

**GHANA INSTITUTE OF JOURNALISM**

**SCHOOL OF GRADUATE STUDIES AND RESEARCH**

**THE ROLE OF SOCIAL MEDIA ON ENVIRONMENTAL  
AWARENESS EXAMINING ADENTA MUNICIPAL ASSEMBLY**

**PAMELA MAWUSI AGYEMANG-BAAH**

**MADC19050**

**A LONG ESSAY SUBMITTED TO THE SCHOOL OF RESEARCH AND  
GRADUATE STUDIES, GHANA INSTITUTE OF JOURNALISM IN PARTIAL  
FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF  
ARTS (M.A) IN DEVELOPMENT COMMUNICATION.**

**AUGUST, 2020**

## **STUDENTS DECLARATION**

I do hereby declare that this long essay is the result of my original research, and that it has not been partially or wholly presented by anybody for the award of any degree in this institute or elsewhere. All references used in the work have been accordingly acknowledged.

I bare sole responsibility for any shortcomings.

.....  
**PAMELA MAWUSI AGYEMANG-BAAH**  
**(CANDIDATE)**

.....  
**DATE**

.....  
**DR. KOFI AMPONSAH-BEDIAKO**  
**(SUPERVISOR)**

.....  
**DATE**

## **DEDICATION**

This long essay is dedicated to my parents of blessed memory, my husband, siblings and friends for their encouragement, help and priceless support during my programme.

## **ACKNOWLEDGEMENT**

My sincere gratitude goes to the Almighty God for His protection, strength, wisdom, knowledge and understanding throughout my period of study. I am grateful to my Supervisor Dr. Kofi Amponsah-Bediako whose support, direction and encouragement during the period of putting this long essay together has been invaluable. My sincere thanks to all the lecturers who have been of immense help throughout the programme.

I am particularly grateful to Mr. Daniel A. Nii-Noi Adumuah the Chief Executive of Adenta Municipal Assembly for his relentless effort and support in accomplishing this task.

## **ABSTRACT**

The rapid growth of social media as a type of online communication tool has promoted easy communication among users. The various platforms make way for comments, videos, photos and posts to be shared easily and at a remarkable rate. The use of social media in changing behaviours has not been widely studied, despite the dramatic increase in Internet and social network use. The general use of social media makes it an easy, cost effective way to reach out to large numbers of people. Globally, environmental issues are also progressively getting to be a concern. Awareness of environment has become one of the important issues that all countries and major organizations working on it at International level. Contribution of media generally and social media particularly in the raising environmental awareness is important because they have a greater environmental influence on growth of world population and standards for high lifestyle of our communities. The aim of the study was to examine how environmental communication through the social media creates environmental awareness by the people of Adenta Municipal Area. This study address improper disposal of Municipal solid generally, in Greater Accra and Adenta Municipal in particularly. Due to uncontrolled urbanisation, large quantities of waste are generated daily, and this put much pressure on an already strained solid waste management system. The study equips the individual and residents of Adenta Municipal to possess knowledge on specific environmental problems. The individual will be awakened by the knowledge to act in a desirable way to solve problems related to the environment which will form into a positive attitude towards the environment.

## TABLE OF CONTENTS

<b>Contents</b>	<b>Page</b>
STUDENT DECLARATION .....	iii
DEDICATION.....	iii
ACKNOWLEDGEMENT .....	iv
ABSTRACT.....	v
CHAPTER ONE .....	1
1.0 INTRODUCTION .....	1
1.1 BACKGROUND OF THE STUDY .....	2
1.2 JUSTIFICATION OF THE STUDY.....	3
1.3 OBJECTIVES OF THE STUDY .....	4
1.4 RESEARCH QUESTIONS.....	5
1.5 SIGNIFICANCE OF THE STUDY .....	5
1.6 ORGANISATION OF THE STUDY .....	6
CHAPTER TWO .....	7
LITERATURE REVIEW .....	7
2.1 INTRODUCTION.....	7
2.2 DEFINITIONS .....	7
2.2.1 History of Social Media.....	8
2.2.2 Different kinds of social media .....	11
2.2.3 Social Media in Ghana .....	15
2.3 CONCEPTUAL FRAMEWORK .....	16
2.3.1 Behavioural Change Model .....	16
2.4 THEORETICAL FRAMEWORK SOCIAL MEDIA AND ENVIRONMENTAL ..... 17	
CONSCIOUSNESS. ....	17
2.4.1 Social Media and Its Influence in Environmental Consciousness.....	17
2.4.2 The Importance of Social Media .....	20
2.5 CONCEPTS AND DEFINITIONS .....	26
2.6 CONCLUSION/SUMMARY .....	26
CHAPTER THREE .....	26
METHODOLOGY .....	27

3.0 INTRODUCTION.....	27
3.1 SAMPLE SIZE AND SAMPLING TECHNIQUES .....	27
3.2 RESEARCH DESIGN .....	27
3.3 SOURCES OF DATA.....	27
3.4 STUDY POPULATION .....	28
3.5 INSTRUMENTS FOR DATA COLLECTION .....	29
3.6 DATA COLLECTION PROCEDURE.....	29
3.7 DATA ANALYSIS .....	30
3.8 LIMITATION OF THE STUDY .....	30
CHAPTER 4 .....	31
CONCLUSION.....	31
REFERENCES.....	33

## CHAPTER ONE

### 1.0 INTRODUCTION

Environmental issues are progressively getting to be concern of the world (Statista, 2016). Globally, countries are worried about the current state of the environment which is undergoing degradation over a long period of time. Environmental issues such as global warming and other natural hazards have led to the spread of environmental awareness among people across various countries and regions. This has given rise to the development of commitment among societies as well as organizations to steward the earth by adopting sustainable practices (UNESCO, 1997).

Awareness of environment has become one of the issues that all countries and major organizations working on at international level (Verma, 2016). Therefore inducing environmental awareness in people in this era of potentially catastrophic global environmental change is one of the important challenges in the path to sustainability. In order to spread environmental knowledge and awareness of environmental issues, the contribution of the media in general and social media in particular in raising environmental awareness is important to produce greater environmental influence on the growth of world population standards for high lifestyle of our communities (Scholtz, 2016; Verma, 2016).

## **1.1 BACKGROUND OF THE STUDY**

Social media had its beginning since 1978 through the use of e-mail for communication and information share. Emergence of social media transforms consumers to active creators of information rather than receivers of information (Shoa, 2009).

Changes in technology, lifestyles and education mode have led to unprecedented growth in usage of networking sites. Social media is a powerful tool of content creation, sharing ideas, disseminating and expressing knowledge, opinions. Social media is not limited to sharing and communication of information, it has emerged as a platform of webcasting, gaming and blogging also. Social media provides space to users to participate in collaborative projects enabling them to create, ass or edit web contents. Blogging on social media provides information on recent events in informal way. Communities or groups interact with each other on this platform for information sharing. In short social sites help individuals in socializing.

Social media tools are gaining importance in increasing environmental concern and environmental responsible behaviours in public. (Krätzig & Warren-Kretzschmar, 2014). Through environmental friendly groups, social media tools are actively being harnessed to spread information and awareness on environment issues through environment protection fan pages, environment related posts, green blogging and through online videos.

Social media such as YouTube, Facebook, Instagram and Twitter may prove beneficial to access users' mind set and to influence their attitude and perceptions. Many users use social media to share real time videos or photos on various environmental issues such as illegal dumping, flowing of chemical spills in water ways; fires in forests and issues on endanger species.

This brings about awareness and arise attention among help groups and common people. Social media thus helps in inspiring environment activism with the help of messages such as

quotations and videos, stories on responsible behaviours. Social media aids in providing momentum to spread awareness and knowledge on these issues

The use of social media tools like Facebook, Twitter, Whatsapp, Instagram amongst others permit users to generate and exchange of user generated contents on different themes. Consequently, social media can be used as a facilitator to create awareness of environmental issues.

## **1.2 JUSTIFICATION OF THE STUDY**

Dartey (2011) noted that the mass media holds the key to influence attitudinal and behavioural change of Ghanaians particularly on the environment through conscious sensitisation and education. She further observed that journalists could do this effectively if they received training on environmental reporting and therefore called on the Environmental Protection Agency (EPA) to avail itself as an important news source. Dartey (2011) stated that environmental communication and media intervention were key factors to EPA's organisational success as a government institution. Boateng (1993) advocating for sustainable development has suggested that the media should play a key role in addressing environmental crisis. In Ghana, institutions such as the Ghana Interaction Council (1990) and available documents, including Ghana Environmental Action Plan (1991), the Ghana National Report to the Earth Summit (1992), have all agreed that the mass media should be used as an essential means of environmental education (Kwansah Aidoo, 1999).

Government with the establishment of the Environmental Protection Agency (EPA) in 1994 had mandated EPA to create awareness among the citizenry about the need to observe good environmental management and practices. The EPA as part of its strategies identified the mass media, traditional rulers, schools among others as conduits through which it could make the citizenry appreciate the benefits of good environmental management and practices as well as the dangers society can face if it responds to the environment negatively (EPA, 1999).

Ghana also formulated an Environmental Sanitation Policy in 1999, which was subsequently reviewed and re-launched in 2010. For an effective implementation of the policy, Ghana further came out with a comprehensive National Environmental Sanitation Strategy and Action Plan (NESSAP) 2010-2015 (MLGRD, 2010).

Waste Management experts, Zoomlion Ghana Limited, have also re-echoed the need for attitudinal change towards sanitation in Ghana during their recent visit to Cape Coast embarking on Environmental Sanitation Campaign (Coleman, 2015).

In this vein a day will hardly go by without a mass media report on the incidence of environmental abuses. Radio, television stations and newspapers often carry news on huge heaps of garbage at almost every corner of cities, plastic waste and choked gutters among others mostly in rural areas. Despite all the efforts and information available, water bodies have become polluted with both solid and liquid waste which usually results in heavy floods due to choked gutters and blocked drainage systems, thereby rendering thousands of people homeless.

Environmental friendly behaviours can be promoted through communication on environment related issues. The mass media has played a significant role towards this end. Now there is a trend, in communication that uses non-standard forms of addressing these issues. The growth of internet services and social media applications has made people to become more prone to digital world. Social media extensively influences users' attitudes, knowledge and perceptions online activities like blogging, chatting, gaming and instant messaging (Boyd & Ellison, 2008). The study therefore seeks to examine the extent to which social media has been harnessed to promote environmental awareness.

### **1.3 OBJECTIVES OF THE STUDY**

The general objective of the study was to examine how environmental communication through the social media creates environmental awareness by the people of Adenta Municipal Area.

Specific objectives of the study were to:

1. Examine the usage level of social media services among users?
2. Examine the types and contents of environmental information disseminated by the social media on Environmental issues.
3. Examine the environmental information disseminated by the social media in promoting environmental awareness.

#### **1.4 RESEARCH QUESTIONS**

To address the above objectives, these research questions were proposed to guide the study of the problem under investigation.

1. What is the social media services usage level among users?
2. What are the types and contents of environmental information disseminated by the social media on Environmental issues?
3. What are the different factors of social media that assist in promoting environmental awareness?

#### **1.5 SIGNIFICANCE OF THE STUDY**

This research would add to literature on environmental communication through the social media. The successful completion of this study would help the stakeholders to identify the strategies empirical research on the types and contents of environmental information in Ghana. It also makes it possible to analyse the effects of environmental information on the environmental practices by urban dwellers in Adenta Municipal, in particular, and Ghana in general.

This would inform policy formulation on how to tackle the environmental sanitation problems as well as providing scientific information for government and municipal policy makers, environmental activists, researchers and other relevant bodies to enhance their environmental management efforts.

## **1.6 ORGANISATION OF THE STUDY**

The study on the role of social media and environmental awareness of urban dwellers in the Adenta Municipal area will be organised as follows: Chapter One discusses the background to the study, justification of the problem, general and specific objectives, research questions and significance of the study. Chapter Two will review related literature on social media and the environment. The chapter continues with the discussion on the relationship between environment and development, environmental degradation and poverty. It will also discuss the effects of littering with plastic bags, domestic solid waste and open air defecation as a global issue and highlighted the plastic waste menace of Africa in general and Ghana in particular. This will be followed with the discussion on the need for environmental communication through social media and its role in promoting environmental awareness. The chapter will conclude with the discussion on the social media, theory and the conceptual framework of the study.

In chapter Three, the study will describe the study area, research design and the study population. The chapter also includes the determination of sample size, socio-demographic characteristics of the respondents, sampling techniques, instrument for data collection, sources of data, of environmental awareness and techniques of data analysis. Finally, Chapter Four will summarise the findings, conclusions, recommendation for future research and actions to be taken by specific institutions or individuals.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

This chapter reviews related literature to the study. It examines the role of social media in creating environmental awareness. The review is done under a number of sub-headings such as the definitions, conceptual framework, theoretical framework and poverty, definition of concepts

#### **2.2 DEFINITIONS**

Social media has become an increasing phenomenon with many and varied definitions in public and academic use. Generally Social media can be referred to as the media used to expedite social interaction. Social media harmonizes digital media including the fusion of electronic texts, graphics, images and sound into a structured computerized environment that allows people to interact with the data for appropriate purposes. Social Media also contains design elements that create virtual social spaces encouraging interaction, thereby augmenting the appeal of the technology and promoting transitions back and forth from the platform to face-to-face engagement.

The Oxford English Dictionary describes social media as —Websites and applications that enable users to create and share content or to participate in social networking.‖ In other words, social media is where people in the internet communicate, share and discuss information about each other. The term social media is normally associated with any site in the internet. However, according to scholars, it is a web-based application allowing users to create a profile in a closed system, has other users with whom one relates with and can perceive them as friends (Boyd & Ellison, 2007).

It deals with the use of mobile and web-based technologies to design highly interactive platforms that enable individuals and communities to share, converse, create and adjust user-generated content (Kietzmann, Hermkens & McCarthy, 2011). User-Generated Content (UGC) is authorized by Web 2.0 (Kaplan & Haenlein, 2010). Web 2.0 is a term encompassing a second generation of internet-based and interactive applications that are developed around user-generated and user-adjusted content, such as wikis, blogs, podcasts and social networking sites. The term Web 2.0 is widely credited to Tim O'Reilly who used it as the theme of a conference in 2004 referring to a second generation of Web-based services that characterize openness for collaboration and interactivity (Boler, 2008, p. 39; O'Reilly, 2005). Web 2.0 allows internet users to join in the creative process.

The social media basically explains the various sites where people/users can post using applications such as Facebook, twitter, LinkedIn, Instagram, Snapchat and Whatsapp among others.

### **2.2.1 History of Social Media**

In the late 70s and in the beginning of the 80s, computers were not as common as today and were more a luxury or a rare commodity. The idea of staying inside home in front of a desk and a keyboard was not a good social idea or a popular way of spending time.

It was in 1978 when the Bulletin Board System (BBS) appeared which function as a notification to friends and other people about meetings, share information with postings and making announcements. These online meeting places were effectively independently-produced chunks of code that allowed users to communicate with a central system where they could download files or games (many times including pirated software) and post messages to other users (Digital trends, 2014). The BBS became a significant activity, gaining popularity in the 80s and 90s.

Later, other online services appeared as well like “The prodigy” (1984) and along with it the truly pioneer of the social network as we know now at day: AOL (America Online). For many people AOL was the inception of the internet by itself. One of the most fascinating features it could have had was the AOL member-created communities, where users could have profiles of themselves with detailed information.

By the mid-90s the internet was growing fast, websites like Yahoo and Amazon had just started and the need to have a PC in every home also started. According to the Digital trends (2014), by 1995, the site that could have been one of the first to fulfil the modern definition of social networking was born. Classmates.com was the website that provided the idea of virtual reunion as a phenomenon. It helped people to create a social network with old schoolmates; users could create personal profiles and share the information with people that they used to go to school with. Classmates.com was a hit almost immediately, and even today the service boasts some 57 million registered accounts (Digital Trends, 2014).

In 1997, the website Six Degrees appeared; giving the users the opportunity not only to create profiles but also to invite friends, organize groups and search other user profiles (a little like the beginning of Facebook). This website didn’t succeed enough and at the beginning of 2000 it disappeared.

It was finally in 2002 when the social networking boomed with the launch of Friendster which promoted the idea that a rich online community can exist only between people who truly have common bond (Digital trends, 2014). This site worked a little bit like an online dating site, and Friendster gained around of 3 million users before the poor structure and the technical problems dragged this website into an unquestionable drop.

In 2003 MySpace was launched and once became super popular in the social network community. It supplied music, music videos, photos, comments, and a changing features

environment. It helped mostly music bands and people who were interested into finding news about them. With time MySpace declined as well and its popularity waned. Finally in 2004, Facebook appeared. In January 2015 according to the website Statista and its Global social network ranked by number of users, Facebook was the largest social networking site in the world with 1.366 billion users. According to the Forbes list, Facebook is the 18th most valuable brand in the world.

Finally but not last, the technology revolution and constant upgrade of communication sources have helped to change social networking. With the appearance of smartphones, touch screens, iPads, tablets and so on, the mobility of our communication has become closer and more personal. This allows users to contact and talk with each other at any moment. Because of this, social networks have needed to adapt as well to the new requirements of their users. New applications have been developed and new ways of social networking have been created; smartphones ‘video and photo sharing platforms such as Snapchat, Vines or Instagram have been launched in the past few years. Mobile-based platforms also approach social networking in an entirely different manner than their Web based counterparts. Instead of offering a comprehensive social networking experience like the now-defunct Myspace and the struggling Google+, they rather focus in a specific kind of interaction service, that involves the sharing of public images, the private sharing of images, augmented reality, and location-based matchmaking. People essentially use the various services together with other platforms to build a comprehensive, digital identity (Digital Trends, 2014).

Digital technologies have become prevalent in contemporary daily life. In recent times, social media has drawn the attention due to its exponential growth rate in users within shorter periods. Also, social media which used to be primarily devoted to communication and sharing within

one's personal networks of relationships, are currently the locus of professional interactions. Tacer (2008) indicated that social media have overtaken pornography as the number one use of the internet.

### **2.2.2 Different kinds of social media**

In order to understand social media's importance, it is necessary to describe some of the most relevant social media platforms that are currently in the market and revolutionizing the world:

- **FACEBOOK**

According to its website, Facebook was launched in 2004 by Mark Zuckerberg, who was 23 years old at the time. The site gets income from advertising while being free for users to use. People sign up by giving some personal information, completing a profile and uploading photos of themselves. They can also share information, thoughts, news, videos and links to different kinds of interesting topics or media that can be found on the internet. People create an online network with old friends, family, co-workers or new people they are interested in connecting with.

Facebook allows you to keep in touch with people from all around the world. Distance is no longer a problem and Facebook allows others to get closer with just one click. Facebook can help ordinary people form a deeper connection with others that have fame or status, for example, official artist accounts or important political profiles. Facebook can also gather people with the common interests, and offer social interactions that may have been impossible outside of the digital world. Another feature that can be considered for Facebook's success is its easy-to-use design that allows people to read information, keep track of friends, and upload photos in a very simple way.

Facebook has also succeeded in the business sector. It is an online tool used by companies who want to increase their sales, become viral or have a better communication with their clients.

Facebook's economical profits have come via promotional and advertising tools that companies are willing to pay for in order to be announced within the social network. Many business accounts have a Facebook page, where people can go and follow the updates of different companies' products, rank their services, message them for information, give suggestions, etc. The most important service Facebook provides is the free publicity to companies and their products. This happens as users share information about the companies to their social network.

Businesses today may enjoy Facebook for many different reasons: including the easy integration options and free advertising opportunities. Preceding to the internet, the main avenues of advertising were radio or television commercials, printed ads in newspapers or magazines, direct mail marketing and word of mouth. Most of these venues can be expensive and less effective, hence businesses have found a great option with Facebook (Baisden, 2011).

- **INSTAGRAM.**

The official Instagram website defines it as a fun, quirky way to share people's lives with friends and others through a series of images or pictures. The user has the option to snap a photo with a cell phone and choose from different filters to make it better. It's a way of sharing people's daily life in a more visual way. Instagram allow people to experience moments in friends' lives through pictures as they happen. Through Instagram, the world is imagined to be more connected through photos'.

Instagram was launched on October 6, 2010 and originally only able on iPhones due to the good quality of their cameras. It surpassed 25 million users in early March, 2012. How does Instagram work? Instagram allows people to take photos within the app or use old photos from your phone album and share a photo moment of your daily life. Users can give a title to it, use

hash tags and the photos can be shared with others, not only through Instagram but also in other social platforms like Facebook or Twitter.

At first photos were publicly shared with anybody but people can choose to keep them private. The foundation of Instagram, as a social network, is to share photos with friends and people who can like and comment on them. With this, people share their daily lives in a dynamic visual way. A special feature of Instagram is hash tags, which allow users to find photos of some specific interest. It is like a filter that helps people to look for specific photos in an easy way. It also allows users to follow their favourite artist or public person and gives the feeling of a more personal connection with them. People that once we thought were out of our league can be followed. I personally enjoy this social network for photos, which I find is something more dynamic and nice to the eye. An image can describe a million things. I consider that this kind of social network can help to impact peoples 'minds and opinions by showing information through a strong image. For example, environmental problems around the world can be perceived better in this way.

- TWITTER

Kwak, Haewoon (2010) describes Twitter as a micro blogging service where users tweet about any topic within a 140 character limit and follow others in order to read and receive their tweets, that unlike the other social networks, doesn't need the reciprocation in following someone back.

Common practice of responding to a tweet has evolved into well-defined mark-up culture: RT stands for retweet, '@' followed by a user identifier address, and '#' followed by a word represents a hash tag. This well-defined mark-up vocabulary combined with the strict limit of characters conveniences users with brevity in expression. The retweet mechanism empowers

users to spread information of their choice beyond the reach of the original tweet's followers (Kwak, 2010). Twitter uses the hash tags to find "trending topics" which are the most common phrases or words people use in this platform during the day or latest hours.

With this, Twitter tries to encourage people into discussion. Kwak (2010) also claims that the trending topics are a good representation, if not complete, of issues that reflect societies in their public spheres. Twitter is written in tweets, which are the limited sentences the users write in their personal profiles. Tweets usually express an idea or an opinion. It can also be a critic toward something or just a random thought. The topics can be such as jokes, personal experiences, photographs, suggestions, etc.

People, who have Twitter, can follow a specific topic, person or news from all around the world in a very easy way and can also participate in chats that are made through the hash tags. If someone wants to know what the general opinion is about something, someone or a certain happening, then twitter is the tool. Some people claim that twitter is more a news media tool than a social network, but again it all depends how it is used.

Finally, Twitter helps to create data analysis about people preferences in different topics like elections, sports, movies and so on helping different companies, researches and people to understand society better. Websites like <https://interactive.twitter.com/> gathers some Twitter data and makes it available for everybody:

- YOUTUBE

YouTube was launched in May 2005 and was created by Steve Chen, Chad Hurley and Jawed Karim. YouTube official website describes it as a space that allows billions of people to discover watch and share originally-created videos. It provides a platform for people to connect, inform and inspire others across the globe. It acts as a distribution platform for original content creators and advertisers, both large and small.

### **2.2.3 Social Media in Ghana**

According to the GSMR (2016), there is currently over 3,424,971,237 internet users globally, with an internet penetration of about 46% of global population, a growth difference of 3% from the previous year. Facebook, the largest social media network according to its September 2016 data, reports a monthly active user base of 1.79 billion with 1.09 users active on mobile also making it the most active social media channel. The trend shows that 1-2 out of 3 persons found online is using Facebook probable using mobile to access it, a total social media usage is far higher when all the numerous social media channels are considered with a total of 2.31 billion, (Wearesocial Report, 2016).

The trend is no different in Ghana as the 7,958,675 of the population can be found online (28.4% penetration) ranking the country the 47th highest internet user base closely following that of the United Arab Emirates in the global internet user base rankings (GSMR, 2016). Social media usage in Ghana is also continuously growing and estimated at 40% social media penetration having 2.9 million social media users as at January 2016, with almost every online mobile user having a social media account or on a social messaging channel such as whatsapp (GSMR, 2016).

Research also shows that the average Ghanaian spend not less than 3hours 30 minutes browsing the internet on his/her phone, out of which 3hours 13 minutes of this is spent on social media (wearesocial report, 2016) which indicates the changing behavioural patterns of human activities away from the traditional lifestyle to most time spent on social media.

## 2.3 CONCEPTUAL FRAMEWORK

### 2.3.1 Behavioural Change Model

This reasoning was associated with the belief that if people were better informed, they would become more conscious of their environmental problems and consequently, would be inspired to behave in an environmentally responsible manner. Thus, as evident in Figure 1, when knowledge increases, environmentally favourable attitudes that lead to responsible environmental actions are developed (Hungerford HR, Volk TL, 1990).

**Figure 1: Behavioural Change Model**



Figure 1: Behavioural Change Model (Hungerford HR, Volk TL, 1990)

**Figure 2 Conceptual Framework**



The framework depicts that if people are better informed through social media on Environmental issue awareness; they would be more informed of environmental problems and thus, would be motivated to behave in an environmentally responsible manner.

## **2.4 THEORETICAL FRAMEWORK SOCIAL MEDIA AND ENVIRONMENTAL CONSCIOUSNESS.**

### **2.4.1 Social Media and Its Influence in Environmental Consciousness.**

According to Sandoval (2005), people usually express two kind of different opinions about the relationship between mass media and the environment. On one side some, those who aren't that attached to environmental issues may claim that media attention towards environmental matters is growing more and more, and the spread of information it is getting bigger and bigger. The ones tasked with divulgation and conservation of nature, tend to complain more about how mass media approaches environmental information, either in quality or quantity.

The relationship between mass media and the environment is very young and recent. More accurate data comes, according to Cudworth (2003), from 1960's- 1980's when events like Chernobyl, the oil spread in Torrey Canyon and the diffusion of scientific information, and international meetings like the UN's Human Environment Conference in Stockholm, Sweden have occurred. Only after these events have environmental matters began to gain attention from the media.

The media needed, as a consequence of these, to show interest in ecological issues in order to satisfy the necessities of the audience. To begin with, the information the media was given was mostly scientific and about international meetings on environmental issues. The language was more elaborate and difficult to understand for the general public. The content was controlled by researchers and governmental authorities. In the 1980's the creation of environmental organizations started to appear. This was thanks to the influence of social movements and social knowledge. Information was also made and delivered by social groups, students and people, whom started to get involved in environmental matters. Gonzalez (2007) states that their main criticism was against economical models and systems. Later, during the 90's the environmental

interest started to grow more from different sectors of the populations rather than only the scientists, scholars and the social organization.

Concepts like ambientalism were used and people from different industries began to help with the environmental discussion in the social spheres. Environmental impact studies, environmental consulting and the compensation for nature started to grow as well. Because of this, mass media needed to get more involved. Its content began to be divided in economic development and the environment. On the other hand, these two topics were separated completely. Zeran (2005) points out this kind of problem as the reflection of the liberal economic model which postulates information as a merchandise and not as a social public service.

Thanks to technological developments in mass media, information has become more public, helping different social groups to keep track of the environmental issues, exploitation of natural resources, international and community problems regarding environmental issues; and all of those can be related with other social aspects like health, traditions, customs, education, etc. A more dynamic activism can be achieved as well. Because of the image related to mass media and environmental matters, people may have the impression that mass media was, and might still not be fully committed to the environmental crisis that happens all around the world. Gonzalez (2007) believes that mass media, for example in Mexico, had put their personal and economical interest over the social wealth of the country and that only because of the constant push of society they have been forced to talk about ecology and the environment, although still in a fragmented way that doesn't allow free speech, debate and social criticism.

Does mass media have the control of generating environmental consciousness? Many environmental problems are social. The social dynamics drive to some of these environmental problems and the changes created after them have social effects. The environment can be a

problematic term and an abstraction of how different societies perceive and experiment their own environment. It is difficult to separate the environment from society. Cudworth (2003) defines the environment as the context which provides the conditions for the existence of the human species, and for the multifarious other living creatures and vegetation. She also says that for the ecological scientist, there are webs of interconnecting relations of dependency between humans and other animal life, plants, water and earth. Environmental justice and the institutionalization of the environment is one example of how communities and the environment co-exist and are often co-dependent of each other. For instance, if we look at a forest, environmental justice would make people ask about who gets to use and rule their forests and what affects these particular usages and the governance of forest has on forest conditions. One clear representation of this can be seen with the Amazon rainforest in Brazil where the deforestation of the zone has affected not only the wildlife but also the indigenous people who live in the place, forcing them to move away from their villages and homes. As indicated before, mass media's main function is to transmit a message to inform or entertain different audiences, which usually are formed by societies, communities or ideologies. It is their responsibility, as part of the social system which helps to create ideas, culture and communities, to share environmental matters as an important social topic that influences the cultural, political and social ways of the audience. Mass media as a weapon of information can be used for education. It can allow people to gather information from different topics such as the environment. It can also encourage societies to get more engaged with finding solutions to the different problems they have to deal with in a more sustainable perspective. Some entrepreneurs claim that environmental issues don't generate enough profits for the mass media big companies. Others say that even though mass media do try to put an effort into environmental issue information, it is not enough because the quantity of ecological problems that happen every day, which may over take the capacity of mass media to properly cover them.

### **2.4.2 The Importance of Social Media**

Social media, as part of mass media, helps with the influence and shape of social behaviours can do the same. Mashall McLuhan (1964) examines the social behaviour through the changes in media of communication. He describes media as the extension of the senses and therefore he claims that the introduction of a new medium, like social media, to a culture can change the way people in that culture behaves and alters their consciousness. Electronic media has changed the parameters of space and time by making communication almost instantaneous. In particular, social media has torn down these walls from a social point and impacted it with new patterns of information flow on social behaviour.

Kathleen C. and Anuheia R (2010) suggest that "technology has raised free speech to a whole new platform. Alternatively, reading opinions and propaganda through newspapers, posters, commercials, and even billboards; free speech is written and even texted on the internet all over the world. The coming of the social networking era has brought strength to the infinite access of free speech in our social environment" (Kathleen, C and Anuheia, R., 2010, 5).

In other words, social media has embraced free speech between users and has changed the way communication was previously used, giving social power to the audience as well. Social Media helps people discover information about problems that before were ignored by the traditional transnational mass media, and has given a heavier weight to issues that before were left behind. People can share their opinions, critiques and embrace the discussion in more dynamic ways. The oppression and limited communication, particularly in some countries, can be avoided, thanks to social media, where people have access to give, receive and share information in a more free and easy way. Where consumer interactions with corporations were once relegated almost exclusively to private communications such as letters, phone calls or discussions with friends; stakeholders can now easily make their opinions and complaints heard publicly ( Lyon and Montgomery, 2012, 14).

For example, I have seen that people in Mexico have started to express more opinions in political matters compared to the small voice they had before. Me, as someone being away from my homeland, can have access to information which allows me to understand the situation in the country, not only through the normal mass media like newspapers, television, radio and so on, that sometimes might be censored, but also by the opinion of the Mexican people. Mass media helps to create a broader perspective.

The audience can also be more selective about the kind of information they want to receive. The social media filters allow users to search for a specific topic in a very easy and instant way. Social media has become an important part of people's lives and technologies such as smartphones, tablets and social media are changing the way people access and consume media. Communities have become closer and the flow of information is faster than ever before. For instance the new generation of news has become viral and more visual. People can access information in more dynamic ways like videos, photos, text, blogs, and the interactivity between the audiences with it is more personal and instant. Something as easy as sharing a photo through societies can create more impact than newspapers, magazines, etc. People gets together to share skills and set up new ways of communication through social media in order to talk about specific issues that some big broadcasters may ignore or may consider as not as important as other topics.

This new way of communication has not only influenced social behaviours and communication processes but it has also altered the ways of advertising and how companies may work. The advertiser and the advertised blend together making an unilateral necessity between the companies and the audience, If a company hopes to succeed in this new generation of technology they must embrace social media(Vinnie. P and Ayuna, 2010).

As also mentioned before, social media like Facebook have created the possibility for companies to build virtual companies and personalities. Thanks to this a dialogue between the customers and businesses can be formed. Social media has transformed companies into large personalities, transcending beyond just a brand, they can operate as a personal connection, and they can have a more personal contact with their environment and the people they are trying to reach. (Vinnie. P and Ayuna, 2010).

Nir Eyal and Ryan Hoover (2014) say that companies attach their product to "internal triggers" creating habit forming methods to link their services to the users' daily routines and emotions. Instead of expensive marketing, social media can be a good tool to use these internal triggers to the costumers in a cheaper way. To share opinions and interests, through social media, has helped the companies to find these triggers in an easier and more personal way. Habit-forming technology is already here, and it is being used to mould our lives. The fact that we have access to the web through our various connected devices — smartphones and tablets, televisions, game consoles, and wearable technology gives companies far greater ability to affect our behaviour (Eyal and Hoover 2014). Eyal and Hoover (2014) argue that the habit-forming products can do far more good than harm and that the entrepreneurs and innovators have tremendous new powers to influence the everyday lives of billions of people. They believe that the trinity of access, data and speed presents unprecedented opportunities to create positive habit (Eyal and Hoover, 2014). For example, it can improve our relationships with society, friends, family, and people with common interests and with people all around the world.

Like Eyal and Hoover said, social media and habit-forming products can create good habits that, can help to improve social matters that were ignored before by the big companies and mass media; like environmental issues, social problems, etc. It can also help to connect isolated, minority communities to the rest of the world and the different realities beyond their own.

On the other side, social media can also affect our interaction and communication through interpersonal communication. The way people communicate now seems to change from a face to face form into a social media or mediated interaction. For people it's becoming easier to talk with people through Facebook, twitter, messages and other media that doesn't force the connection of people in a more physical and real way.

People don't need to have a personal or close contact with others anymore as long as the social networks exist. People can know what is going on in others' lives by just adding them in their social media. Interaction has become a little colder and distant but at the same time this has enable communities to get together without the real connection process that a face to face communication needs. People can follow others' thoughts, ideas, events and stages in life by just a click. It can either make us feel comfortable with knowing what is happening in society or feeling that we know what is happening with our connections without trying to put any kind of effort to it. Also, people can create their own digital personality through social media and build a reality that may sound more attractive than the honest reality, by only sharing their highlight re. In other words, it allows us to build and create a representation of ourselves to others by only sharing specific information.

#### **2.4.4 Role of Social Media in Raising Environmental Awareness**

The Humanitarian Centre Organization (2013) proposes that social media can be used to promote good environmental practices, share best solutions and raise awareness about environmental campaigns in other unforeseen ways. Social media can embrace activism all over the world and communicate to people in a faster way. It aids to open social discussion about environmental matters and share it with others as well. Previously, mass media centred on covering big events that were considered of more importance than others. The broadcast of certain topics could be manipulated or controlled by those whom where behind the information

delivered. People can now manage information on their own. Organizations can share their activities to others and urge people to join. People can see the efforts and solutions to environmental problems made by different organizations in order to try to raise awareness and consciousness.

Recognizing how natural resources are being exploited in countries around the world is different than seeing what is happening around the corner. Many times mass media claims that solutions are being put into place when sometimes this may not be completely true or they might only cover certain parts of the problem. If people can contribute to these solutions the problem itself feels more personal and therefore people care more about the issue. Mass media plays a pivotal role into social behaviour and changes. Social media can have the same effects on society. Just like mass media can have bad influence on these changes and identities, it can also generate positive influences. The Humanitarian Centre Organization (2013) also says that if a strong social media presence was combined with meaningful changes in behaviour, lasting change could be achieved and embedded in organizations.

Social media can aid create a culture of environmental awareness that allows action to take place. Social media can also help where mass media by itself cannot cover all these environmental issues, by using different people as new informants and journalists. Karin Gunther Russ claims in an article post to Our Health and Environmental Blog on April 2, 2013 that social media provides a favourable platform for non-profit organizations to reach their audience and to achieve a variety of goals. Facebook is most commonly used by non-profits for building awareness and engaging a strong base of supporters for the organization. Engaging an audience means more than just sharing information; it encourages them to take the information presented and act on it. Social media can aid to keep people interested in environmental issues, raise awareness and encourage action on good environmental practices. If social media is used properly, it can build a bigger culture environmental interest.

Social networks can provide different kinds and levels of information that are important to us (Krätzig & Warren-Kretzschmar, 2014). Some researchers found that social media provides opportunities to encourage environmental activism (Arbatani & Labafi, 2016). Furthermore, the study” (Mooney & Winstanley, 2013) found that utilising the pro-social aspects of Twitter could serve as a vital tool in informing the public better about environmental problems.

In addition to increasing environmental awareness, social media can also be employed to serve environmental communication. Many international NGOs or organizations have stressed the need of these new media for awareness-raising campaigns. For instance, the European Commission’s successful 2010 campaign on biodiversity had a strong social media component (BIO Intelligence Service for EECN, 2011). Furthermore, Greenpeace is one of the environmental projects has been using social media actively to advertise its campaigns.

Furthermore, the remarkable success of the Earth Hour in 2010, which became the largest social movement in history (WWF, 2010), with over a billion people from over 128 different countries turning off their lights for an hour, could partly be credited to the extensive social media used (Lokhandwala & Koshy, 2010).

On the other hand, some researchers found that social media does not seem to be a replacement for other traditional interventions; such as holding frequent face-to-face meetings. At best, social media may be considered as an addition to a more intensive social-based intervention (Vigrass, 2015).

Additionally, some studies state that there are serious threats for individuals and society in using social media platforms and thus a need for a sensible social media interaction (Zeitel-Bank & Tat, 2014). So, future research is also needed to examine the success of social media based communication in eliciting behaviour change and the overall effectiveness of various social media applications within the environmental fields (Hempel, 2014).

## **2.5 CONCEPTS AND DEFINITIONS**

**Environment:** Is a composite of many variables, which surrounds man as well as the living organisms. The Environment is made up of water, air, land and the interrelation ships which exist between water, air, land and human beings and other living creatures such as plants, animals and micro-organisms (Kalavathy, 2004).

**Social Media Definitions:** Social Media is defined as websites which allow profile creation and visibility of relationships between users (Boyd & Ellison, 2008); web-based applications which provide functionality for sharing, relations, group, conversation and profiles (Kietzmann et al., 2011).

**Environmental awareness:** Environmental awareness can be defined as the ability of an individual to understand the connection existing between: (a) human activities, (b) the current status of environmental quality [Liu, 2014: Mei et al, 2016), and (c) his/her willingness to take part in environment activities (Umuhire et al., 2016)

## **2.6 CONCLUSION/SUMMARY**

This chapter discusses some definitions of social media, environmental awareness, as well the theoretical framework on social media and environmental awareness. It also conceptualised the relationship between social media and environmental awareness and gave some empirical evidence of the relationship that have been established by some scholars.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 INTRODUCTION**

This section discusses the method of the study. It captures the research design, sources of data, instrument used to collect data as well as data analysis procedure. It describes the study population, sampling procedure and sample size. Lastly it captures the limitations of the method employed to conduct this study

#### **3.1 SAMPLE SIZE AND SAMPLING TECHNIQUES**

This section discusses the method of the study. It captures the research design, sources of data, instrument used to collect data as well as data analysis procedure. It describes the study population, sampling procedure and sample size. Lastly it captures the limitations of the method employed to conduct this study.

#### **3.2 RESEARCH DESIGN**

Research design is a strategy that provides a framework to address the general objective of the study. This study adapted the descriptive study design to find out the influence of social media on the environmental awareness of dwellers of Adenta. A descriptive study requires that information is gathered from a set of cases that are carefully selected to enable the researcher make estimates of the precision and generalisation of the findings (Singleton & Straits, 2009). The study employs the Type I of the “Acapulco Typology” research design of agenda setting theory which compares the news coverage of the media for a set of major issues to the aggregate public agenda (McCombs & Bell, cited in Stacks & Salwen, 2014). In this instance, the emphasis will be on social media coverage.

#### **3.3 SOURCES OF DATA**

The researcher employed both primary and secondary data for the study. The primary data was collected through survey questionnaire. Secondary data on the other hand will be collected

from social media sites on environmental awareness such as facebook, twitter and whatsapp.

### **3.4 STUDY POPULATION**

The target population for this study was urban community dwellers of Adenta Municipality.

The classification of urban community in this study is based on the operational definition of the Ghana Statistical Service that it is an area with a population of 5,000 and above (Ghana Statistical Service, 2010).

The population of Adenta Municipality, as stated in the 2010 Population and Housing Census, is 78,215. Males constitute 50.3 percent and females represent 49.7 percent (GSS, 2010).

The researcher chose urban population of Adenta Municipality because environmental sanitation issues in urban communities are different in nature from that of rural communities. Some characteristics such as population density, type of economic activities, and food and energy consumptions in urban communities generate a type of waste that differs from what exists in the rural areas (Torrey, 2004).

Sampling enables a researcher to study a relatively small number of units in place of the target population. The study used non-probability sampling techniques to select the sample size from the target population under study. The study adopted the 500 sample size as it was reasonable and feasible for this particular study. The sample size determination was based on time constraint and limited resources. It was assumed that almost everyone in the urban communities drinks sachet water and uses plastic carrier bags. The same way, domestic solid wastes of all types, organic and inorganic are generated by people in urban communities. However, for some reasons they are not able to dispose all these wastes legally (Mariwah, Kendie & Dei, 2010). The unit measure of the sample frame was permanent residential status of a community member who was 15 years and above, and had lived in the study area for at least two years. An

adolescent age limit of 15 years was set by the researcher with the view of getting respondents who were responsible and were likely to understand environmental issues.

### **3.5 INSTRUMENTS FOR DATA COLLECTION**

The choice of instrument and design for data collection were therefore very crucial for the study. This was to avoid errors that can negatively affect accuracy, reliability, and validity of the findings. The study employs questionnaire for the data collection. Questionnaire is divided into three parts. First part consists of statements related to social media usage level of respondents. Second part is based on environmental concern of respondents. Items of environmental concern are measured on five point Likert scale. With this the respondents are asked to express their level of agreement or disagreement on a scale of 1 to 5, [1] =strongly agree, [2] = agree, [3] = neutral, [4] = disagree, [5] = strongly disagree. Third part of the questionnaire explores the factors of social media applications that encourage environmental friendly behaviour in respondents. A set of self-generated statements are used for analysis purpose. All items are measured on five point Likert scale ranging from [1] = strongly disagree to [5] = strongly agree.

### **3.6 DATA COLLECTION PROCEDURE**

The study used survey research, documentary analysis of social media broadcasts and structured interviews to collect both primary and secondary data. The questionnaire was used to collect primary data from 500 dwellers at Adenta. Two (2) research assistants were trained to assist in the administration of the questionnaires. The target population was heterogeneous in nature and in terms of languages spoken. The documentary or content analysis was used to extract requisite data on environmental sanitation from news bulletins from social media platforms from January, 2020. Views were solicited on littering with plastic bags, domestic solid waste, open air defecation and environmental consciousness of urban dwellers.

### **3.7 DATA ANALYSIS**

The primary and secondary data collected through questionnaire and content analysis analysed using descriptive statistics. Statistical Product for Service Solutions (SPSS) version 21.0 software was used to aid in the data analysis. Frequencies and percentages were used to analyse the data.

The analysis of Research Question 1(RQ1) identified the usage level of social media services by users. Respondents are asked to select the social media sites that they used frequently. These include Facebook, Whatsapp, twitter, Instagram etc. Descriptive statistics were employed to analyse the data. Analysis of RQ2 measures the types and contents of environmental information disseminated by the social media on Environmental issues. His was analysed using content analysis. Exploratory factor analysis is performed on data to analyse RQ3. Exploratory factors analysis is a method of data reduction and it is done on the selected items to bring out factors affecting awareness level of environmental issues and promoting pro-environmental behaviour.

### **3.8 LIMITATION OF THE STUDY**

All forms of media play a role in dissemination of environmental information; however this research is limited to only four social media platforms like facebook, whatsapp, Instagram and Twitter. This is because these are the platforms widely used by people in the country and are easily available. This research project relied on both primary and secondary sources of information. A limitation with secondary data collection methods is that there is very little research done in the area of social media in creation of environmental awareness globally and in Ghana. In addition, due to limited resources, the study is situated in the Adenta since it's an emerging urban area that faces environmental challenges. Resources are limited to carry out a nationwide survey and there is also no available national data to carry out such a study.

## CHAPTER 4

### CONCLUSION

The use of social media in changing behaviours has not been widely studied, despite the dramatic increase in Internet and social network use among teens and young adults. The general use of social media makes it an easy, cost effective way to reach out to large numbers of people (Korda & Itani, 2013). This indicates that social networking could potentially provide an easily accessible social support system, regardless of distance.

Social networking can hasten the progress of behavioural interventions to directly engage participants in each step of the project (Thackeray et al., 2008). In addition, many Internet and social media users are actively seeking information and advice when online (Korda & Itani, 2013). Behavioural interventions could utilize information-seekers and provide the opportunity for user-generated content.

Environmental issues are progressively getting to be concern of the world (Schultz et.al, 2016). Also, awareness of environment has become one of the issues that all countries and major organizations working on it at International level (Verma, 2016).

Municipal solid waste management generally in Greater Accra, is at present delivered in an unsustainable manner and Adenta Municipal is not an exception. Due to uncontrolled urbanisation, large quantities of waste are generated daily, and this put much pressure on an already strained solid waste management system. Coupled with weak institutional capacity, and lack of resources, both dwellers and the city authorities face difficulties in ensuring that all the waste generated in the city is collected for disposal. Home collection of waste is limited to high and, some middle income areas while the poor and the less privileged are left to contend with the problem on their own. This leads to indiscriminate disposal of waste in surface drains, canals and streams, creating unsanitary and unattractive environments in many parts of the city.

Environmental consciousness is the acquisition of knowledge about environmental problems or issues that translate into attitudinal changes and subsequently results in a tendency to act positively towards the environment (Kwansah-Aidoo, 2004). It comprises both an intellectual and an affective element. Environmentally consciousness would equip the individual to possess knowledge on specific environmental problems. The individual will be awakened by the knowledge to act in a desirable way to solve problems related to the environment which will form into a positive attitude towards the environment. Such right behaviour would represent affective dimension of environmental consciousness (Rannikko, 1996; Kwansah-Aidoo, 2004).

The creation of environmental awareness and education are two ways to solve these problems. Contribution of media generally and social media particularly in raising environmental awareness in the target group is key because it produce greater environmental influence on growth of world population and standards for high lifestyle of our communities (Scholtz, et al, 2016; Verma,2016). Social Media has some notable benefits such as broader spread, easy availability, speed, immediacy and usability that are appropriate for environmental awareness (John, 2012). Additionally, John (2012) said that there are various ways that can be used to raise environmental awareness in social media sites such as Facebook, Twitter, Blogs and YouTube. Environmental awareness and environmental knowledge have positive correlation; by increasing environmental knowledge the environmental awareness will increase (Schultz, 2016).

This study provides evidence to support the efficacy of Internet and social media interventions and their role on environmental awareness particularly at Adenta Municipality.

## REFERENCES

- Boyd, D., & Ellison, N. (2008). Social Network Sites: Definition History, and Scholarship. *Journal of Computer-Mediated Communication*, 13, 210–230.
- Boateng, A. B. (1993). Moderating the interface: Media role in environmental Management in Ghana. In S. T. K. Bofo (Ed.), *Media and environment in Africa: Challenges for the future* (pp. 45-51).
- Coleman, E. (2015). We must work hard to improve sanitation - Zoomlion. Retrieved from <http://www.ghanaweb.com/GhanaHomePage/News Archive/We-must-work-hard-to-improve-sanitation-Zoomlion-372834>.
- Dartey, Y. (2011). Capacity of journalists in environmental reporting. Accra: EPA. Retrieved from <http://www.ghanabusinessnews-.com/2020/02/01/epa-to-buildcapacity-of-journalists-in-environmental>.
- Environmental Protection Authority. (2002). *Eco-schools*. Victoria: Author. Retrieved January 10, 2020, from <http://www.eco-schools-litterless.org/References-p14.html>.
- Statista. Leading social networks worldwide as of April 2016, ranked by number of active users (in millions) 2016 [cited 2016 April]; Available from: <http://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users>.
- Verma, S.K., ENVIRONMENTAL AWARENESS: A NEED OF NATURE. *Journal of Global Resources* Volume, 2016: p. 182-185.
- Amedahe, F. K. (2002). *Fundamentals of educational research methods*. Cape Coast: University of Cape Coast Press.
- Ghana Statistical Service (2010). Estimated population of the Adentan Metropolis. Retrieved from [http://www.statsghana.gov.gh/docfiles/2010\\_District\\_Report/Greater Accra/Adentan/Metropolitan](http://www.statsghana.gov.gh/docfiles/2010_District_Report/Greater Accra/Adentan/Metropolitan)
- Stacks, D. W., & Salwen M. B. (2014). *An integrated approach to communication theory and research*. Retrieved from [https://books.google.com.gh/books/about/An\\_Integrated\\_Approach\\_to\\_Communication.html?id=V5aNAgAAQBAJ&redir\\_esc=y](https://books.google.com.gh/books/about/An_Integrated_Approach_to_Communication.html?id=V5aNAgAAQBAJ&redir_esc=y)

Singleton, R. A., & Straits, B. C. (2009). *Approaches to social research* (5th ed.). New York: Oxford University Press

Torrey, B. B. (2004). Urban ecosystem series. Retrieved from, [www.Wikipedia.com](http://www.Wikipedia.com).

Davis, A., & Jurasek, M.(2008). Context change and travel mode choice: Combining the habit discontinuity and self-activation hypotheses. *Journal of Environmental Psychology*, 28(2), 121-127.

DeBar, L. L., Dickerson, J., Clarke, G., Stevens, V. J., Ritenbaugh, C., & Aickin, M. (2009). Using a website to build community and enhance outcomes in a group, multi-component intervention promoting healthy diet and exercise in adolescents. *Journal of Pediatric Psychology*, 34(5), 539-550.

De Young, R. (2000). New ways to promote pro environmental behaviour: Expanding and evaluating motives for environmentally responsible behaviour. *Journal of Social Issues*, 56(3), 509-526.

Duggan, M., Ellison, N. B., Lampe, C., Lenhart, A., Madden, M. (2015) *Social Media Update 2014*. Pew Research Center. Retrieved from:[http://www.pewinternet.org/files/2015/01/PI\\_SocialMediaUpdate20144.pdf](http://www.pewinternet.org/files/2015/01/PI_SocialMediaUpdate20144.pdf)

John, I. *The Social Media as a platform for creating environmental awareness in the Niger Delta region*. 2012

Scholtz, B., C. Burger, and M. Zita, *A Social Media Environmental Awareness Campaign to Promote Sustainable Practices in Educational Environments*. 2016: p. 355-369.

Verma, S.K., *Environmental Awareness: A Need of Nature*. *Journal of Global Resources* Volume, 2016: p. 182-185

Webb, T. L., Joseph, J., Yardley, L., & Michie, S. (2010). Using the Internet to promote health behaviour change: A systematic review and meta-analysis of the impact of theoretical basis, use of behaviour change techniques, and mode of delivery on efficacy. *Journal of Medical Internet Research*, 12(1), e4.