

Assessment on Residents' Attitudes Towards Waste Management in Ghana

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Abstract

Attitude towards environmental sanitation and waste disposal must be properly practiced to guarantee longevity and healthy living in Winneba, Effutu Municipality in the Central Region of Ghana. Mixed method approach was used for the study. Stratified random and purposive sampling techniques were used to select the one hundred and fifty-six-one (156) respondents for the study. The main instruments for the data collection were questionnaire, semi-structured interviews and observation. The study revealed that, individual participation has a direct bearing on proper waste disposal practices. It was also concluded that Effutu municipal authorities failed to mobilize the community and educate citizens on the rudiments of proper practices of segregating waste in their own bins at the household level. It is recommended that, the waste management institutions should be adequately resourced by the Municipal Assembly to ensure efficient and effective waste management in the area.

Keywords

Attitudes, Waste Management, Winneba, Effutu Municipality, Ghana

Received: October 14, 2020 / Accepted: November 20, 2020 / Published online: December 24, 2020

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1. Introduction and Background

Environmental sanitation and cleanliness attitude must be re-introduced for the proper management of waste in communities, since the people have very negative attitude towards waste management and disposal. If this is done, the environmental health status of residents can then be significantly improved by guaranteeing their longevity and healthy living [1].

Visible evidence exists to show how 'ordinary' citizens are contributing to filth and choked gutters resulting from indiscriminate waste disposal practices exacerbating floods but, there is little knowledge about citizens' attitudes towards the environment. The poor attitudes of people could be

attributed to the failed educational system where much emphasis was not placed on environmental education in the past. So the bulk of the population have grown up without that proper environmental attitude. The effects are the increasing cholera outbreaks and malaria in major cities in Ghana [2]. The attitudes of residents therefore play an important role in curbing environmental problem as rightly opine

"...waste generation is conditioned, to an important degree, by people's attitudes towards waste: their patterns of material use and waste handling, their interest in waste reduction and minimisation, the degree to which they separate wastes and the extent to which they refrain from indiscriminate dumping and littering" [3].

Problems of waste in urban areas is not only specific to Ghana

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but can better understood in the light of recent rapid urbanization worldwide. This rapid urbanization in African countries and by the same logic, a rapid accumulation of garbage is likened to “a monster that has aborted most efforts made by city authorities, urban planners, states and federal governments”, to manage or at least contain it [4]. Notably 9 out of every 10 African cities are facing serious waste disposal problems [5].

This research therefore proposed to investigate Winneba residents’ attitudes towards waste disposal, drawing on the self-interest model which holds that citizens favour strict environmental regulations if their local environment is polluted. The population of the Effutu Municipality have increased tremendously in recent years. In 1970 and 1984 the population of the Municipality was 32,315 and 32,523 respectively. In 2000, the population was 46,574. The population growth rate for the Municipality between 1984 and 2000 represents 2.2%. According to the 2010 Population and Housing Census (PHC), the Municipality had a population of 68,597 [7]. The increase in population has resulted in the increase in production and consumption of products and this coupled with the fact that every product or item you purchase today is packaged, have also resulted in an increase in the tons of waste generated on a daily basis in the municipality. The municipal authorities, however have not been able to keep pace with the rapid accumulation of waste and now the authorities are overwhelmed by the waste situation in Winneba. This has resulted in waste being found in gutters, drains and on pavements or streets and seashore in Winneba.

This brings us to the important question about attitudes and waste disposal problems in Winneba. The attitudes of the Effutu Municipal Assembly (EMA) and the population at large are important issues, which influence how seriously the waste problem can be resolved. Unfortunately, individuals and communities continue to make choices that contribute to the decline of natural environments as evident in figure 1 below. The beautiful sight of the beach at Wonsom is no longer the same due to constant dumping of refuse at the shores. This research is therefore an attempt to investigate residents’ attitudes towards waste disposal in Winneba to examine the implications for national efforts towards environmental protection.



Figure 1. Scene of the waste problems at Wonsom.

The purpose of the study was to investigate Winneba residents’ attitudes towards waste management in the Effutu municipality. The study sought to answer this research question- What are Winneba residents’ attitudes towards waste disposal? The article has the following structure: firstly, an introduction showing the importance of the theme and the objective of the study; secondly, it presents a review of literature on attitudes towards waste disposal; thirdly, a methodology of the research is presented; results and its discussion are presented in the fourth part and finally the conclusions with recommendations of the work are shown.

2. Review of the Literature on Attitudes Towards Waste Disposal

The Theory of Planned Behaviour suggests that a person's behaviour is determined by his or her intention to perform the behaviour and that this intention is, in turn, a function of his or her attitude towards the behaviour and his or her subjective norm. The best predictor of behaviour is intention. Intention is the cognitive representation of a person's readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour [8]. This intention is determined by three things: their attitude toward the specific behaviour, their subjective norms and their perceived behavioural control. Behaviour is driven by beliefs about the likely consequences of an action (favourable or unfavourable), perceived social pressure or subjective norms and perceived behavioural control over the action. The stronger these factors are, the more likely someone is to form a behavioural intention to do the action and consequently, act [8].

The theory of planned behaviour holds that only specific attitudes toward the behaviour in question can be expected to predict that behaviour. In addition to measuring attitudes toward the behaviour, we also need to measure people's subjective norms – their beliefs about how people care about will view the behaviour in question. To predict someone's intentions, knowing these beliefs can be as important as knowing the person's attitudes. Finally, perceived behavioural control influences intentions. Perceived behavioural control refers to people's perceptions of their ability to perform a given behaviour. These predictors lead to intention. A general rule, the more favourable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behaviour in question [8]. The Theory of Planned Behaviour hypothesises that the immediate determinant of behaviour is the individual's intention to perform or not to perform the behaviour in question. Intentions are, in turn, influenced by three factors as illustrated in figure 2.

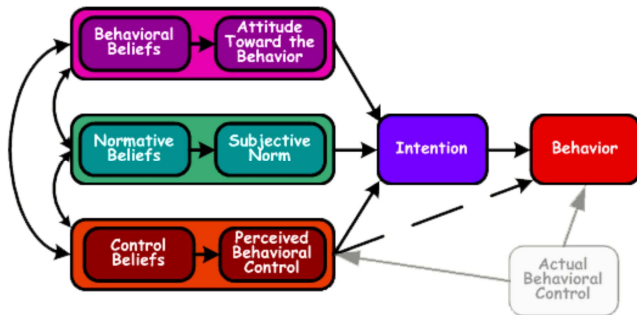


Figure 2. Theory of Planned Behaviour [2].

1. Attitude - the individual's favourable or unfavourable evaluation of performing the behaviour
2. The subjective norm - the individual's perception of social pressure to perform or not to perform the behaviour
3. Perceived behavioural control - a measure of the individual's perception of their ability to perform the behaviour in question [8].

Actual behavioural control refers to the extent to which a person has the skills, resources, and other prerequisites needed to perform a given behaviour. Successful performance depends not only on a favourable intention but also on a sufficient level of behavioural control. The more favourable the attitude and the subjective norm, and the greater the perceived control the stronger should the person's intention to perform the behaviour in question [8].

There is some substance to claim of rapid and unplanned urbanization, inadequate funding and economic decline as justification for the most promising economy in sub-Saharan Africa having declined, the same argument cannot be put forward in recent times [9]. This is because the recent increase in waste disposal problems stems from the fact that, attitudes and perceptions towards waste disposal have not been adequately considered. Most waste management programmes have not been successful since they failed to address the remote cause of the problem- that is these programmes fail to look at the attitudes of people and how it affects the waste disposal patterns.

Attitudes of residents can be critical in either ameliorating or exacerbating the situation. This posit that "people's attitudes influence not only the characteristics of waste generation, but also the effective demand for waste collection services, in other words, their interest in and willingness to pay for collection services" [3]. This implies that there should be the urgent re-introduction of the bi-monthly or monthly environmental sanitation, and proper awareness should also be created on the dangers of indiscriminate waste disposal methods adopted by the residents [1].

Environmental knowledge and attitudes of households should be examined in order to understand their behaviour and how

to encourage the waste separation and recycle at waste generating sources. Knowledge of people on environment in general and waste management in particular has long been recognized among the most crucial factors influencing household waste disposal recycling [10, 11]. Most recyclers are more likely to get one or more sources of information for example friends, newspaper, and television. Government should also provide waste management facilities to enable residents properly dispose off the waste to enhance their health safety [1].

Attitude about waste management is the principle/perception that people have on how they deal with the waste that they produced. This attitude can predict the potential behaviour that residents want to perform. Belief plays an important role in pro-environmental behaviour [12]. Dumping of rubbish indiscriminately is one of the extreme bad habits of Ghanaians toward cleanliness. It is very easy for people to create a dumping ground right beside their home or residence, due to lack of an official dumping ground, or to prevent them from walking a distance. Many gutters in the cities and towns are choked due to people making them dumping sites, some people deliberately, especially those who sell by the road side, sweep and dump their rubbish into nearby gutters. This always results in frequent flooding in many parts of Accra (is it Winneba or Accra) during the rainy season. Traders and street hawkers, who accumulate rubbish at the end of the day, dump their rubbish in nearby bushes, eventually making it a dumping site for all the traders, and even residents around [13]. This posit that, there should be properly empowered and reposition to meet the mandate of their calling by providing functional waste disposal vans, personnel's, and motivations to enable them live up to their responsibilities [1].

Littering of the environment is an act almost every Ghanaian falls culprit to. The sachet water, which is meant to give Ghanaians a safe drinking water on the street, is gradually turning the whole city of Accra (is it Winneba or Accra) into a dumping ground. Moreover, the black polythene bag used for selling, popularly known as the "take away," also accounts for the immense nature of litter on the environment. It has become the habit of many people to litter the environment with these rubber sachets and black polythene bags when they are through with its purpose. Irrespective of where they are, they litter the environment even when they are in buses, instead of leaving them in the buses for e drivers to clear them after work. The nature of littering the street is evident when wind blows, as these polythene bags will be flying in the air, with one not knowing where they are coming from [13].

3. Methodology

The study employed both the qualitative and quantitative methods (mixed method). This was to ensure triangulation and to confirm, complement, cross validate or corroborate the shortfalls of each method with the aim of ensuring consistency of findings obtained through different instruments used. Population- The target populations for the study were residents of Winneba Township the capital of the Effutu municipality. A sample size of one hundred and fifty-six (156) (refer to the tables) residents were sampled for the study. This involved ordinary residents whose activities related directly or indirectly to waste generation and management, some officials of the Effutu municipal assembly, Zoom Lion and a health worker.

Stratified random and purposive sampling techniques were used to select the respondents for the study. One hundred and fifty-six (156) (I hope you have seen the inconsistency) residents and officials were selected using strata sampling to answer questionnaires. The main aim for using strata sampling is to reduce the potential of human bias in the selection of cases to be included in the sample. As a result, the stratified random sample provides us with a sample that is highly representative of the population being studied. Purposive sampling technique was then used to select two officials each of the Effutu municipal assembly, Zoom Lion and a health worker to be interviewed. The main instruments for the data collection for this study were questionnaire, semi-structured interviews and unstructured observations.

The quantitative data entry and analysis was done by using the SPSS software package. The data was edited, coded and analysed into frequencies, percentages with interpretations. The qualitative data was analysed by the use of the interpretative method based on the themes arrived at during the data collection. The themes were related to the research question and interpreted on the number of issues raised by respondents. These were based on question on the semi-structured interviews.

4. Findings and Discussions

Attitudes of individuals have both positive and negative effects on waste management practices. A good waste management practice is achieved when individuals have positive attitudes towards it. For instance, individuals disposing of waste at the rightful places, keeping the community neat and tidy and cooperating with the authorities to promote good sanitation practices. However, disposing of waste in gutters, on the floor instead of the containers, not cooperating with the authorities to curb problems of how to dispose of waste can effect waste management negatively.

4.1. Willingness to Pay for Waste Disposal Services

From Table 1 below, 70.5 per cent of respondents are willing to pay a fee to be accorded better services regarding household waste collection. Out of the 70.5 per cent, 31.4 per cent representing 49 respondents are already paying and 39.1 per cent out of the 70.5 representing 61 respondents are not paying as at the time of the survey but they are willing to pay a reasonable amount towards waste management which confirms their readiness towards managing waste in the municipality. It can also be deduced that 27.8 per cent of the respondents were also not paying any fee and are not ready to pay any fee since they are not receiving any better service. They felt waste was not picked on regular basis and also, they had to go and dump their waste by themselves, hence, saw no reason why they should pay for these services. From the survey residents were willing to pay fees for waste collection provided they will be provided with better and quality services. In effect, it was also a confirmation to The Theory of Planned Behaviour. Since the theory suggests that a person's behaviour is determined by his or her intention to perform the behaviour and that this intention is, in turn, a function of his or her attitude toward the behaviour and his or her subjective norm. The best predictor of behaviour is intention. Intention is the cognitive representation of a person's readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour [8].

Table 1. Do you Pay for your Waste Disposal Service?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	49	31.4	32.0	32.0
	No but I am willing to pay	61	39.1	39.9	71.9
	I don't pay but I'm not willing to pay	43	27.6	28.1	100.0
	Total	153	98.1	100.0	
Missing	System	3	1.9		
Total		156	100.0		

4.2. Concern About the Waste Situation

The concern of residents about the waste menace will definitely reflect in their attitudes. That is if they are much concerned

about the waste situation in Winneba then they will also have a positive attitude". From Table 2, 18.5 percent representing 29 residents both Agreed and Strongly Agreed to the statement I am not much Concern about the Waste Situation here, 121 other

residents who represented 77.6 percent both Disagreed and Strongly Disagreed to the statement, "I am not much Concern about the Waste Situation here.

Table 2. I am not much Concern about the Waste Situation here.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	6	3.8	3.9	3.9
	A	23	14.7	14.9	18.8
	NS	4	2.6	2.6	21.4
	D	55	35.3	35.7	57.1
	SD	66	42.3	42.9	100.0
	Total	154	98.7	100.0	
Missing	System	2	1.3		
Total		156	100.0		

4.3. Indiscriminate Disposal of Waste

When people have a positive environmental attitude, they tend to control indiscriminate waste disposal. But from the survey there seem to be a contrast because majority of residents claim to be concerned about the waste menace and yet continue to dispose of waste indiscriminately. From Table 3, 35 residents representing 22.4 percent Strongly Agreed to the statement "Waste is disposed off indiscriminately in my locality", 55 individuals representing 35.3 percent Agreed to the statement. Whereas 34 residents representing 21.8 percent Disagreed to the statement, Waste is disposed off indiscriminately in my locality and 15 residents representing 9.6 percent Strongly Disagreed to the statement, "Waste is disposed off indiscriminately in my locality". Figure 2 confirms how residents dispose waste indiscriminately in Winneba.



Figure 3. Indiscriminate Disposal of Waste in Winneba.

From Figure 3, it implies that, dumping sites were more than 100 metres away from the houses of residents. In the absence of a basic facility of collection of waste, residents were prone to dumping waste on the streets, open spaces, drains, and water bodies in the vicinity creating insanitary conditions. The study has proven that, more often, it was due to households lacking knowledge and incentives to keep to the rules of the collection system, and operators lacking sanctions and authority. Indeed, the study has revealed that, there was irregular or lack of routine education or information regarding waste management by EMA, WMD (not explained earlier), ZoomLion Ghana Ltd. especially

in the fishing beach areas in the Municipality.

Table 3. Waste is Disposed Off Indiscriminately in my Locality.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	35	22.4	22.7	22.7
	A	55	35.3	35.7	58.4
	NS	15	9.6	9.7	68.2
	D	34	21.8	22.1	90.3
	SD	15	9.6	9.7	100.0
	Total	154	98.7	100.0	
Missing	System	2	1.3		
Total		156	100.0		

4.4. Assistance of Residents Towards Waste Management

From Table 4, 4 residents representing 2.6 percent Strongly Agreed to the statement, It is not my responsibility to offer any possible assistance for waste management and 11 residents representing 7.1 percent also Agreed to the statement. While 62 residents representing 39.7 percent Disagreed to the statement, "It is not my responsibility to offer any possible assistance for waste management" and 40.4 percent made up of 63 residents Strongly Disagreed to the statement, "It is not my responsibility to offer any possible assistance for waste management".

Table 4. It is not my responsibility to offer any possible assistance for waste management.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	4	2.6	2.6	2.6
	A	11	7.1	7.1	9.7
	NS	14	9.0	9.1	18.8
	D	62	39.7	40.3	59.1
	SD	63	40.4	40.9	100.0
	Total	154	98.7	100.0	
Missing	System	2	1.3		
Total		156	100.0		

4.5. Organisation of Clean up Exercise

From Table 5, 42 residents representing 26.9 percent Agreed to the statement, "Clean up exercises are organized in my community to clear the environment of waste" and 8 individuals representing 5.1 percent Strongly Agreed to the statement. Whilst 41 residents making 26.3 percent

Disagreed to the statement, “Clean up exercises are organized in my community to clear the environment of waste” and 39 residents forming 25.0 percent also Strongly Disagreed to the statement, “Clean up exercises are organized in my community to clear the environment of waste”.

Table 5. Clean up exercises are organized in my community to clear the environment of waste.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	8	5.1	5.2	5.2
	A	42	26.9	27.3	32.5
	NS	24	15.4	15.6	48.1
	D	41	26.3	26.6	74.7
	SD	39	25.0	25.3	100.0
	Total	154	98.7	100.0	
Missing	System	2	1.3		
Total		156	100.0		

4.6. Attendance to Communal Labour

From Table 6, 44 residents making 28.2 percent Strongly Disagreed to the statement, “I attend communal labour to clean up my community” and 40 residents representing 25.6 percent Disagreed to the statement. But 38 residents representing 24.4 percent Agreed to the statement, “I attend communal labour to clean up my community” and the 10 residents representing 6.4 percent also Strongly Agreed to the statement. This shows that forty-eight (48) of the residents have positive behavioural attitudes towards communal labour to ensure proper waste management in their environment. The findings of this study was supported by previous research that, the intention is determined by three things: their attitude toward the specific behaviour, their subjective norms and their perceived behavioural control. Behaviour is driven by beliefs about the likely consequences of an action (favourable or unfavourable), perceived social pressure or subjective norms and perceived behavioural control over the action. The stronger these factors are, the more likely someone is to form a behavioural intention to do the action and consequently, act. The Theory of Planned Behaviour assumes that people behave rationally, in that they consider the implications of their actions. Both the Theory of Reasoned Action and the Theory of Planned Behaviour apply to situations involving a choice of behaviour, where reasons can be given for the choice made [8].

Table 6. I attend communal labour to clean up my community.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	10	6.4	6.6	6.6
	A	38	24.4	25.0	31.6
	NS	20	12.8	13.2	44.7
	D	40	25.6	26.3	71.1
	SD	44	28.2	28.9	100.0
	Total	152	97.4	100.0	
Missing	System	4	2.6		
Total		156	100.0		

4.7. Appropriateness for Individuals to Clean their Surroundings

An analysis of the data as presented in Table 7 showed that, 95 residents representing 60.9 percent Strongly Agreed to the statement, “it is appropriate for individuals to clean their surroundings” and 39 residents representing 25.0 percent Agreed to the same statement. On the other hand, 7 residents representing 4.5 percent Strongly Disagreed to the statement, “it is appropriate for individuals to clean their surroundings” and 3 others representing 1.9 percent also Disagreed to the statement. This posits that, the residents have requisite skills, and successful behavioural attitudinal change in cleaning their surroundings. A research conducted on the theory of planned behaviour, published in *Organizational Behaviour and Human Decision Processes* supported the current study and affirms that, actual behavioural control refers to the extent to which a person has the skills, resources, and other prerequisites needed to perform a given behaviour. Successful performance depends not only on a favourable intention but also on a sufficient level of behavioural control. The more favourable the attitude and the subjective norm, and the greater the perceived control the stronger should the person’s intention to perform the behaviour in question [14].

Table 7. It is appropriate for individuals to clean their surroundings.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	95	60.9	61.7	61.7
	A	39	25.0	25.3	87.0
	NS	10	6.4	6.5	93.5
	D	3	1.9	1.9	95.5
	SD	7	4.5	4.5	100.0
	Total	154	98.7	100.0	
Missing	System	2	1.3		
Total		156	100.0		

5. Conclusions and Recommendations

The study concluded that, most residents although are willing to pay for a fee to be given better services so far as good sanitary condition is concern the residents were not motivated to practice good disposal methods. The study also revealed that, in the absence of a basic facility of collection of waste, residents were prone to dumping waste on the streets, open spaces, drains, and water bodies in the vicinity creating insanitary conditions. More often, it was due to households lacking knowledge and incentives to keep to the rules of the collection system, and operators lacking sanctions and authority. Indeed, there was irregular or lack of routine education or information regarding waste management by EMA, WMD, ZoomLion Ghana Ltd. especially in the fishing beach areas in the Municipality.

It is recommended that, the waste management institutions should be adequately resourced by the Municipal Assembly to ensure efficient and effective waste management in the area. The Municipal Assembly should liaise with other corporate bodies in the municipality like banks to pull financial resources to support institutions in charge of managing waste especially WMD and ZoomLion Ghana Ltd. With the support, adequate dustbins, skips and core waste management equipment such as compaction trucks, roll on/roll off trucks, skip loaders would be purchased to ensure effective waste collection and disposal.

It is also recommended that, people particularly in the low class residential areas should be made to pay for disposing their waste. This is because they are the very people who generate the waste. That is, the 'pay as you throw principle' should be introduced. All these should be done through education by letting residents know the importance of environmental cleanliness and how they can contribute to it. This will go to support the financial base of the waste management institutions.

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