

WASTE MANAGEMENT PRACTICES AS LOCAL ORDER: ATTITUDES AND PERCEPTIONS OF RESIDENTS IN ASHAIMAN, GHANA

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ABSTRACT

This paper examines how perceptions and attitudes inform social practices that in one way or the other contradict, interact with or accommodate official legal regulations on waste management. The study used a questionnaire, in-depth interview guide, and observation guide as instruments for data collection. The participants for the in-depth interviews included households, opinion leaders, and officials of the Waste Management Department. A sample of 75 was assigned to households' respondents in the survey research. The analysed data revealed that despite the lack of regulations there is no total disorder in waste management practices. Instead, a certain register of informal rules has been identified which may be regarded as an important part of a wider local legal arena. This register, however, does not represent the best code of waste management practices. It is, therefore, recommended that a body of normative standards for a waste management system that accommodates local realities be developed.

Keywords: Waste management, attitudes, perception, local order, Ashaiman

INTRODUCTION

For the most part, problems with solid waste in developing countries are seen to be or actually are the consequence of modernization and economic development (Lissah et al., 2021; Botkin & Keller, 2003). Thus, the generation of solid waste in urban environments in the developing world is increasing due to the inclusion of more people in the consumer economy and the uncontrolled migration from the countryside to the cities (Drackner, 2005). Subsequently, the strive by developing countries to become modernized and achieve economic development has meant that the challenges associated with development have tended to be overlooked (Chazan, 2002). This has resulted in a build-up of waste that has, in some cases, overrun development efforts made by city authorities (Onibokun & Kumuyi, 1999).

A number of international actors have made the situation worse by using some developing countries in Africa particularly sub-Saharan Africa as a dumping site for their waste. For instance, an investigation conducted by a number of journalists tracked televisions that had been broken beyond repair in Great Britain to Nigeria. In the same report, an estimated 940,000 tonnes of domestic electronic waste was fitted with a satellite device. It was shown that the waste was bought by a London-based dealer and shipped to Nigeria and Ghana. Under the environmental protection laws of the UK, the broken televisions and other domestic electronic waste should have been classified as hazardous waste and should never have left Great Britain (Milmo, 2009). In a report by Cameron Dwyer, Somalia, Ghana, Ivory Coast, Kenya, Guinea, Zimbabwe, Guinea-Bissau, and Nigeria are among the African countries where electronic waste from all over the world end up (Dwyer, 2019). This makes the waste situation in Africa gloomier. All these reflect sustainable development challenges on the continent.

Ghana's domestic waste problems are serious with uncontrolled dumping of polythene bags, food waste, cans and domestic electronic waste, and disposal sites constituting a health hazard. In 1998, an estimated quantity of 765,000m³ of solid waste was generated in Accra. Out of the quantity generated 96,000m³ was left uncollected (Etuah-Jackson et al, 2001: 84; Tsiboe & Marbel, 2004). Other statistics available from the Environmental Protection Agency (EPA, 2002) indicate that the Accra Metropolitan Assembly responsible for waste management in Accra is able to collect only about 55% of solid waste generated within the city. This means 45% of the waste generated is left uncollected. This data suggest that the issue of waste does not only pose a health challenge but also places a huge debt burden on the country. In effect, it raises sustainable development issues. The World Bank, in 2012, estimated that poor sanitation was draining Ghana's economy of about \$290 million each year. This was equivalent to 1.6% of Ghana's Gross Domestic Product (GDP).

This situation of uncollected waste coupled with residents' attitude of indiscriminate disposal has resulted in littering in bushes, gutters, heaping of waste, and overflowing of skips making the situation worse. Furthermore, the components of solid waste (glass, paper, food waste, plastics, metals, cans, ashes, consumer electronics) both degradable and non-degradable generated domestically are usually not sorted, recycled or reused. Most of these components of domestic/household waste come from activities such as cooking and home decoration. Of the wastes generated, it is estimated that about 83% of the Ghanaian population dump waste in either authorized or unauthorized sites in their neighbourhood which leads to unsanitary conditions (Benneh, Songsore, & Nabila, 1993). In an attempt

to handle the waste dumped at unauthorized sites, it is common to see unauthorized burning of all the components of waste together by households as their form of waste management practice. It is therefore not surprising that the World Bank report (2012) principally attributed an annual premature death of 19,000 Ghanaians to poor sanitation and hygiene conditions.

The distance of most homes from disposal sites adds up to the problem as one cannot dispute the fact that long-distance disposal sites discourage residents and roadside sellers from making use of them (Robinson & Read, 2005; Freduah, 2007). In addition, most of the containers for storing waste such as baskets, boxes, buckets, plastic containers which according to Freduah (2007) in most cases have no lids cause the lighter types of solid waste (paper, rubbers, etc.) to be spread around by air before the rest is being taken to the disposal sites. The negative attitudes of people add to the waste management problem. These practices do not promote sustainable waste management standards.

The attitudes of people are usually composed of what they have learned through daily interactions with family members, as well as other members of society. These social interactions create a 'social order'- a pattern of interactions and customs, capable of constantly reproducing at least those conditions essential for its own existence. In other words, the preservation and enforcement of the 'normal' ways of relating and behaving in a society, or those facts of society which remain relatively constant over time, for example, people frequently dump garbage around a communal container because it is full and has not been emptied. With time that pattern of action-orientation becomes an informal order - based on a frame of cultural values - because it is partly accepted by members of the society despite the fact that it might not be in consonance with the official legal regulations. In this respect, waste management might be in crisis but there may still be a social order in a sheer socio-legal sense. From the foregone, it is clear that the attitudes and perceptions of people toward waste management may be based on a set of shared norms which may create a form of local order in the society.

In addition, these social interactions promote the formation of values and beliefs influenced not only by family, religion, and culture but also by socio-economic factors. This process directly or indirectly determines one's behaviour towards waste. That is, if a person lives in a community where people either regularly or not regularly dump indiscriminately, the possibility of such a person picking up that attitude whether consciously or unconsciously is high. This forms part of how an informal local order is created. As Pickens (2005) puts it, attitude influences a person's decision, guides behaviour, and impacts what one selectively remembers and does.

In relation to domestic waste management in Ghana, many previous researches (see Adipah, 2019; Miezah et al., 2015; Adu-Boahen, 2014; Mariwah, 2012; Oduro-Kwarteng, 2011; Puopiel, 2010; Tsiboe & Marbell, 2004; Anomanyo, 2004) have largely focused on institutional frameworks and problems associated with waste management, and indeed these problems are very serious and nerve-racking. Within the many previous studies, poor management, migration, irregular collection, and inadequate resources to handle waste have been mentioned as the key problems affecting waste management. It has also been established by these researches that there is inadequate technical expertise at both national and local levels in solid waste management. This is suggestive that there has been the introduction of technology and consumer goods of modernity without the necessary knowledge of how to cope with

its remaining. Abrokwah (1998) points out the low level of technology and the lack of law to punish sanitary offenders as major causes of the waste management problems. There are also often no clear roles and there is a lack of national policies with specific responsibility in relation to solid waste management. The legislations related to waste in Ghana are often fragmented with different institutions almost performing the same functions. These legislations suggest the existence of institutional frameworks to handle waste, yet in practice, it seems that these frameworks do not exist.

The numerous literature on waste management suggests that various studies have been undertaken in relation to solid waste. However, their focus on problems with institutional frameworks means that other constitutive components of problems with waste management in Ghana have been neglected. In addition, most studies are not directly related to Ghana and instead focus on Africa in general (see Akinade et al., 2016; van Dijk & Oduro-Kwarteng, 2007). We are aware of how interesting all these empirical researches are in this context. This manifest interest makes the study presented here even more relevant as a current/up-to-date topic. In that, a careful look at these researches suggests a lack of studies on peoples' attitudes and perceptions toward waste, and how these attitudes and perceptions lead to behaviours that inform social practices that in one way or the other contradict, interact with or accommodate official legal regulations. The question to be addressed in this paper, therefore, is *how do the attitudes and perceptions of households toward domestic waste influence waste disposal behaviour?* Addressing this question in respect of normative/local orders will fill in an important knowledge gap in why waste is such a big problem in Ghana and help to inform policy.

STUDY AREA AND METHODOLOGY

Profile of Ashaiman

Ashaiman Municipal Assembly (ASHMA) is within the Greater Accra Region of Ghana. It was carved out of the Tema Metropolitan Assembly in July 2008. It lies within the south-eastern part of Ghana and is located about 4km in the Northern part of Tema. It is 30km from the capital city, Accra.

In the year 2000, the population stood at 160,000 with a growth rate of 4.6% which is above the national average of 3.1%. According to the population and housing census in 2010, the population stood at 190,972. The population was estimated to be about 201,072 in 2012 at a growth rate of 4%, and 298,841 in 2013. The majority of the population with females (28.5%) and males (27%) falls between the ages of 15 to 49 (See Figure 1 on the Age Structure of the populace in Ashaiman). The reason for the high growth rate in Ashaiman is mostly because the city is increasingly a recipient of a large number of migrants from all over Ghana and other neighbouring West African countries. This has made the population heterogeneous with diverse socio-cultural practices.

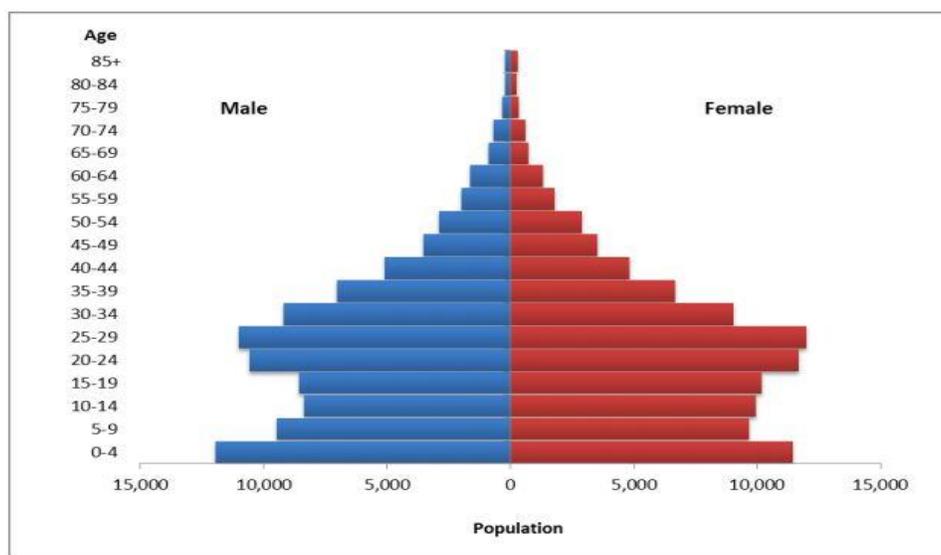


Figure 1: Age Structure
Source: Ghana Statistical Service (2014)

The Ashaiman municipality has an average household per house of 2.9 and an average household size of 3.7, less than the regional average household size of 3.8%. The municipality is generally urban.

Ashaiman in the past had a well-laid-out infrastructure. However, due to extreme pressure on housing landlords construct extensions to accommodate extra heads which have led to a deterioration of the originally laid out infrastructure. This has given rise to the emergence of slums and semi-slum areas leading to congestion, overcrowding, large household sizes, lack of accommodation and other consequential diseases. Due to scarcity of land some houses have been constructed on water-ways that cause severe flooding in some areas of the town during the major raining season.

Sanitation remains a major public health problem in the municipality. These include poor disposal of refuse, ineffective human waste and poor drainage/sewerage management. The final refuse disposal site for the municipality is situated at 'Kpong' which is in the Tema Metropolitan area. The ineffective refuse collection has over the years resulted in the pile-up of refuse in most areas in the municipality. This provides ready breeding grounds for all types of vectors. The disposal site is a common area to find scavengers especially young adults retrieving all sorts of items ranging from food to empty containers and clothing. The unavailability of public places of convenience compounded by the congestion in the municipality has led to indiscriminate open space defecation. Also, the central sewerage system is either choked by waste, broken or leaking at many points giving rise to unpleasant smells and spilling of waste matter in many parts of the municipality. The poor sanitation conditions in the area foster the transmission of diseases such as malaria, diarrhoeal and skin diseases among others. The situation of waste within the assembly has led to the formulation of waste bye-laws.

Approaches to Data Collection

The question to be addressed in this paper requires a rigorous scientific approach. Hence, in this section, we will explain the scientific methodology used in gathering data. As stated by Punch (2005), the basic difference between qualitative and quantitative techniques lies in their level of measurement. Therefore, an empirical study could have all qualitative data or all quantitative data, whichever applied is not a matter of rules but a matter of what one is trying to find out. The combination of these research techniques can be time-intensive and exhaustive, however, the extra time and effort of combining both forms of research are desirable (Bryman, 2008: 607-626). By using both qualitative and quantitative research approaches, we knew we could obtain a fuller/broader understanding of the research question. This concurs with Creswell and Clark (2017). Neuman (2006) recommends combining both qualitative and quantitative methods because it is better to look at something from several angles rather than to look at it only in one way.

On this basis, we employed both approaches to data collection and analysis. Triangulating made it more practical to formulate an interview guide and questionnaire that gave me the opportunity to control the domain of the study. This also made it easier to validate the responses in the interview by observing and adding to the information being collected. The choice of this method was effective in getting in-depth and varied responses in a more flexible way.

Primary data was obtained directly from households by the use of in-depth interviews (IDIs), questionnaires, and observation. The questionnaire had both closed and open-ended questions. The IDIs were characterized by open-ended and probing questions which gave respondents the chance to respond in their own words, how they understood and perceived the happenings related to solid waste management around them.

The research participants included households, opinion leaders, and officials of the Waste Management Department (WMD) of Ashaiman. The participants were 18 years and above. The age limit was important in this study for two reasons: 1. Ethical and 2. In most cases respondents above 18 years are believed to have experienced some important phases of the socialization process and therefore understood why some attitudes were exhibited, and why some perceptions were held. Such age cohorts also fall within the early adult years and as such are believed to make independent decisions. Households formed an integral part because they are major stakeholders in terms of waste generation and management. The other participants (opinion leaders and officials) were included to aid understanding of issues, as well as to validate responses from other participants. In addition, the household members are those actors who generate through their waste practices the existing order – this takes place in exchange with the other main actors involved – waste officials etcetera – especially as regards the way the latter refer to official normative regulation. Consequently, the data from these respondents informed the study on why some residents' attitudes and perceptions were contrary to or conformed to waste regulations.

The study setting (Ashaiman) is a heterogeneous community with a huge population; as a result a quota of 75 sample size was assigned to the number of respondents in the survey research. This was to bring onboard heterogeneous views on respondents' behaviour towards waste. Most of the houses in Ashaiman had no house numbers. As a result, the houses were selected at random. One member of each household (as most of the houses are compound-type) was

selected accidentally to participate in the study. This was done until the assigned number (75) was reached. This was to give households equal opportunity to participate in the study. Respondents were from the two-income divisions. This sample size is not for generalization purposes but rather to complement the IDIs and observation.

Purposive technique was used to select some household members and opinion leaders to participate in the IDIs. Considering the income divide of the populace, respondents were interviewed from this income divide. This method of categorization was informed by the basic assumption that socio-economic factors played a major role in how people handled waste. The respondents were selected upon showing they had time and enough information to inform the study. They were identified during the pilot stage. The number of respondents was 6 (2 household members, 2 waste management officials and 2 opinion leaders). The number of six respondents for the IDIs is justified by Myers (2000) who argued that small sample size is often accurate to offer in-depth and useful data in conducting qualitative research.

The IDI was one of the appropriate techniques since it allowed respondents the time and scope to talk about their opinions which the use of only a questionnaire or observation may not allow. The questionnaire had a cover letter explaining the purpose and ethical issues involved in the study. It was self-administered by the lead researcher. The interviews were conducted in both English and Twi (local language) which were later transcribed. The IDIs were complemented with the use of digital recorders. This made it possible for us to capture and analyze all relevant information gathered during the interview process. One of the problems associated with the IDI technique and the use of the questionnaire was that it was time-consuming and expensive.

The views of respondents on factors affecting solid waste disposal behaviours, the question of why people littered, who was involved and why people were involved in solid waste disposal, whose responsibility it was to check waste disposal and to clean the surroundings, the households awareness of waste management activities, what happens during institutional failure, the level of enforcement of bye-laws on solid waste, and cultural practices etcetera were obtained using the IDI guide. The questionnaire was divided into 5 parts: demographics, household waste practices, residents' attitudes and perceptions, residents' willingness to pay, and institutional arrangements towards solid waste management.

Another important technique that was employed in this study was the use of observation. With observation, we paid close attention, watched, and listened carefully while being in the field. Here, the physical setting of the atmosphere was captured and scrutinized. According to Silverman (2000) good field researchers are intrigued about details that reveal "what's going on here" through careful listening and watching. Field researchers believe that the core of social life is communicated through the mundane, trivial, and everyday minutia. This is what people often overlook. In this study, every detail about when, what, and how waste was disposed was recorded because it significantly revealed and explained issues that arose. Notes were taken through direct and indirect observations with the use of an observational protocol which according to Creswell (2007: 135) helps researchers to organize their thoughts. Pertinent issues which were also observed included but were not limited to the following: time for disposal, who disposes, where disposal took place, types of waste, how often skips were emptied and what happened if skips overflowed. Other observations made included the reactions of residents toward waste. The lead researcher lived in Ashaiman during the data

collection period. This helped me to get closer to residents as well as understand the reality of the situation. Pictures were also taken with a digital camera during the everyday observation process.

It happened in the data collection process that a wide range of issues were simply not amenable to observation. Therefore, to Bryman (2008: 466) asking people about such issues represented the only viable means of finding out about them. This justifies why the study adopted in-depth interviews, questionnaire administration, and observation to complement each other.

The Statistical Package for the Social Sciences (SPSS) software version 22 was used to analyse the data collected with the questionnaire. The questionnaire with the responses was coded and entered into the software. A statistical analysis of the data was made using descriptive statistics.

With the qualitative data, the recorded interview transcripts and field notes were typed and saved as word documents. A duplicate copy of the field notes was created to serve as a backup which allowed for concurrent data analysis. With reference to the research question, after transcribing and coding, concepts were carefully put into themes and categories for manual analysis. This process helped to cut out conversations that were slightly off-topic and also allowed the study to focus on the text pertinent to the study itself. Various phenomena were described, classified, and careful attempts were made to see how the thoughts were related. Coding and memoing went hand in hand during the analysis. This helped to move the data analysis from the empirical level to a conceptual level as stated by Punch (2005).

We tried as much as possible to comply with some ethical issues in conducting this study, especially in the area of the researcher-respondent relationship while in the field which according to Punch (1998) is very paramount. In this regard, we verbally sought the consent of respondents before data was collected. The purpose and importance of the study were explained to the respondents, and the type of questions they were to answer. The respondents were assured of confidentiality and anonymity while making these research results available.

DATA ANALYSIS AND DISCUSSION

Solid Waste Generation and Disposal Practices

The data analysis revealed that households generated waste daily. Using Figure 2 as a point of reference for the quantity of waste generated, the survey results confirmed that 33.3% of household's generated a half bucket of waste in a day, 22.7% generated a full bucket size while 20% generated more than a full bucket in a day. The data also suggest that the majority of households generated a full or more than a full bucket size of waste in a day. With this amount of waste generated by households on daily basis it is confirmed that waste is indeed an inevitable by-product of most human activity (UNSCAP, 2000).



Figure 2: 34 bucket size

The survey results showed that most of the wastes generated by households were plastic waste (49.1%) and food waste (36.7%) respectively, whilst the other types of waste constituted 14.2%. This corroborated the observation that households generated different types of waste which included both organic and inorganic waste - plastic waste, food waste, ashes, papers, glasses, and etcetera. This data corresponds with Puopiel's (2010) finding that most types of waste generated by households were plastic wastes, whereas it conflicts with Benneh et al. (1993) and Baabereyir's (2009) findings that organic waste constituted the bulk of the waste produced by households. The high proportion of plastic waste can be explained by the fact that there has been the influx of more plastic-producing companies (e.g. Zenith plastics, Jelly plastics, Ferro Fabrics Ltd., etc.) in Ghana of which most are based in Tema and Accra. More so, from the interviews it was revealed that most households and food vendors preferred plastic containers and rubbers popularly called 'take away' for handling food to metal containers because it was convenient. These plastic containers and rubbers were usually discarded after use. The rubbers have been infamously dubbed as the 'father Christmas' bag as it is more common in homes.

From the survey, it was revealed that 64% of households used plastic containers to store their waste. Observation points to the fact that the wastes generated were stored in different containers by different households. The types of containers observed included plastic containers, metal containers/buckets, plastic/polythene bags, boxes, and sacks (see Figures 3).



Figure 3: Means of Storing Waste

It was also revealed that only the plastic containers supplied by the waste service providers had lids while the other types of containers had no lids. This finding correlates with Freduah (2007) that most residents used buckets, baskets, and boxes that had no lids to store waste. There was no moment the researcher observed one household using two or more different containers. It was also observed that households did not sort their waste before disposal. This was confirmed by the survey as all respondents affirmed this observation. Through the in-depth interviews respondents revealed that they had no knowledge of sorting since they grew up with the practice of not sorting and did not know why they should sort their waste when all types of waste were considered as waste – whether rubber or metal. The practice of not sorting the types of waste generated was a common social practice that informed the existing informal local order.

A participant stated;

I have not been taught to separate my waste. I have never seen anyone including my parents sorting their waste. No one in this community does that. After all waste is waste, so why should I even spend my time separating my waste?

This approach of waste handling does not only pose a human risk but also devalues environmental sustainability. The response from participants confirms Pickens' (2005) assertion that attitudes of people influence a person's decision, guide behaviour and impact what one selectively remembers and does. This practice is also confirmed by the social context theory that the behaviour of people shapes the way other members of that society behave. In that, because it is a common practice that has become a normative order as well as an ingrained habit; households do not see the need to sort their waste even when they may know the practice is not favourable.

Apart from households that considered all types of waste as waste and therefore did not sort it, the survey showed that 74.6% of residents did no sorting because they only had one container which did not support the practice of sorting. This shows that if waste management institutions do not provide the facilities (e.g. containers, etc.) to promote good waste management practices residents will have no option than to engage in the non-sorting behaviour. Inadequate waste containers to promote sorting was a challenge, however, it was revealed through interviews that some community members had no knowledge of sorting waste. The issue of lack of knowledge influencing household behaviour is established by Maycox (2003) who states that lack of knowledge was a significant barrier to waste management practices. Notwithstanding, at times people may act against their knowledge/judgment if there is no chance to do better whether in conformity or against the rule.

The survey showed that the waste generated by households was usually emptied by children (43.7% - males and females), young adult females (36.4%), young adult males (5.4%), old adult females (12.7%), and old adult males (1.8%). Most households disposed between 5am to 10am. An observation at the disposal site also disclosed that indeed women and female children were the most engaged in disposal though there were few times young males also came to dispose. It was hardly observed that male adults came to dispose garbage. This confirms Ehrampoush and Mogahadam's (2005) and Yin and Mariwah's (2013) arguments that gender difference (i.e. being a man or woman) could influence one's perception of solid waste management. It was however revealed through the in-depth interviews

that gender bias attitude towards waste management practices was something connected to culture. According to a respondent, the women were responsible for domestic duties while the men were responsible for providing finance. Since the women did the domestic chores it behoves on them to do the disposal while the men prepared to go to work to bring money home. As a female participant said;

I get up early in the morning to tidy up the house while my husband prepares to go to work. This has been my duty since childhood and even when I got married.

This shows that culture plays a major role in determining who disposes the garbage. This finding is consistent with Kwawe (1995) and Puopiel (2010) that culturally women were tied to such duties. This is an informal way of how local order related to gender bias is created. This also reveals as stipulated by Agbola (1993) that learned behavioural patterns are cultural in origin. However, it needs to be noted that culture/traditions may not necessarily be the very reason for a particular waste management behaviour.

Through an in-depth interview with an official of the Waste Management Department (WMD), it was discovered that Ashaiman had 27 spots where skips were located for residents to dispose. It was observed that most of the skips were located in low-income areas. The reasons were that most respondents in such areas could not afford the monthly payment of the bins provided by the waste management institutions.

Some skips were located along main roads, while others were located in the neighbourhoods. It was also observed that there was one open dump area in the community. Through the survey and observation, it was common to see containers overflowing, as 96% of respondents agreed in the affirmative (see Figure 4).



Figure 4: Overflowing of Waste

This was partly because the number of containers provided did not correspond with the quantity of waste generated by the population. This is in line with the finding of Puopiel (2010) who reported that a small number of skips influenced waste disposal behaviour. In that, if the population outnumber the skips provided, the skips easily get full

and residents dump around the container. Also, 89.6% of the respondents in the survey established that containers were not regularly emptied. This situation made the residents dump their wastes on the floor around the communal containers. A respondent asked a series of questions:

What do you expect me to do when containers overflow? Do you expect me to take the garbage back home?
If I wanted the garbage to be in my home, would I have brought it out to be disposed?

This series of questions confirmed the saying of an opinion leader that some households saw waste as a 'demon' that needed to be discarded without looking out for the consequences:

Most residents see waste as a 'demon' which some people think they cannot live with and therefore must be disposed of at all cost. They don't care about its consequences.

Though this act of dumping on the floor conflicted with the official legal regulations of the assembly households did not seem to see their actions as wrong. The practice of dumping waste on the floor when containers are overflowed was observed to be common at the time of this study. It was observed to be a normal behaviour. Even though it was not acceptable, it was inevitable. Through the in-depth interviews, households said that because skips were not regularly emptied they were left with no option other than to do the wrong thing. The social context theory confirms that the performance (in terms of availability of containers and how often the containers are emptied) of Waste Management Institutions (WMIs) shapes how people relate to waste. This is an important contrast to the cultural ascription designated by Agbola (1993) that culture/tradition was the origin of waste disposal behaviour. The social context theory again argues that people learn through observing others' behaviour, attitudes, and outcomes of those behaviours. Therefore, residents' dumping on the floor and the outcome of their action whether positive or negative influenced others observing whether to or not to engage in the behaviour. All this together finds expression in a sort of local order based on social norms or rules.

Whilst some respondents dumped around the containers, it was also common to observe that other residents dumped in gutters (see Figure 5), drains, and in uncompleted structures. This confirmed that the methods of solid waste disposal (dumping of waste in gutters, drains, by roadside, unauthorized dumping site etcetera) described for Nigeria (Momoh & Oladebeye, 2010) are also common in Ghana. These types of gutters were referred to as '*dead gutters*' by the researcher since it was stagnant. This way of dumping was a violation of the assembly bye-laws on waste, as it indicates that domestic waste must be disposed at designated places.



Figure 5: Waste Dumping in Gutters

The majority of respondents (41.3%) said the skips were less than 5 minutes away from their homes, 32% said it was 11-15 minutes from their homes, while 26.7% claimed it was 16 to 20 minutes away from them. From the survey, 58.7% of respondents said that the distance from their homes to the disposal site inconvenienced them while 41.3% stated it did not inconvenience them because the disposal site was near to their homes and sometimes the trucks came around for the garbage. From the in-depth interviews it was exposed that the distance to/from the communal containers influenced disposal attitudes. This correlates the finding of Robinson and Read (2005) that the location of a facility influences behaviour. In respect of who collects the waste from the communal containers, 74.7% said it was a private company while 18.7% said it was the municipal assembly. The involvements of private institutions and informal entrepreneurs will be discussed under institutional arrangements. Most respondents (61.3%) said the waste was finally disposed at landfill sites of which they were very concerned about whether the site was environmentally friendly. Puopiel (2010) has confirmed disposal at landfill sites.

There were various solid waste management options in which households engaged. These included open burning, community dump sites, pay-as-you-dump, indiscriminate dumping, and dumping in communal containers in the neighbourhood. In respect of how favourable/unfavourable a particular solid waste management option was; the survey revealed that 62.7% of respondents said open burning was unfavourable while 37.3% said it was very unfavourable. The responses show that respondents were not in favour of this practice although they did not show any knowledge of the practice being a violation of waste laws or not. However, it was common to see open burning in some parts of the neighbourhoods (see Figure 6). This finding is synonymous with that of Kendie (1998: 76) who argued that although open burning was not favoured by people in reality they stick to this practice. This finding is also in agreement with Momoh and Oladebeye (2010) and Zaato (2011) who pointed out the attitude of burning waste at unapproved sites. Through the in-depth interviews, it was discovered that the burning of garbage was usually done at night as some members in the neighbourhood do object to such practices. This is very interesting because it shows that there was indeed something like an informal local order of waste management and that some practices were socially disapproved of according to such informal agreement. People did burn at night not because of the official law but in order to avoid neighbourhood conflict. This was a clear case of local normative ordering; behaviour that is

socially accepted although not necessarily in tune with the municipal bye-laws whilst at the same time is not accepted by some local residents.



Figure 6: Burning of waste

Community dump sites and indiscriminate disposal were all considered unfavourable and very unfavourable. Although 82.7% of respondents considered indiscriminate disposal as very unfavourable, it was a common thing to observe in the municipality. This can be linked to the foregone analysis on open burning. When asked why they chose the practice of indiscriminate disposal, 49.3% named inadequate bins while 26.7% named long-distance from/to disposal sites as the reason. This reveals that in waste management practices, if one party does not stick to an established order then the other one may have no other option than to change the model of order. Thus, if waste management institutions do not provide adequate bins as well as bring the skips closer to residents, they would have no choice but to dump at unapproved places.

According to 24% of respondents in the survey, residents who engaged in indiscriminate disposal were fined, 8% said both fine and imprisonment, 53.3% did not know the kind of sanction, while 14.7% said others. These responses indicate that most residents had no idea of waste laws or the consequences/sanctions one may attract if there is a violation. The in-depth interviews showed that residents who were caught dumping indiscriminately were sanctioned by other residents/households that sometimes ended up in the hands of the police. This, according to the respondents deterred others from engaging in the practice. In light of the theory of planned behaviour, this reveals that if an actor considers a social or legal sanction more costly than the easy way to get rid of waste the actors will change behaviour. Landfilling, pay-as-you dump and communal containers in the neighbourhood were in most cases considered favourable.

Whilst indiscriminate disposal was commonly observed, 66.7% of respondents said clean-up exercises were not frequently organized. Even when organized, 68% said they lowly participated while 32% moderately participated. With regards to the low level of participation, one opinion leader attributed it to a lack of materials to aid the exercise, and the lackadaisical attitude of some residents. This clearly shows that the attitudes of people play a major role in waste disposal behaviour.

Attitudes and Perceptions towards Solid Waste

Solid waste is a serious problem confronting Ashaiman and Ghana as a whole. This was confirmed by the survey, 58.7% said extremely serious, 17.3% said quite serious, while 24% said they had no idea. Interestingly, 50.7% of respondents perceived the problem will be less serious in 5 years to come but subject to improvement in waste services and the attitudes of residents. The majority of the respondents (82.7%) claimed they were very concerned about dealing with the solid waste problem in the municipality.

In respect of the waste management attitudinal scale, 85.3% disagreed and 14.7% agreed respectively in relation to whether they played an important role in the management of garbage in the community. Whether the purchase decisions respondents made increased or decreased the quantity of garbage to be disposed, 77.3% agreed while 22.7% disagreed. All respondents were in the affirmative that they cared about the health implications of burning garbage. It was obvious that people threw garbage on the streets and in the drains because they had no other means of getting rid of the garbage as 77.3% agreed to that disposition. This also reveals that one's attitude can be shaped by institutional failures.

Most respondents (70.3%) said that the local government was not doing enough to fix the problem. The majority (60%) think that personal issues like crime, unemployment and cost of living were more important to them than a garbage-free community. This finding seems to be consistent with Tsiboe and Marbel's (2004) assertion that economic situations make people neglect their role in waste management. However, this position was neutralized by a respondent during the in-depth interview who stated that a garbage-free environment was very important in the survival of humans. Therefore, substituting a garbage-free environment was just like neglecting oneself. This showed that some households were very concerned about how residents related to the environment. However, most respondents (57.3%) disagreed that picking up garbage was the only solution to the garbage problem whilst 71.2% also disagreed that it was their duty/responsibility to be picking up garbage around their community. This sense of irresponsibility or kind of orientation is considered by some authors as being a legacy of colonialism as postulated by Kendie (1998) that during the colonial era activities that took place outside the home were seen as the duty of the colonial administrator.

In the survey, all respondents were in the affirmative that there was the need for both public education, and environmental management to be taught in schools. This showed that respondents believed environmental education had a serious role to play in changing household attitudes to deal with the solid waste menace in Ashaiman. This view is not different from the recommendation made by Festus and Ogoegbunam (2012) who stated that waste management education should be formally carried out. During the in-depth interviews it was revealed that education increased the awareness of households towards solid waste. However, it was also observed that one's level of education generally did not determine respondents' attitudes towards waste. This was clearly observed in the middle-income areas where most residents had had some level of tertiary education. It was observed that most of such residents did not give much attention to the waste around their homes. They only seemed to be much concerned about how the waste would leave their homes. It was also observed that some residents in such income areas had adopted an open-pit strategy in their homes without recourse to the laws. The issue of public and private space brought about some controversy as a waste

management official said that those residents did not understand why you an outsider (official) should come and determine what they are supposed to do in their homes.

...some do ask that what authority have you to tell me what I should do on my land...even the educated ones are worse.

This, according to the official brought a lot of tension between them and such residents. This result confirms Momoh and Oladebeye's (2010) affirmation that one's educational level does not have a significant bearing on his/her attitude towards waste. This however contradicts the findings of Festus and Ogoegbunam (2012). In probing further, it was revealed that such members were sometimes prosecuted whilst others were educated on the effects and the laws regulating waste. This indicates how critical attitudes can be when it turns out to be ingrained.

It was discovered through the in-depth interviews that attitudes of some households towards waste were at times the source of internal conflict. In that there were internal regulations as to who should clean and dispose the refuse. These responsibilities were assigned on weekly basis to households. It was observed that these forms of arrangements were more common in compound-type houses and responsibilities were shared between siblings or females in the household. The conflict usually emanated when one household refused to perform their duties. As a participant said:

...if I clean and someone refuses to clean, I won't agree because I'm not the person's housemaid to do that job...this is what brings about the fight...

It was revealed that at times there were some forms of arrangements when a person responsible for cleaning and disposal fell ill or travelled. It was also discovered that there were instances in which the position of dustbins brought about conflict. No household preferred a dustbin/skip to be positioned in front or at the back of his/her house except in instances where the waste was only generated by that household. This confirms the 'not in my backyard syndrome'. In the matter of resolving this type of conflict, respondents said that at times the households amicably resolved it, but when that failed the issue goes to the house owner and finally to court, that is, if it failed at the house owner's level. To the respondents, most of these cases however hardly reached the court since households preferred to maintain their relationship after the resolution. This is evidence of alternative dispute resolution at the local level in terms of solid waste management. All this pertains to an informal order that in various ways corresponds with the official legal system of the Municipal Assembly.

Willingness to Pay for Waste Services

In the survey, 74.8% of respondents said they were provided with waste services. These included collection from household to household and the provision of communal containers. Most respondents (85.3%) said they have been provided with the service between one to two years while 14.7% said between three to four years. In terms of the payment, 64.6% said they paid while the rest did not pay either because they had no money. It was discovered at the WMD that a resident who assigns for their services pays GHS30/\$5 monthly.

With the services provided to respondents, 48% were satisfied, 37.3% were not satisfied, while 14.7% were uncertain. Out of those unsatisfied, 26.6% said collections were not frequent while 6.7% said poor attitude of workers. Although not all respondents were satisfied with the service, all households wanted the service to continue. Through the in-depth interviews it was revealed that the institution was performing a significant role which when stopped could put the community into serious health threat. Whilst households wanted improved services, 66.7% were not willing to pay a higher amount for that. Those unwilling to pay gave the following reasons: that they could not afford it because of unemployment and low income, that it was the duty of the municipality and government. According to an official, the unwillingness was also because residents had enjoyed the service for free for a long period due to state intervention and therefore did not see why they should pay nowadays. This corroborates the findings of Songsore (1992) that with the establishment of the WMD, and the past contributions of the state towards waste management, the public tends to have the view that the WMD and the state should be solely responsible for managing waste. However, the 33.3% of households who were willing to pay for improved services were willing to do so only if they saw changes in the current waste situation. This suggests that waste management is not poles apart from the general need of people especially when it comes to the need for value for money. This also confirms the findings of Botsie (1995) and Kendie (1999) that residents will be willing to pay high rates for sanitation only if substantial improvements in current sanitation conditions occurred.

The waste management bye-laws consider the behaviour of not paying for waste service as an offence. The households from the in-depth interview showed that they would be willing to pay more if they had the economic means to earn a good income. This suggests that the income level of households influenced whether they would pay or not; though that might not necessarily be the reason in all cases. Aside from the economic means and income level, payment of the waste fee was not considered a household responsibility by some residents rather that of the state. It was observed that most households were in doubt about whether it was the state/households who should take up that responsibility.

Institutional Arrangements for SWM

An investigation at the WMD showed that there were two Waste Management Institutions (WMIs) working in Ashaiman. These were ZoomLion Ghana Limited and Zoom Alliance Ghana Limited. Nevertheless, residents perceived these institutions to be the same. It was observed that the institutions collected the waste from household to household through the use of a compactor truck (see Figure 7). This confirms Tsiboe and Marble's (2004) assertion that waste institutions collected waste from household to household and from communal collection points with a compactor and a skip truck. The institutions also had containers positioned in some neighbourhoods which most respondents (85.3%) said were emptied once a week. According to 89.3% of the households the institutions performed better in high-income areas than low-income areas. This finding also endorses Mariwah and Drangert (2010) that WMIs perform well in high-income areas compared to low-income areas.



Figure 7: Compact truck

It was also observed that aside from the WMIs engaging in door-to-door service, there were informal private individuals/entrepreneurs who were also collecting garbage from door-to-door with the use of wooden trucks (see Figures 8) and tricycles (see Figure 9). Through the in-depth interviews, it was revealed that households who did not enjoy the institutional services gave their garbage and paid daily for that service. This was almost equal to dump and pay. To satisfy the researcher’s curiosity on whether these informal private individuals posed competition to the existing institutions, it was revealed that there were times the institutions threatened these informal private individuals to stop the service on the basis that they were denying the WMIs of revenue. It would be attention-grabbing to note from the researcher’s point of view that, when these formal institutions are left to manage the current waste situation in the municipality, it will obviously lead to a waste crisis, however, not disorder.



Figures 8: Wooden trucks for door-to-door collection



Figures 9: Tricycle for waste collection

In respect of the problems encountered in solid waste management services, in the survey, 69.3% of households said the problem of inadequate coverage was serious while 30.7% said it was not serious. With the problem of lack of service delivery, 45.3% said it was very serious, 45.3% said it was serious while 9.4% said it was not serious. Majority (44%) said lack of finance was very serious, 33.3% said it was serious, 13.3% said it was not serious while 9.4% said it was not a problem. In the in-depth interview, the official asserted that one of the major problems that hindered their performance was the lack of finance to support programmes and activities of the department. This confirms Kendie’s

(1998) position that the government invested low in SWM. Through the in-depth interviews households asserted that some households exhibited negative attitudes towards waste disposal.

Respondents considered the lack of laws as a serious problem, as 65.3% said it was very serious, 16% said serious while 18.7% said not serious. This finding confirms Abrokwa (1998) and Ogawa (2002) that there was a lack of laws to regulate and punish sanitary offenders. This means that the formal legal regulations were not sufficient and therefore need improvement. It was also clear that households (86.7%) considered the lack of enforcement of waste legislation as being a very serious problem. This finding confirms Sule (1981) and Onibokun and Kumuyi (1999) who argued that officials were unable to enforce waste legislations which made the laws ineffective. This situation of the inability of enforcing waste disposal laws as well as inadequate legislation according to Baabereyir (2009) greatly constrained efforts to address the solid waste problem that confronted Ghana. This condition puts waste officials in a fix. A participant said:

...The laws are not effective and the residents don't seem to understand us. What do you want us to do?

According to an official, another problem they encountered was political interference. Anytime it was due for them (officials) to prosecute waste offenders the politicians came in to plead for offenders. If they (officials) refused then it meant they were willing to lose their jobs.

...when it is time to prosecute you get calls from politicians to drop some cases. If you refuse then it means you are going to lose your job. They placed you in this position so they can take you out when they want. When this interference occurs, I don't have any choice but to drop all the cases and educate the offenders for justice's sake.

To the officials, these attitudes of politicians compounded the problems as they intervened when residents committed an offence. The residents' attitudes were encouraged by the act of the politicians. Though it was naive to ask why the politicians were not prosecuted it however implied compliance with rules and laws in general and that waste regulation is no exception from the general pattern.

When respondents were asked to indicate how waste management services could be improved, some households said there should be public education by the media on solid waste disposal and its effects on health. This again confirms Festus and Ogoegbunam (2012) on the role of public education. This according to them will help change some negative attitudes towards waste. Other respondents said different bins should be provided by the institutions to households to encourage sorting. Some respondents proposed that the price rate for dumping should be reduced to households in areas where they cannot afford the current price to encourage more household participation. Some respondents said those found guilty of indiscriminate dumping should be fined to serve as deterrence to other households. This boils down to the effectiveness of the laws. This corresponds to Sule (1981), Onibokun (1999) and Baabereyir (2009). Some respondents also said institutions should be established to buy easily recyclable waste. This they said will serve a dual purpose thus creating employment and freeing the society from indiscriminate disposal. An official also made it clear

that the WMD should be allowed to perform their functions without political interference. It is apparent from the foregone discussion that people did reflect quite intensively on normative solutions to the waste problems.

Local Waste Management as Local Order

As regards the legal and normative aspects of waste management and practice, it has been shown that there is a tremendous lack of regulation; however, there is no total anarchy in local waste management. Instead, a certain register of informal rules has been identified. This register may be regarded as an integral component of a wider local legal arena or local informal order. We have identified some rules, e.g. waste burning has to be avoided, and unmarried males have to pay extra money to females for their waste services etcetera. Such rules are common knowledge and provide a certain minimal standardization of waste handling in the local community. Such order is respected only to a certain extent and is not without internal contradictions as are all kinds of legal regimes. Nevertheless, as regards enforcement, compliance with the normative informal order underlies social control since neighbours take a stance towards other people's public performances.

Such order is composed of different components be they custom, gender rules, rules of politeness, but also refer to official law, municipal bye-laws, their 'interpretation' by local politicians and so forth. The maintenance of minimal sanitary and environmental standards, the circumvention of the official fining system by alternative local sanctions of misconduct: all these aspects show how local households are trying to bring in line a variety of basic needs of which waste is just but one. There is also an indication of how informal local order related to gender bias is created. This is suggestive of how different gender roles which are unbalanced could emanate from culture. Although this informal local order is created through social routine, it is not evocative that the official regulations support the course.

To be precise with this: Such legal order does not represent a code of best practice and, for the time being, does not successfully encourage appropriate behaviour. However, it may be seen as a point of departure to develop a body of normative standards for a waste management system that accommodates local realities.

From the above, it is obvious households' attitudes and institutional arrangements play a major role in solid waste management practices, as well as in environmental sustainability. It is also clear how informal normative orders whether or not they fall in line with the bye-laws regulating waste in the society contribute to determining waste management behaviours.

CONCLUSION

This study has shown that attitudes and perceptions towards waste disposal are shaped by both societal practices and the institutions responsible for waste management. These attitudes may either or not conform to waste legislation. Therefore, understanding waste disposal behaviour in its right context will help institutions to improve the services they render. Consequently, environmental sustainability development.

In addition, the study has also shown that the informal order which is/may be the product of social routines might form a part of the broader local order which in part shapes waste handling behaviour. This behaviour may be/may not be appropriate behaviour towards solid waste management, hence the essence to develop a standardized normative body.

The empirical findings and discussion in this study in respect of normative/local order provide a new understanding of domestic waste management which adds to a growing body of literature. Furthermore, this study makes the case for taking social context seriously as a key influence on waste disposal behaviour. This study adds to one's understanding of how attitudes and perceptions towards solid waste informed by some social practices contradict, interact with or accommodate official legal regulations.

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CONFLICT OF INTEREST

There is no conflict.

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