

GHANA INSTITUTE OF JOURNALISM

SCHOOL OF GRADUATE STUDIES AND RESEARCH

**ATTITUDE AND BEHAVIOUR TOWARDS LITTERING; A CASE STUDY OF
KLOTTEY KORLE RESIDENTS**

BY

EMMA AKU OBIRI

MADC 19085

**A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL OF THE GHANA
INSTITUTE OF JOURNALISM IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF ARTS IN DEVELOPMENT COMMUNICATION**

SEPTEMBER, 2020

DECLARATION

I hereby declare that this is entirely my original work and has not been submitted either in part or whole for the award of a degree at the Ghana Institute of Journalism or any other institution, except for the works which were consulted and have been duly referenced. This research was done by me, Emma Aku Obiri, under the supervision of Dr. Richard Boateng.

EMMA AKU OBIRI (MADC 19085)

(STUDENT)

Date: 01/10/2020

Signature

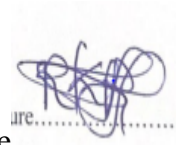


DR. RICHARD BOATENG

(SUPERVISOR)

Date: 01/10/2020

Signature



DEDICATION

I dedicate this dissertation to everyone who contributed in diverse ways to make it a success.

ACKNOWLEDGEMENT

I am first and foremost grateful to God for giving me the strength to do this work. I also appreciate all those who have given me support for the production of this work. I am most grateful to my supervisor, Dr. Richard Boateng for his guidance, patience, expertise, and great understanding while undertaking this project. Furthermore, I wish to sincerely thank all the respondents who took time off their busy schedule to assist answer the survey questionnaire as well as the key informants at the Ministry of Sanitation and Water Resources for taking time to answer my lengthy questions.

TABLE OF CONTENTS

DECLARATION.....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENT	iv
TABLE OF CONTENTS	v
LIST OF TABLES	vii
ABSTRACT	viii
CHAPTER 1 (INTRODUCTION)	
1.1 Background of the Study.....	1
1.2 Statement Of Problem	4
1.3 Main Objective.....	5
1.4 Specific Objectives.....	5
1.5 Research Questions	5
1.6 Significance of Study.....	6
1.7 Definition of Terms	6
1.8 Methodology	7
1.9 Scope of Study	7
The Study Area	8
1.11 Organization of Study	8
CHAPTER TWO: LITERATURE REVIEW	9
2.0 Introduction	9
2.1 Nature and extent of littering	9
2.2 Attitude and behavior towards littering	13
2.3 Impact of littering	16
2.4 Measures to combat littering	20
2.5 Theoretical framework	22
2.6 Conceptual framework	22
2.7 Research Gaps.....	23
CHAPTER THREE (METHODOLOGY)	25
3.0 Introduction	25
3.1 Theoretical Perspective	25
3.2 Research Design and organization of the study	26
3.3 Data types	27
3.4 Exploration Survey	27
3.5 Study Population and Sample size	28
3.5.1: Study Population	28
3.5.2 Sample size	28

3.6 Sampling for the households	28
3.6.1: Osu	28
3.6.2 Adabraka	28
3.6.3 Asylum Down	29
3.7: Household questionnaires and interviews	29
3.8: Analysis of the data and presentation	30
3.9: Challenges of the study	31
CHAPTER FOUR (RESULTS AND DISCUSSION)	32
4.1 Nature and extent of littering	32
4.2 Attitude and behavior towards littering	35
4.3 Impact of littering	43
4.4: Solutions to littering	46
CHAPTER FIVE (SUMMARY OF FINDINGS, CONCLUSION AND	
RECOMMENDATION)	47
5.1 Summary of findings	47
5.2 Conclusion	48
5.3 Recommendations to:	48
References	50
Appendix 1: Questionnaire	56
Appendix 2: Interview Guide	64

LIST OF TABLES

Table 4.1.1: Summary of respondents' demographic characteristics	32
Table 4.1.2: Klottey Korle and litter	32
Table 4.1.3: Description of the litter problem in Klottey Korle	33
Table 4.1.4: Sources of litter	33
Table 4.1.5: Littering among the residents before the survey	34
Chart 4.1.1: Areas littered in Klottey Korle	34
Table 4.1.6: Amount of litter in Klottey Korle	35
Table 4.2.1: Reasons for littering	36
Table 4.2.2 Reasons for not littering	36
Table 4.2.3: Cross tabulation of littering by gender	37
Table 4.2.4: Cross tabulation of littering behaviour by education	37
Table 4.2.5: Cross tabulation of littering behaviour in areas under study	37
Table 4.2.6: Residents' opinion on why others litter	38
Table 4.2.7: Residents' level of concern about littering	39
Table 4.2.8: Willingness to attend an antilittering campaign or event voluntarily	39
Table 4.2.9: Responsibility of keeping Klottey Korle clean	40
Table 4.2.1.0: Have you seen or heard any littering prevention message(s) in Klottey Korle ...	40
Table 4.2.1.1: Sources of prevention messages	41
Table 4.2.1.2: Effectiveness of litter prevention messages	41
Table 4.2.1.3: Likelihood of cautioning a litterer	41
Table 4.2.1.4.: Level of education versus willingness to voluntary participate in their neighbourhood.	42
Table 4.2.1.5: Gender versus cautioning response	43
Table 4.2.1.6: Gender versus willingness to voluntarily participate in an antilittering event/campaign	43
Table 4.3.1: Economic impacts of littering	44
Table 4.3.2: Environmental impact	45
Table 4.4.1: Solutions to littering	46

ABSTRACT

The littering problem is an inherent fact of modern living that exists in one way or another in many countries, cities, and communities of the world. In Ghana, urban littering especially is one of the most visible and persistent environmental issues facing the government and costs the government several millions of cedis each year to clean up and repair the damages associated with it.

Studies done have continually shown that littering is a result of attitudinal and behavioral problems in human beings and as such, it is seen as a human impact on the environment and the society; a personal choice with public consequences.

Over the years, the government of Ghana has implemented a range of strategies to tackle the litter problem. Some of these are the introduction of a National Sanitation day, distributing dustbins to households, prohibiting littering, monitoring, arresting, and fining of individuals who litter, among others. However, these solutions have not been as effective as they lack community participation. Furthermore, they do not focus nor seek to understand citizen's attitudes and behavior towards littering. The purpose of this project which focused on Klottey Korle was guided by four main objectives; (1) to ascertain the nature and extent of littering in Klottey Korle, (2) to determine Klottey Korle residents' attitude and behavior towards littering, (3) to assess the effect of littering in Klottey Korle, (4) to recommend solutions to curb the littering problem

The study findings were largely based on a survey of households sampled from Osu, Adabraka, and Asylum down in Klottey Korle. The research findings revealed that people and keeping trash by the roadside are the major sources of litter in Klottey Korle. The study also revealed that the residents had both positive and negative behavior towards littering. The study recommends more community engagement and dialogue, awareness creation through civic education which should target all citizens, and the provision of more litter bins.

CHAPTER 1 **INTRODUCTION**

1.1. BACKGROUND OF THE STUDY

In today's world, Littering has become an intrinsic way of life, it has become a problem that is increasingly growing and affecting many countries. This is having negative effects on the health of residents in communities, deteriorating the quality of environmental and economic growth of urban, and rural areas (Ojedokun & Balogun, 2011). While, there are several definitions of Littering, Schultz, Bator, Large, Bruni, & Tabanico, (2011) says Littering' refers specifically to the human behaviour of disposing of waste improperly. The throwing away of waste on the ground intentionally or unintentionally on a daily basis. In Accra Ghana especially, littering is a persistent challenge that costs the government huge amounts of money annually to cleanup.

Litter is a visible problem with many sources. It can be broadly defined as throwing trash or any visible solid waste improperly in the wrong places. It may originate from natural sources such as animals and plants or anthropogenic sources. It may include a wide variety of wastes such as plastics, paper, glass, metals, vegetation, dead animals, and construction materials, and so on (Armitage & Rooseboom, 1999). According to Schultz et al (2011), Littering is a result of human behaviour. This behaviour affects people's lives, gives tourists a bad view of the locality, and leads to environmental degradation (Butcher, 2005). Whether intentional or accidental, littering begins with the individual, and the habit has now become so common that it has become an interesting area of research.

Given the environmental and social problems that result from litter, different strategies have been adopted worldwide to reduce or to prevent littering in public places such as imposing fines and sanctions, conducting cleaning campaigns, raising public awareness, locating well-designed trash

cans in public places, and promoting anti-littering culture through education at early ages (Kollmuss & Agyeman, 2002; Al-Khatib et al., 2009; Wever et al., 2010).

In Ghana, some of those strategies are the Government imposition of the National Sanitation Day where every first Saturday of the month, communities come together to clean up the environment and distil their gutters. Also, the distribution of dustbins through Nawabin helps in managing the littering problem among others. In addition, Private Organizations have not been left out, Waste Management Companies like Zoomlion, have also employed people who are responsible for the day to day cleaning of the streets, and provision of dustbins for households to collect and dispose of their litter. Others have also brought several strategies to curb this cankerworm but especially in Accra, they have not been very successful. Could it be that they are successful on paper but its implementation is the problem as Bell and Russel (2002) puts it?

The failures of these strategies strongly imply that it may be an attitudinal or behavioral problem. Also, the majority of these programs and interventions are not based on sound principles of human behaviour (KAB, 2009). The failure also suggests that the strategies require a psychological intervention with the public being consulted to make them successful (Okeoma & Nkwocha, 2009).

Attitude can be defined as a favorable or unfavorable evaluation reaction toward something or someone, exhibited in one's beliefs, feelings, or intended behavior (Myers, p. 36). It is a social orientation - an underlying inclination to respond to something either favorably or unfavorably which either can be positive or negative.

Behavior is referred to as an organism's external reactions to its environment. Behavior may be modified according to positive or negative reinforcements from the organism's environment or according to self-directed intentions.

People acquire beliefs automatically by relating them to certain items, characteristics and/or occasions. People analyze benefits and costs of doing particular behaviours and they therefore tend to form good attitudes towards behaviour that seem to have a consequence that they desire and bad attitudes towards those that don't have a consequence they desire (Ajzen, 1991; Leijdekkers et al., 2015).

Therefore, attitude and behavior towards littering is referred to as a person's reaction whether favorably or unfavorably towards the throwing of trash or any visible solid waste improperly in the wrong places. An individual can have a negative attitude and positive behaviour or a positive and a negative behaviour towards littering. A negative attitude towards littering is important for environmentally sensitive actions and a positive attitude is environmentally destructive. (Kaiser et al., 1999). This negative attitude, if turned into a behaviour, could lead to reduced money and time spent on litter cleanups and environmental campaigns. A negative response could also be an outward display of values on cleanliness. Therefore, questions arise as to why some people lack this negative attitude. Ojedokun & Balogun (2013) argue that the people with these attitudes have some characteristics which control their thoughts, feelings and in turn their littering actions.

Over the last several years Africa has urbanized quickly (Freire, 2014). The population growth and rapid urbanization rate has aggravated the waste generated in cities, hence the increasing concern about the repercussions of environmental pollution problems such as littering on health, social, economic and aesthetic related issues of urban environments. Whereas developed nations have governments, agencies, international organizations, entities and special interest groups that fund

and provide expertise on littering research, these efforts lack in developing countries (Asante & Stephenson, 2006) leading to little or no knowledge on the matter.

1.2. STATEMENT OF PROBLEM

The pollution of the environment with litter is a common occurrence in Ghana. It is so pervasive that most environmentalists and well-meaning Ghanaians are worried about the state of the environment that the current generation will bequeath to the future generations if the incessant littering act is unchecked. The Director of the Environmental Health and Safety Unit of the Accra Metropolitan Authority has indicated that Ghana produces 13,000 tons of waste on daily bases. A performance audit report of the Auditor General on Solid waste management by the Accra Metropolitan Assembly has also indicated that the Assembly spends an average of GH¢ 6,570,000.00 annually on collection of solid waste in the Accra Metropolitan area. There is therefore the need for a holistic study into this phenomenon to bring about sustainable solutions.

Unfortunately, most research studies or articles on Littering like Afnan, Humood & Khalil (2019) “Attitudes and opinions towards public littering in the Kingdom of Bahrain”, Quarshie (2015) “Assessment of litter on the banks of some selected lagoons along the eastern coast of Ghana and Brooks & Davoudi (2017) “Litter and Social Practices Journal of Litter and Environmental Quality, all tend to focus on either the qualitative or quantitative aspect of the study but never both.

That is, to either explain causal relations between observable phenomena (i.e. attitudes and littering) to deduce and generalize or observe behaviours of people to infer meanings. Most of these studies forget the need to bridge the gap between these methods so that there is a holistic view of studying the phenomenon to understand and present the full picture of the phenomenon.

This study will therefore use both the quantitative and qualitative approach to bring an all-inclusive rational, in-depth understanding and better appreciation of the littering habits of the residents in the Klottey Korle constituency.

1.3. MAIN OBJECTIVE

To investigate the attitude and behaviors of Klottey Korle Constituents towards littering.

1.4 SPECIFIC OBJECTIVES:

1. To ascertain the nature and extent of littering in Klottey Korle.
2. To determine Klottey Korle Residents' attitude and behaviour towards littering.
3. To assess the effect of littering in Klottey Korle.
4. To recommend solutions to curb the littering problem.

1.5. RESEARCH QUESTIONS

The research was guided by the following questions:

1. What is the nature and extent of littering in the Klottey Korle Constituency?
2. What are the attitude and behavior of the residents of Klottey Korle towards littering?
3. What are the effects of littering on the residents as well as the Constituency?
4. What are some solutions that can be recommended to curb the littering problem?

1.6.SIGNIFICANCE OF STUDY

In spite of evidence of the negative health, environmental, and economic impacts, littering continues to be a problem and therefore warrants ongoing research attention. In some parts of Europe and America, there has been several research focused on Littering and especially people's attitude and behaviour towards it. (Keep America Beautiful, 2009, Reiter et al., 1980; Grasmick et al., 1991; Lehman et al., 2004; Beck, 2007; Keep Britain Tidy 2009 & 2013). In Ghana, even though such research works do exist, there are limited, this research therefore seeks to add more knowledge to existing literature as well as narrow the findings to a specific locality to try as much as possible to understand their attitude and behaviour towards littering in order to lay a solid foundation to finding effective and long-lasting solutions against the problem.

1.7 DEFINITION OF TERMS

1. **Litter** is a visible problem with many sources. It can be broadly defined as throwing trash or any visible solid waste improperly in the wrong places. It may originate from natural sources such as animals and plants or from anthropogenic sources.
2. **Littering** refers specifically to the human behaviour of disposing waste improperly. The throwing away of waste on the ground intentionally or unintentionally on a daily basis.
3. **Attitude** can be defined as a favorable or unfavorable evaluation reaction toward something or someone, exhibited in one's beliefs, feelings, or intended behavior
4. **Behavior** consists of an organism's external reactions to its environment.
5. **Attitude and Behavior towards littering** is referred as a person's reaction whether favorably or unfavorably towards the throwing of trash or any visible solid waste improperly in the wrong places

1.8 METHODOLOGY

A case study design will be adopted for this study. It is an empirical research that allows the research to investigate and understand the current attitude and behaviour of the residents of Klottey Korle towards littering.

The study will employ the use of mixed methods for data collection, which is a combination of both quantitative and qualitative methods. Questionnaires will be distributed to respondents in the Constituency under study, the researcher will also be in the constituency for a while and observe how residents litter in their communities. In addition, personal interviews will be conducted at the Waste Management Office, Sanitation Service providers, District Offices, Town and Country planning departments and Metropolitan Health Directorate of the Ghana Health service in the Constituency.

1.9 SCOPE OF STUDY

This study is a dissertation focused on littering: its extent and nature, attitudes and behaviours and its effects on residents in the Klottey Korle Constituency. As much as littering has effects on all aspects of society, this paper will be focused on the environmental and economic effects of littering. The findings of the paper will be used to make recommendations on how best people's attitudes and behaviours concerning Littering can be managed. A study of this magnitude should have covered more areas and even the whole country if possible because of time and financial constraint the researcher has limited the area to the Klottey Korle constituency in Accra. Particularly, Osu, Ringroad, Circle, Asylum down, North Adabraka and Tudu.

1.10 THE STUDY AREA

Klottey Korle is one of the constituencies represented in the Parliament of Ghana. The Klottey Korle constituency is located in the Greater Accra Region of Ghana. According to the 2010 Population and Housing Census, the estimated population of the Constituency is 121,723 with 10,136 houses and 35,508 households. Some of the communities in the constituency are Osu, Ringway Estates, Asylum Down, North Ridge, West Ridge, Ministries, Gold Coast City, North Adabraka and Tudu.

1.11 ORGANIZATION OF STUDY

The study has been divided into five chapters.

Chapter one covers the background of the study, the statement of the problem, objectives of the study, research questions, the scope of the study, the organization of the study, and the methodology to be applied. Chapter two reviews related literature for the study. Chapter three involved the methodology used in collecting data for the research. The use of both Quantitative and Qualitative methods instruments will be used in data gathering. From Questionnaire to personal Interview and Participant Observation. Chapter four deals with the presentation of the results, data analysis and discussion. Finally Chapter five draws conclusions from the main findings and proposes some recommendations.

CHAPTER TWO **LITERATURE REVIEW**

2.0 Introduction

Littering is not a novel environmental pollution problem. However, it differs from other types of pollution because it results from the collective action of numerous individuals not from a small number of corporations (Feld, 1978). Litter is the end result of littering. The first efforts of behavior experts to solve environmental issues began with the problem of littering (Cone & Hayes, 1985) because littering was seen as a behavioral problem that could cause significant impact on the economy, environment and society (Torgler et al., 2008; Bennett, n.d.).

THEMATIC ANALYSIS

2.1 Nature and extent of littering

The act of littering is the most visible form of environmental degradation, though mostly ignored (Fennie, 1973), but poses various environmental sustainability threats (Steg and Vlek, 2009). While the littering problem is currently receiving global attention, the phenomenon has always been in existence. Melosi (1981) ascribed the problem of littering to refuse and garbage tossed in the street. He noted that the litter problem was a result of industrialization as well as the development of the European cities. Mumford (1961; as cited by Beck, 2007), said that industrialization produced the most degraded urban environment the world had yet seen.

A wide range of definitions of litter and littering has been used in literature. Litter can be defined as any piece of glass, plastic, paper, metal, cloth, rubber, food, or food by-product which is thrown away in public places outside waste collection containers (H.A. Arafat et al., 2007). Waste outside

any container is not referred to as litter (H.A. Arafat et al., 2007). Geller et al. (1982), Stokols et al. (1987), Keenan (1996) and Hines et al. (1986-87) define littering as the thoughtless, inappropriate discarding of small quantities of wastes (Ojedokun & Balogun, 2013). Littering is also leaving behind unwanted and unnatural elements in the environment (Green, 2001). Powls (2005) defines littering the act of disposing rubbish improperly especially along roadsides, highways and streets. Littering can be intentional, unintentional or gross. Intentional littering is when someone deliberately throws trash while unintentional is when litter accidentally falls off a moving vehicle. Gross littering is when someone deposits a large amount of waste into a ditch, a bin for small litter or has an illegal dumpsite.

Littering can be categorized into active and passive. The researchers argue that littering is a two-stage process of (a) placing litter in any location in the environment and then (b) failing to remove that litter when leaving that location. This failure to remove litter is termed as passive littering. Active littering is whereby an individual takes a shorter amount of time to litter an object, for example, just before leaving or while passing through an area (Sibley & Liu, 2003). Passive littering compared to active littering is more resistant to change because of forgetfulness and the decreasing feeling of responsibility of picking up the litter (Msezane, 2014).

In littering research conducted in the 1970s, the first of its kind, Keep America Beautiful (KAB) found that litter originates from seven sources: household rubbish by the curb, bins used by businesses, demolition and construction sites, loading docks, uncovered garbage trucks, pedestrians and motorists (KAB, 2009). However, many studies have shown that littering is mostly human descendent as high levels of litter are usually synonymous with high levels of human traffic (KAB, 2009; Schultz et al., 2011). In 2009, Keep Britain Tidy conducted a survey, looking in more detail at roadside litter which arises mainly from litter thrown from vehicles. They found that 20%

of the general public admitted to littering from a car in the six months prior to the survey. Williams et al. (1997) found that litter is not simply dropped or left behind, but it is deliberately placed in certain locations. A high proportion of littering occurs in locations where litter can be hidden, or in places resembling litter bins, for example, in bushes or pot planters.

Littering is also linked to economics (Okeoma & Nkwocha, 2009) as there is usually a significant intensity of activities practiced along the areas that are normally littered. These areas can be categorized into four: a) special event venues such as concerts, carnivals and other special events that attract a large number of people who will generate waste; b) roads and highways as well as highway on/off ramps; c) high traffic and everyday locations such as fast food businesses, convenience stores, picnic grounds, park benches and other high pedestrian traffic areas; and d) transition points which are places where someone stops for eating, drinking or smoking before they proceed (Novotny et al., 1999). In South Africa, more bins were needed to be put near taxis and street vendors as these areas were littered (Poswa, 1997).

There are many causes of littering but the main causes offered in the literature include laziness (the bin is too far away), a perception that littering is not an important environmental concern especially compared to “the bigger” environmental issues e.g., the ozone layer, a feeling that someone else is paid to clean up and in a location context, a lack of litter collection (general area cleanliness), and bins.

As a result of the impacts of littering in the world, many groups existed with the aim of raising littering awareness and running anti-littering campaigns including clean up events. This led to the introduction of the “International Tidyman icon”, an icon found on packaged products to encourage proper binning of the packaging after use. The origins of the Tidyman logo are unclear but one suggestion is that the Tidyman was first used by the American beer company, Budweiser,

in the 1950s to encourage people not to litter and the other although similar idea is that the Tidyman logo was originally developed by the Keep America Beautiful campaign in conjunction with the American Brewers Association in the 1960s (The Tidyman History, 2015)

Despite being the least urbanized region in the world, Africa is urbanizing rapidly. Its urbanization rate soared from 14% in 1950 to 40% in 2016 and is expected to grow to 50% in 2030 (ADB, OECD & UNDP, 2016). Urban populations are projected to grow trifold in 50 years (Freire et al., 2014). Population growth and rapid urbanization rate aggravate waste generation in cities, hence the increasing concern about the implications of environmental pollution problems such as littering on health, social, economic and aesthetic related issues on urban environments. This concern is promoting research on factors related to littering as urban growth will lead an increase in litter generation causing a strain on the natural resources of a country (Ojedokun & Balogun, 2013; Asante & Stephenson, 2006).

As the urban population and economic status increase, there will be more consumption hence more tendencies to litter. In Nigeria, littering is a problem particularly in urban areas (Chezmuna, 2011). Ojedokun & Bologun (2013) in their study note that there is a high and increasing prevalence of urban environmental pollution through littering in most urban centers and cities, highlighting the capital city of Oyo State, Ibadan, despite Nigeria's government efforts to tackle the problem. Another study in Nigeria (Okeoma & Nkwocha, 2009) revealed that littering problem is intense in the areas that were surveyed, largely determined by the education levels, age and socio-economic of citizens. However, a study in Ghana revealed that littering occurs regardless of age or socio-economic status (Ian Somerhalder Foundation (ISF), 2014).

The White Paper on Integrated Pollution Management for South Africa of 2000 described littering as an example of environmentally and socially unacceptable practice (Furusa, 2015). Its

management was hindered by poor quality of data collected on forms and amounts of litter generated from the diverse types of land use in South Africa (Marais et al., 2004). 15 years later, littering has become a major issue which requires immediate attention (Furusa, 2015). Littering is also one of the most environmental problems especially but not limited to urban areas of Zimbabwe. The Environmental Management Agency identified the country's CBD primary sources of litter as pedestrians, motorists, overloaded trucks and overloaded trash containers and illegal dumping sites (Itai, 2015).

2.2 Attitude and behavior towards littering

Attitude towards littering is a person's inclination to react positively or negatively towards throwing away wastes (Ojedokun, 2011). All litter seen in the environment is the result of a person's negligence or careless attitude and behavior (Waghorn-Lees et al., 2013). People who litter are referred to as litterbugs. According to Merriam-Webster Dictionary, a litterbug is one who throws or leaves trash/waste in a public place. However, littering behavior is not a single, easily defined behavior, but a concept that includes a broad range of sub-Behaviors. It does not matter if the behavior is desirable or not; if it is occurring then must be a reinforcing consequence for the performer of the behavior.

Brook (2012) gives factors that influence littering behaviour to include personal, social, material and habitual factors; while personal factors according to him refers to the extent to which an individual considers that it depends on his own volition or his personal responsibility to dispose of their litter properly as against someone else's responsibility to clean it up; the social factors are those that describe social norms that send strong signals about acceptable behaviours; such that if

most people are seen littering, then the littering act becomes an acceptable norm. Brook again contends that while material factors refer to the likelihood of the characteristics of a site to provide cues for the promotion of littering behaviour, the habitual factors are those factors that can become an automated cognitive default behaviour of individuals such that littering becomes an act carried out without an elaborate reasoning (Steg and Vlek, 2009).

In addition, Surveys by Keep America Beautiful report that to some extent everyone litters (KAB, 2007). There are personal factors that influence littering behaviors. Personal variables are i) demographic variables e.g., age, sex, education, income and area of residence and ii) cognitive variables e.g., level of litter awareness, concern about littering and the willingness to act on it. (Stuart, 1975).

Age is a demographic variable that is a statistically significant predictor of littering behavior, even though the effect is small (Schultz et al., 2011). However, while certain groups are expected to litter more than others, there has been no substantiation that there is a littering demographic-a group of people generating the most litter. According to Tillet (2007); Okeoma (2009); Ojedokun (2011) and Shukor et al., (2012), younger people litter more because they are not in the habit of urban cleanliness as it has not been well grounded in them during their upbringing. Furthermore, the young tend to consume goods and foods on the streets that litter the environment (Okeoma, 2009). However, as age increases, their attitudes become negative (Ojedokun, 2011) and as age increases, the tendency to take littering prevention actions also increases (Ojedokun & Akungba-Akoko, 2013).

In addition to age, there are other demographic variables that influence littering attitudes and behaviors. They include sex, education and living conditions, amongst others. People living in large households of 5+ members are more likely to litter compared to those from smaller

households of 1-2 members (Geller, 1968; cited by Beck, 2007). On the other hand, people with higher levels of education were found to have lower than average littering rates (William et al., 1997; Okeoma, 2009). Cognitive variables are levels of litter awareness, concern about littering, willingness to act, childhood experiences, sense of control, values, social class, felt responsibility and place attachment (Gifford et al., (2014), n.d.; Al-Khatib et al., 2009 & Inglehart, 1995). For example, a study carried out the Population Studies Centre (2015) found that African households were less likely to be aware of environmental interventions and initiatives than non-African households and therefore more likely to litter. In a survey done in South Africa on Exploring Environmental Consciousness in South Africa, littering was seen as a community problem by more than 20% of all households (Population Centre Research Report, 2010).

The behavior is also affected by the physical context (situational/environmental variables) which include the characteristics of the location, cleanliness of the area, availability of bins and the distance between the bins and the litterer and the presence of law enforcement and/or fines. People are likely to litter less in a cleaner environment but will litter more in a dirty environment (Alice Ferguson Foundation, 2011). They are also likely to litter in a public location as they assume someone else will clean it up. They are also likely to litter if there are no bins or if the distance between the bins is too far. This is because of the human need to get rid of the litter item as soon as possible. According to Okeoma (2009) the lack of bins is a major contributor to littering on Nigerian streets. Enforcement is seen as a major deterrent against littering due to the embarrassment a litterer would face and the cost of the fine. However, studies in Scotland found that it was considerably hard to enforce laws and fines (Keep Britain Tidy, 2011). A preliminary study done in South Africa revealed that there was an inadequate supply of bins leading to people

littering more. In addition to this, where there were bins, a lack of regular litter removal caused litter to accumulate in the street encouraging littering (Poswa, 1997).

The attitude and behavior of littering is also affected by social variables (context). Social norms are agreed means of conduct oneself and these can drive littering or proper disposal (Lyndhurst, n.d.). For example, when individuals are with a respectable member of the family or community around them, they will most likely litter less. Lack of education on littering also influences littering behaviour as it is one of the reasons people litter (ENCAMS, 2001).

The role of habit and the subconscious is noted across the literature as a factor which acts as a driver of littering behavior for some. As with many repeated behaviors, littering may be an individual's default disposal behavior, so it is done with no thought given to the littering action. It therefore becomes an ingrained behavioral pattern, which can be difficult to change (Lyndhurst, n.d.). In Ghana, attitude towards littering was found to be exceedingly poor as almost all respondents acknowledged that they were in the habit of littering (Van et al., 2016)

2.3 Impact of littering

There is no doubt that littering is a problematic issue. According to Keep Britain Tidy (2013:3) "littering is one of the first signs of social decay. If we don't care about litter on our street or in our parks, we are unlikely to care about other environmental issues that negatively impact our lives, community and society". H.A. Arafat et al. (2007) categorizes impacts of litter into three, noting that neither is easy to quantify: aesthetic blight; medical impact as a result of injuries caused by litter and financial impact which is associated with the cost of collection of litter and the losses

caused by the occurrence of litter. Nilsen (2010) categorized the impacts of litter into biodiversity loss, aesthetic loss and human catastrophe.

While the developing nations lack the infrastructure and capacity hinder their ability to deal with the removal of this litter, developed nations in the West generate large amounts of litter per person as they consume more disposable goods negatively impacting the environment.

Littering costs money. This high cost is what led to an increase in the research of littering behavior and effective solutions to the littering problem (Cooley, 2005). In the United States, the direct cost of litter cleanup is almost 11 billion dollars annually (MSW Consultants, 2009 cited by Schultz et al., 2011). In Florida, 180 businesses were surveyed and the total amount spent on litter annually was \$2,434.73. This figure was calculated from data collected during the survey for wages per hour, number of hours spent on litter cleanup and employees involved in the cleanup activity (FCSHWM, 1999). In South Africa, beach cleansing to remove litter was approximately R3.5 million in 1994-95 (Balance et al., 2000). England spends one billion pounds annually on litter cleanups. This is money that could be used to pay the running costs of 4400 libraries (Keep Britain Tidy, 2013).

Littering also impacts the economy through losses in the tourism and fisheries sectors. As litter is not stagnant, it will find its way into the marine environment. Marine litter impacts the economy as it leads to the loss of tourism, amenities e.g., facilities and recreation potential. It is also a threat to livelihoods. A small decrease in fish yield could cause devastating impacts as people who rely on tourism as their sole source of income may have it depleted severely resulting in a lack of basic necessities such as food (Tudor & William, 2000).

Fishing is one of the most important economic activities in Angola, South Africa and Namibia and it is a major contributor to their economies. Litter and pollution from industries are causing degradation of their coastal habitats therefore eroding their potential to attract tourists (BCLME, 2006).

Balance et al. (2000) conducted a study on the worth of a clean beach in Cape Peninsula, South Africa. The researchers found that the annual recreation value of the beaches in that region was eight million rand. However, if the beaches had more than two pieces of debris per meter, 85% of the tourists would not visit the beaches and the value of the beaches would reduce from eight million rand to one million rand. Given the importance of tourism to the national economy of South Africa, the potential loss in the number of tourists due to a drop in standards of beach cleanliness is significant. Cleanliness in a beach is one the most important traits tourists look at (Keep Britain Tidy, 2013). Littering also impacts the economy indirectly as occurrence of litter decreases property values by 7% and citing litter statistics from 1970-1975 by Scott Geller, KAB reported there are 500-1000 vehicle accidents related to litter and 12 houses damaged or destroyed by fire starting with litter (KAB, 2009). Littering also has environmental impacts. Torgler et al., (2008) found that items littered such as cigarettes, glass and plastic bottles, plastic bags, napkins, tissues, take-away food packages and snack wrappers seriously damage the environment as some are not degradable. The littered items cause the death of plants and animals (domestic and wildlife). For example, the Royal Society for the Prevention of Cruelty to Animals (RSPCA) in the UK receives more than 7,000 calls per year regarding animals that have been injured by litter (RSPCA, 2015). It was also seen to lead to surface and groundwater pollution, threat on biodiversity and aesthetic impact in Brazil (Raffoul, 2006).

In Zimbabwe, litter was found to affect human beings as it causes health hazards; it is a breeding ground for bacteria leading to disease-The cholera and typhoid outbreak in Harare (2011- 2012) was as a result of uncontrolled littering. Littering also harms both wildlife and aquatic life and causes land and water pollution (Itai, 2015).

Njeru (2006) studied the plastic bag problem in Kenya, which is the most littered item, and found that plastic bags are linked to many environmental problems. They cause serious storm water problems as they block gutters and drains (see also Toxic Link, 2014). Njeru reports that in Bangladesh, plastic bags were banned in 2002 following flooding caused by blocked drains. Ingestion of the bags by livestock leads to their death; because they are not degradable, their presence in soil decreases soil productivity; they spread malaria as they provide breeding grounds for mosquitoes and finally, they release toxic gases when burnt. Wangari Maathai performed experiments that linked plastic bag litter with malaria (UNEP, 2005).

Plastic bag litter is also a common problem in South Africa with South Africans said to consume 8 million plastic bags a year (Dikgang et al., 2010). Due to the negative impacts of the bags, the plastic bag levy was put in place by the government to curb the devastating effects of plastic bag litter on the environment. Research has found that 90% of the litter found on South African beaches contained plastic. Ghana is also from plastic bag pollution which causes blockage of drainage and is a hazard to livestock (Yire, 2012). This has prompted the country to ban their usage. Kenya, Botswana, Eritrea, Uganda, Somalia, Ethiopia, Tanzania among others, already have in place a plastic bag ban (McAllister, 2015).

Clean up Australia (n.d) focused on cigarette butt litter and its impact on the environment. According to their report, 4.5 trillion cigarette butts are littered every year and this reduces the aesthetic quality of the environment as areas with cigarette litter look untidy and unkempt and

attract littering of other items. Cigarette smoke has 4000 chemicals and if dropped when alight, they can stay there for 3 hours hence releasing these toxins and can cause fires with up to 12 fires started by littered cigarette butts.

Littering also impacts the marine environment. When one tosses litter on the ground, they might be in reality throwing it into the ocean. Keep Britain Tidy (2013) found that 80% of the litter found in seas and oceans originates from inland areas. Clean up Australia (n.d.) and UNEP (2009) report that there are 46,000 pieces of plastic in every square mile of the sea. These plastic and cigarette litter in the marine environment leads to death of aquatic life as the litter is ingested by the aquatic animals. The litter is also a source of toxic substances which pollute the water e.g., cigarettes have the chemical lead which can leach into the water threatening the wellbeing of marine life. While beach clean-ups are advocated for, cleaning up the debris disturbs the existing natural nests for animals such as turtles and so the ultimate solution is to prevent the litter in the first place by avoiding littering (UNEP, 2009).

2.4 Measures to combat littering

Given that littering is rooted in human behavior, Torgler et al. (2008) suggests two methods of changing these attitudes and behaviors. The first method is the use of antecedent strategies such as environmental design, prompts, clean ups, education and environmental participation. These have been used to control littering (see e.g., Shukor et al., 2012). The second method is finding solutions that punish or applaud littering behavior through tax impositions or giving rewards respectively. According to Lyndhurst (n.d), careful designing of solutions contributes to effective anti- littering interventions. Furthermore, strong partnerships and working with the community can help deliver

effective interventions (Bennett, 2014). On the other hand, Warghon-Lees (2013) suggests that setting achievable goals and making changes based on feedback from community members is vital to the success of any anti-littering community project. However, according to the National Cooperative Highway Research Program (NHCRP, 2009), the effectiveness of individual litter prevention strategies is largely undetermined. The primary tenet in litter prevention is that litter begets litter and keeping an area litter-free will greatly reduce the incidence of new litter. In addition, advertising and education materials should reflect a social norm that littering is not commonplace. That is such adverts should show a clean environment as opposed to a littered environment. Nilsen (2010) suggested having a moral motivation model which included taxation and public awareness to curb the littering problem in Norway.

Okeoma & Nkowacha (2009) suggested strategic and tactical measures for Nigeria for example strategic measures can be environmental education and creation of awareness on the dangers of littering and its impacts on the society, implementation and enforcement of environmental laws while tactical measures can be punishing environmental crimes by law.

Itai (2015) recommended tracking refuse vehicles, use of attractive anti-littering messages and highlighting financial gain from recycling as solutions to curb littering in Zimbabwe's CBD. In addition to this, he suggested that public places be kept clean and bins provided for a cleaner environment.

Van (2016) said that intensive education and the provision of litter collection services would reduce marine litter in the Ghanaian beaches. He added that education should not only aim at increasing awareness but also at changing attitudes and recommended the use of tools such as TV and radio, fliers and brochures to be targeted at and given to users of the marine environment.

2.5 Theoretical framework

Most littering is as a result of human behaviour. The major factors in determining behaviours, according to behaviour change theories, are environmental, individual and behavioural characteristics. One such theory is the Theory of Planned Behaviour (TPB). Behaviours inform attitudes, which are determined by a set of beliefs and the TPB is a theory that links beliefs and behaviours. The Theory of Planned Behaviour (TPB) (Ajzen, 1991) outlines that somebody's attitude towards behaviour, his or her subjective norms, and his or her perceived behavioural control, together form an individual's behavioural intention and the actual behaviour. Intention is influenced by the attitude of an individual towards performing the behaviour, the subjective norm that surrounds the behaviour and also by the control an individual thinks he has over performing that behaviour. Intention captures the variables that stimulate the behaviour. They are the indicators of the willingness of individuals to try and how determined they are and how much energy they are willing to put to perform the said behaviour (Kong et al., 2014).

2.6 Conceptual framework

The conceptual framework points out the relationships between the personal and physical variables that influence attitude and behaviour towards littering. Littering begins with and is as a result of the interaction of the personal and physical variables. These variables influence littering behaviour and attitude positively or negatively leading to a desirable or undesirable outcome. A desirable outcome is when an individual has a negative attitude and positive behaviour. An individual with a negative attitude and positive behaviour towards littering performs environmentally friendly actions. This means that the individual will, for example, walk to put his or her litter in a bin or

hold on to the litter until he or she sees a bin, regardless of the effort or energy it costs to do so. This results in an increase in urban cleanliness and a reduction in economic and environmental impacts. The undesired outcome will be when an individual has a negative behaviour and a positive attitude towards littering. Such a person performs environmentally destructive actions. Therefore, the individual will throw the trash carelessly as the benefits for littering are higher as it will cost less effort and energy for the litterer. This positive attitude and negative behaviour towards littering will lead to litter generation which has an economic and environmental impact on society. Introducing change to these influencing factors at this point, for example through education, increasing the number of bins, laws and fines will then lead to a change in behaviour and attitude for the better if done well. If not, the cycle continues leading into the undesirable outcome. However, the desire to perform environmentally friendly actions may be hindered by physical (environmental/situational) variables and as such, applying this theory in such circumstances enables explanation of inconsistencies between the expected attitude and the unexpected behaviour.

2.7 Research Gaps

The review of literature highlighted the following key gaps that this study aims to fill:

1. Many studies have been done on solid waste management yet littering is an aspect of it and has not been adequately documented. This study aims to somewhat put structure into information because understanding littering may enable solve the waste management crisis.

2. The influence of other personal factors in addition to the areas of residence, age, sex and education on littering attitudes and behaviours and littering preventive actions.
3. The review also showed that many littering studies have been done in developed countries and in West Africa, Nigeria specifically and though few have been done in Ghana, they have not been specifically on littering. This study aims to change this narrative by contributing literature on littering attitude and behaviours in West Africa and Ghana.

CHAPTER THREE **METHODOLOGY**

3.0 Introduction

This chapter outlines the theoretical perspectives and research methods of the study. It describes the research designs and methods employed in the study, looking at the data sources, sampling design and procedure and the data collection, processing and analysis methods used.

3.1 Theoretical Perspective

This research is going to utilize two of the dominant theoretical perspectives of Research, the Positivist and Interpretive approach.

The Positivist approach looks at more empirical study and tends to be quantitative in nature, using experiments, surveys and statistics. It enables the researcher to search for objectivity in measuring the phenomena under study. The overriding objective of the Positivist is to prove or disprove hypotheses and ultimately to establish universal laws of behavior. Through the process the researcher remains detached from the data collection exercise since the social research is based upon objective measurement and not intuition or subjective judgments.

The Positivist theoretical perspective will assist the researcher describe the nature and extent of Littering in the community under study, what is the real cause of the Littering problem and its effects on the residents in the constituency.

The other theoretical approach to use in the data gathering is the Interpretive approach. This approach argues that social researchers should study meaningful social action not just the external

or observable behavior of people. Social action is action to which people attach subjective meaning - activity with a purpose or intent. Individual motives are crucial to consider even if they are irrational, emotion-laden and contain false facts and prejudices. Interpretive researchers value common sense as a way to interpret the world.

The approach will help the researcher probe into the attitude and behaviour of littering by the Klottey Korle residents, the reason they litter, their perception towards it and what they think can be done to curb it and whose responsibility it is to fix the problem.

3.2 Research Design and organization of the study

The researcher used the Mixed method approach for data collection i.e. quantitative and qualitative research design. The designs for most quantitative studies are highly structured and it was preferred as it would facilitate prompt data collection from the respondents. The study was conducted in two parts. Data in part one was collected using the quantitative approach. Questionnaires with both open and closed ended questions were given to the sampled residents of Klottey Korle constituency, particularly Osu, Adabraka and Asylum Down. They were asked to be as clear as possible while answering the open ended questions. As some of the residents could not understand the language used, which was English, the questions were translated for them and done carefully, so as not to lose the understanding or meaning of the question.

In part two, qualitative research was used in collecting data through interviews with key informants at the Ministry of Sanitation and Water Resources. The researcher used an interview guide prepared in advance.

3.3 Data types

The study used primary and secondary data sources. It also used quantitative and qualitative data. Primary data on attitude and behaviour towards littering was collected through a pre-coded questionnaire. Secondary data was collected from review of literature done on the topic under study. In addition, the researcher relied on informal interviews with key informants.

3.4 Exploration Survey

Before the actual preparation and study was done, a pre-survey was done. This was done in Osu, Ringoad and Asylum Down so as to enable the researcher understand both environments and also know the best tools to use, best times to go especially in Osu and whom to approach to gain access to the households to be surveyed. In Osu, the researcher went to the chief of the area, informing him of the study and was given a guide to show her the areas she had sampled. In Asylum Down, the researcher spoke to the Assembly man and Unity Committee members and was also given a guide.

3.5 Study Population and Sample size

3.5.1: Study Population

The study population comprised residents of Osu, Adabraka and Asylum Down in Klottey Korle Constituency which have over 10,000, 8,000 and 6,000 people respectively. The three areas were chosen as they represented the high and low-income households, respectively. The three areas

were also chosen because they lie parallel to each other in Klottey Korle Constituency. The unit of analysis in the study was the households.

3.5.2 Sample size

A sample size of 200 was calculated from the total population of 24,000 which represents 1% of the population.

3.6 Sampling for the households

3.6.1: Osu

Located about 3 kilometers (1.9 mi) east of the central business district, Osu is a neighborhood in central Accra, Ghana, known for its busy commercial, restaurant and nightlife activity. It is locally known as the "West End" of Accra. Osu offers a mix of houses dating from the early 20th century (both low-rise apartment blocks and detached houses) to modern office towers. The main thoroughfare, Cantonments Road (colloquially known as Oxford Street) features large supermarkets and appliance shops, and is renowned for its food joints and lively nightlife.

In Osu, 20 households were chosen for the study and random sampling was used. The researcher randomly picked 3 people from each household totaling 90 people. These twenty (20) households were from these areas in Osu; Akoadjei, Osu Alata, Kinkawe and Another. To select the specific household to be given the questionnaire, the researcher physically counted and numbered the houses in the area.

3.6.2 Adabraka

Adabraka is a town in the Korley Klottey Constituency. It was the first and the poshest colony in Ghana during the British era. Questionnaire was distributed to a total of 45 people from 15 different households. Four (4) people from each household. Stratified sampling technique was used to ensure that the population has mixed characteristics such as gender, age range, income bracket and Employment Status. This is to ensure that every characteristic is proportionally represented in the sample.

3.6.3 Asylum Down

Asylum Down is a district or neighborhood in Accra, Ghana, north of Castle Road and east of Barnes Road. In Asylum Down, the researcher used Convenience sampling to hand out questionnaires to 50 people. Any individuals who happen to be most accessible to the researcher was handed a questionnaire.

3.7: Household questionnaires and interviews.

A structured questionnaire was developed by the researcher. Clear instructions were given to the respondents and this was done in English or in Ga. The questionnaire was designed in a way that the data could be easily coded and entered into the computer. It was also divided into different sections and was numbered. Contents of the questionnaire were demographic information, questions on nature and extent of littering in the Klottey Korle Constituency, attitudes and practices and finally, questions on the respondents' knowledge of littering impact. In order to measure

validity and reliability of the questionnaire, it was tested on 10 different people prior to the survey. The researcher also interviewed the key informants who were the

3.8: Analysis of the data and presentation

In this research, the data collected was in qualitative and quantitative form. With regards to the quantitative side, out of 200 questionnaires administered only a Hundred (150) were analyzed as information on the questionnaires from five (30) respondents were not understandable while fifteen (20) respondents refused to complete the questionnaire. The data collected was edited to guarantee accuracy. It was then classified into four groups: respondents from Osu, Adabraka and those from Asylum Down and from the interviews. Each of the Hundred (150) questionnaires were read and re-read to enable the researcher to become familiar with the data. The closed ended questions were coded in numbers for easy analysis. As for the open-ended research questions, descriptive coding was applied so that the researcher could have a summary of what the transcript was about and then applied analytical coding where the researcher categorized the data based on phrases and keywords. The key phrases and words that came out from the open ended questions were first written down in different colour pens to be later on contextualized. The interviews were also read; analytical coding was applied as well. Key points were written down then typed on an excel worksheet. The data was analyzed by Statistical Package for Social Sciences (SPSS) software and presented in tables by frequency and percentages.

3.9: Challenges of the study

Some of the participants could not understand the English language. To overcome this, translation to Ga was done making every effort to not lose the meaning of the questions.

Because of the COVID- period and the need to observe all the safety protocols especially Social distancing, many respondents were not forthcoming in answering questionnaires and conducting interviews the researcher relied more on Online Survey and Telephone Interview as Zoom meetings with the interviewees

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Nature and extent of littering

Table 4.1.1: Summary of respondents’ demographic characteristics

Average Age of Respondents	Gender		Educational level		
	Male	Female	Primary	Secondary	Tertiary
29	55%	45%	32%	26%	42%

Source: Fieldwork, Klottey Korle, Accra 2020

A total of 150 respondents were selected for the study. The respondents in this study were both males (82; 55%) and females (68; 45%), with an average age of 30 years. Almost half of the respondents had attained a tertiary level of education whilst the remaining half had attained primary (32%) and secondary (26%) levels of education respectively.

Table 4.1.2: Klottey Korle and litter

Klottey Korle is				
Generally Littered		Heavily littered	Moderately littered	Slightly littered
YES	NO			
53%	47%	14%	51%	35%

Source: Fieldwork, Klottey Korle, Accra 2020.

With reference to the above table, more than half of the respondents were of the view that Klottey Korle is generally littered with about half saying that the constituency was moderately littered.

Table 4.1.3: Description of the litter problem in Klottey Korle

Don't know	3	2%
Major problem	105	70%
Minor problem	39	26%
Not a problem at all	3	2%
Grand Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020.

Two thirds of the respondents are of the opinion that litter is a major issue of concern in the constituency.

Table 4.1.4: Sources of litter

	Percentage (%)
Household trash by the roadside	72
Dumpsters used by businesses, shops, supermarkets or illegal dumping	55
Loading docks at commercial sites e.g., outside supermarkets, food joints, etc.	45
Construction and demolition sites	39
Uncovered garbage trucks	53
Motorists	61
Pedestrians	80

Source: Fieldwork, Klottey Korle, Accra 2020

The respondents identified the major sources of litter as Pedestrians and Household trash by the roadside. Other common sources of litter were motorists, dumpsters by businesses, uncovered garbage trucks, loading docks at commercial sites and Construction and demolition sites.

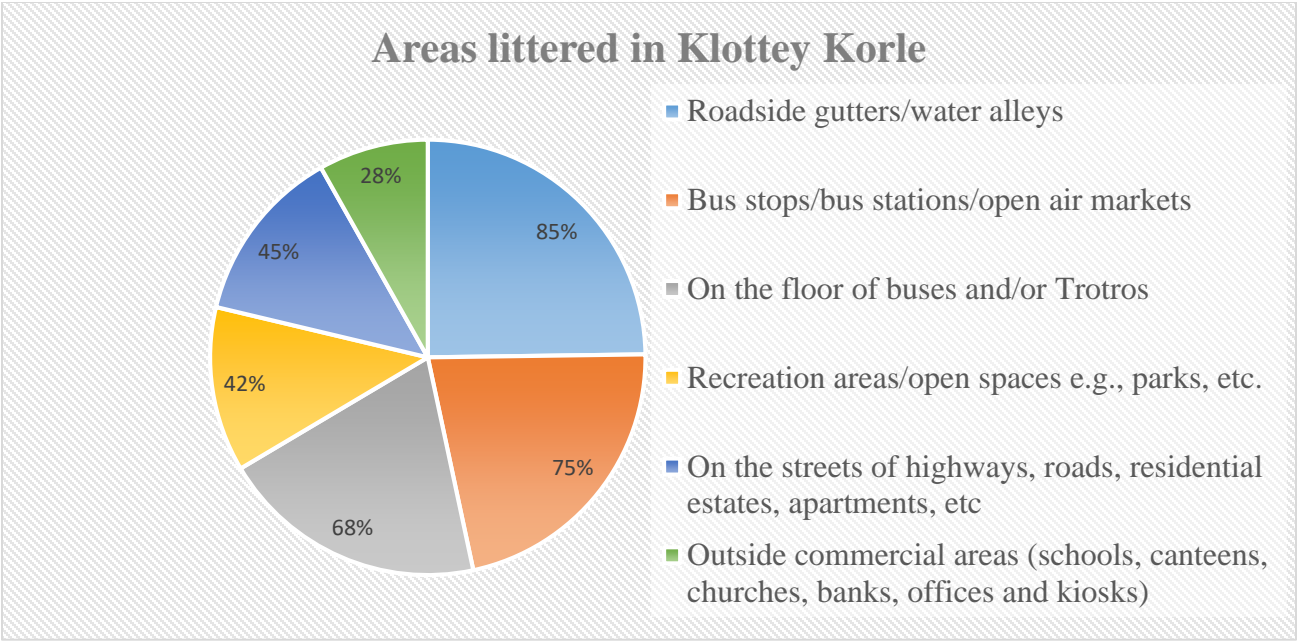
Table 4.1.5: Littering among the residents before the survey

% of those who had littered			% of those who had seen others litter		
YES	NO	TOTAL	YES	NO	TOTAL
63%	37%	100%	89%	11%	100%

Source: Fieldwork, Klottey Korle, Accra 2020

People are the major source of litter as shown in the table above. Majority of the respondents had littered and had seen people litter. These findings corroborate with numerous studies that suggest that people are the greatest source of litter.

Chart 4.1.1: Areas littered in Klottey Korle



Source: Fieldwork, Klottey Korle, Accra 2020

Most of the littering was observed on roadside gutters/waterways and at bus stops, bus stations and open air markets where commercial activities (retailing and vending of all sorts of products) are intensive and there’s a high population of human traffic. Other places considered to be normally littered were On the floor of buses and/or Trotros, On the streets of highways, roads, residential estates, apartments, among others.

Table 4.1.6: Amount of litter in Klottey Korle

	Frequency	Percentage
Don't know	17	11%
Gotten worse	4	3%
Improved	26	17%
Stayed the same	103	69%
Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020

More than half of the respondents intimated that the littering problem in Klottey Korle has stayed the same over the years and it substantiated their concern that it is a major issue that needs to be dealt with.

4.2 Attitude and behavior towards littering

When the respondents were asked if they had ever littered, 63% of them said that they had littered prior to taking the survey and when asked if they had ever seen others litter prior to the survey, 89% of the respondents said they had seen other people litter. This results show that littering behavior might be a daily practice. Various factors/variables drive such attitudes and behaviors namely personal, social, material/physical and habituations. However, this study focused only on personal and physical variables

Table 4.2.1: Reasons for littering

	Frequency (n)	Percentage
Because there was no bin around	37	39%
Laziness and carelessness	13	14%
Because I don't have a choice! This is Africa	3	3%
Because it was convenient	25	26%
Because its someone's else duty to clean the environment	8	8%
Subconsciously	9	9%
Total	95	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Inadequate litter bins were the most cited reason for the respondents littering behaviors.

Table 4.2.2 Reasons for not littering

	Frequency (n)	Percentage %
Has negatively effect on the health of both animals and humans in the society	27	49%
Conscious about the effects of littering	11	20%
Cleanliness leads to Godliness.	3	5%
Has an extremely negative impact on the environment	10	18%
To keep the country clean	4	7%
Total	55	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Those who had never littered also gave various reasons for their anti-littering behavior such as littering having negative effect on the health of both animal and humans in the society, them being conscious of the effects on littering on the environment, they had been educated and cultured not to litter; had awareness of the implications of littering; and being responsible citizens.

Table 4.2.3: Cross tabulation of littering by gender

Have you ever littered					
GENDER		Yes Frequency	%	No Frequency	%
	MALE	50	53%	32	58%
	FEMALE	45	47%	23	42%
	TOTAL	95	100%	55	100%

Source: Fieldwork, Klottey Korle, Accra 2020

A cross-tabulation of the results by gender reveals that whereas in some studies either males seem to litter more than females, or female litter more than men, in Klottey Korle, males have littered more than females. This could also be because the majority of the respondents were males.

Table 4.2.4: Cross tabulation of littering behaviour by education

Have you ever littered					
EDUCATIONAL LEVEL		Yes Frequency	%	No Frequency	%
	Primary	39	41%	9	16%
	Secondary	29	31%	10	18%
	Tertiary	27	28%	36	65%
	Grand Total	95	100%	55	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Majority of respondents whose highest Education was Primary level littered the most.

Table 4.2.5: Cross tabulation of littering behaviour in areas under study

Have you ever littered					
AREAS		Yes Frequency	%	No Frequency	%
	Osu	40	42%	21	38%
	Adabraka	29	31%	17	31%
	Asylum Down	26	27%	17	31%
	Grand Total	95	100%	55	100%

Source: Fieldwork, Klottey Korle, Accra 2020

A lot of respondents who have littered were residents in Osu as compared to those in asylum down.

Those who had not littered was an average across all three areas in the constituency.

Table 4.2.6: Residents’ opinion on why others litter

S/N	OPTIONS	Frequency %
1	They do not care about the environment	89
2	They do not care about the environment because it is not their personal property.	87
3	They think someone else/Sanitation Cleaners will clean it up	80
4	It does not make any difference as the environment is already littered?	65
5	Everybody else is littering	63
6	Not enough public trash receptacles provided.	80
7	There is little or no awareness at all in regards to littering	69
8	There are no anti-littering laws and enforcement officers	80
9	They do not know the impact of their actions on the environment.	45
10	They think the item does not constitute litter because, for example, it is organic	40

Source: Fieldwork, Klottey Korle, Accra 2020

Research has proven that Personal as well as material or physical factors influence one’s attitude and behaviour towards littering. All the respondents, whether they had littered or not, when asked “why they thought people littered” mentioned a number of Personal or Material/physical factors such as; people not caring about the environment, thinking it is the job of sanitation workers to clean the environment, number of bins, presence of existing litter, among others.

Table 4.2.7: Residents’ level of concern about littering

Level of concern	Frequency	%
Very concerned	56	37%
Concerned	83	55%
Slightly concerned	11	7%
Not Concerned	0	0%
Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020

In addition to Gender, education and area of residence, other personal factors were also seen to influence littering attitudes and behaviors. They were level of concern, felt responsibility and placed attachment.

The level of concern usually influences littering behavior as it makes people to be more environmentally conscious. In our findings, however, even though 55% of the respondents showed they were “concerned” about littering (Table 4.2.7), the level of concern did not have a bearing on littering behavior. This is seen by the fact that 56% of those who had littered before the survey were “concerned” about the littering situation in Klottey Korle (Table 4.1.5). Therefore, to come up with effective ways of dealing with litter, the mental attitude and behavior must be examined so that their thoughts match their actions.

Table 4.2.8: Willingness to attend an anti-littering campaign or event voluntarily

	Frequency	%
Yes	130	87%
Maybe	17	11%
No	3	2%
Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Place attachment was found to be an influencer of littering behavior. A lot of respondents affirmed that they will voluntarily engage in anti-littering voluntarily especially if it is within their vicinity.

Some residents stated that they would not participate if anti littering event or campaign was not in their neighborhood mostly because their responsibility is within their neighborhood and not in other peoples' neighborhoods. This not only speaks to place attachment's influence on littering but also the influence of felt responsibility.

Table 4.2.9: Responsibility of keeping Klottey Korle clean

Response	Frequency	%
The public	22	15%
The Government	15	10%
Both Parties	113	75%
Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Three – quarters of the respondents mentioned that both the government and the public were responsible for keeping the city clean. Feeling responsible makes people less likely to litter.

Table 4.2.1.0: Have you seen or heard any littering prevention message(s) in Klottey Korle

Response	Frequency	%
No	75	50%
Yes	75	50%
Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Studies have shown that reminders for example anti-littering messages in an area influences littering behaviour as it serves to “remind” a person of the preferred behaviour. Table 4.2.1.0 shows that more than half of the respondents said they had seen or heard the messages with road signs/billboards being the highest source of these messages (Table 4.2.1.1), while half haven't seen or heard. The findings also show that the internet was the least provider of information on littering and its prevention. This shouldn't be the case as with the advent of the Internet and access

to mobile phones, the majority of the youthful population are always online, it is therefore imperative to say that the internet should be used as a tool to promote and disseminate information on littering.

Table 4.2.1.1: Sources of prevention messages

Response	Percentage
Billboards/road signs	43%
Broadcast media (radio, TV)	17%
Print media (newspapers/ magazines/pamphlets, posters)	26%
Social Media / Web/ Internet	14%
Total	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Table 4.2.1.2: Effectiveness of litter prevention messages

Response	Frequency	%
Not at all effective	78	52%
Somewhat effective	66	44%
Very effective	6	4%
Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020

More than half of the residents noted that prevention messages in the constituency are not effective as compared to just 4 percent who said the messages were very effective.

Table 4.2.1.3: Likelihood of cautioning a litterer

Response	Frequency	%
Very likely	92	61%
Somewhat likely	48	32%
Not at all likely	6	4%
Don't know	4	3%
Total	150	100%

Source: Fieldwork, Klottey Korle, Accra 2020

Littering behaviours can be positive or negative and litter preventive actions are an example of positive behaviours towards littering, which can also be influenced by various variables. When asked if the residents would caution someone if they saw them littering, more than half of the residents said that they would “very likely” caution a litterer.

Table 4.2.1.4.: Level of education versus willingness to voluntary participate in their neighbourhood.

Would you voluntarily participate in an anti-littering campaign?					
EDUCATIONAL LEVEL		Yes Frequency	%	No Frequency	%
	Primary	31	25%	17	61%
	Secondary	34	28%	5	18%
	Tertiary	57	47%	6	21%
	Grand Total	122	100%	28	100%

Source: Fieldwork, Klottey Korle, Accra 2020

H. A. Arafat et al. (2007) found that participating voluntarily in an anti-littering campaign or event as a preventive action was a highly acceptable idea for people with different levels of education. However, in our findings, we found that the higher the level of education, the more the willingness to participate voluntarily. The likelihood to caution a litterer also increased with the level of education.

Table 4.2.1.5: Gender versus cautioning response

If you saw someone litter, would you be very likely, somewhat likely or not at all likely to caution them against it?					
GENDER		Likely (Very likely + somewhat likely)	Not at all likely	Don't Know	Total
	Male	59	6	3	68
	Female	81	0	1	82
	Total	140	6	4	150

Source: Fieldwork, Klottey Korle, Accra 2020

Gender was also seen to influence littering preventive actions. More females than males were also likely to caution a litterer (Table 4.2.1.5) and attend an anti-litter campaign (Table 4.2.1.6).

Table 4.2.1.6: Gender versus willingness to voluntarily participate in an anti-littering event/campaign.

Would you participate in an anti-litter campaign/event voluntarily?				
GENDER		Yes Frequency	No Frequency	Total
	Male	48	20	68
	Female	74	8	82
	Total	122	28	150

Source: Fieldwork, Klottey Korle, Accra 2020

4.3 Impact of littering

Littering has been seen to have impacts on multiple sectors of society: the economy, environment, social and health. Most of the residents agreed that littering affects their economy (Table 4.3.1) with over 85% agreeing that it has economic impacts of litter through loss of tourists, reduced property values and economic development.

Even though a few of respondents agreed that the cost of litter has an impact on the economy, one informant at the Ministry of Sanitation and Water resources disagreed stating that it had a huge impact. He says Accra, the fast-growing city of more than four million people generates about 3,000 metric tonnes of waste a day which costs Ghana's economy around 420 million Ghana cedis (\$290 million) each year, equivalent to 1.6% of its GDP.

According to him, this money could be diverted to constituency development instead.

Table 4.3.1: Economic impacts of littering

Economic	% Highly disagree	% Disagree	% Neutral	% Agree	% Highly agree
Litter can hinder the economic development as businesses may not set up new ventures in a place that is littered.	2	3	5	10	80
Littering affects the tourism industry as litter on the beaches may keep tourists away.	1	4	10	15	70
Litter clean-up causes the taxpayer a lot of money as it is expensive	0	0	0	10	90
Litter reduces the value of houses/property in the given area as people would pay more if the general area was cleaner	5	5	15	20	55
Litter causes damages hence economic losses as a result of floods caused by blocked drainage	0	0	0	15	85

Source: Fieldwork, Klottey Korle, Accra 2020

Table 4.3.2: Environmental impact

Environmental impacts	% Highly disagree	% Disagree	% Neutral	% Agree	% Highly agree
Litter on the ground degrades natural areas	2	3	8	15	72
It can lead to the death of vegetation thus reducing diversity of species	5	5	5	15	70
Litter in the oceans can lead to death of fish and gradual depletion of marine life	3	3	2	15	77
Littering reduces air quality due to the smell	0	0	0	10	90
Debris may be carried into waterways with potential for serious water contamination	0	0	0	5	95
Littering is one of the signs of social decay because it shows people don't care about the environment	0	0	5	10	85

Source: Fieldwork, Klottey Korle, Accra 2020

On the environmental impacts (Table 4.3.2), more than two-thirds of the respondents agreed that littering does have a negative impact on the environment.

4.4: Solutions to littering

Table 4.4.1: Solutions to littering

Solution	Percentage %
Provide more bins	90
Create awareness and educate the public	95
Community involvement in litter management	98
Introduce exorbitant taxes and fines	55
Set up tough laws and legislation	70
Cleaning up prior litter to reduce the litter begets litter effect	83
Prompts from broadcast, print and social media	80
Motivations/awards for keeping their residential places clean	82.5

Source: Fieldwork, Klottey Korle, Accra 2020

Literature reviews have given many sources to the problem of littering to reduce its impact on the society. In Klottey Korle, as table 4.3.3 indicates, almost all the respondents said community involvement, creating awareness and educating the public as well as providing more bins would be a good solution to littering in Klottey Korle. These are material factors that could influence proper disposal. Other solutions would be awarding clean neighbourhoods and cleaning up prior litter to reduce littering rates.

Only about half of the respondents intimated the introduction of fines and exorbitant taxes. This is because to change attitude and behavior, applying fines and introduction of laws will not help the situation. One of the informants during the interview said that applying fines will not necessarily dissuade people from littering, thus applying them would be ineffective. He further added that the key to the reduction of littering is community engagement and creation of awareness and strategic environmental education of the public.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATION

5.1 Summary of findings

The study set out to investigate the behaviour and attitude towards littering of the residents of Klottey Korle Constituency especially in the suburbs of Osu, Adabraka, and Asylum down. It also wanted to find out the overall impacts of littering in the County. This study has shown that:

- a) Littering is a major problem in Klottey Korle. Individuals (Pedestrians) and putting the household trash by the roadside are the highest sources of litter.
- b) Personal and material variables are the most common drivers of littering attitudes and behaviours in Klottey Korle and its preventive actions.
- c) Residents of Klottey Korle have both positive and negative attitudes towards littering as littering is not gender specific. Most of the residents' litter due to circumstances they find themselves in, e.g., inadequate dust bins.
- d) Littering has an enormous impact on the environment and the economy. Having quite a significant amount of the revenue allocation go to sanitation activities is a taxpayer's misfortune.
- e) The most effective solution perceived to prevent littering was more community engagement and dialogue. Residents must be included in the decision making procedure on how to prevent littering and the initiatives they need to employ to further diminish it.
- f) There has to be increased civic awareness in terms of bringing out good communication materials that will attract the attention of the residents and propel them to put a stop to littering.

g) To reduce littering, there have to be the provision of more bins at vantage positions, and the waste management companies must empty it on a daily basis.

h) The majority of respondents stated that the cleanness of public places is a shared responsibility between the government and the public.

i) Laws on sanitation must work so people who are caught committing this crime will be made to do some community service, like cleaning the streets, parks, distilling companies and even join the sanitation companies to pick up trash.

5.2 Conclusion

Litter is a social construct. Whereas litter is simply waste in the “wrong” place, littering behaviour is the process by which that waste ends up in the wrong place. Littering behavior, in turn, comes about as the result of interactions between items that are considered as litter, the individuals, and the factors that influence their actions. Thus understanding this behaviour is the key to finding meaningful tactics to deal with the problem. Littering should therefore be seen as a by-product of incidences. Once we study these incidences, we find our solution.

5.3 Recommendations to:

Government and environmental agencies

Based on this study, the most effective approach to tackling littering may be strategic and tactical.

1. Strategic

- I. Community Participation and dialogue- include the residents of Klottey Korle on the decision making as well as encourage them to bring strategies and initiatives to manage the

littering situations in the constituency so that whatever project is implemented they feel a part of it, they own it and then they help execute and sustain it.

- II. Public education and awareness (changing antecedent conditions) - An Overarching Awareness-raising strand to improve and dissuade littering behaviours that are and are not acceptable. Explaining why littering is not appropriate through highlighting its negative effect may make the messages more acceptable. Media campaigns should be used as evidence in the past has shown that they have been as they reach many people at a time.
- III. Enforcement of the already existing laws in Klottey Korle on littering and illegal dumping.

2. Tactical Measures

- I. Increase the number of bins at vantage areas in Klottey Korle. This MUST be coupled with an efficient collection system. The bins must have action messages for example “**bin your trash**” and it must be translated in the local languages as well, Ga and Twi to be precise.
- II. Give civic education to all residents both old and young on littering, its effects and the best way to curb it. Also General Environmental Education must be given to the residents.

Individuals

- I. Simply stop littering your trash as you walk or drive. BIN YOUR TRASH. Littering begins with you and so does the maintenance of a clean environment.
- II. Be each other’s keeper. Caution others when you see them litter in a gentle way reminding them that littering has consequences which include flooding due to blocked roads.
- III. Parents should teach their children good binning habits because they will grow into life-long practices.

REFERENCES

- Abarca-Guerrero L., Maas G. and Hogland W. (2012). Solid Waste Management in Developing Countries. *Waste Management*, 33 (1)
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational behaviour and human decision processes*, 50 (2), 179-211.
- Alice Ferguson Foundation (2011). Getting to the Source: Understanding District Citizens and Business Community Attitudes towards Litter and Responses to Anti-Litter Messaging and Strategies. *Non-Engineering Solutions for Trash Reduction in the Anacostia Watershed*
- Al-Khatib I.A. (2009). Children's perceptions and behaviour with respect to glass littering in developing countries: A case study in Palestine's Nablus district. *Waste Management*, 29 (4), 1434-1437.
- Al-Khatib I.A., Arafat H.A., Daoud R. and Shwahneh H. (2009). Enhanced solid waste management by understanding the effects of gender, income, marital status, and religious convictions in attitudes and practices related to street littering in Nablus – Palestinian Territory. *Waste Management*, 29.
- Andres D. and Andres, C. (1995). Roadside Litter and Current Maintenance Waste Management Practices: Are We Making Any Progress? Conference on maintenance Management, Transportation Research Board Conference proceedings 5: 135-143. Washington, D.C: Transport Research Board, National Research Council.
- Beck W. R. (2007). Litter. A review of litter studies, attitude surveys and other litter related literature. *Keep America Beautiful*.

Bell R. G. and Russell, C. (2002). Environmental policy for developing countries. *Issues in Science and Technology* 18, no. 3, Spring 2002.

Butcher L. (2005). *Local Environment: Fines to fit the crime in Waste Management*. Centre on Housing Rights and Evictions (COHRE) (2008). *Women, slums and urbanization: examining the causes and consequences*. Geneva.

Corbin C. J. and Singh J. G. (1993). *Marine debris contamination of beaches in St. Lucia and Dominica* *Marine Pollution Bulletin*.

Dikgang J., Anthony L. and Martine V. (2010). *Analysis of the Plastic-Bag Levy in South Africa*. Policy Paper No. 18.

Freire M., Somik L. and Danny L. (2014). *Africa's Urbanization: Challenges and Opportunities*. Working Paper No. 7. The Growth Dialogue 2201 G Street, NW, Washington DC. 20052 USA.

Furusa R. (2015). *Literature review on Littering. A study exploring littering behavior and identifying strategies to curb littering*.

Geller E. S., Winett R. A. and Everett P. B. (1982). *Preserving the environment: Strategies for behaviour change*. Elmsford, NY: Pergamon Press.

Ghana Statistical Service (2010). *2010 Population and housing Census. Summary report of final results*.

Gifford, Robert, and Andreas Nilsson (2014). "Personal and social factors that influence pro environmental concern and behaviour: A review: Personal and Social Factors That Influence Pro-Environmental Behaviour", *International Journal of Psychology*.

Green C.A. (2001). *The effect of prior litter on sewing class students' clean-up behaviour*.

Henry, R. K., Yongsheng, Z., and Jun, D. (2006). Municipal Solid Waste Management Challenges in Developing Countries – Kenyan case study. *Waste Management*, 26 (1), 92100pp.

Kabogo S. W. (2009). Environmental Effects of Open Air Markets: A Case Study of Ngara Market, Nairobi. The University of Nairobi.

Kasozi A. and Harro von Blottnitz (2010). Solid Waste Management in Nairobi: A Situation Analysis. Technical Document accompanying the Integrated Solid Waste Management Plan (draft). University of Capetown.

Keenan M. (1996). The A, B, C of litter control. *Irish Journal of Psychology*, 17 (4), 327– 339.

Keep America Beautiful (KAB) (2009). Littering Behaviour in America. Results of a national study. Prepared by Action Research.

Keep Britain Tidy (2009). Vehicle Litter Research Report- 2009.

Keep Britain Tidy (2013). When it comes to litter: which side of the fence are you on?

Koger, S. and Winter, D. N. N. (2010). *The Psychology of Environmental Problems*. New York: Psychology Press.

Lehman P. K. and Geller E. S. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues*, 13,13-32.

Leijdekkers Simone, Yosi Marin Marpaung Marieke Meesters, Ann-Katrin Naser, Marlieke Penninx, Merije van Rookhuijzen & Marije Willems (2015). Effective Interventions on littering behaviour of youngsters. What are the ingredients?

Marais M., Neil A. and Chris W. (2004). The Measurement and Reduction of Urban Litter Entering Storm Water Drainage Systems: Paper 1 – Quantifying the problem using the City of Cape Town as a case study.

Melosi M. V. (1981). Garbage in the cities- Refuse, Reform and the environment. College Station, TX: Texas A&M Press.

National Cooperative Highway Research Program (NCHRP) (2009). Energy, Environment, and Maintenance: Reducing Litter on Roadsides: A Synthesis of Highway Practice Transportation Research Board. Washington, D.C.

Merriam Webster Dictionary

Nilsen A. (2010). An Economic Evaluation of Plastic Bag Ban Regulation. A Masters“ Thesis for the Master of Philosophy Degree in Development and Economics. University of Oslo.

Njeru J. (2006). The Urban Political Ecology of Plastic Bag Waste Problem in Nairobi, Kenya. *Geoforum*37, 1046-1058.

Novotny T.E. and Zhao F. (1999). Consumption and production waste: another externality of tobacco use. *Tobacco Control* 8, 75-80.

Ojedokun A. O. and Balogun S.K. (2011). Psycho-sociocultural Analysis of Attitude towards Littering in a Nigerian Urban City. *Ethiopian Journal of Environmental Studies and Management*, 4:1

Ojedokun O. (2011). Attitude towards littering as a mediator of the relationship between personality attributes and responsible environmental behaviour. *Waste Management* 31 (12): 2601-2611

Ojedokun A. O. and Balogun, S. K. (2013) Self-monitoring and responsible environmental behaviour: the mediating role of attitude towards littering. *Review of Psychology Frontier*, 2 (1): 31-38. <http://www.ajol.info/index.php/ejesm/article/viewFile/67204/55305>

Ojedokun A. O. and Adekunle A. (2013). The Role of Socio-demographical and Psychological Factors in Taking Littering Prevention Actions. *International Journal of Advances in Psychology (IJAP)* 2 (4).

Ojedokun, A.O. (2009) Influence of psychosocial factors and mediatory role of environmental attitude on responsible environmental behaviour among residents of high density areas in Ibadan metropolis. Unpublished doctoral dissertation. University of Ibadan, Ibadan, Nigeria.

Okeoma, I. O. and Nkwocha E. E. (2009). Street Littering in Nigerian Towns: towards a Framework for Sustainable Urban Cleanliness. *African Research Review*, 3 (5), 147-164. <http://www.ajol.info/index.php/afrrrev/article/download/51149/39825>

Poswa (1997). Curbing Umtata's Littering Problem. *ReSource* (4) No. 3. Published in association with the Institute of Waste Management.

Raffoul L, Robin M. and Renata G. (2006). Roadside Litter in Barbados: Sources and Solutions. Centre for Resource Management and Environmental Studies (CERMES)

Schnelle, J.F., McNees, M.P., Thomas, M.M., Gindrich, J.G. and Beagle G.P. (1980) Prompting behaviour change in the community: use of mass media techniques. *Environment and Behaviour*, 12, 157–166.

Schultz P.W., Bator R.J., Large L.B., Bruni C.M. and Tabanico J.J. (2011). Littering in context: Personal and environment predictors of littering behaviour. Article in Press.

Sibley C. and Liu J. (2003). Differentiating Active and Passive Littering: A Two-Stage Process Model of Littering Behaviour in Public Spaces. *Environment and Behaviour* 2003. Singapore National Environment Agency (2011). *Towards a Cleaner Singapore: Sociological study on littering in Singapore.*

Stuart N.R (1975). *Social and Environmental Influences on Littering Behaviour. A Dissertation presented to the Faculty of Graduate Studies and Research.*

Tillett T. (2007) Healthy Home, Healthy Community. In *Environmental Health Perspective*, April 2007, 115 (4), 194-195.

Toxic Link (2014). *Plastics and the Environment: Assessing the Impact of the Complete Ban on Plastic Carry Bag. A report by Toxic Link. H-2, Jungpura Extension New Delhi 110014.*

United Nations (2012). *World Urbanization Prospectus: the 2011 Revision. New York: United Nations Department of Economic and Social Affairs/Population Division.*

Van Dyck, I.P., Nunoo, F.K.E. and Lawson, E.T. (2016). An Empirical Assessment of Marine Debris, Seawater Quality and Littering in Ghana. *Journal of Geoscience and Environment Protection*, 4, 21-36 pp.

Waghorn-Lees C., Michael F., Kyle D. and Lynn D. (2013): *Litter Reduction from a Behavioural Science Perspective. Hollin Consulting.*

Yire, I. (2012). *Banning plastic bags in Ghana and the way forward. Retrieved October 30, 2016. <http://opinion.myjoyonline.com/pages/feature/201206/88817.php>.*

Zurbruegg C. (2002). *Solid Waste Management in Developing Countries.pdf.*

APPENDIX 1

QUESTIONNAIRE

These series of questionnaires are designed to solicit information on the attitude and behaviour towards Littering, a case study of the Klottey Korle residents. Your response will help the researcher achieve the stated objectives required.

Your answers to these questions shall be highly appreciated and considered purely confidential since this study is strictly for academic purposes. All respondents are therefore not liable to any information they provide.

SECTION A: Background Information

1. Age? _____

2. Where do you reside?

- 1. Osu []
- 2. Adabraka []
- 3. Asylum Down []

3. What is your highest level of education (Tick one)

- 1) Primary []
- 2) Secondary []
- 3) Tertiary []

4. Gender:

- 1) Male []
- 2) Female []

SECTION B: Nature and Extent of Littering in The Klottey Korle Constituency

5. Do you think Klottey Korle is generally littered?

- 1) Yes []
- 2) No []

6. How littered is Klottey Korle? (Tick one)

- 1) Slightly littered []
- 2) Moderately littered []
- 3) Heavily littered []

7. Do you ascribe the cleanliness of some parts of the constituency to the following?

	Highly disagree	Disagree	Neutral	Agree	Highly agree
The Klottey Korle Constituency street cleaners sweep the constituency keeping it clean.					
There are enough bins to facilitate anti-littering behaviour.					
People are aware of the importance of not littering and therefore do not litter.					
The laws and enforcements in place deter people from littering.					

8. Which areas of Klottey Korle are normally littered? (Tick all that apply)

S/N	AREAS	√
1	Roadside gutters/water alleys	
2	Bus stops/bus stations/open air markets	
3	On the floor of buses and/or Trotros	
4	Recreation areas/open spaces e.g., parks, etc.	
5	On the streets of highways, roads, residential estates, apartments, etc	
6	Outside commercial areas (schools, canteens, churches, banks, offices and kiosks)	

9. Do you subscribe to the following as the sources of litter in Klottey Korle? (Tick all that apply)

	Highly disagree	Disagree	Neutral	Agree	Highly agree
Household trash by the roadside					
Dumpsters used by businesses, shops, supermarkets or illegal dumping					
Loading docks at commercial sites e.g., outside supermarkets, food joints, etc					
Construction and demolition sites					
Uncovered garbage trucks					
Motorists					
Pedestrians					

SECTION C: Attitude and Behavior of the Residents of Klottey Korle Towards Littering

10. Have you seen people litter?

- 1) Yes []
- 2) No []

11. Have you ever littered?

- 1) Yes []
- 2) No []

12. If yes, why did you litter?

13. If no, why did you not litter?

14. Is littering... (Tick one)

- 1) Mostly done by people []
2) Mostly accidental? (from open garbage trucks, construction or demolition sites) []

B) If mostly done by people,

- 1) Is it intentional (everyone else is doing it, the area is already dirty, etc.)? []
2) Is it due to other factors e.g. lack of enough bins, poor laws and attitudes? []
3) Other _____

15. How would you describe the litter problem in this estate? Tick one

- 1) Major problem []
2) Minor problem []
3) Not a problem at all []

16. In general, how would you describe the litter problem in Klottey Korle?

- 1) Major problem []
2) Minor problem []
3) Not a problem at all []
4) Don't know []

17. Would you say the level of litter in Klottey Korle has improved, stayed the same, or gotten worse over the years? (Tick one)

- 1) Improved []
2) Stayed the same []
3) Gotten worse []
4) Don't know []

22. How effective do you think littering prevention messages are in Klottey Korle? Tick one.

- 1) Very effective []
- 2) somewhat effective []
- 3) Not at all effective []

SECTION D: Solutions That Can Be Recommended to Curb the Littering Problem

23. Making Klottey Korle citizens involved in picking up litter through anti-litter events, campaigns, and clean-ups will stop them from dropping litter themselves.

- 1) Highly disagree []
- 2) Disagree []
- 3) Neutral []
- 4) Agree []
- 5) Highly agree []

24. Would you participate in an anti-litter campaign, clean up event VOLUNTARILY in your neighbourhood?

- 1) Yes []
- 2) No []

25. Infrequent picking up of litter results to dumping

- 1) Highly disagree []
- 2) Disagree []
- 3) Neutral []
- 4) Agree []
- 5) Highly agree []

26. What do you think should be done to reduce littering in Klottey Korle? Select as many as apply

- 1) Provide more bins []
- 2) Create awareness and educate the public []
- 3) Community involvement in litter management []
- 4) Introduce exorbitant taxes and fines []
- 5) Set up tough laws and legislation []
- 6) Cleaning up prior litter to reduce the litter begets litter effect []
- 7) Prompts from broadcast, print and social media []
- 8) Motivations/awards for keeping their residential places clean []

27. Who do you think should be responsible for keeping Klottey Korle clean?

- 1) The public []
- 2) The government []
- 3) Both Parties []

31

SECTION E: Effects of Littering On the Residents as Well as The Constituency

28. If you saw someone litter, would you be very likely, somewhat likely, or not at all

likely to caution them against it?

- 1) Very likely []
- 2) Somewhat likely []
- 3) Not at all likely []
- 4) Don't know []

29. Did you know that littering has negative effects?

- 1) Yes []
- 2) No []

30. Littering has economic, and environmental impacts. Please agree or disagree with the following statements under each impact.

Economic	Highly disagree	Disagree	Neutral	Agree	Highly agree
Litter can hinder the economic development as businesses may not set up new ventures in a place that is littered.					
Littering affects the tourism industry as litter on the beaches may keep tourists away.					
Litter clean-up causes the taxpayer a lot of money as it is expensive					

Litter reduces the value of houses/property in the given area as people would pay more if the general area was cleaner					
Litter causes damages hence economic losses as a result of floods caused by blocked drainage					
Environmental impacts					
Litter on the ground degrades natural areas					
It can lead to the death of vegetation thus reducing diversity of species					
Litter in the oceans can lead to death of fish and gradual depletion of marine life					
Littering reduces air quality due to the smell					
Debris may be carried into waterways with potential for serious water contamination					
Littering is one of the signs of social decay because it shows people don't care about the environment					

THANK YOU FOR YOUR TIME!!!

APPENDIX 2

INTERVIEW GUIDE

1. What are your thoughts on littering in Klottey Korle?
2. Do you think that it is a big problem that has gotten out of hand?
3. In your opinion, is littering an attitudinal problem?
4. What efforts have the government put in place to manage the litter situation?
5. Have people who have been caught littering ever been persecuted?
6. Is there enough awareness of Littering prevention in the Klottey Korle?
7. Do you think the provision of bins across the country has helped the littering situation?
8. Has the Ministry made enough provision for Street cleaners in the Constituency?
9. Do you know of some health risks associated with littering?
10. Are there any economic impacts of littering?
11. Age
12. Role (Job Title)
13. Rank
14. Gender