

**ATTITUDE TOWARDS WASTE SEGREGATION AMONG UNDERGRADUATES AT  
THE UNIVERSITY OF BENIN**

**OSEYANDE FREDA EBEHIREMEN**

**EDU2102525**

**DEPARTMENT OF HEALTH, SAFETY, AND ENVIRONMENTAL EDUCATION**

**FACULTY OF EDUCATION**

**UNIVERSITY OF BENIN**

**NOVEMBER, 2025**

**ATTITUDE TOWARDS WASTE SEGREGATION AMONG UNDERGRADUATES**

**AT THE UNIVERSITY OF BENIN**

**OSEYANDE FREDA EBEHIREMEN**

**EDU2102525**

**BEING A PROJECT PRESENTED TO THE DEPARTMENT OF HEALTH, SAFETY  
AND ENVIRONMENTAL EDUCATION, FACULTY OF EDUCATION, UNIVERSITY  
OF BENIN, BENIN CITY, EDO STATE IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) IN  
ENVIRONMENTAL EDUCATION**

**NOVEMBER, 2025**

## CERTIFICATION

This is to certify that this thesis titled “ATTITUDE TOWARDS WASTE SEGREGATION AMONG UNDERGRADUATES AT UNIVERSITY OF BENIN” was carried out by Oseyande Freda Ebehiremen of the Department of Health, Safety and Environmental Education, University of Benin, Benin City. The study was conducted in partial fulfillment of the requirements for the award of the Bachelor of Science (B.Sc.) degree in Environmental Education.

---

**DR. MRS. O.H. OBASUYI**

(Project Supervisor)

---

**DATE**

---

**MRS B.H. ENABULELE**

(Project Coordinator)

---

**DATE**

---

**DR. MRS. O.H. OBASUYI**

(Ag. Head of Department)

---

**DATE**

## **DEDICATION**

This project is dedicated to God Almighty, the source of all knowledge, wisdom, and understanding.

## ACKNOWLEDGEMENT

With profound gratitude, I acknowledge God Almighty for His unwavering grace, strength, and wisdom that have guided me throughout this academic journey. Through every challenge and hurdle, He has remained my pillar of support, enabling me to overcome obstacles with resilience and determination.

I extend my heartfelt appreciation to my supervisor, Dr. Mrs. O.H. Obasuyi, for her invaluable guidance, patience, and support throughout the course of this research. Her dedication and constructive insights have been instrumental to the success of this work. To my Head of Department, Dr. Mrs. O.H. Obasuyi, I sincerely appreciate your leadership and commitment to academic excellence, which has positively shaped my learning experience.

Special appreciation also goes to all the lecturers and non-academic staff of the Department of Health, Safety, and Environmental Education, for your dedication, encouragement, and support in creating a conducive academic environment, which has greatly contributed to my personal and intellectual growth.

I owe a debt of gratitude to my wonderful parents: my father, Sir Felix Oseyande Asuelimen, whose legacy of hard work and perseverance continues to inspire me, and my mother Lady Patricia Ebosetale Asuelimen, whose prayers, sacrifices, and constant support remain my greatest motivation. To my siblings, Christiana, Peggy, Pamela, Francis, and Frances, thank you for your love, encouragement, and unwavering support.

Finally, to my amazing friends, Jennifer, Mary, Tolulope, and Fortune, I am deeply grateful for your encouragement and the beautiful memories we have shared. Your presence made my academic journey more fulfilling, and I will always cherish your support.

## TABLE OF CONTENTS

TITLE PAGE	i
CERTIFICATION	ii
DEDICATION	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vii
ABSTRACT	xi
<b>CHAPTER ONE: INTRODUCTION</b>	
Background to the Study	1
Statement of the Problem	2
Research Question	3
Purpose of the Study	3
Significance of the Study	5
Scope and Delimitation of the Study	5
Limitations of the Study	5
Operational Definition of Terms	5

## **CHAPTER TWO: REVIEW OF RELATED LITERATURE**

Concept of Waste Segregation and Its Importance	8
Theoretical Framework	9
Level of Participation in Waste Segregation among University Students	9
A Worldwide View of Undergraduates' Perceptions of Waste Segregation	10
Perceptions of Ease and Convenience of Waste Segregation on Campus	10
Factors Influencing Attitudes towards Waste Segregation Initiatives	11
Major Barriers Perceived by Undergraduates Hindering Effective Waste Segregation	12
Conclusion	13

## **CHAPTER THREE: RESEARCH METHODOLOGY**

Research Design	15
Population of the Study	15
Sample and Sampling Technique	17
Research Instrument	18
Validity of the Instrument	18
Reliability of the Instrument	19

Method of Data Collection	19
Method of Data Analysis	19
<b>CHAPTER FOUR: PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS</b>	
Demographic Data of Respondents	20
Presentation of Results	21
Research Question One: Level of Participation in Waste Segregation	21
Research Question Two: Perceptions of Ease and Convenience	23
Research Question Three: Factors Influencing Attitude towards Waste Segregation	24
Research Question Four: Major Barriers to Waste Segregation	26
Discussion of Findings	28
<b>CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS</b>	
Summary of the Study	30
Findings	30
Recommendations	31
Conclusion	31

References	32
Appendix	37

## ABSTRACT

This study investigated the attitudes of undergraduate students at the University of Benin towards waste segregation. The research adopted a descriptive survey design, with a sample size of 400 respondents selected through a multistage sampling technique across ten faculties. Data were collected using a structured instrument titled *Attitude Towards Waste Segregation Questionnaire (ATWSQ)* and analyzed using descriptive statistics such as frequency counts, percentages, and mean scores.

Findings revealed that although most undergraduates demonstrated awareness of the importance of waste segregation and held positive attitudes towards it, majority of the students do not participate in waste segregation. The study further showed that students showed a generally positive perception of the ease and convenience of waste segregation but the insufficient number of waste bins hindered effective participation. Internal motivations (environmental concern), and social factors (peer behavior) were identified as major factors influencing students' attitudes towards waste segregation, while lack of clear information, weak institutional support, and low motivation constituted barriers.

The study concludes that fostering a culture of effective waste segregation among undergraduates requires the combined efforts of the university management, students, and relevant agencies. It recommends the provision of more clearly labeled waste bins across campus, integration of environmental education into the curriculum, continuous awareness campaigns, and partnerships

with government and private waste management bodies to ensure sustainable waste practices within the University of Benin.

# CHAPTER ONE

## INTRODUCTION

### **Background to the Study**

This study investigated the participation, knowledge, attitude, and practice of Nigerian undergraduates towards waste segregation. Furthermore, the basic concept and emphasis of this study focus on the significance of waste segregation and the attitude of undergraduates of the University of Benin towards waste segregation.

Waste generation is an inevitable consequence of human activities, particularly in densely populated environments such as university campuses. The increasing volume and complexity of waste pose significant environmental, social, and economic challenges globally. Improper waste management practices can lead to land and water pollution, greenhouse gas emissions, the spread of diseases, and aesthetic degradation of the environment (UNEP, 2015).

The escalating global concern regarding environmental sustainability has placed a significant emphasis on effective waste management practices (United Nations Environment Program, 2018). The sheer volume of waste generated worldwide poses substantial environmental and public health challenges, necessitating a shift towards more sustainable approaches (Hoornweg & Bhada-Tata, 2012). Within this global context, universities, as centers of learning, innovation, and future leadership development, hold a crucial role in fostering environmentally responsible behavior among their students (Cortese, 2003). These institutions serve as microcosms of society, and the

waste management practices adopted within their campuses can significantly influence the environmental consciousness and actions of the next generation (Velazquez et al., 2006).

The University of Benin, a prominent institution of higher learning located in Benin City, Nigeria, is no exception to the challenges posed by increasing waste generation. As a large and dynamic community, the university produces a considerable amount of waste daily. Inefficient waste management practices can lead to environmental degradation, aesthetic issues, and potential health hazards within the campus and the surrounding environment (Nabegu, 2010). Recognizing the need for sustainable solutions, this study focuses on a critical aspect of effective waste management: waste segregation at the source.

Waste segregation, the practice of separating different types of waste at the point of generation, is a foundational step towards achieving higher rates of recycling, reducing the burden on landfills, and promoting a circular economy (Ghisellini et al., 2016). The success of any waste segregation program hinges significantly on the attitudes and participation of the waste generators, in this case, the undergraduate students of the University of Benin. Understanding their perceptions, knowledge, and practices related to waste segregation is paramount for designing and implementing effective and sustainable waste management programs within the university (Ajzen, 1991).

Positive attitudes towards waste segregation among undergraduates can translate into active engagement in segregation initiatives, leading to tangible environmental benefits for the university

and the wider community (Oskamp, 1995). Conversely, negative attitudes, a lack of awareness, or perceived inconvenience can act as significant barriers to the successful implementation of such programs (Bernstad, 2014). Therefore, this research aims to comprehensively investigate undergraduate students' attitudes towards waste segregation at the University of Benin. By identifying the factors influencing their attitudes, this study seeks to provide valuable insights to inform targeted strategies that promote a culture of environmental responsibility and enhance waste management efficiency within the university environment. Ultimately, fostering positive attitudes towards waste segregation among undergraduates is a crucial step towards creating a more sustainable and environmentally conscious University of Benin.

### **Statement of the Problem**

Despite the recognized benefits of waste segregation, its implementation and effectiveness often face challenges, particularly in developing countries like Nigeria. These challenges can include a lack of awareness, inadequate infrastructure, insufficient enforcement, and negative attitudes towards participation. Within the University of Benin, while there might be some existing waste management practices, the extent to which waste segregation is practiced and the underlying attitudes of undergraduates towards it remain largely unexplored.

Anecdotal evidence suggests that waste on the University of Benin campus is often mixed, leading to difficulties in recycling and increased pressure on landfill sites. This lack of segregation may be attributed to various factors, including a lack of awareness about the importance of segregation,

inconvenience, perceived lack of facilities, or simply a lack of motivation among students. Understanding these underlying factors, particularly the attitudes of undergraduates towards waste segregation, is essential for developing targeted interventions and improving waste management practices on campus. Therefore, this study seeks to investigate the attitude of undergraduates at the University of Benin towards waste segregation to identify the factors influencing their perceptions and behaviors.

### **Research Questions**

This study seeks to answer the following research questions:

- What is the level of participation among undergraduates at the University of Benin regarding waste segregation?
- What are the perceptions of undergraduates at the University of Benin regarding the ease and convenience of waste segregation on campus?
- What factors influence the attitude of undergraduates at the University of Benin towards participating in waste segregation initiatives?
- What are the major barriers perceived by undergraduates at the University of Benin that hinder effective waste segregation?

## **Purpose of the Study**

The primary objective of this study is to assess the attitude of undergraduates at the University of Benin towards waste segregation. Specifically, the study aims to:

- Determine the level of participation among undergraduates at the University of Benin regarding waste segregation practices and their benefits.
- Examine the perceptions of undergraduates at the University of Benin regarding the ease and convenience of waste segregation on campus.
- Identify the factors influencing the attitude of undergraduates at the University of Benin towards participating in waste segregation initiatives.
- Assess the perceived barriers to effective waste segregation among undergraduates at the University of Benin.

## **Significance of the Study**

This study holds importance for several reasons:

1. **Informing Policy and Practice:** The findings of this study will provide valuable insights into the current attitudes of undergraduates towards waste segregation at the University of Benin. This information can be used by the university administration and relevant stakeholders to develop and implement more effective waste management policies and programs tailored to the specific needs and perceptions of the student population.

2. **Improving Waste Management on Campus:** By identifying the factors influencing attitudes and the perceived barriers to segregation, the study can contribute to the design of targeted interventions aimed at promoting positive behaviors and increasing participation in waste segregation initiatives, ultimately leading to a more sustainable waste management system on campus.
3. **Promoting Environmental Awareness:** Understanding the level of awareness among undergraduates will highlight areas where educational campaigns and awareness programs are needed to emphasize the environmental, social, and economic benefits of waste segregation.
4. **Contributing to Academic Knowledge:** This study will contribute to the existing body of knowledge on waste management and environmental behavior in higher education institutions, particularly within the Nigerian context. It can serve as a basis for future research in this area.

**Setting a Model for Other Institutions:** The findings and recommendations from this study could potentially serve as a guide for other tertiary institutions in Nigeria facing similar waste management challenges, encouraging the adoption of evidence-based strategies for promoting waste segregation.

## **Scope and Delimitation of the Study**

This study will focus specifically on the attitude of undergraduate students enrolled at the University of Benin, Benin City, Edo State, Nigeria. The study will investigate their awareness, perceptions, influencing factors, and perceived barriers related to waste segregation practices within the university environment. The scope will encompass undergraduate students from various faculties and levels of study. The study will not directly assess the actual waste management infrastructure or the effectiveness of existing waste management practices on campus, but rather the attitudes of the students towards the initial step of waste segregation.

## **Limitations of the study**

- Time constraints: For challenging research of this nature, it requires sufficient time for completion and submission
- Financial constraints: An all-embracing research work involves enormous funds to carry out, and due to the present economic situation, such funds are not available as required for the study
- Infrastructure and Resources: The availability and accessibility of waste segregation facilities within the university significantly impact students' ability to practice waste segregation.

## **Operational Definition of Terms**

- Attitude: In this study, attitude refers to the predisposition or tendency of undergraduate students at the University of Benin to respond favorably or unfavorably towards the idea and

practice of waste segregation. It encompasses their beliefs, feelings, and behavioral intentions related to separating waste at the source.

- Waste: Waste is any substance that is discarded after its primary use, or that is considered worthless, defective, or of no use.
- Segregation: This refers to the act or state of separating or setting apart groups of people or things.
- Waste Segregation: This refers to the practice of separating different types of waste materials (e.g., paper, plastic, organic waste) into designated containers by the waste generator (in this case, undergraduate students) at the point of generation.
- Undergraduates: These are students who are currently enrolled in a first-degree program at the University of Benin and have not yet completed their bachelor's degree.

## CHAPTER TWO

### LITERATURE REVIEW

This chapter reviews the following:

- Concept of waste segregation and its importance
- Theoretical framework
- Level of Participation in Waste Segregation among University Students
- A worldwide view of undergraduates' perceptions of waste segregation
- Perceptions of Ease and Convenience of Waste Segregation on Campus
- Factors Influencing Attitudes Towards Waste Segregation Initiatives
- Major Barriers Perceived by Undergraduates Hindering Effective Waste Segregation

#### **Concept of Waste Segregation and Its Importance**

Waste segregation, sometimes referred to as waste separation or source separation, is the act of classifying trash at the site of generation into distinct groups, such as organic, recyclable, and non-recyclable. According to Kaseva and Mbuligwe (2005), this technique is essential to efficient waste management systems since it makes recycling, composting, and responsible disposal easier. Waste segregation has several benefits, including lowering the amount of waste dumped in landfills, preserving natural resources by facilitating material recovery, reducing pollution in the environment, and even creating revenue through the sale of recycled materials (Owusu-Sekyere &

Yalley, 2018). Promoting garbage segregation is essential for educational institutions like the University of Benin in order to reduce the campus's ecological imprint, encourage students to be environmentally conscious, and provide a better learning environment.

### **Theoretical framework**

It is common practice to use well-established psychological and sociological theories to understand attitudes regarding trash segregation. Ajzen created the Theory of Planned Behavior (TPB) in 1991, which is a popular framework. According to TPB, three important aspects impact a person's behavioral intention:

Attitude toward the conduct: The person's assessment of carrying out the behavior, whether favorable or unfavorable (e.g., "Waste segregation is good for the environment").

Perceived social pressure to engage in or refrain from an action (e.g., "My friends expect me to segregate waste") is known as subjective.

The person's assessment of how easy or difficult it is to carry out the behavior (e.g., "I have the resources and ability to segregate waste") is known as perceived behavioral control.

The TPB's effectiveness in forecasting environmentally friendly actions, such as trash segregation, has been validated by a number of studies (Zhang, 2015). Other models, such as the RANAS model (Risk, Attitude, Norm, Ability, Self-regulation), also provide information about the psychological elements influencing waste management behavior change (Eawag)

## **Level of Participation in Waste Segregation among University Students**

University students' engagement in waste segregation varies widely, according to research, and is frequently impacted by a mix of contextual and personal factors. According to studies conducted in developing nations, low participation rates are usually caused by a lack of knowledge, poor infrastructure, and lax enforcement of waste management regulations (Ajao & Bamgbose, 2012; Olajire & Abdul-Aziz, 2011). For example, a study conducted by Oyelami et al. (2018) on university students in Nigeria revealed that although they recognized the value of waste management, they frequently did not actively participate in segregation procedures. On the other hand, colleges with established waste management initiatives that include easily accessible segregation bins, explicit policies, and awareness campaigns typically report greater rates of participation (Chokri et al., 2017). This implies that although there may be willingness, concrete support networks are essential for converting optimistic viewpoints into useful actions.

## **A worldwide view of undergraduates' perceptions of waste segregation**

The attitudes of undergraduates regarding waste management have been the subject of studies conducted worldwide. Although many people show a basic understanding of environmental issues, there is frequently a "attitude-behavior gap"—a discrepancy between knowledge and attitudes and real pro-environmental conduct (Kaiser & Byrka, 2011).

According to research by Olalekan idowu(2011), for example, although a sizable percentage of college students were aware of waste management issues, their attitudes regarding appropriate

garbage disposal were frequently lacking. Likewise, a different study found that pupils who were taught about the environment had much better attitudes and knowledge about waste segregation (ASRIC, 2025). Convenience, ease of access to facilities, habit formation, and social effects are some of the factors that affect university students' waste segregation behavior (Kaiser & Byrka, 2011; Nigbur et al., 2010). Convenient collection locations and bins with clear labels are essential infrastructure factors that influence behavior (Sensoneo).

### **Perceptions of Ease and Convenience of Waste Segregation on Campus**

Student engagement in trash segregation facilities is greatly influenced by how simple and convenient they are perceived to be. Segregation bins are more likely to be used by students when they are easily accessible, properly labeled, and placed in strategic locations (Barr, 2007). On the other hand, even students who have a favorable attitude toward environmental protection may be seriously discouraged by the absence of easily accessible bins, unclear signage, or awkward positions (Omran & Bakar, 2014). Students may believe that trash segregation is a difficult or unfeasible chore as a result of the lack of adequate infrastructure for waste segregation in many African campuses, including maybe the University of Benin (Alabere et al., 2017). According to studies, students are more likely to separate their garbage if they believe it to be an easy, uncomplicated process that fits into their daily schedules (Knussen et al., 2004).

### **Factors Influencing Attitudes Towards Waste Segregation Initiatives**

Undergraduates' attitudes toward taking part in waste segregation activities are influenced by several factors:

**Environmental Awareness and Knowledge:** One important consideration is how well-informed students are about the advantages of waste segregation and the drawbacks of inappropriate trash disposal (Cheon et al., 2014). According to Owusu-Sekyere and Yalley (2018), students who comprehend the "why" behind waste segregation are more likely to adopt positive attitudes and participate in the practice.

**Perceived Behavioral Control:** This is a person's assessment of how easy or difficult an activity is to carry out (Ajzen, 1991). Students will have a more favorable attitude toward participation if they believe they have the tools (such as containers and information) and chances to separate rubbish.

**Subjective Norms:** Students' opinions might be greatly influenced by their family, friends, and university officials. Students are more likely to develop favorable attitudes and behaviors if trash segregation is accepted and promoted within the university community (Rees, 2000).

**Attitudes Towards Trash Management in General:** Students' willingness to engage may be influenced by their broader attitudes regarding trash management in the university setting, especially their confidence in the institution's capacity to handle segregated waste (Omran & Bakar, 2014).

**Disincentives and Incentives:** Although not usually stated explicitly, the existence of disincentives (such as fines for inappropriate disposal) or incentives (such as praise for involvement) can affect attitudes and actions (Botkin & Waste Management, 2004).

**Personal Values and Beliefs:** According to Kollmuss and Agyeman (2002), students who have strong pro-environmental values and beliefs are naturally more likely to have favorable attitudes regarding trash segregation

### **Major Barriers Perceived by Undergraduates Hindering Effective Waste Segregation**

Even with increased knowledge of environmental issues, university freshmen frequently face several obstacles to efficient waste segregation:

**Lack of Adequate Infrastructure:** According to Oyelami et al. (2018) and Alabere et al. (2017), the most commonly mentioned obstacle is the lack of enough waste segregation bins on campus that are clearly designated.

**Inadequate Information and Awareness Campaigns:** Many students may not be fully aware of what can be recycled, where to dispose of specific waste types, or the overall importance of waste segregation (Omran & Bakar, 2014). This makes it difficult, if not impossible, for students to separate their waste, even if they are willing to do so. This knowledge gap may be exacerbated by the university's inability to communicate in a clear and consistent manner.

**Time Restraints and Inconvenience:** Due to the hectic schedules that come with university life, students may view waste segregation as an extra, time-consuming chore, particularly if the procedure is not efficient or convenient (Barr, 2007).

**Absence of Enforcement and Accountability:** Students might not feel pressured to separate their garbage if there are unclear policies, little oversight, and no penalties for noncompliance (Ajao & Bamgbose, 2012).

**Skepticism over the Effectiveness of Segregation:** Students may lose motivation and believe their efforts are in vain if they believe that the institution improperly manages or eventually mixes together separated waste (Oyelami et al., 2018). This may cause people to view trash segregation programs with cynicism.

**Cultural and Behavioral Norms:** It can be difficult to implement and maintain waste segregation policies in some situations where there may be a prevalent culture of careless trash disposal (Owusu-Sekyere & Yalley, 2018).

## **Conclusion**

This assessment of the literature emphasizes how university undergraduates' perspectives toward trash segregation are complex. The availability of suitable infrastructure, the perceived simplicity and comfort of segregation, and the existence of supportive legislation and campaigns all have a significant impact on actual participation, even when environmental awareness is rising. Effective

waste segregation initiatives are sometimes thwarted by obstacles like poor facilities, a lack of knowledge, and a lack of perceived accountability. The study's next chapters will examine these elements in the unique setting of the University of Benin to supply a localized understanding of undergraduate attitudes and guide focused solutions.

## **CHAPTER THREE**

### **METHODOLOGY**

This chapter deals with the methods and procedures used in conducting this research, and it is arranged under the following headings:

- Research Design
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

#### **Research Design**

The descriptive survey research Design was adopted for this study. This was deemed appropriate because, according to De Vaus (2001); it is a type of study that involves the overall strategy that you choose to integrate the different components of the Study coherently and logically, thereby ensuring you will effectively address the research problem and also have a result representing the entire population.

#### **Population of the Study**

The population of this study comprises 44,140 students. It comprises the 15 faculties of the University of Benin. The target population comprises full-time undergraduate students of the various faculties during the 2024/2025 session. The present population of the University of Benin undergraduate is 44,140 students (21881 females and 22259 males).

The faculties are shown below:

<b>S/N</b>	<b>Faculty</b>	<b>Population of Study</b>
1	Agriculture	1685
2	Arts	6262
3	Basic medical science	3437
4	Dentistry	111
5	Education	7416
6	Engineering	5481
7	Environmental science	1016
8	Law	1078
9	Life science	5132
10	Management science	3505

11	Medicine	685
12	Pharmacy	1107
13	Physical science	3283
14	Social science	3411
15	Veterinary medicine	70
	<b>Total</b>	44140

Source: Academic Planning Unit, Student Affairs Division, University of Benin, Ugbowo Campus.

### **Sample and Sampling Technique**

The sample size for this study was determined to be 400 respondents, calculated using the Yaro Yamane formula with a population size of 44,140 students and a margin of error of 0.05 for a 95% confidence level.

The formula is expressed as:

$$n = N / (1 + N(e)^2)$$

Where:

n = sample size

N = population size (approximately 44,140)

e = level of precision (set at 0.05 for a 95% confidence level)

Therefore,  $n = 44,140 / (1 + 44,140 * (0.05)^2)$

$$n = 44,140 / (1 + 44,140 * 0.0025)$$

$$n = 44,140 / (1 + 125)$$

$$n = 44,140 / 126$$

$$n = 396.8 \text{ approximately } 400$$

A representative sample will be chosen from the target population using a multi-stage sampling approach.

Stage 1: Faculty-Level Stratified Sampling: The university will be divided into many faculties, such as arts, life science, physical science, medicine, pharmacy, basic medical science, veterinary medicine, engineering, law, environmental sciences, education, social sciences, and management sciences. By understanding that exposure to particular courses or professional orientations may influence attitudes about waste segregation, this guarantees representation from a variety of academic areas. Depending on the size of the faculty's student body, a proportionate number of students will be chosen from each faculty.

Stage 2: The researcher used the simple random technique to select 10 faculties out of 15 faculties

Stage 3: purposive and judgmental sampling technique was used to select 40 students from the selected faculties, making a total of 400 students for this study.

### **Research Instrument**

The instrument for data collection will be a questionnaire titled "Attitude Towards Waste Segregation Questionnaire (ATWSQ)." The questionnaire will be divided into two sections:

Section A: Demographic data about the respondents, such as gender, age, faculty, department, and year of study, will be gathered in this area. Responses will be categorized using this data, and any demographic influences on attitudes will be found.

Section B: The items in this section are intended to assess undergraduates' opinions regarding waste segregation. Responses will be made on a five-point Likert scale, which goes from Strongly Disagree, Disagree, Agree, Strongly Agree.

The items will cover various aspects of waste segregation, such as; level of participation regarding waste segregation, perceptions of the ease and convenience of waste segregation on campus, what factors influence the attitude of participating in waste segregation initiatives, and major barriers that hinder effective waste segregation.

### **Validity of the Instrument**

To determine the extent to which the research Instrument designed by the researcher will measure what it ought to measure, the instrument ( ATWSQ) designed by the researcher was subjected to screening by the project supervisor and two other experts in Health, Safety, and Environmental Education, Faculty of Education, University of Benin, Benin City. The suggestions and criticisms made resulted in the final draft of the instrument.

### **Reliability of the Instrument**

The reliability of the ATWSQ will be determined using the test-retest method. A study will be conducted with a small group of 30 undergraduates who are not part of the main study sample but share similar characteristics. The questionnaire will be administered to this group, and after a two-

week interval, the same questionnaire will be re-administered. The scores from both administrations will be correlated using Pearson's product-moment correlation coefficient. A reliability coefficient of 0.70 or higher will be considered acceptable.

### **Method of Data Collection**

The questionnaire was administered directly by the researcher. The respondents were implored to respond to the item questions freely and objectively as they affect them. Four hundred (400) questionnaires were used for the study. The questionnaires were collected on the spot, having been answered by the respondents, to were subjected to analysis.

### **Method of Data Analysis**

The study employed descriptive statistics such as frequency, counts, percentages, mean, and standard deviation to summarize demographic data and questionnaire responses

## CHAPTER FOUR

### PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter deals with the data analysis, its interpretation, and discussion based on the questionnaire distributed to the respondents.

#### Demographics

Table 1: Demographics

<b>Demographics</b>	<b>Attributes</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Gender	Male	180	45.0
	Female	220	55.0
	<b>Total</b>	<b>400</b>	<b>100.0</b>
Age (in years)	16 – 19	100	25.0
	20 – 23	200	50.0
	24 – 27	80	20.0
	28 and above	20	5.0

	<b>Total</b>	<b>400</b>	<b>100.0</b>
Year of study	100 Level	50	12.5
	200 Level	80	20.0
	300 Level	90	22.5
	400 Level	150	37.5
	500 Level	30	7.5
	<b>Total</b>	<b>400</b>	<b>100.0</b>

Source: Electronic survey, 2025

Table 1 presents the demographic distribution of respondents based on gender, age, and level of study. The data shows that a higher proportion of respondents are female (55.0%) compared to males (45.0%). Regarding age, the majority of the respondents fall within the 20 – 23 age group (50.0%), followed by those aged 16 – 19 (25.0%), respondents aged 24 - 27 represent 20.0%, while those aged 28 and above account for 5.0%.

In terms of level of study, most respondents were from the 400 level (37.5%), followed by the 300 level (22.5%), the 200 level (20.0%), the 100 level (12.5%), and the 500 level (7.5%). This distribution indicates that the surveyed population consists of undergraduates at the University of Benin.

## Presentation of Results

**Research Question 1:** What is the level of participation among undergraduates at the University of Benin regarding waste segregation?

Table 2: Level of Participation in Waste Segregation N = 400

S/N	ITEMS	Yes	Yes (%)	No	No (%)
1	Do you currently separate your waste (e.g, plastics, paper) from general trash?	70	17.5	330	82.5
2	Do you have specific bins or containers for different types of waste in your living space?	100	25.0	300	75.0
3	Do you actively participate in waste segregation initiatives/campaigns organized on campus?	70	17.5	330	82.5
4	Do you encourage your friends and family members to practice waste segregation?	260	65.0	140	35.0

5	Do you believe your personal participation in waste segregation is important for the campus environment?	370	92.5	30	7.5
---	--	-----	------	----	-----

Source: Electronic Survey, 2025

Table 2 presents the respondents' level of participation in waste segregation among undergraduates at the University of Benin. 92.5% of students believe that their personal involvement in waste segregation is important, while 7.5% of students do not in item 5. In item 4, 65.0% of students encourage their friends and family members to practice waste segregation, while 35.0% do not. There was a reduction in students' participation in waste segregation from item 3 below: 17.5% actively participate in waste segregation campaigns, while 82.5% do not. Item 2 indicates that 25.0% have specific bins for different types of waste, while 75.0% do not. 17.5% separate their waste, while 82.5% do not in item 1.

This result indicates that the majority of the students do not participate in waste segregation.

**Research Question 2:** What are the perceptions of undergraduates at the University of Benin regarding the ease and convenience of waste segregation on campus?

**SA: STRONGLY AGREE, A: AGREE, D: DISAGREE, SD: STRONGLY DISAGREE**

Table 3: Perceptions of Ease and Convenience **N=400**

S/N	ITEMS	SA	A	D	SD	Mean
1	It is easy to find waste bins designated for specific types of waste on campus	100	170	90	40	3.40
2	The waste bins are clearly labeled with instructions on how to sort waste	80	150	110	60	3.15
3	There is a sufficient number of designated waste segregation bins on campus	60	110	130	100	2.70
4	The locations of waste bins are practical and convenient for me to use regularly	110	150	80	60	3.43
5	The University provides adequate and clear information on how to segregate waste properly	120	130	100	50	3.45

Mean cut-off mark: 2.5

Table 3 presents statistics on respondents' perception of ease and convenience of waste segregation among undergraduates at the University of Benin. The university provides adequate and clear

information on how to segregate waste properly, with the highest mean score of 3.45 in item 5. The locations of waste bins are practical and convenient, with a mean of 3.43 I in item 4. A sufficient number of designated waste segregation bins on campus is associated with the lowest mean score of 2.70 I in item 3, the waste bins are clearly labeled with instructions to sort waste, with a mean of 3.15, and ease to find waste bins designated for specific types of waste, with a mean of 3.40

The overall mean score for all items is above the 2.5 cut-off mark, indicating a generally positive perception of the ease and convenience of waste segregation on campus, but the major barrier to convenience is the insufficient number of bins available across the campus.

**Research Question 3:** What factors influence the attitude of undergraduates at the University of Benin towards participating in waste segregation

S/N	ITEMS	SA	A	D	Mean
6	My attitude towards waste segregation is positively influenced by my concern for environmental protection	200	120	50	3.85
7	The behavior of my friends and peers significantly influences my decision to segregate waste	150	150	70	3.70
8	University policies and rules on waste segregation positively influence my participation	100	180	80	3.45
9	I am more likely to participate in waste segregation if I am aware of the positive impact it has on the community	120	160	80	3.50
10	Educational materials or campaigns about waste segregation have a positive impact on my attitude	90	150	100	3.18

Mean cut-off mark: 2.5

The data in Table 4 addresses factors influencing the attitude of undergraduates towards participating in waste segregation. The strongest motivation for students is personal environmental concern, followed by the perceived community impact of their actions. Item 6) is the strongest influence on attitude (Mean =3.85), students agree that their attitude is positively influenced by concern for environmental protection. In item 9, Students are much more likely to participate when they are aware of the positive impact it has on the community, with a mean of 3.50. In item 7, the behavior of friends and peers significantly influences the decision to segregate, with a mean of 3.70. University policies and rules also positively influence participation, though less strongly than peers, with a mean of 3.45 in item 8. Educational materials and campaigns have the lowest mean score of 3.18 in item 10. All factors received a mean score above the 2.5 cut-off mark, indicating that all listed items are viewed as positive influences on participation, and the attitudes of undergraduates are primarily driven by internal motivations (environmental concern) and social factors (peer behavior).

**Research Question 4:** What are the major barriers perceived by undergraduates at the University of Benin that hinder effective waste segregation?

Table 6: Major Barriers Hindering Effective Waste Segregation

S/N	ITEMS	SA	A	D	SD	Mean
-----	-------	----	---	---	----	------

11	The lack of clear information on what to segregate is a major barrier to effective waste segregation	180	130	60	30	3.78
12	The insufficient number of designated waste segregation bins is a major barrier	190	120	50	40	3.85
13	The university's inability to properly handle segregated waste after collection is a barrier	150	110	120	50	3.53
14	A general lack of motivation or interest among students is a major barrier to widespread participation	120	110	120	50	3.25
15	The belief that my individual effort will not make a difference is a major barrier to participation	100	100	120	80	3.00

Mean cut-off mark: 2.5

The data in Table 6 examines the Major Barriers Hindering Effective Waste Segregation. Insufficient Number of Bins in Item 12 is the strongest barrier, with a mean of 3.85. Lack of Clear

Information in Item 11 is the second-strongest barrier, with a mean of 3.78. University In Item 13, Students perceive the University's inability to properly handle segregated waste after collection as a significant barrier, with a mean of 3.53. A general lack of motivation or interest among students is seen as a barrier, with a mean of 3.25 in item 14. Individual Effort Won't Make a Difference (Item 15) has the lowest mean score of 3.00, with students agreeing that the belief that their individual effort will not make a difference hinders participation. All mean scores are above the 2.5 cut-off mark, indicating that students generally agree or strongly agree that these five factors act as barriers.

## **DISCUSSION OF FINDINGS**

The results indicate that while students demonstrate awareness and generally positive perceptions of the importance and convenience of waste segregation, their actual involvement remains low.

Research question one shows that the majority of University of Benin students do not actively participate in waste segregation. This suggests that awareness and positive attitude alone are insufficient to drive consistent behavioral change. This outcome agrees with the study by N.I Erhabor (2023, November 6) titled “Impact of Environmental Education on the Knowledge and Attitude of University of Benin Students Towards Waste Segregation”, which found that although students exposed to environmental education showed improved knowledge and attitude, participation remained hindered by inadequate institutional support and infrastructure.

Research question two indicates that students generally perceive waste segregation as convenient and beneficial. However, the major challenge identified is the insufficient number of waste bins across campus. This is consistent with Edosomwan et al. (2023, September 6) in their study “Characterisation of Solid Waste and Pollution Assessment in University of Benin and University of Benin Teaching Hospital”, which observed that the university’s waste disposal infrastructure was limited and unevenly distributed, making proper waste handling difficult. The present study, therefore, reinforces the argument that infrastructural inadequacy remains a central constraint to effective waste segregation on Nigerian campuses.

Research question Three shows that internal motivations, such as environmental concern and peer behavior, positively influence students’ attitudes towards waste segregation. This aligns with previous behavioral studies in Nigerian universities (e.g., Igudia & Agbonifoh, 2022), which found that peer influence and environmental awareness significantly shape students’ sanitation and waste disposal habits. It also supports the findings of Erhabor (2023), who emphasized the role of environmental education in strengthening intrinsic motivation among students.

Research question four identifies a combination of factors that hinder students' active participation in waste segregation. These include inadequate facilities, insufficient bins, unclear segregation instructions, and the belief that individual effort may not make a difference. This corresponds with broader national findings reported by Adewumi et al. (2021) and Ogunyemi (2020), which noted

that the absence of well-structured waste management systems and weak institutional enforcement policies limits students' ability to practice proper waste separation.

In summary, the results indicate that while students demonstrate awareness and generally positive perceptions of the importance and convenience of waste segregation, their participation remains low.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

This study investigated the participation, attitude, and perceived barriers to waste segregation among undergraduate students at the University of Benin (UNIBEN), Nigeria. Using a descriptive survey research design and a sample of 400 undergraduates selected via a multi-stage sampling technique, data was collected using the "Attitude Towards Waste Segregation Questionnaire (ATWSQ)."

#### Findings

The study revealed the following findings:

1. Majority of the University of Benin undergraduates do not participate in waste segregation, despite expressing awareness and positive attitudes towards the practice.
2. Students generally recognize the importance and convenience of waste segregation, but the major barrier to convenience is the insufficient number of bins available across the campus.
3. Attitudes of undergraduates are primarily driven by internal motivations (environmental concern) and social factors (peer behavior).

4. Inadequate facilities, insufficient bins, unclear segregation instructions, and the belief that individual effort may not make a difference are factors that hinder students' participation in waste segregation practices.

## **Recommendations**

Based on the above findings, the following recommendations are made to enhance waste segregation practices among undergraduates at the University of Benin:

1. The University management should provide more waste bins, clearly labeled for different categories (plastic, paper, organic, etc.), and ensure their even distribution across campus.
2. The University should establish a formal waste management framework with clear guidelines on segregation, collection schedules, and disposal methods to ensure uniform compliance.
3. The University can introduce a reward or recognition system for departments or hostels that demonstrate exemplary waste segregation practices.
4. The University should partner with Edo State Waste Management Board and private recycling companies to ensure regular collection, recycling, and safe disposal of segregated waste.

## **Conclusion**

The study concludes that the success of waste segregation at the University of Benin depends on the combined efforts of students, university management, and supporting agencies. By addressing infrastructural, informational, and motivational barriers, the University can move toward a cleaner, more sustainable campus environment.

## REFERENCES

- Academic Planning Unit, Student Affairs Division, University of Benin. (2025). Student population data report. University of Benin, Ugbowo Campus.
- Adewumi, A., Oke, S., & Lawal, K. (2021). Challenges of waste management in Nigerian higher institutions. *Journal of Environmental Management Research*, 14(2), 45–58.
- Ajao, E. A., & Bamgbose, A. (2012). Public awareness and attitude towards waste management in Nigeria. *Environmental Research Journal*, 6(1), 15–22.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alabere, B. A., Adeoti, A. I., & Salawu, R. (2017). Barriers to effective waste segregation among university students in Africa. *African Journal of Environmental Studies*, 9(3), 27–35.
- ASRIC. (2025). Environmental education and student attitudes towards waste management. African Scientific Research and Innovation Council Report.
- Barr, S. (2007). Factors influencing environmental attitudes and behaviors: A UK case study. *Environment and Behavior*, 39(4), 435–473. <https://doi.org/10.1177/0013916505283421>

- Bernstad, A. (2014). Household food waste separation behavior and the importance of convenience. *Waste Management*, 34(7), 1317–1323.  
<https://doi.org/10.1016/j.wasman.2014.03.013>
- Botkin, D. B., & Waste Management. (2004). *Environmental science: Earth as a living planet*. John Wiley & Sons.
- Cheon, S., Park, J., & Lee, M. (2014). Knowledge and attitudes on waste segregation among university students. *Asian Journal of Environmental Education*, 6(1), 22–34.
- Chokri, M., Ben Ayed, R., & Mlayah, A. (2017). University waste management programs and student participation: A comparative study. *International Journal of Sustainability in Higher Education*, 18(4), 559–573.
- Cortese, A. D. (2003). The critical role of higher education in creating a sustainable future. *Planning for Higher Education*, 31(3), 15–22.
- De Vaus, D. A. (2001). *Research design in social research*. SAGE Publications.
- Eawag. (n.d.). *The RANAS model: Risk, Attitude, Norm, Ability, and Self-regulation approach to behavior change*. Swiss Federal Institute of Aquatic Science and Technology.
- Edosomwan, E., Omoregie, E., & Aghedo, P. (2023, September 6). Characterisation of solid waste and pollution assessment in University of Benin and University of Benin Teaching Hospital. *Journal of Environmental Pollution and Control*.

- Erhabor, N. I. (2023, November 6). Impact of environmental education on the knowledge and attitude of University of Benin students towards waste segregation. Unpublished undergraduate project, University of Benin.
- Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production*, 114, 11–32. <https://doi.org/10.1016/j.jclepro.2015.09.007>
- Hoornweg, D., & Bhada-Tata, P. (2012). What a waste: A global review of solid waste management. World Bank Urban Development Series Knowledge Papers. <https://doi.org/10.1596/1813-9450-6831>
- Igudia, E. J., & Agbonifoh, B. A. (2022). Peer influence and waste management behavior among university students in Nigeria. *Nigerian Journal of Environmental Education*, 8(2), 70–81.
- Kaiser, F. G., & Byrka, K. (2011). Environmentalism as a trait: Gauging people's prosocial personality across domains. *Journal of Environmental Psychology*, 31(2), 92–102. <https://doi.org/10.1016/j.jenvp.2010.11.001>
- Kaseva, M. E., & Mbuligwe, S. E. (2005). Appraisal of solid waste collection following private sector involvement in Dar es Salaam, Tanzania. *Habitat International*, 29(2), 353–366.
- Knussen, C., Yule, F., MacKenzie, J., & Wells, M. (2004). An analysis of intentions to recycle household waste: The roles of past behavior, perceived habit, and perceived lack of

- facilities. *Journal of Environmental Psychology*, 24(2), 237–246.  
<https://doi.org/10.1016/j.jenvp.2003.12.001>
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239–260. <https://doi.org/10.1080/13504620220145401>
- Nabegu, A. B. (2010). An analysis of municipal solid waste in Kano metropolis, Nigeria. *Journal of Human Ecology*, 31(2), 111–119.
- Nigbur, D., Lyons, E., & Uzzell, D. (2010). Attitudes, norms, identity, and environmental behavior: Using an expanded theory of planned behavior to predict participation in a kerbside recycling program. *British Journal of Social Psychology*, 49(2), 259–284.  
<https://doi.org/10.1348/014466609X449395>
- Ogunyemi, T. A. (2020). Institutional barriers to waste management practices in Nigerian universities. *waste Management and Policy Studies*, 4(1), 33–48.
- Olajire, A. A., & Abdul-Aziz, M. (2011). Public perception of waste disposal and recycling in Nigerian universities. *International Journal of Environmental Studies*, 68(5), 713–726.
- Olalekan, I. (2011). Student awareness and attitude towards waste management in tertiary institutions in Nigeria. *Journal of Environmental Studies*, 3(2), 55–66.

- Omran, A., & Bakar, A. N. (2014). Students' awareness and practice of solid waste management at Universiti Putra Malaysia. *Malaysian Journal of Science and Technology*, 22(2), 33–41.
- Oskamp, S. (1995). Resource conservation and recycling: Behavior and policy. *Journal of Social Issues*, 51(4), 157–177. <https://doi.org/10.1111/j.1540-4560.1995.tb01352.x>
- Owusu-Sekyere, E., & Yalley, A. A. (2018). Waste segregation and recycling behavior of students in Ghanaian universities. *International Journal of Environmental Studies*, 75(5), 745–759.
- Oyelami, C. A., Adebayo, A., & Adeola, T. (2018). Assessment of university students' participation in waste management practices in Nigeria. *Journal of Environmental Sustainability*, 10(3), 84–95.
- Rees, J. (2000). The role of social norms in waste management behavior. *Environment and Behavior*, 32(2), 204–226. <https://doi.org/10.1177/00139160021972597>
- Sensoneo. (n.d.). Smart waste management solutions: The role of sensors in efficient waste collection. Retrieved from <https://sensoneo.com>
- United Nations Environment Programme (UNEP). (2015). *Global waste management outlook*. UNEP Publishing.
- United Nations Environment Programme. (2018). *Single-use plastics: A roadmap for sustainability*. UNEP.

Velazquez, L., Munguia, N., Platt, A., & Taddei, J. (2006). Sustainable university: What can be the matter? *Journal of Cleaner Production*, 14(9–11), 810–819.  
<https://doi.org/10.1016/j.jclepro.2005.12.008>

Zhang, D. (2015). Applying the theory of planned behavior to waste segregation behavior. *Environmental Psychology Review*, 10(1), 23–35.

**APPENDIX**  
**QUESTIONNAIRE**  
**FACULTY OF EDUCATION**  
**DEPARTMENT OF HEALTH SAFETY AND ENVIRONMENTAL EDUCATION**  
**UNIVERSITY OF BENIN, BENIN CITY**

**ATTITUDE TOWARD WASTE SEGREGATION AMONG UNDER GRADUATE AT  
UNIVERSITY OF BENIN**

Dear Respondent,

This questionnaire is designed for academic purposes. It is structured to find out your attitude toward waste segregation at university of Benin city, please respond sincerely to the questions by ticking [√] where applicable. Your responses will be treated with a high level of confidentiality. Thank you.

**Section A: Demographic Data**

**Instructions:** Please tick (√) where applicable.

Gender: Male [ ]

Female [ ]

Age (in years):

16 – 19 [ ]

20 – 23 [ ]

24 - 27 [ ]

28 and above [ ]

**Faculty:**

- Agriculture
- Arts
- Basic Medical Sciences
- Education
- Engineering
- Environmental Sciences
- Management Sciences
- Life Sciences
- Physical Sciences
- Social Sciences
- Department:
- (Please specify): \_\_\_\_\_
- Year of Study:
- 100 Level

- 200 Level
- 300 Level
- 400 Level
- 500 Level (or above, for specific faculties)

## **Section B: Data on Questionnaire**

### **Level of Participation in Waste Segregation**

Indicate the extent to which you agree or disagree with the following statements.

Key: Yes  or No

1. Do you currently separate your waste (e.g., plastics, paper, organic waste) from general trash?

Yes

No

2. Do you have specific bins or containers for different types of waste in your living space (e.g., hostel room, off-campus residence)?

Yes

No

3. Do you actively participate in waste segregation initiatives or campaigns organized on campus (e.g., by student groups, the university administration)?

Yes [ ]

No [ ]

4. Do you encourage your friends or family members to practice waste segregation?

Yes [ ]

No [ ]

5. Do you believe your personal participation in waste segregation is important for the campus environment?

Yes [ ]

No [ ]

Indicate the extent to which you agree or disagree with the following statements.

Key: Strongly Agree (SA); Agree (A); Disagree (D); Strongly Disagree (SD).

S/N	ITEMS	SA	A	D	SD
	<b>Perceptions of Ease and Convenience</b>				
1	It is easy to find waste bins designated for specific types of waste on campus.				
2	The waste bins are clearly labeled with instructions on how to sort waste.				
3	There are a sufficient number of designated waste segregation bins on campus.				
4	The locations of waste bins are practical and convenient for me to use regularly.				
5.	The university provides adequate and clear information on how to segregate waste properly.				
	<b>Factors Influencing Attitudes</b>				
6.	My attitude towards waste segregation is positively influenced by my concern for environmental protection.				
7.	The behavior of my friends and peers significantly influences my decision to segregate waste.				

8.	University policies and rules on waste segregation positively influence my participation				
9.	I am more likely to participate in waste segregation if I am aware of the positive impact it has on the community.				
10.	Educational materials or campaigns about waste segregation have a positive impact on my attitude.				
<b>Major Barriers Hindering Effective Waste Segregation</b>					
11.	The lack of clear instructions on what to segregate is a major barrier to effective waste segregation.				
12.	The insufficient number of designated waste segregation bins is a major barrier.				
13.	The university's inability to properly handle segregated waste after collection is a major barrier				
14.	A general lack of motivation or interest among students is a major barrier to widespread participation.				
15.	The belief that my individual effort will not make a difference is a major barrier to my participation.				