

---

# **“People have been paid to sweep the place!”- Exploring the antecedents of littering behaviour in Ghana.**

Margaret Amankwah-Poku\*  
Department of Psychology,  
University of Ghana.

\*Corresponding Author *mamankwah-poku@ug.edu.gh*

George Ofori  
Department of Psychology, University of Ghana.

## **Abstract**

This study explored why Ghanaians litter their environment indiscriminately in spite of its adverse consequences. Twelve students from the University of Ghana were interviewed and the data analysed using thematic analysis. Three themes emerged, reflecting participants' 1) Knowledge concerning littering, 2) Reasons why they litter their environment and 3) Ways of curbing littering. Participants knew what littering was but still littered their environment because, among other things, they did not feel responsible for the proper disposal of litter, littering felt like “it's part of you”, litter begets littering and there were no bins or none close by. It is important that individuals are educated on the dire consequences of littering and that the government enforces the laws governing littering. Reward and punishment systems should be instituted to acknowledge clean communities and enforce penalties in unclean communities.

## **Keywords:**

Littering; Waste disposal;  
Negative behaviour;  
Ghana; Environment

## **Introduction**

Littering is the improper disposal of litter or small quantities of waste (Khawaja & Shah, 2013) such as dropping of waste on the ground. (Ojedokun, 2015). Ong and Sovacool (2012) defines litter as any domestic or commercial waste including debris or rubbish that is not placed in the right receptacle. People may litter for various reasons, and the dynamic nature of littering makes its interpretation rather broad, but one thing is clear, that, without human beings, littering would not exist (Steg & Vlek, 2009). Littering may be described as an attitudinal problem, an instinct and a repetitive behaviour (Ojedokun, 2013), with significant negative consequences for the quality of the environment and public health (Ojedokun & Balogun, 2011). Attitude towards littering can be characterised as an inclination to react positively or negatively towards throwing away waste or rubbish (Ojedokun, 2011). The inability or failure to remove litter can be characterised as passive littering, while active littering involves an individual taking a shorter period of time to litter a place, for instance just before leaving or passing through the area (Sibley & Liu, 2003). Motivations

and barriers that influence littering behaviour and proper disposal behaviour include personal, material, social and habitual factors (Lyndhurst, 2013).

Personal factors suggests that an individual's sense of responsibility or belongingness could influence littering behaviour. In essence, littering is perceived as more acceptable when personal responsibility is diminished (Campbell, 2009). Individuals are more likely to litter if they feel less of a personal responsibility for maintaining their environment and when they feel alienated by their community. Uncertainty about what counts as litter, such as questions about which items, their size, and context, also contributes to causing individuals to litter. Thus, small items may be seen to cause minimal impact, in terms of aesthetics, health and safety (Lyndhurst, 2013). Other personal factors accounting for littering include lack of understanding regarding the impact of littering on the environment, the desire to get rid of messy items (the "icky factor") due to the discomfort of carrying 'dirt' until a bin is found (Lewis, et al., 2009), and feeling lazy to walk to a bin (Square Holes Pty Ltd, 2011).

Material factors also contribute to understanding why people litter the environment. Existing litter and other indicators of an already littered site increase or decrease the likelihood of further littering (Kallgren et al., 2000). Signs of disorder, such as graffiti on the walls, badly arranged chairs in a classroom, or spilt liquids, overturned furniture or even uncompleted buildings increase the likelihood of littering in such places (Al-mosa et al., 2017; Keizer et al., 2008). Keizer et al. found that 69% of research participants were willing to litter in an environment which featured graffiti, compared to only 33% in an environment with no graffiti. People are also less concerned about dropping litter in towns and cities than in the countryside, as they believe that urban areas will be cleaned up overnight (Lewis et al., 2009). The absence of litter bins can also cause littering. When bins are available and easily accessible, littering is found to significantly reduce (Schultz et al., 2013).

Again, social factors such as gender differences and socioeconomic status can account for littering behaviour and frequency. For example, males have been reported to litter more than females (Al-mosa, et al., 2017; Asmui et al., 2017; Chung & Lo, 2004; Schultz et al., 2013) while younger adults have been consistently shown to engage in littering more than older adults (Bateson et al., 2013). Low income earners have also been reported to litter more than high income earners (Nkwocha & Okeoma, 2009) while social pressures and disapproval from large group sizes deter individuals from engaging in this anti-social behaviour (Bator et al., 2011). Finally, in terms of habitual factors (habits), littering may become an individual's 'default' disposal behaviour-sometimes done without a particular intention or thought. An example is teenagers engaged in littering behaviour that was believed to be thoughtless and ingrained in their habits (Alice Ferguson Foundation, 2011), suggesting that littering behaviour may get to a point where it is viewed as 'normal'.

Littering can pose several problems which may have environmental consequences among others (Henewa et al., 2014; Yoada, et al., 2014). As an environmental problem, litter can be characterised as a substantial source of contamination and disease outbreak. Misplaced plastic containers, plastic bags, glasses and many other commonly used materials accumulate in the environment, posing a number of health and environmental hazards. Such improper disposal of rubbish, and thus poor sanitation, has been a major issue in Ghana, and the outbreak of diseases such as cholera, (Ohene-Adjei et al., 2017) typhoid, and dengue fever have been cited as some of the deadly diseases caused

by unclean environments (Healthy Ghana Television, 2015). Waste in gutters and water bodies, especially solid waste, causes hitherto flowing water to become stagnant and this forms breeding grounds for mosquitoes. The Ministry of local Government and Rural Development in Ghana initiated the National Sanitation Day in response to the 2014 Cholera outbreak which claimed many lives. The National Sanitation Day which is scheduled for every first Saturday of the month is characterised by a voluntary clean-up exercise for all Ghanaian residents in order to reduce unsanitary conditions that can cause major disease outbreaks.

Environmental problems caused by littering could also escalate into major environmental disasters. A case in point is the national disaster which occurred at the Kwame Nkrumah Interchange in Accra on the 3<sup>rd</sup> of June, 2015. Although flooding events and their impacts are not systematically documented by the Metropolitan, Municipal and District Assemblies in Ghana, it is estimated that flooding occurs during all rainy seasons, from March to June/ July, with the June 3<sup>rd</sup> 2015 floods being the deadliest, having left 150 casualties and affected 52,000 people (World Bank, 2017). This incident of flooding was attributed to the littering habits of Ghanaians, who dispose of plastic waste indiscriminately. Litter (especially plastic waste) can cause drains to choke up, making the flow of water almost impossible, and this can result in flooding (Brown et al., 2010; Calice et al., 2012). On 24<sup>th</sup> April 2017, the president of Ghana declared, “by the time we end our four-year term [2020], Accra is going to be the cleanest city in Africa”. More than three years after this declaration Accra is still very littered and dirty, and there has been little effort to fulfil this promise; neither have citizens conducted themselves well.

In spite of the negative consequences of littering such as flooding and disease outbreak, Ghanaians continue to litter their environment indiscriminately. According to Oteng-Ababio, et al. (2017), despite city authorities’ efforts to remedy waste problems using foreign-based models, it is still a huge problem as there is indiscriminate dumping and public spaces are swamped with uncollected waste. Though there are laws against littering, these are not enforced. People litter and are not sanctioned for their behaviours; they maintain unsanitary environments and are not penalised. Thus, such behaviours persist in Ghana and are getting worse, especially with the increased use of plastic products in the form of carrier bags, bottles, take away packs and wrappers for sachet water (popularly known as ‘pure water’). To curb this menace effectively, there is a need to understand why people continue to litter their environment and what is maintaining this negative behaviour. Thus, it was necessary to first use in-depth interviews to explore and understand individuals’ views about littering, to serve as the basis for further studies. Specifically, the study sought to investigate why people litter and determine how littering can be curbed. Findings formed the basis for a larger quantitative study, which explored a cross-section of Ghanaians across ages. This study is thus part of a bigger study investigating factors contributing to the attitudes and behaviours of Ghanaians toward littering.

## Methods

In this qualitative study, the researchers conducted an in-depth investigation of littering behaviour in order to understand why people litter and to inform subsequent studies. A semi-structured interview guide was used to elicit participants’ views on littering. The study was conducted at the Accra City Campus of the University of Ghana where the participants were recruited. Accra City Campus is a non-residential and fee-paying campus located at the heart of the capital city, Accra.

This campus admits qualified Senior High School graduates and has a population of 7000 students. Programmes offered include Arts, Business Administration, Social Sciences and lately Education, and they are run by teaching faculty from the Main Campus of the university. This study site was chosen because it is in the heart of the capital city, Accra; a very busy centre with many human and business activities, but challenging sanitation conditions, especially littering, because it is a non-residential campus with students commuting daily.

As this is a qualitative study, fewer participants were required for testing. According to Yardley (2000), in qualitative research, a statistically representative sample size is too large to analyse in depth, as vast quantities of data will be too complex to synthesise and this will undermine the reason for using this method. Thus, for qualitative research a smaller number of participants, chosen for their special attributes, is often preferable (e.g. Charmaz, 1990). The literature shows that demographic variables such as socioeconomic status (Nkwocha & Okeoma, 2009), gender (e.g. Al-mosa, et al., 2017; Asmui et al., 2017; Schultz et al., 2013) and age (Bateson et al., 2013) account for littering behaviour and frequency. Younger adults are reported to engage in littering more than older adults (Bateson et al., 2013). Based on this, younger adults were targeted for the present study to learn about littering behaviour. The researchers chose to test university students who are more educated in order to avoid testing less educated individuals who may be littering due to their ignorance.

Littering behaviour is not peculiar to specific individuals, and therefore this study did not require purposive sampling. Instead, convenient sampling was used to select participants who were readily available and willing to participate in the study. Recruitment and interviewing were done concurrently, and after interviewing the eleventh and twelfth participants, the researchers reached the saturation point where no new information was being obtained from the interviews. In total, twelve students (4 males and 8 females) between the ages of 18 and 24 years, studying Business Administration or Social Science, were interviewed. These two programmes of study were selected using the fishbowl method.

The interview guide used asked questions related to participants' understanding of littering, why they would litter and how littering could be curbed. The guide had 13 main questions with probes, to obtain in-depth information from participants. An audio recorder was used to record the interviews. First, approval was obtained from the Ethics Committee for the Humanities at the University of Ghana (ECH 053/18-19). Then, prospective participants were approached on the University campus and informed about the study and those who gave their consent to participate were included in the study. Participants were assured of anonymity and confidentiality and were informed about their right to withdraw from the study at any time. Interview sessions were held at the University of Ghana, Accra City Campus, and they lasted for a minimum of 45 minutes. Verbal appreciation was expressed to participants after their interviews.

Thematic analysis was used to analyse the data obtained. First, the recorded interviews were transcribed verbatim. The transcripts were then read and re-read to identify and analyse emerging patterns. The researchers looked for connections between these emerging patterns and generated sub-themes. These sub-themes were then categorised into main themes, based on their connections. During this process, credibility and validity of data analysis and interpretation were ensured. Since qualitative research, the researcher is the tool for data collection and analysis (as he/she interpreted reports from participants), it is necessary that the process of data analysis and interpretation is

credible and valid. To achieve this, the first two transcripts were analysed by the first author and corroborated by the second author to reduce subjectivity in the data analysis and interpretation. The researchers then analysed the rest of the transcripts while each corroborated the results of the other. In addition, portions of the transcript were analysed and discussed with other researchers with expertise in qualitative research, making the data analysis and interpretation process transparent and plausible.

## Results

Three main themes emerged after data analysis. These included 1) Knowledge of laws concerning littering, 2) Why people litter, and 3) Ways of curbing littering behaviour. Several sub-themes made up these main themes (see Table 1).

**Table 1: Summary of themes and sub-themes**

| MAIN THEMES                            | SUB-THEMES   |
|--|--|
| Knowledge of laws concerning littering | <ul style="list-style-type: none"> <li>» Improper disposal of litter</li> <li>» No knowledge of specific laws</li> </ul>   |
| Why people litter                      | <ul style="list-style-type: none"> <li>» Shifting responsibility</li> <li>» “It’s part of you”- “it’s a norm</li> <li>» Littering begets littering</li> <li>» Lack of bins and proximity to bins</li> <li>» Littering by observation</li> <li>» No sanctions or enforcement of laws</li> </ul> |
| Ways of curbing littering behaviour    | <ul style="list-style-type: none"> <li>» Education</li> <li>» Rewards and punishment systems</li> <li>» Provision of bins</li> </ul>   |

### Knowledge of laws concerning littering

This theme reports participants’ understanding of littering and their knowledge of laws concerning littering. It was important to ascertain whether participants understood what qualified as littering before finding out whether they littered and why. Several participants described littering as the improper disposal of items or rubbish placed in the wrong location. Participants recounted several perceived conventions but had little or no knowledge of specific laws concerning littering as described with the sub-themes below.

#### Improper disposal of litter

Participants had some understanding of what qualified as littering as they reported:

*Ok I think littering is dumping waste or stuffs on the floor where they in turn become a burden unto someone else to go back to get them to a proper place” (Male, 23).*

*“My understanding of littering is about dumping refuse or garbage anywhere, that’s what I know about littering- where we’re not supposed to drop, we just dump (Female, 23)*

Their basic understanding of littering was dropping items or rubbish at inappropriate

places. These quotes, which reflect the views of most participants, correctly describe littering. However, they were not familiar with the laws governing littering.

### ***“No knowledge of specific laws”***

When asked whether they knew of any laws concerning littering in Ghana, most participants said they did not.

*“Ok perhaps I don’t ok, I’m not into this law. What I know is, it’s not good to litter, yes it’s illegal because this Zoomlion people (a waste collection company) and this environmental sanitation, at first when we were children they call it “tankas” (simplified name given to the Town Council). Yeah, if ever they come and they see that there’s rubbish in your house or you’ve piled up rubbish they can sanction you and send you to court but I don’t know exactly the article or the Act of littering in the constitution but I know it’s not right and it’s illegal to litter in Ghana”. (Female, 24).*

*“To be frank no, but I believe that there’ll be a system that should. There should be, but to my knowledge I don’t have because I’ve never seen anybody being punished or being prosecuted for littering around so, so far no, but I believe there’ll be one” (Male, 23).*

Although participants believed there are laws concerning littering, they were unable to state any specific ones. Thus, although participants understood what littering was, they still engaged in this negative behaviour for several reasons, as outlined in the second theme below.

## **Why people litter**

This theme reports the various reasons for littering the environment. Participants littered for several reasons.

### ***Shifting responsibility***

Many participants believed there were workers paid to collect litter at various places, hence there was no need to be concerned about where they dropped their litter. They were of the view that these workers would not have any work to do if people did not litter. Their narratives also described the shift of responsibility from the individual to the government or other organisations such as the Zoomlion Company limited. As participants recounted:

*“If I’m walking and there’s no dustbin and I know that definitely people have been paid to sweep the place, I’ll put it there because someone would come and sweep it, the person is being paid for it” (Female, 24).*

*“.....because we think somebody would come and do it, we’re not the ones supposed to do it. Zoomlion has been assigned to come and distil [desilt] our gutters so we won’t do it, so we expect Zoomlion to come and do it for us every week and every other day” (Female, 20).*

Participants shifted their responsibility for proper waste/ litter disposal to individuals or organisations and this may have caused them to litter indiscriminately, not thinking about the consequences. One participant indicated the lack of dustbins at convenient locations as justification for littering, thus, shifting her responsibility for proper waste. With this shift in responsibility and continual littering, this negative behaviour may begin to feel normal and become “part of the individual” because of its constant practice, as reflected in the next sub-theme.

### ***“It’s part of you”- It’s the norm***

Some participants described littering behaviour as a “normal phenomenon” while others also stated that littering had become “part of them”, suggesting the activity was ingrained in their own and in other individuals’ behaviours. Participants stated:

*“Ok if you live in a society that everyone litters, you develop the attitude, so you might go somewhere else or you might be alone but still litter, so it’s part of you” (Female, 22)*

*“Probably because it has become a habit and like I said some areas where they once lived, they’ve seen a lot of littering there, it’s become like a part and parcel of them”. (Male, 23)*

These quotes indicate there comes a point where littering behaviour becomes a norm among some individuals. Individuals engage in this behaviour, and perhaps because they are not apprehended for it, others learn and engage in it. Littering may become a habit over time and the presence of litter in one’s immediate environment may not be seen as a negative phenomenon but instead may trigger more littering.

### ***Litter begetting litter***

Results indicated that participants were more likely to litter when they perceived an environment as already littered. Some assumed that if there was a heap of rubbish at a particular location, it was indicative that the rubbish was about to be collected or burnt, hence their decision to add more litter. Similarly, others indicated it was acceptable to drop litter at a location that was already littered or where there was a heap of litter.

*“If I should get to a place and let’s say there’s already a heap or rubbish there, even though it’s not a dumping site, I’ll do the same because people have already dumped it there” (Female, 25).*

*“If littering is seeing a refuse somewhere and putting it there, I’ll probably be a victim, I wouldn’t litter a place where I don’t see anything there, so if I put rubbish somewhere it’s because I’ve seen that it’s a site- there’s rubbish there so I put it there” (Female, 20).*

The above show how a littered environment or piles of rubbish can attract more litter. Individuals may litter as a result of seeing an already littered site, while others may do so because bins are either not available or not within easy reach.

### ***Lack of bins and proximity to litter bins***

The absence of litter bins also caused participants to litter the environment. Participants suggested that littering may occur if bins are located far away from them or are unavailable. Participants stated;

*“Ghana, I hardly see dustbins or place of waste disposal close by, so I think it makes it difficult even trying as an educated person who’s been educated of the effects of littering” (Male, 23).*

*“I think I was holding a black rubber (polythene bag), I wasn’t feeling comfortable holding it and I wasn’t with a bag too. So I bought pure water (drinking water in a plastic pack) so they gave me a black rubber with it. So looking around there was no dustbin and I was still holding the black rubber I felt uncomfortable so I just [gestures to indicate she dropped it]. Well I knew I didn’t like holding it, I didn’t even realise the time I dropped it” (Female, 24).*

Other participants indicated that even when litter bins were available, they were not regularly emptied, as reported below.

*“Also we don’t have rubbish bins, even the ones we have they’re not regularly emptied, so that one too is a factor” (Female, 22).*

These quotes indicate the importance of making litter bins available and within easy

reach. If individuals have litter and no bins are available, they will dispose of it no matter how inappropriate. Other participants formed littering habits as a result of observing significant others littering their environment.

### **Littering by observation**

This sub-theme reflects the effect of participants observing others littering their environment. Participants reported they learned the habit of littering their environment from others close to them. They had seen other people litter and therefore thought it was all right to do the same. The narrative below is illustrative.

*“I’ll say where I’m coming from in Ghana, [place/culture not specified] littering is something that we like doing a lot because of our culture, we grow up and see people litter around. So it’s normal, so unconsciously, you’re dropping it” (Male, 23)*

Other participants also reported people close to them engaged in littering, hence it was not new to them. Growing up around family members who littered meant learning such behaviours. As one participant reported,

*“Our parents and our grandparents didn’t take caution or didn’t make any effort to make our cities clean, they used to dump everywhere and we came to meet it so we just continued” (Male, 23).*

The above quotes highlight the influence of an environment on forming littering habits. Participants observed and imitated littering behaviours and continued to do so because their predecessors or probably they themselves were not sanctioned for it.

### **No sanctions or enforcement of laws**

Participants described how they thought laws, fines, or penalties for littering behaviour were not upheld or enforced. Several participants suggested that littering behaviour occurs because of the lack of law enforcement. As participants observed:

*“I don’t really know of any strict laws. You’ll see writings that “If you dump rubbish here you’ll pay two hundred cedis” (Ghana currency) or something like that but I’m not a witness to it being enforced. I see people writing it on the walls and houses (about prohibitions and sanctions) but I’ve not really seen any case of it happening- people taking money for it or people going to prison, police arresting someone for it” (Female, 20).*

*“So nobody is going to penalise them in the sense that after all when the person dumps the rubbish then he is gone, there is no security measure, there is no law enforcement that will check that this guy dumped the rubbish on the floor so let’s show this guy, lets punish him for dumping the rubbish on the floor”. (Male, 23)*

Participants believed that because individuals were not punished for their actions, they were less cautious and at liberty to litter the environment. In spite of the above reports, participants acknowledged that it was necessary to curb littering.

### **Ways of curbing littering behaviour**

This final theme reflects various suggestions by participants on how to curb littering behaviour. Participants believed that education to create awareness was necessary, as well as establishing reward and punishment systems, and more importantly, making available adequate bins.



### **Education**

Some participants stressed the need for education concerning littering behaviour. They suggested once people are well informed about littering, perhaps that could curb their behaviours. The narratives below are illustrative:

*“Education is the main tool we can use to curb littering in Ghana because if we create the awareness- like adverts, you know people watch TV a lot. I saw this “Yolo” (a television advertisement) advert on tele, it’s about a drink for children and that advert speaks a lot about littering” (Female, 24).*

*“Maybe for example campaigns making people aware- Education. Let them know the effect [of littering] on them, and it has to go on for some time for people to be aware. Make sure that most of the people in the country are aware so that in times where you breach any contract and you’re being prosecuted you wouldn’t have any other reason” (Female, 20).*

Several participants were of the view that there is the need to intensify educational programs concerning littering, and to have an effective reward and punishment system to curb littering. Once education is provided, individuals will have no excuses when they are caught littering and are punished.

### **Reward and punishment systems**

Several participants stated there was the need to rightly reward individuals who demonstrated good litter disposal habits such as dropping litter in bins. Other participants also stated the need to mete out punishment, for example, community service and payment of fines, as a measure for curbing littering. Participants reported:

*“Then we should do something like maybe, the community that’s most clean, maybe the government would award that community or something. Yes, let’s motivate people to ensure that the society is always clean” (Female, 24)*

*“Community service won’t be bad, community service, yes. So let’s say, maybe when somebody dumps rubbish on the floor, you just let the person go and dig and let’s say go on a community service and go and clean a particular locality or place so that the individual will learn” (Male, 23).*

These responses underscore the need to institute a system that rewards proper litter disposal and punishes improper litter disposal. Yet while rewards and punishments may be important, there is also a need to first provide adequate bins that enhance good and proper litter disposal.

### **Provision of bins**

Some participants emphasized the need to have bins provided by the government and other organisations such as Zoomlion Company Limited. This may not completely curb littering behaviour, but it is likely to reduce the menace drastically. Participants reported:

*“So government should just create more, Zoomlion people to work, give them the cars and everything. That’s what government should do and then also around (referring to immediate environment), we can’t always wait for Zoomlion, so they should get us dustbins in schools, in communities, even on the road, on the street, anywhere, not just the ministries (a location for government offices) so that it looks nice, but also around”. (Female, 24)*

*“You (government) have to put bins at vantage points you know Adabraka (a town in Accra) like this, I’ve not seen any bin around. You know, if you get to the residential areas there’re bins all over so if anybody finishes drinking water and feels like dumping it, if bins*

*are at vantage points, I'm sure any person with the right sense or any person who, "thinks" would dump it in the bin instead of putting it on the floor, so they should provide bins at vantage points in neighbourhoods."*

The above indicate the importance of providing bins at vantage points to reduce littering in the community or society. Most probably when this is done, littering will reduce. Thus, the government has a responsibility and so does the individual.

## Discussion

Interviews were conducted to find out why people litter in spite of its detrimental effect. Overall, three major themes emerged from the analysis with respect to littering behaviour: Knowledge of laws concerning littering, Why people litter and Ways of curbing littering. This study revealed that participants engaged in littering in spite of knowing it was a negative behaviour. They littered without thinking about the consequences. Participants' knowledge and understanding of what constitutes littering (i.e. dumping of refuse at improper places, or disposal of rubbish or items indiscriminately) is consistent with definitions of littering put forward (e.g. Khawaja & Shah, 2013; Ojedokun & Balogun, 2011). However, this did not prevent them from engaging in this negative behaviour. It may well be that because littering behaviour is not characterised as a serious crime (Selby, 2011), participants did not see the need to avoid it. This finding suggests having knowledge of what constitutes a negative behaviour such as littering is not enough to prevent the behaviour from occurring. It is important for individuals to also understand the negative effects of engaging in such behaviours and hence avoid them.

Participants also had knowledge of certain basic conventions about littering but could not mention any specific laws in Ghana governing littering, beyond noticing warning posts on walls, admonishing people not to litter. According to the Ghana Criminal Offences Act - 1960 (ACT 29) Section 296, throwing rubbish in the street is a crime for which the offender is liable to a fine. This offence includes throwing rubbish in *any town places, or causing or permitting to be placed, any carrion, filth, dirt, refuse, or rubbish, or any offensive or otherwise unwholesome matter, on any street, yard, enclosure, or open space, except at such places as may be set apart by the local authority or the health officer for that purpose.* Thus, there is a law against littering, but participants had no knowledge of it. According to Oteng-Ababio (2011), authorities in Ghana fail to implement by-laws and enforce policies related to waste management. For instance, individuals in poor neighbourhoods may dump waste indiscriminately rather than pay waste services to collect it. The fact that such individuals continually engage in such practices suggests they go unpunished (Oteng-Ababio, 2011). The present finding suggests the need for education to make individuals aware of laws related to littering and improper waste disposal and thereby curb the menace and avoid its negative consequence.

Participants gave several reasons why they littered. They shifted their responsibility of proper litter disposal to "other people" such as the government, paid workers and organisations (for example Zoomlion- a Waste Management Company). Thus, they littered because these "others" were responsible for cleaning the environs. This finding corroborates Campbell's (2009) that littering was perceived to be more acceptable when personal responsibility was diminished. The present finding suggests that as long as individuals do not feel responsible for proper litter disposal and the cleanliness of their environment, they will continue to litter indiscriminately. This highlights the need for education to sensitize individuals on the importance of taking personal and collective

responsibility for their environment and the consequences (such as flooding and health problems) of shifting this responsibility onto “others”.

The lack of bins and proximity to bins was another reason why participants littered, supporting the literature that people littered typically due to the unavailability of bins (e.g. Asmui et al., 2017) and also proximity to litter bins and recycling receptacles (Schultz & Stein, 2009). The present finding suggests that in addition to making litter bins available for use, these bins should be strategically positioned at locations where there is much human activity. This means despite the need for enough bins to enhance the proper disposal of litter, their position or location is extremely essential. Again, participants felt uncomfortable or uneasy holding onto litter, causing them to dump it at inappropriate locations. People are generally reluctant to carry ‘dirty’ or unclean items until they find a bin (Alice Ferguson Foundation, 2011). This desire to get rid of messy items is referred to as the ‘icky’ factor (Lewis, et al., 2009). Thus, if an individual perceived an item as “dirty” or “messy”, he/she was likely to get rid of that item by any means. Heavy litterers have a narrow personal space and may have little or no room for items considered as unacceptable, messy or irrelevant to them (Alice Ferguson Foundation, 2011). Such items may be seen as invading their space, hence making them feel uncomfortable or uneasy, which results in littering. Coupled with the above, the fact that participants perceive people are “paid to sweep” may have made it easier for them to litter their environment without thinking about the consequences.

Participants further reported they littered because they observed others close to them doing so. This finding reveals the crucial role specific others (such as family members and close friends) play in forming and maintaining littering behaviours. It highlights how behaviours (negative and positive) can be formed by observing others (models) in our environment. As Long et al. (2013) reported, littering and recycling behaviours were greatly influenced by one’s social network. Bandura’s (1977) theory of observational learning can explain the present finding. According to Bandura, negative behaviours are imitated in the same way as positive behaviours, through vicarious reinforcement and vicarious punishment. Thus, when societal models litter and go unpunished, other individuals may imitate such negative behaviours and are likely to go unpunished as well.

Further, sadly, some participants considered littering as a ‘norm’ in their society, suggesting they did not perceive this act as a negative behaviour. Some people do not perceive littering as a serious problem (Lyndhurst, 2013); nevertheless, that they considered it as “normal” revealed how ingrained in some participants this negative behaviour was. This suggests that these individuals have not learned that littering is an inappropriate behaviour with grave consequences. Perhaps they had never been reprimanded or punished for littering and so they continued to litter. This suggests that normalising littering without suffering any direct or immediate consequence means individuals will always litter.

Finally, participants reported that it was easier for them to litter in places where litter already existed- thus litter begets litter. People are more likely to litter in a disordered environment (Keizer et al., 2008), indicating an existing deviation from a particular social norm increased the likelihood of more antisocial norms. In like manner, the presence of a dumping site or a place filled with litter attracted more littering. Perhaps seeing a littered environment also made littering seem “normal”, thus participants’ “adding” more litter. Thus, to curb littering, there is the need to get rid of litter in the environment to avoid attracting more litter and sustain a clean environment.

Participants reported ways in which they believed littering could be curbed. They emphasized the need for public education on the consequences of littering behaviour. There are short term (e.g. dirty and polluted environment) and long term consequences (e.g. flooding and diseases) of littering, but most participants did not understand this, hence the need for effective education on littering and its consequences. According to Wanjohi (2016), the key to reducing littering is to create awareness and strategic environmental education of the public. Van Dyck (2016) has suggested, for instance, that intensive education and the provision of litter collection services would reduce marine litter on Ghanaian beaches. Thus, education should focus on increasing awareness of the consequences of littering and also changing people's attitudes and perception about littering through mediums such as the television, the radio, fliers and brochures. Emphasis should be laid on the negative consequences of littering in Ghana such as the floods of June 3<sup>rd</sup>, 2015 and the outbreak of diseases such as cholera, which claim several lives each year.

Initiating a system of rewards (to increase proper litter disposal) and punishment (to decrease littering behaviours) was also suggested to curb littering behaviour. The law of effect states that behaviour is strengthened when it is followed by a pleasant or satisfying feeling but weakened when followed by or associated with an unpleasant feeling or stimulus (Thorndike, 1898). Thus, rewarding individuals for practicing proper litter disposal is likely to sustain this positive behaviour while punishment will deter it. This means laws governing littering in Ghana should be publicised and the public educated about them before they are enforced. Among a Malaysian sample, low enforcement of littering laws and low awareness of littering contributed to their positive littering behaviours (Asmui, et al., 2017). According to Asmui, et al., when individuals are punished for littering or observe others being punished for littering, they will be less likely to litter or imitate littering behaviours.

Finally, the need for adequate litter bins in Ghana was suggested by participants to curb littering. Placing litter bins at vantage and strategic points would help to reduce littering behaviour. As Wanjohi (2016) reported, 90% of his respondents stated that the provision of bins would help curb littering behaviour in Nairobi. In addition, bins should be emptied often enough to avoid litter begetting more litter.

## **Limitations**

This study tested a small number of participants and was limited to a sample of students; thus, findings only reflect their views. In spite of this limitation, these students have provided vital information on littering behaviour which is a major challenge in Ghana. Further studies could interview a larger sample size and include individuals from the general public of varied ages and of various professions and educational levels other than tertiary students. Also, a quantitative method should be used in order to test a large number of people based on what the present study reported.

## **Conclusion**

This study found that littering behaviour results from individuals shifting the responsibility of disposing of litter to "others"; seeing littering as normal and imitating others who litter, as well as the unavailability of bins. Though they had knowledge and understanding of what constituted littering,

they littered without weighing the consequences, perhaps because littering is not characterised as a serious crime. These findings reveal the need to increase efforts in education with respect to littering behaviours, while focusing on cognitive restructuring to change attitudes and behaviours that influence littering. Laws and policies on littering should be publicised and enforced to deter such behaviour, while reward systems should also be introduced to sustain proper litter disposal and maintain cleanliness. Individuals should be educated to understand that keeping a clean environment should be the shared responsibility of every citizen of Ghana and not the sole responsibility of the government or cleaning agencies.

## Acknowledgements

We wish to acknowledge teaching assistants; Catherine Adzadi, Prince Atorkey, Christiana Owiredua and Queen Angela Norman for their support on this project as well as the participants for making time to participate in this study.

## References

- Alice Ferguson Foundation. (2011). Getting to the source: Understanding district citizens and community attitudes towards litter and responses to anti-litter messaging and strategies. non-engineering solutions for trash reduction in the anacostia watershed. *AFF Final Report*, 1-124.
- Al-Mosa, Y., Parkinson, J., & Rundle-Thiele, S. (2017). A socioecological examination of observing littering behaviour. *Journal of Non-profit & Public Sector Marketing*, 29(3), 235-253.
- Asmui, M., Zaki, S. M., Wahid, S. N. S., Mokhtar, N. M., & Harith, S.S. (2017). Association between litterers' profile and littering behaviour: A chi-square approach. *The 3rd ISM International Statistical Conference (ISM-III)*. AIP Conf. Proc. 1842, 030003-1-030003-7; doi: 10.1063/1.4982841.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bateson, M., Callow, L., Holmes, J. R., Roche, M. L. R., & Nettle, D. (2013). Do images of 'watching eyes' induce behaviour that is more pro-social or more normative? A field experiment on littering. *PLoS One*, 8(12), e82055.
- Bator, R., Bryan, A., & Schultz, P. W. (2011). Who gives a hoot? Intercept surveys of litterers and disposers. *Environment and Behaviour*, 43, 295-315.
- Brown, T. J., Ham, S. H., & Hughes, M. (2010). Picking up litter: An application of theory-based communication to influence tourist behaviour in protected areas. *Journal of Sustainable Tourism*, 18(7), 879-900.
- Campbell, F. (2009). *People who litter*. Wigan, Manchester: Environmental Campaigns.
- Charmaz, K. (1990). 'Discovering' chronic illness: Using grounded theory. *Social Science & Medicine*, 30:11, 1161-1172.
- Chung, S. S., & Lo, C. W. (2004). Waste management in Guangdong cities: the waste management literacy and waste reduction preferences of domestic waste generators. *Environmental Management*, 33(5), 692-711.

- Healthy Ghana Television. (2015). Littering: Unhealthy Ghanaian habits-effects and solutions. Retrieved from: <https://healthyghanatv.wordpress.com/2017/05/01/effects-and-solutions-of-unhealthy-ghanaian-habits/>.
- Henewa, R. A., Raheem, K., & Ameyaw, Y. (2014). Impact of environmental education on sanitation practices in some selected schools in the New Juaben Municipality, Eastern Region of Ghana. *International Journal Advanced Biological research*, 4(2), 228-234.
- Kallgren, C. A., Reno, R. R., & Cialdini, R. B. (2000). A focus theory of normative conduct: When norms do and do not affect behaviour. *Personality and Social Psychology Bulletin*, 26(8), 1002-1012.
- Keizer, K., Lindenberg, S., & Steg, L. (2008). The spreading of disorder. *Science* 322, 1681-1685.
- Khawaja, F. S., & Shah, A. (2013). Determinants of Littering: An experimental analysis. *The Pakistan Development Review*, 52(2), 157-168.
- Lewis, A., Turton, P., & Sweetman, T. (2009). Litterbugs: How to deal with the problem of littering. Prepared by policy exchange for the campaigns to protect rural England. Retrieved from <https://www.zerowastescotland.org.uk/sites/default/files/Rapid%20Evidence%20Review%20of%20Littering%20Behaviour%20and%20Anti-Litter%20Policies.pdf>.
- Long, J., Harre, N., & Atkinson, Q. D. (2013). Understanding change in recycling and littering behaviour across a school social network. *American Journal of Community Psychology*, 53(3-4), 462-474. doi: 10.1007/s10464-013-9613-3.
- Lyndhurst, B. (2013). Rapid evidence review of littering behaviour and anti-litter policies. *A Brook Lyndhurst Report to Zero Waste Scotland*. 1-81. Retrieved from: <https://www.zerowastescotland.org.uk/sites/default/files/Rapid%20Evidence%20Review%20of%20Littering%20Behaviour%20and%20Anti-Litter%20Policies.pdf>
- Nkwocha, E. E., & Okeoma, I. O. (2009). Street littering in Nigerian towns: Towards framework for sustainable urban cleanliness. *African Research Review*, 3(5), 147-164.
- Ohene-Adjei, K., Kenu, E., Bandoh, D. A., Addo, P. N., Noora, C. L., Nortey, P., & Afari, E. A. (2017) Epidemiological link of a major cholera outbreak in Greater Accra region of Ghana, 2014. *BMC Public Health* 17:801. doi 10.1186/s12889-017-4803-9.
- Ojedokun, A. (2011). Attitude towards littering as a mediator of the relationship between personality attributes and responsible environmental behaviour. *Waste Management* 31 (12): 2601-2611. doi: 10.1016/j.wasman.2011.08.014.
- Ojedokun, A. (2013). The role of socio-demographical and psychological factors in taking littering prevention actions. *International Journal of Advances in Psychology*, 2(4), 197-205.
- Ojedokun, A. (2015). The littering attitude scale (LAS): Development and structural validation using data from an indigenous (Nigerian) sample. *Management of Environmental Quality: An International Journal*, 26(4), 552-565.
- Ojedokun, O., & 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), 68-80, doi: 10.4314/ejesm.v4i1.9.
- Ong, I.V.B., & Sovacool, B. J. (2012). A comparative study of littering and waste in Singapore and Japan. *Resource, Conservation and Recycling*, 61, 35-42, doi: 10.1016/j.resconrec.2011.12.008.

- Oteng-Ababio M. (2011). Governance crisis or attitudinal challenges? Generation, collection, storage and transportation of solid waste in Ghana. *Integrated Waste Management, Vol. I*, Mr. Sunil Kumar (Ed.), ISBN: 978-953-307-469-6, InTech, Retrieved from: <http://www.intechopen.com/books/integrated-wastemanagement-volume-i/governance-crisis-or-attitudinal-challenges-generation-collection-storage-andtransportation-of-soli>.
- Oteng-Ababio, M., Owusu-Sekyere, E. Amoah, T. S. (2017). Thinking globally, acting locally: Formalizing informal solid waste management practices in Ghana. *Journal of Developing Societies*, 33(1), 75–98.
- Selby, H. (2011). *Indiscriminate littering contributes to flood disasters*. Retrieved from: <http://thechronicle.com.gh/2011>.
- Schultz, P. W., Bator, R., Bruni, M., & Tabanico, J. (2013). "Littering in context: Personal and environmental predictors of littering behaviour." *Environmental Behaviour Vol. 45*, 35-59. Retrieved from: <http://dx.doi.org/10.1177/0013916511412179>.
- Schultz, P. W., & Stein, S. (2009). *Litter in America: National research findings and recommendations*. Washington, DC: Keep America Beautiful. Retrieved from: [https://kab.org/wpcontent/uploads/2019/08/LitterinAmerica\\_ExecutiveSummary\\_Final\\_0.pdf](https://kab.org/wpcontent/uploads/2019/08/LitterinAmerica_ExecutiveSummary_Final_0.pdf)
- Sibley, C., & Liu, J. (2003). Differentiating active and passive littering. A two stage process model of littering behaviour in public Spaces. *Environment and Behaviour*, 35, 415–433.
- Steg, L. & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda, *Journal of Environmental Psychology*, 29, 309-317.
- Square Holes Pty Ltd (2011). *Keep South Australia Beautiful, Litter Disposal Behaviour*. Retrieved from <http://www.kesab.asn.au/wp-content/uploads/social-research-reports/KESAB-Litter-disposal-behaviour-Oct-Dec-2011.pdf>
- Thorndike, E. L. (1898). Animal intelligence: An experimental study of the associative processes in animals. *Psychological Monographs: General and Applied*, 2(4), i-109.
- Van Dyck, I. P., Nunoo, F. K., & Lawson, E. T. (2016). An empirical assessment of marine debris, seawater quality and littering in Ghana. *Journal of Geoscience and Environment Protection*, 4(05), 21.
- Wanjohi, N. P. (2016). *An assessment of attitude and behaviour towards littering among the citizens of Nairobi city*. (Unpublished Masters dissertation). Nairobi: University of Nairobi. Retrieved from: <http://erepository.uonbi.ac.ke/handle/11295/98446>.
- World Bank. (2017, May). *Enhancing urban resilience in the greater Accra metropolitan area*. Retrieved from: <http://documents.worldbank.org/curated/en/949241495793834492/pdf/115296-REPLACE-MENT-PUBLIC-Accra-v5-highres-nocutmarks.pdf>
- Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology and Health*, 15, 215-228.
- Yoda, R. M., Chirawurah, D., & Adongo, P. B. (2014). Domestic waste disposal practice and perceptions of private sector waste management in urban Accra. *BMC Public Health*, 14:697. <http://www.biomedcentral.com/1471-2458/14/697>.