problems such as climate change. However, due to ineffective communication strategies, many of the efforts to educate the public on climate change have not translated into a greater degree of concrete progress (Mooney *et al*, 2013). Mooney *et al* (2013) believe that the new media such as Twitter can be used to influence or change people's perception and attitudes towards environmental issues like climate change.

There is also a study that shows that social networking site has been used for sustainable development by various individuals and organizations (Willard, 2009). Willard observes that mainstream social networking sites such as Facebook, Orkut and LinkedIn invariably attract some members with sustainable development interests. By linking together individual members, groups, events and pages, SNSs (social networking sites) enable individuals to learn about new ideas and social movements as their friends and colleagues become involved in them.

There are ample evidence of individual or group awareness and attitude towards waste management in Nigeria (Ifegbesan, 2009). Ifegbesan sees public awareness and attitude towards waste management as critical in the effort to respond to waste management challenges. In a study of secondary school students' understanding and practices of waste management in Ogun State, Ifegbesan found that students possessed high environmental awareness and knowledge of waste problem but have low attitudes towards waste management.

Environmental awareness has been seen as a combination of motivation, knowledge and skills (Partanen-Hertell *et al*, 1999, in Olgyaiová, Pongrácz, Mikkola, Škapa & Keiski, 2008). This knowledge has to be supported by will, information and

abilities to behave in an environmentally friendly way. When the environmental awareness of an individual is combined with external stimulating physical and practical conditions, the result can be a desire and will to make environmental friendly choices. Environmental awareness starts to develop when people notice that unfavourable or threatening changes in the surroundings emerge, and the effect of which cannot be corrected easily.

The realisation of an individual that environmental damages need a long time to recover stimulates the arising environmental awareness and management. Olgyaiová, Pongrácz, Mikkola, Škapa and Keiski (2008) believe that motivation is necessary to increase the level of knowledge and skills in health matters. Though people and organisations think that the state of the environment should be improved, they do not see themselves as active actors in the process of environmental awareness and management. They always think somebody else; for instance, scientists, environmental and non-governmental organisations or international organisations should focus on, or solve environmental problems. Motivation as Olgyaiová et al (2008) defined it is the driving force that causes an individual to act in order to achieve a specific goal. Motivation is usually perceived as a positive force, the desire to achieve a goal. Motivation is the driving force of the society that changes from the growing production and economy towards a steady sustainable welfare. Raising environmental awareness supports development towards sustainability. Social media enlightenment campaigns on waste management can motivate users or the public to achieve a common goal of environmental friendliness.

The Theory of Media Richness has been used as a theoretical framework for analysing environmental issues because of the social media richness. Ali (2011) examines this theory on the platform of mobile phones and its ability to provide feedbacks promptly through various social media between users on environmental issues. Media richness has been referred to as the ability of information and particular media to change human understanding, overcome differing conceptual frames of reference, or clarify ambiguity (Daft & Lengel, 1984, in Ali, 2011). According to Daft and Lengel (1984 as cited in Ali, 2011), media richness is a function of:

1. The medium's capacity for immediate feedback,
2. The number of cues and channels,
3. Language variety, and
4. The degree to which intent is focused on the recipient.

In writing about this theory, Walther (1992, as cited in McQuail, 2005) believes that the degree of presence in the technology and the number of users of the technology determined the richness of the media. Walther explained that if a channel is lean, the audiences are small but if the channel is large, the audiences are large and heterogeneous. Fair enough, the degree of the social presence of a communication technology or the media is determined by the media richness. In other words, media richness determines the social presence. Social presence in a medium or media is

determined by the degree of users or audiences. Furthermore, the degree of the number of users determined the richness of the media. Social presence is occasioned by media richness. The new media integrate social relations. The Internet has a heavy social presence because it is creating a new culture. For instance, social media or social networking sites such as Facebook, Twitter and YouTube have heavy social presence, and have created a new socio-political revolution as seen in the 'Arab Spring' in Tunisia, Egypt, Libya, Syria, and many other places in the Arab nations (Akpoghiran, 2014). This therefore, can be used to influence responsible environmental behaviour.

Media richness theory can be associated with Value Change Theory to explain and analyse awareness and attitude towards environmental management. This theory (value change theory) employs the technique of 'comparative feedback' to induce attitudinal and behavioural change (Folarin, 2005). It states that rather than simply inform people about the harmful or beneficial effects of certain kinds of behaviour, methods based on value change theory challenge the people to test their own values against others, which are presumed to be socially more acceptable. The postulation is that since values underlie attitudes, which in turn underlie behaviour, it is assumed that a change in value will lead to corresponding changes in attitude and behaviour.

Importantly, the individual has to have clear information on the ranking of his present value. This is where the functions of the social media in terms of social interaction, feedback, information and education are imperative. The social media for example, can be used to inform or educate its users of their behaviours that may be harmful to the environment. Harmful attitudes of individual to the environment are value-action gap. It is a term used to describe the gap that occurs when the values or attitudes of an individual do not correlate to their actions. Generally, it is the difference between what people say and what they do, in this case, environmental management.

In the light of this study, all theories and studies imply that attitudes towards the environment are contingent upon the value we attach to the environment. The theories point to responsible environmental behaviour, which means actions taken by an individual or a group of individuals to do what is right in order to protect the environment. Audience of the social media can use the media to inform, educate and enlighten people to be environmentally conscious as well, as to awaken interest in environmental management.

Research Method

The study used both primary and secondary data. The primary data were obtained using the survey method. The geographical scope of the study was the Delta State University, Abraka and the Delta State Polytechnic, Oghara. The two schools were chosen because both are in Delta central where the study was carried out. Demographically, the scope was limited only to final year students of these

institutions. Previous studies by various researchers published in books and academic journals were consulted as secondary materials or data.

The research method was the survey. Questionnaire was the instrument for data collection. The Taro Yamani (1967) sample size (n-400) was adopted. The Taro Yamani sample size has been widely used by numerous researchers since 1967 in various academic fields. The instrument was purposely administered only to final year students in the two institutions with the aid of research assistants. A total of three hundred and ninety-three (393) copies of the questionnaire were filled by the respondents. This represented 98.3% response rate. The target respondents were mainly users of social media. It is believed that Facebook is the most commonly used social medium by young people and even corporate bodies, hence, our decision to focus on Facebook users. The responses were pooled and analysed in accordance with the objectives of the study. The data were analysed in percentages, means, and standard deviation

Results

The sample returned (n-393) represented 98.3% of the sample size. The data consisted of 238 males representing 60.5% of the respondents and 155 females representing 39.4% of the respondents. The age ranges of the respondents show that between 18-24 consisted of 132 (33.5%) respondents, those between 25-34 ages were 109 (27.7%) respondents, those between 35-45 ages were 89 (22.6%) and those between 45-above were 63 (16.03%) respondents. On marital status, there were 165 single respondents representing (41.9%), married respondents were 131 representing 33.3% and 97 of the respondents were widows representing (24.6%). There were 91 (23.1%) respondents who had secondary education and 302 (76.8%) with higher education. From the data obtained, there were 128 (32.5%) students, 115 (29.2%) of the respondents were lecturers, 61 (15.5%) of the respondents were civil/public servants, 56 (14.2%) of the respondents were businessmen and women. There were 33 (8.4%) health workers such as medical practitioners and nurses.

S/N	Items	Options	
		Yes	No
1	I have used Facebook to promote environmental awareness and management.	23.1%	76.8%
2	I have never come across environmental issues posted on Facebook.	18.1%	81.9%
3	My interest in solid waste management through the social media platform has been raised.	20.8%	79.1%
4.	I spend so much time in friendly issues on the social network sites not on environmental issues.	87.0%	12.9%
5.	There is poor usage of the social media on environmental issues in Nigeria.	94.9%	5.00%

Returned Sample (n 393); percentage analyses of usage of social media for environmental awareness campaigns.

Table 2: Audiences' Interest in Solid Management through Facebook Social Site/Medium Items

	(SA)	(A)	(UD)	(D)	(SD)	Mean (\bar{X})	Std. Dev.
6.	Television still remains the best platforms for environmental awareness campaigns like solid waste management than social media.					3.22	0.22
7.	Hardly do issues on environmental awareness management appeared on Facebook					3.67	0.67
8.	I am in the social network sites for many reasons none have been environmental management issues.					3.74	0.74
9.	The social media are dominated by youths who may not have interest in environmental issues.					3.81	0.81
10.	Issues of global warming and climate change are more prominent in the social media than solid waste management.					4.14	1.14
11.	The level of environmental awareness on the social media is poor.					3.65	0.65
12.	Many issues on Facebook in Nigeria are about politics, personal issues, government and celebrities, interest in environmental management like solid waste are not frequent.					3.81	0.81
<p><i>NOTE: Mean point: 3:00. 5 = Strongly agree (SA); 4 = Agree (A); 3=Undecided (UD); 2 = Disagree (D); 1 Strongly disagree (SD).</i></p> <p><i>Mean (\bar{X}).</i></p>							

The set mean/point or benchmark was 3.00. All points obtained exceed the benchmark. This implies affirmative to the statement made.

Table 3: Categories of Issues Respondents' Posted and Shared on Facebook

Issues Observed/Shared	Frequency	Percentage
National/Political issues	3, 105	21.5%
Personal/Social issues	5,107	35.4%
Celebrities/Entertainment issues	2,056	14.2%
International issues	2,056	7.18%
Local News	1,037	7.23%
Sports Issues	2,087	14.45%
Environmental issues	0	0%
Total	14, 436	100%

Respondents' were asked to state the major issues that they post and shared on Facebook. This was within the period of May and June, 2016. The researchers after which, categorized these issues as given above.

Discussion of Findings

Table 1 was to determine usage of social media for environmental management The Yes or No option was provided. In item 1, respondents were asked whether they have used social media to promote environmental awareness and management, by percentage analyses, 76.8% of the respondents were not in the affirmative. In item 2 from the table, 81% have never come across environmental issues posted on the social media like Facebook, Twitter and Nairaland. This could be the obvious reason why 79.1% of the respondents' had never come across environmental issues like solid waste management on the social media platform. Further to the above, 87.0% of the respondents spend so much time on friendly issues on the social network sites and not in environmental issues.

At a point where mean obtained ($3.22 > 3.00$), respondents argued that television still remains the best platforms for environmental awareness campaigns like solid waste management than social media. The above result is however contrary to the findings of Nalewajek and Macik (2013) that the Internet and the social media are the simplest possible and effective to affect attitudinal change on responsible consumption and environmental behaviour. In the same vein, Mooney et al. (2013) recommended a sophisticated communication approach to change attitudes towards climate change.

The communication approaches no doubt, are the social media. At a point where $3.67 > 3.00$, hardly do issues on environmental awareness management appeared on social media. At a mean point of 3.74, respondents agreed that they

were in the social network sites for many reasons but none have been environmental management issues. Obviously, given the point at $3.81 > 3.00$, the study revealed that social media are dominated by youths who may not have interest in environmental issues. However, issues of global warming and climate change are more prominent in the social media than solid waste management ($4.14 > 3.00$). Also, the result obtained showed that the level of environmental awareness campaigns on the social media was poor ($3.65 > 3.00$). This could be as a result that many issues on the social media in Nigeria are about politics, personal issues, government and celebrities, interest in environmental management like solid waste were not frequent. The mean score obtained for this was $3.81 > 3.00$. The results from the standard deviation showed a positive affirmation to the results from the mean results. This was affirmative to the questions asked.

The social media are important channels of public awareness campaigns. In many other countries of the world especially in the western nations, social media have been aggressively used for environmental campaigns to bring about right attitude towards environmental management. There are many social network sites created for environmental campaigns. In Nigeria, however, it is the contrary. Facebook which is the most visited social sites had not been devoted to environmental campaigns. On the contrary, Mooney et al (2013) for example, in their study proved that Twitter social network was found to be a useful tool in informing the public better about environmental problems.

As a result of the dominance of social, personal and entertainment issues, environmental issues had not received significant attention on Facebook. Environmental awareness campaigns and management on solid waste for example, are inadequate and very poor. It is believed that the opportunities that the social networking sites provide are yet to be fully utilized.

The findings imply that:

1. Attention, interest, desire and action (AIDA) of Nigerians in environmental management is declining. People rarely discussed environmental issues on the social media as a regular discourse except in cases of environmental disaster like flood, oil spill and erosion.
2. Environmental policy makers need to inculcate the social media as tools for environmental management awareness campaign (EMAC) and researchers need to do studies on social media and environmental management.

Conclusion and Recommendations

The attraction of social media like Facebook implied the richness of the social network site. Facebook is the most visited social networking site in Nigeria. The research looked at the Facebook social network site as a strategy for environmental awareness campaigns like solid waste management. Many of the fans and users of the site share or post various issues on the site. Issues ranging from

politics, personal or social, celebrities or entertainment and sports were observed within the period of the study. There was a very scanty issue on environmental awareness and management like solid waste on Facebook within the period under study. Using 393 online and offline respondents to answer the research questions through a systematic procedure, the results showed that there was no significant usage of Facebook social site for environmental awareness campaigns and management. This was because; the social media like Facebook are largely dominated by social and personal issues. The overall implication means poor environmental awareness campaign on the social media in Nigeria.

Arising from the above, we therefore recommend a Facebook Fan-page on Environmental Management Awareness Campaign (FFEM). It is a page or pages devoted to issues and interest in environmental management especially solid waste that is defacing our environment. It is where Facebook users can discuss environmental issues. Stakeholders in environmental management should use the medium of Facebook to launch aggressive campaigns on solid waste management and other environmental problems in our society. For example, blogs or sites can be created to promote environmental awareness and management. Blog like www.akpatEMAC.com has been created for environmental awareness.

Environmental awareness and management can be handled by the right or responsible attitude, incorporating environmental issues in mainstream education, regular environmental campaigns on the mass media and social media, and encouragement of public participation in environmental matters. Government at all levels should be committed to environmental management on a regular basis not only in the case of disaster.

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