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### DETERMINATION OF THE EXTENT TO WHICH PEOPLE'S ATTITUDE INFLUENCES SOLID WASTE MANAGEMENT IN CROSS RIVER STATE, NIGERIA.

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#### Abstract

This paper examined the determination of people's attitudes on Solid Waste Management in Cross River State, Nigeria. One hypothesis was developed to direct the investigation to fulfill the study's objectives. In line with this, a literature review was conducted. For this study, a survey research design was used. Out of the 6,923 respondents in the population, a random sample of 1,106 respondents was chosen for the study. Stratified random sampling, basic random sampling, and accidental sampling were used to choose the sample. Determining People's Attitudes on Solid Waste Management Questionnaire (DPAXWM) was the name of the tool used to collect data. Two measurement and evaluation specialists and one from the Department of Continuing Education and Development Studies validated the questionnaire. The split-half reliability approach was used to estimate the instrument's dependability. The statistical method used to examine the hypothesis under investigation was the independent t-test. The hypothesis was tested with significance set at the .05 level. The study's conclusion showed that attitude has a significant influence on solid waste management. The study's conclusions led to recommendations for the immediate reinstatement of the bimonthly or monthly environmental sanitation program and for raising public awareness of the risks associated with the careless disposal of waste that Cross River State residents engage in. Above all, to improve residents' health and safety, the state government should also provide waste management facilities so that people can dispose of their garbage correctly.

**Keywords:** Determination, Attitude, Solid Waste, Waste Management, Cross River State.

## Introduction

Due to Nigeria's growing population and high consumption habits among urban inhabitants, managing solid waste has become a more challenging problem on a local and global level. In most parts of Cross River State, solid wastes are carelessly thrown away in any open location without regard for the effects they have on the environment. Both the environment and human health are seriously at risk from this. The ecology is damaged, infections are transmitted, and the quality of the air, water, and land are all compromised by improper solid waste management.

Mbalisi and Offor, (2016), assert that in developing nations especially, improper disposal of domestic solid wastes is a big worry for the environment. Attitude to effective solid waste management could be seen as an embodiment of character for both men and women. According to Oden (2007), the resulting environmental problems constitute a threat to man's continued existence on earth. These problems bring about degradation, pollution, and erosion and hence, introduce various diseases that threaten human existence. According to Aniah (2012), information on the age structure of the population is essential to the various dimensions of population analysis. Human beings are socially classified according to either age or sex. That is, every society makes social distinctions according to age or sex. In most growing societies, individuals are being rated in terms of their age to attract respect from society and also in terms of sex in the position of class systems. These distinctions are some of the bases for the differentiation of social roles in society. Cross River State environment is generally friendly for investment in tourism. It is the hope that with good tourism education accompanied by a clean environment, a good security network, etc. tourism will continue to thrive in the state to boost the economic development of the area (Omang, Ojong, Anthony & Kujoh, 2021).

Attitude is permanent since it remains over time, and it involves broad assessments of people (including oneself), items, or issues because it helps guide the individual behavior of an adult, with this, I meant that when an adult develops a positive attitude it can help improve the general wellbeing towards efficient management of solid waste. Attitude as a notion has piqued the curiosity of practically every discipline concerned with human psychology. This is because attitude affects how individuals view and react to other people, things, or circumstances in their lives. (Atu, Joseph, and Afangideh, 2015). In addition, attitude can influence how people interact with others, which makes attitude a fascinating area of research. An attitude is a long-term, overall assessment of people, things, or problems, including oneself. A persistent attitude is one that endures throughout time.

Attitudes are defined as being specific to a thing or conduct, although beliefs are also more general, linked to a larger worldview, and generally more firm. This is similar to what Vaughan and Hogg (2013) said, Such attitudes endure in a variety of contexts and are generally stable. In a nutshell, attitude can be defined as an individual's assessment or sentiment, whether favorable or unfavorable, toward other individuals, things, situations, or occasions. (Umeduji & Aiseuebegan, 2016). Agwu (2012) The study that was conducted

was titled "Issues and difficulties of solid waste management methods in Port Harcourt City, Nigeria, a behavioral viewpoint." The purpose of the study was to determine how people felt about their backgrounds (sex, age, and attitude), as well as how much knowledge, awareness, and solid waste management practices there were among the people living in Port Harcourt. The researcher found that the age, sex, and attitude of the people living in Port-Harcourt City had an impact on their perceived behavioral control, attitude, and subjective norm. The actual behavior of the residents, or their degree of awareness, knowledge, and solid waste management techniques, was ultimately influenced by these criteria.

Omang, Patrick, Obibessong, & Ojong (2023) acknowledge that illiterate people grow and view progress in a way that makes it challenging to attain environmental sustainability in their surroundings. Therefore, resolving the issues is necessary for long-term intervention in rural sanitation and water delivery. The projects' viability depends on the community's willingness to donate time and resources to them. (Catherine, Ojong, Asor & Ojuah, 2021).

### **Theoretical framework**

#### **Planned behavior theory by Icek Ajzen (1991)**

This theory was propounded by Icek Ajzen (1991) and reviewed by Doris (2018). The theory states that behavior intentions are impacted by a person's attitude towards a certain behavior, their perception of their level of control over that behavior, and subjective standards or social expectations surrounding that behavior. The actual behavior is the outcome of a person's perception of control combined with such behavioral objectives. Ajzen (1991) Highlighted the significance of intention in behavior performance; however, in this instance, it addresses situations that have an impact on the behavior's actual performance. In other words, the degree to which a behavior is performed determines the behavior's outcome. Furthermore, the theory is predicated on the idea that a person's intentions for their behavior are closely linked to their attitudes, beliefs, and values regarding the behavior's result. Churchman (2012) confirmed that a person's intentions stem from how they view their action, whether it be positive or negative, as well as how they believe society views the same behavior. As a result, social pressure and reading attitude influence intention, which is crucial for behavior performance and, ultimately, behavioral changes.

The idea is relevant to the study because it explains that attitude does not determine behavior directly, rather it influences behavioral intention that is associated with beliefs and values. A person using a higher knowledge of the effects of unsustainable waste handling may have little adverse effects on the natural world. The individual's intention to reduce the size of his family and rate of consumption which in turn may reduce the waste generation and pressure on environmental degradation may be a good attitude or behavior that can enhance sustainability. Furthermore, an individual's intention within the marital home to dispose of waste personally without involving children may enhance the effective management of waste. Finally, the

occupation an adult engages in can also have a major impact on the environment due to their various survival challenges. Man's intentions to expand the scope of his agricultural and industrial activities also increase waste generation. Therefore, it becomes imperative to form positive attitudes and behaviors toward sustainable trash disposal in order to save the environment and have positive perceptions.

### Statement of the problem

The collection of solid waste management was meant to be an essential obligation to both government and the public. However, it calls for specific plans for the collection, transportation, sorting, and recycling of the garbage that is produced, rather than just the collecting and disposal of waste. People's awareness levels and cultures have a big impact on solid waste management. There is a claim that the rate of excessive solid waste output without appropriate treatment rises with economic success. This thereby produced effects on the environment. Policymakers have access to a variety of programs and tools for managing trash and recycling. Considering the diversity, the situation still persists as urban and rural areas become stinking with unpleasant odors. Perhaps attitude may have been responsible for poor waste management in the area. Notwithstanding the need for it, studies on the mechanisms behind families' recycling decisions in the study area, Government, and well-meaning companies in recent times, brought out strategies for recycling to broadly promote waste management techniques to use valuable trash and lessen the number of items that need to be disposed of still, the situation remains the same, the psychology of the resident as regards their negative attitude and environmental self-concept seriously affect the management of solid waste in the research region.

In addition, the demographic components which encompass the resident's gender, age, occupation, educational status, and marital status have clearly shown that there is a serious negative effect in the area of study and the issue keeps persisting without having a permanent solution to solid waste management. It is a strong opinion of the researcher, that residents' attitudes may also have been the cause of the poor managing solid waste in Cross River State. Given these scenarios, this study sought to investigate whether poor solid waste management is caused by residents' attitudes in Cross River State, Nigeria.

### Literature Review

Bohner and Wanke (2016) assert that attitudes are assessment-based. Responses to individuals, things, and activities. This contains your thoughts, both positive and negative, regarding a particular item.

Additionally, they emphasized that attitude is enduring and that it determines how experiences affect our behaviors. That is not a fleeting emotion. Moreover, Albarracin, Johnson, and Zanna (2005) widened the scope of the term "attitudes" to encompass how people typically see items that have social significance. Generally speaking, attitudes are thought to be developed via a process of subjective personal assessment (which may involve weighing benefits and drawbacks), but they may also be impacted

by affective, emotional, and belief-related reactions. (Lutui, 2014). Elenwo (2017) also examined people's perspectives on garbage management in Rivers State's Obio/Akpor Local Government. The research methodology used cross-sectional surveying and questionnaires. In order to evaluate the hypothesis, the analysis used simple percentages and an ANOVA test. The findings showed that there were no appreciable differences in the opinions of Obio/Akpor Local Government Area inhabitants regarding solid waste disposal. The waste control practices for the entire home, together with their attitudes and viewpoints, were assessed in order to achieve this (beliefs, feelings, and actions). To test the hypothesis, survey data were collected and subjected to statistical analysis using the ANOVA method. The results of the study showed that although the participants knew about waste management, their degree of compliance was hampered by attitude issues.

Additionally, it was discovered that variations existed in the way solid waste management was viewed by the locals in the research area. Stricter penalties for violators of waste management regulations or non-compliant residents were among several ideas. The Cross Rivers State Waste Management Agency's services must be improved in order to embrace the 3Rs in trash management to enhance the management of solid waste in the LGA. It also brings about development to the state. It actively supports local communities' political and economic growth, helps educate tourists, and raises money for conservation. (Omang, Ojong, Anthony & Kujoh, 2021) Schools and universities should get adequate public education on sanitary practices. The state and municipal governments' overall sanitary conditions should be improved by the government through engineering landfill sites to improve the current open dump system. According to the findings, residents' attitudes toward waste management have an impact on how they dispose of waste.

Furthermore, personal interviews with several residents of the villages revealed that a number of typical waste management techniques that are used in the research region were discovered. Burning, recycling, open dumps, and landfills, indiscriminate dumping and littering, dumping into drainage channels, reusing (composting and manure), etc. Were among the most prevalent. More specifically, the residents believed that the aforementioned attitudes toward waste and its management are influenced by elements such as the degree of education, the amount of money earned, the ease of access to and proximity from dumpsites, the population growth, the kind of waste, the age and health status of the population, the size and social orientation of the family, the pattern of land use, and the deliberate actions (laziness and outright bad behavior). This study was conducted in Rivers State's Obio/Akpor Local Government and was prompted by these viewpoints as well as comparable works on trash management in some Nigerian cities.

Barr (2007) investigated environmental attitudes and behaviors in residential waste management in the United Kingdom. The author's conceptual framework was used to analyze three waste management attitudes: recycling, reuse, and waste reduction. It was suggested that environmental values, situational factors, and psychological components have a significant role in determining waste management attitude within the



framework of a basic intention-attitude link. 673 citizens of Exeter, UK, who filled out a self-report questionnaire were used to assess the framework. Reduction and reuse were found to be predicted by underlying environmental values, knowledge, and concern-based qualities, whereas recycling was found to be substantially predicted by other variables. On the other hand, the recycling mindset was described as extremely normative behavior. The results suggested that sustainable waste management techniques are predicted by attitude.

According to Ojong, Onnoghen, Omang, and Ogban (2022), among other reasons, people's reckless exploitation of natural resources has caused the ecology to deteriorate. These reasons include ignorance, poverty, overpopulation, and greed. Unplanned growth, growing issues with pollution, and the disposal of household and industrial trash, are all made worse. They also confirmed that, particularly in the cities of emerging countries, the issues have grown to such an incredible amount that solutions are practically unachievable.

Akin and Agunloye (2018) assessed the attitude of the locals in a few neighborhoods in Owo, Ondo State, Nigeria, towards the management of household solid waste. It classified the many kinds of solid waste produced at home and looked into how the people living in the three Owo quarters—Rufus Giwa Polytechnic Area, GRA, and Iloro Quarters—perceived waste management. With the use of a structured questionnaire and firsthand observations, data were collected directly from the intended audience. The households in the area were the target audience for the questionnaire's questions. Concurrently, the research region employed photography to conduct an on-the-spot condition evaluation of select home solid waste locations. Residents of the three quarters in Owo, Ondo State, who were chosen for the purpose of this study, were given questionnaires using a systematic random sample technique. The univariate technique of data analysis was used, and the required elements of the data set were described in tables and pictures.

The study's conclusions demonstrated that residents of these three specifically chosen quarters face extremely substantial health risks as a result of open domestic solid waste. The data set's essential properties were incorporated. The study's conclusions demonstrated that a higher proportion of participants emptied their receptacles after filling them. The study suggested that in order to enhance local solid waste management, the Nigerian federal government collaborates with international development agencies. This finding seemed to suggest that attitude could be used to forecast how people will dispose of waste at home.

In the Kano metropolitan in western Nigeria, the knowledge, opinions, and attitudes of households regarding solid waste collection services were examined by Hamisu, Mohd, Alias, and Latifah (2017). Three hundred and ninety-one of the city's homes received a survey questionnaire. EFA (exploratory factor analysis) and psychology's theory of value were used to evaluate the data. According to the study's total mean score ( $M=4.07$ ) and standard deviation ( $SD=0.84$ ), households had a high degree of awareness, although their

perception levels were moderate ( $M=3.56$  and  $SD=0.86$ ) and their cognitive attitudes were likewise moderate ( $M=3.19$ ) and  $SD=0.89$ . The mean ( $M$ ) and standard deviation ( $SD$ ) for affective and behavioral attitude, respectively, were both high ( $M= 4.26, 0.85$ , and  $3.84, 0.84$ , respectively). They thus advocated for household participation to enhance Kano's solid trash collection services. Thus, the reviewed study is related to the present study since the result suggested that the more waste disposal management awareness, the more positive/sustainable attitude to waste management.

Lin, Maoliang, Yujie, and Meng (2017) looked into important factors that affect the intention and actions of households to separate garbage. A survey questionnaire that took into account determinants like residents' attitudes, subjective norms, perceived behavioral control, moral obligations, historical behavior, and demographic factors was developed based on the theory of planned behavior (TPB) model in order to predict household waste separation behavior. Partial least squares structural equation modeling (PLS-SEM) was used to evaluate each construct's efficiency after 628 valid surveys from Hangzhou homes were gathered. The results demonstrated that intention and conduct were significantly predicted by subjective norms, perceived behavioral control, past behavior, and intention, with past behavior being the most significant construct.

Further investigation on the moderating effect of various demographic groups in terms of gender, age, income level, and perceived policy effectiveness was also looked at in order to further promote household garbage separation behavior. The study provided insightful suggestions for future regulations that would focus on the development of citizens' habits. These might include locating waste separation and collection facilities in convenient areas, supporting market-driven recycling initiatives and dealers, supporting neighborhood campaigns and educational initiatives that help citizens develop environmentally conscious behaviors, and more.

Mutungwe (2016) examined how residents' beliefs, attitudes, and behaviors related to trash management and interactions with local government bodies. In Zimbabwe's municipal regions, uncollected solid wastes were widely dispersed in illegal dumps along roadsides, in open areas, and beside streams. Mutungwe, Tsvere, Dondo, and Munikwa (2011) investigated the role played by schools in Chinhoyi Urban in reducing illness outbreaks caused by environmental contamination. Observing that little was being done to teach garbage disposal, the researchers suggested workshops for teachers to mainstream waste management in the curriculum. At Chinhoyi Urban, two teachers from each school participated in a week-long training for trainers course on mainstreaming solid waste management. The study is relevant to the current study since it aimed to teach young children proper trash disposal habits regardless of gender.

In Calabar South, Nigeria, Eneji, Eneji, Ngoka, and Abang (2016) investigated the views of the locals on waste management and disposal practices and the impact these practices had on public health. The study's sample comprised civil and public servants, farmers, traders, and other individuals using descriptive survey designs. Using the use of a multistage random sampling procedure, 400 respondents were sampled. A structured questionnaire with four response options on a Likert scale served as the

data-gathering tool. The researchers individually administered the device and gathered the results themselves. Pearson product-moment correlation was used to assess field data obtained with the equipment. Both of the null hypotheses were significant with 398 degrees of freedom and at the 0.05 level of significance. The second hypothesis that was tested also showed a significant correlation between the health status of the residents of Calabar South Local Government Area and careless waste disposal, implying that the people of Calabar South had a very negative attitude toward waste management and disposal. The study concluded that the unfavorable attitude of the people living in Calabar South regarding waste disposal and management had a significant effect on their health. It was consequently advised, among other things, that environmental sanitation should be urgently reinstated on a bimonthly or monthly basis and that sufficient awareness should be raised about the risks associated with the residents of Calabar South's careless trash disposal practices. In order to improve citizens' health and safety, the government should prioritize providing waste management facilities that allow households to properly dispose of their garbage.

Begum, Siwar, Pereira, and Jaafar (2009) state that group or category size often influences attitudes and behaviors about solid waste management. In order to shed light on how contractor attitudes and behavior impact waste management in the construction sector, research was conducted in Malaysia. The results supported Ajzen's theory of planned behavior, showing that contractors with a positive attitude toward waste management also exhibited satisfied behaviors. The size of the contractor, source reduction, reuse, recycling strategies, frequency of waste collection, staff involvement in training initiatives, and method of disposing of garbage are among the elements that have been found to influence contractors' attitudes about waste management. Among the most important variables influencing contractor behavior on waste management in this study were waste disposal behavior and attitude toward waste management.

These were identified as essential for preventing environmental deterioration and for efficiently enhancing growth, performance, and waste management.

The knowledge, attitudes, and practices of university students on waste management were found to be low, less favorable, and moderate, respectively, in Arora and Agarwal's (2011) study. Just 1.33% of hostel students were found to have good waste management practices, while 35.67% were found to have poor practices. Overall, 64.33% of students had a less positive attitude toward trash management. The practices of the remaining 52% were moderate. The investigator discovered that the interviewees' attitudes toward trash management were unaffected by their educational attainment. Since young people are the future leaders, policymakers, and parents, Arora and Agarwal (2011) argued that environmental knowledge, attitudes, and behaviors appear to be vital since young people's perspectives eventually play a significant part in giving answers to future environmental challenges. The study suggested that students should participate in a waste management education or



training program. The research is very relevant because young adults need to imbibe a positive attitude toward solid waste management activities.

### Research Methodology

A survey research design is used to carry out the investigation. Data must be acquired in order to accurately and objectively describe phenomena that already exist. Determining the nature of a situation as it stands at the moment of examination is the goal of the survey research design. The process of doing research via surveys that researchers send to survey respondents is known as the survey research design. After the survey data is gathered, statistical analysis is performed to produce insightful research findings. Nigeria's Cross River State is the research area. Cross River State is part of Nigeria's geopolitical zone to the south. Cross River State is a developing hub for business, industry, and education. It is well-known for producing cash crops like rubber, oil palm nuts, and other agricultural products.

The population of this study comprises three million, seven hundred and fourteen thousand, six hundred and seventy-eight (3,714,678) inhabitants in Cross River State, Nigeria (National Population Commission, 2018). The target population consists of 6, 923 adults between the ages of 18 and 40 years using 23% of the total population of adults (male and female).

In the study, a multi-stage sampling technique comprising stratified random sampling, simple random sampling, and accidental sampling was employed. The Local Government Areas served as the basis for the stratification, and the number of communities within each Local Government Area represented a stratum. 1,106 respondents were chosen from 19 localities in Nigeria's Cross River State to make up the study's sample. In the study area, there were both male and female responders.

### Results

Solid waste management is the dependent variable in this hypothesis, whereas attitude is the independent variable. This hypothesis was tested using Simple regression analysis as shown in Table 1

**TABLE 1:** Simple regression result of the relationship between attitude and solid waste management.

Model	Sum of square	df	Mean square	F-ratio	p-level
Regression	50.775	1	50.775	8.295	.004(a)
Residual	6629.249	1083	6.121		
Total	6680.024	1084			

\* Significant at .05 level.

An adjusted R<sup>2</sup> of .007 was obtained from the simple regression study examining the association between attitude and solid waste management. This suggested that 7% of the study area's determinant solid waste management was attributable to attitude. This result is crucial evidence that attitudes are generally positive in the research area. The regression table yielded an F-value of 8.295 and a significant value of .000 (or  $p < .05$ ) for the Analysis of

Variance (ANOVA) at degrees of freedom (df) 1 and 1083. This finding suggests that solid waste management and attitude are significantly correlated.

### Discussion of Findings

The result of this study indicated that attitude significantly influences solid waste management. The results are consistent with the observation made by Bohner and Wanke (2016) that attitudes are judgmental responses to people, things, and occasions. These consist of your opinions and your sentiments, both favorable and unfavorable, about a specific item. They went on to say that attitude has the power to direct our experiences and determine how those experiences affect our behavior. An attitude is a persistent emotion that does not fade. Additionally, attitudes are seen by Albarracin, Johnson, and Zanna (2005) as including people's overall feelings toward socially meaningful things. Although it is generally accepted that attitudes are formed by a process of subjective personal evaluation (which includes a rational analysis of benefits and drawbacks), affective, emotional, and belief-related reactions can also affect attitudes.

Elenwo (2017) also found that while the respondents were aware of waste management, their level of compliance was hampered by attitude issues. Also, it was shown that there are differences in how the research area's population feels about the management of solid wastes. Stricter fines for violators of waste management regulations or non-compliant residents are among several ideas. The Rivers State Waste Management Agency's services must be improved in order to incorporate the adoption of the three Rs in trash management in order to improve solid waste management in the LGA. Schools and universities should get adequate public education on sanitary practices. The government should take action to convert the current open dump system to designed landfill sites in order to improve the hygienic circumstances within the local government and the state overall.

Furthermore, it was discovered through in-depth conversations with several residents of the communities that there were several typical waste management techniques used in the research region. The most frequent ones were: burning, indiscriminate dumping/littering (done everywhere), recycling, open dumpsites/landfills, reuse (in the case of composting and manure), dumping into drainage channels, etc. More specifically, the residents believed that the aforementioned attitudes toward waste and its management were influenced by elements like education, income, accessibility to dump sites, ineffective government waste management efforts, population growth, the kind of waste, age, and health, social background and size of the family, the pattern of land usage, and deliberate behaviors (such as sloth and blatant poor habits). This study was driven by these viewpoints on waste management held by associated professionals in different Nigerian cities.

According to Ojong, Onnoghen, Omang, and Ogban (2022), among other reasons, people's reckless exploitation of natural resources has caused the ecology to deteriorate. These reasons include ignorance, poverty, overpopulation, and greed. Unplanned growth, growing issues with pollution, and the disposal of household and industrial trash, are all made worse. They also confirmed that, particularly in the cities of emerging countries, the issues have grown to such an incredible amount that solutions are practically unachievable.

## Conclusion

Based on the results of the study it is concluded that residents' attitude significantly relates to solid waste management.

## Recommendations

The recommendations made in light of the study's findings were as follows:

1. In order to enhance domestic solid waste management in Cross River State, the Nigerian federal government ought to collaborate with international development agencies.
2. The bi-monthly or monthly environmental sanitation programs should be immediately reinstated, and inhabitants of Calabar should be made fully aware of the risks associated with using careless ways for disposing of their garbage. Above all, in order to improve residents' health and safety, the government should also provide waste management facilities so that people can dispose of their garbage correctly.
3. A concerted community effort involving all interested parties and age groups to change people's perceptions about solid waste management in metropolitan settings.

## Suggestions for Further Research

Based on the limitations of the study, the following suggestions were made for further research.

- 1) In order to draw a broader generalization, a replication of this study encompassing the North-South Geo-Political Zones should be conducted.
- 2) The study should be replicated on the variables that weren't previously looked into.
- 3) To cover more communities than this research could, the study's scope should be expanded even further.

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