



Assessment of Students' Participation in Forestry Programmes in Tertiary Institutions in Ibadan, Nigeria

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ABSTRACT

The study assessed students' participation in forestry programmes in selected tertiary institutions in Southwestern Nigeria, with emphasis on institutions in Ibadan and other key academic centres. A multistage sampling procedure was used to select 100 respondents from four major institutions offering forestry programmes. Data were collected through a structured questionnaire and analyzed using descriptive statistics and Chi-square analysis. The results showed that the majority of respondents (59%) were within the age range of 20–25 years, while female students (52%) were slightly more than their male counterparts (48%). Students' participation in forestry programmes was generally moderate to high, as evidenced by high involvement in course registration (93%), class attendance (80%), practical sessions (75%), research activities (82%), and field trips (70%). However, participation in voluntary forestry activities such as tree planting and conservation was relatively low (48%). Major challenges affecting participation included poor internet access (55%), financial constraints (45%), poor departmental funding (43%), lack of modern facilities (39%), and limited internship opportunities (31%). The Chi-square analysis revealed that age ($\chi^2 = 8.42$, $p < 0.05$) and academic level ($\chi^2 = 12.64$, $p < 0.05$) had significant relationships with students' participation, while sex and religion were not significant. The study concluded that although students were actively engaged in academic aspects of forestry programmes, their involvement in extracurricular and voluntary activities remained limited. The study recommends prioritizing reliable internet and digital resources, targeted financial support, more frequent field practical's, equitable allocation of field and research opportunities, and stronger internship provision to improve participation.

Received: 16 May 2026

Accepted: 26 May 2026

Published: 13 Aug. 2026

Keywords: Forestry Education, Student Participation, Tertiary Institutions, Practical Training, Southwestern Nigeria

INTRODUCTION

Forestry education in Nigeria had long been recognized as a critical component of environmental sustainability, natural resource management, and national development. Historically, the establishment of forestry institutions dated back to the colonial era, when the need for trained personnel in forest management became evident. Over the years, forestry programmes in Nigerian universities had combined classroom instruction with field-based practical training to equip students with both theoretical and technical knowledge (Ede et al., 2021). Despite these developments, concerns had increasingly emerged regarding the level of student participation in forestry programmes, particularly in key academic centres within states such as Oyo, Ogun, and Ondo. Participation in forestry education was considered essential for producing skilled professionals capable of addressing environmental challenges such as deforestation, biodiversity loss, and climate change. However, evidence from previous studies suggested that although forestry programmes were available in many institutions across Southwestern Nigeria, student engagement in these programmes remained inconsistent and, in some cases, inadequate. Scholars such as Akinyemi and Oduwale (2019) reported that student participation in practical forestry activities was often below expectation, while Obaniyi et al. (2020) noted that involvement in extracurricular forestry activities was generally low. This trend raised concerns about the effectiveness of forestry education in achieving its intended goals.

In Southwestern Nigeria, which hosted prominent institutions such as the University of Ibadan, Federal College of Forestry in Ibadan, Federal University of Agriculture Abeokuta, and the Federal University of Technology Akure, forestry education had been well established, yet there remained a noticeable gap in understanding the actual level of student participation. While many students enrolled in forestry courses, their level of engagement in fieldwork, research activities, and professional development programmes varied significantly. According to Ede et al. (2021), active participation in forestry-related activities such as seminars, workshops, and field excursions was crucial for developing practical competencies, yet many students did not fully utilize these opportunities. Furthermore, societal perceptions of forestry as a less prestigious career compared to fields such as medicine and engineering had also contributed to declining interest and participation among students. Salisu and Ahmed (2017) observed that many students viewed forestry as a fallback option rather than a preferred career choice, which negatively affected their level of commitment and engagement. This perception, combined with limited awareness of career prospects in forestry, further reduced students' motivation to actively participate in the programme. Given these problems, it became necessary to conduct a comprehensive assessment of students' participation in forestry programmes in tertiary institutions across Southwestern Nigeria. Such an assessment was important for identifying gaps in participation, understanding the underlying factors influencing student engagement, and

providing insights for improving forestry education. By examining students' socio-economic characteristics, participation in forestry programme, and this study aimed to contribute to the development of strategies that would enhance student involvement and strengthen forestry education in the Southwestern region.

MATERIALS AND METHODS

Study Area

The study was conducted in Southwestern Nigeria, a region known for hosting several tertiary institutions that offer forestry programmes. The region comprises Oyo, Ogun, Osun, Ondo, Ekiti, and Lagos States. Southwestern Nigeria was selected due to the presence of notable forestry institutions and a high concentration of students enrolled in forestry-related programmes. Geographically, the region lies between latitudes 6°30'N and 8°00'N and longitudes 3°30'E and 6°00'E.

Target Population

The target population for the study consisted of students enrolled in selected tertiary institutions offering forestry programmes within the study area. The selection of these institutions provided access to a representative population of forestry students and enabled the study to examine the interaction between academic forestry programmes and surrounding forest ecosystems.

Sampling Procedure and Sample Size

A multistage sampling procedure was used to select respondents for the study. In the first stage, four tertiary institutions were purposively selected based on the availability of forestry programmes. The selected institutions were the University of Ibadan, Federal College of Forestry, Ibadan, Federal University of Agriculture, Abeokuta, and Federal University of Technology, Akure. These institutions were selected because they were among the major institutions offering forestry programmes in Southwestern Nigeria. In the second stage, proportionate sampling technique was used to select respondents from the selected institutions. The number of respondents was determined using the formula proposed by Diaw *et al.* (2002). A sampling intensity of 30% was used for the University of Ibadan, Federal College of Forestry, Ibadan, Federal University of Agriculture, Abeokuta, and Federal University of Technology, Akure. At the University of Ibadan, respondents were selected from the Departments of Forest Production and Products and Social and Environmental Forestry in the Faculty of Renewable Natural Resources. At the Federal College of Forestry, Ibadan, respondents were selected from students in Forestry Technology and other departments involved in forestry-related programmes. The variation in sampling intensity was due to differences in student population across the institutions. A total of 100 respondents were selected across the four institutions, as shown.

Data Collection

Data were collected from primary sources through the use of a well-structured questionnaire. The questionnaire was

administered to the selected students across the four institutions. The instrument was validated by experts in forestry and agricultural extension, and necessary corrections were made before the final administration. The reliability of the instrument was tested using the test-retest method to ensure consistency.

Method of Data Analysis

Data collected were analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequency counts, percentages, and mean scores were used to describe the socio-economic characteristics of the students and their level of participation in forestry programmes. Inferential statistics, specifically the Pearson Product Moment Correlation (PPMC), were used to analyze the relationship between selected socio-economic characteristics and students' participation in forestry programmes. The results were presented in tables and discussed in line with the objectives of the study.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents

The socio-economic characteristics of the respondents were presented in Table 1. The results showed that female respondents (52%) were slightly higher than male respondents (48%), indicating that both genders were fairly represented in forestry programmes in the study area. This finding suggested that forestry education was no longer dominated by male students alone, as previously reported in earlier studies. The age distribution showed that the majority of the respondents (59%) were between 20–25 years, followed by those within 26–31 years (35%), while only a small proportion (6%) were below 20 years. This implied that most forestry students were within the active academic and productive age group, which could positively influence participation in academic and field activities. This finding was consistent with the report of Akinyemi and Oduwole (2019), who stated that most forestry students in Nigerian universities were young adults within the age bracket of 20–30 years. This age group was considered active and capable of participating in physically demanding forestry activities such as fieldwork and practical training (Obaniyi *et al.*, 2020).

The religious distribution showed that the majority of the respondents were Christians (57%), followed by Muslims (40%), while only 3% practiced traditional religion. This reflected the general religious distribution pattern in Southwestern Nigeria. The distribution of respondents by academic level indicated that the highest proportion of respondents were in 300 level (39%), followed by 400 level students (27%), while 100 and 200 level students accounted for 17% each. This suggested that students in higher levels were more involved in forestry programmes, possibly due to increased exposure to practical courses, research projects, and fieldwork. This finding supported the work of Ede *et al.* (2021), who reported that participation in forestry activities increased with academic level due to increased academic workload and practical exposure.

Table 1: Socio-Economic Characteristics of Respondents

Variables	Frequency	Percentage (%)
Sex		
Male	48	48.0
Female	52	52.0
Age		
< 20	6	6.0
20–25	59	59.0
26–31	35	35.0
Religion		
Christianity	57	57.0
Islam	40	40.0
Traditional	3	3.0
Level		
100	17	17.0
200	17	17.0
300	39	39.0
400	27	27.0
Total	100	100

Level of Students' Participation in Forestry Programmes

The level of students' participation in forestry programmes was presented in Table 2. The results showed that a high proportion of respondents (93%) had registered for forestry courses, indicating a high level of enrollment in forestry programmes. Similarly, 80% of the respondents attended forestry classes regularly, while 82% indicated that the forestry programme included both theoretical and practical components. This suggested that forestry education in the study area combined both classroom learning and practical training. This finding was consistent with the work of Akinyemi and Oduwole (2019), who reported that forestry programmes in Nigerian universities were structured to integrate theoretical knowledge with practical exposure to enhance students' competencies. In a similar vein, Adekunle et al. (2018) noted that effective forestry education required a balance between classroom instruction and hands-on field experience.

The findings further revealed that 70% of the respondents had participated in forestry field trips or excursions, while 75% had been involved in forestry practical sessions or laboratory work. Participation in research and project work was also relatively high (82%), indicating that students were actively involved in academic research activities. This aligned with the findings of Ede et al. (2021), who emphasized that engagement in fieldwork and research activities significantly enhanced students' technical skills and preparedness for forestry careers. Similarly, Ogunjinmi et al. (2017) reported that exposure to field excursions and laboratory practices improved students' understanding of forest ecosystems and management techniques.

In addition, 74% of the respondents had participated in forestry workshops, conferences, or seminars, while 77% reported that they regularly consulted lecturers or supervisors

on forestry-related topics. This indicated a good level of academic engagement among the students. This observation corroborated the findings of Ajayi and Adeyemo (2020), who stated that participation in academic seminars and interaction with lecturers contributed significantly to students' academic performance and professional development in forestry-related disciplines. Furthermore, Oladele et al. (2019) noted that mentorship and regular academic consultation played a critical role in shaping students' interest and commitment to forestry programmes. However, participation in voluntary activities such as tree planting and forest conservation was relatively low (48%), suggesting that students were more involved in compulsory academic activities than voluntary forestry activities. This finding agreed with Obaniyi et al. (2020), who reported that students' participation in extracurricular forestry activities was generally low compared to classroom and compulsory academic activities. Similarly, Salisu and Ahmed (2017) observed that limited motivation and poor awareness of the importance of conservation initiatives often reduced students' willingness to engage in voluntary forestry activities. In addition, Babalola and Nwalo (2019) highlighted that inadequate institutional support and lack of incentives discouraged students from participating in non-compulsory environmental programmes. In summary, the findings indicated that students' participation in forestry programmes in the study area was moderate to high, particularly in academic and practical activities, but relatively low in voluntary and extracurricular forestry activities. This pattern was also reported by Ojo et al. (2020), who concluded that while students were generally active in formal academic components of forestry education, their involvement in informal and voluntary activities remained limited due to institutional, motivational, and socio-economic constraints.

Table 2: Level of Students' Participation in Forestry Programme in the Study Area

S/N	Variables	Yes	No
1.	Have you ever registered for a course in the forestry programme?	93(93.0)	7(7.0)
2.	Do you attend forestry classes regularly?	80(80.0)	20(20.0)
3.	Does the forestry programme include both theoretical and practical components?	82(82.0)	18(18.0)
4.	Have you participated in forestry field trips or excursions organized by your department?	70(70.0)	30(30.0)
5.	Have you been involved in any forestry practical sessions or lab work?	75(75.0)	25(25.0)
6.	Do you actively contribute during forestry lectures or discussions?	73(73.0)	27(27.0)
7.	Have you taken part in any forestry-related research or project work?	82(82.0)	18(18.0)

S/N	Variables	Yes	No
8.	Do you belong to any student association or club related to forestry?	65(65.0)	35(35.0)
9.	Have you ever volunteered for a tree planting or forest conservation activity organized by your institution?	48(48.0)	52(52.0)
10.	Do you seek additional learning materials or resources on forestry outside of classwork?	66(66.0)	34(34.0)
11.	Have you participated in forestry-based workshops, conferences, or seminars?	74(74.0)	26(26.0)
12.	Do you consult your lecturers or supervisors regularly on forestry-related topics or projects?	77(77.0)	23(23.0)
13.	Have you completed an internship or industrial training in a forestry-related field?	72(72.0)	28(28.0)
14.	Do you participate in group discussions or study groups related to forestry courses?	75(75.0)	25(25.0)
15.	Have you ever presented a paper, report, or project related to forestry in a departmental or faculty event?	82(82.0)	18(18.0)

Challenges to Effective Participation in Forestry Programmes

The challenges affecting students' participation in forestry programmes were presented in Table 3. The results showed that poor internet access was identified as a major challenge by 55% of the respondents. This was observed to have affected students' ability to access online learning materials, research articles, and forestry databases, which were essential for academic development. This finding corroborated the reports of Ede et al. (2021) and Ogunjinmi et al. (2018), who noted that inadequate access to digital resources significantly limited students' academic engagement and research capacity in forestry and environmental programmes. Financial challenges and gender favoritism were each identified as major challenges by 45% of the respondents. Financial constraints were found to limit students' ability to participate in field trips, excursions, and practical training that required transportation and field equipment. This finding was consistent with Obaniyi et al. (2020), who reported that financial limitations were a major barrier to student participation in practical forestry training in Nigerian universities. Similarly, Adekunle and Agbaje (2017) observed that insufficient financial support reduced students' involvement in field-based learning activities, while Ajayi (2015) emphasized that economic hardship among students often constrained participation in resource-intensive academic programmes such as forestry.

The study also revealed that poor funding of the department (43%), lack of role models (42%), lack of modern facilities (39%), and safety concerns during field trips (36%) were major challenges affecting students' participation. In addition, limited internship placement (31%) was also identified as a constraint. These findings implied that

institutional and infrastructural problems were significant factors affecting students' participation in forestry programmes. According to Akinyemi and Oduwale (2019), inadequate funding and lack of modern forestry equipment reduced the quality of practical training and discouraged students from active participation. In the same vein, Olatunji and Adebayo (2019) reported that poorly equipped laboratories and limited access to modern forestry tools hindered effective skill acquisition among students. Furthermore, Oladele et al. (2016) highlighted that the absence of professional mentors and role models within forestry institutions reduced students' motivation and career commitment.

Safety concerns during field trips were also found to influence participation, as students often perceived fieldwork as risky due to exposure to forest hazards and inadequate safety measures. This observation aligned with the findings of Fasakin et al. (2020), who reported that concerns about personal safety and insufficient logistical support discouraged students from fully engaging in outdoor forestry activities. Moreover, the issue of limited internship placement was consistent with the study of Salisu and Ahmed (2017), who noted that inadequate industrial attachment opportunities reduced students' practical exposure and weakened their professional preparedness.

Overall, the findings suggested that a combination of financial, institutional, and infrastructural challenges significantly influenced students' participation in forestry programmes. These constraints not only limited academic engagement but also hindered the development of practical competencies required for effective forestry practice, as similarly reported by Ogunwale and Olufemi (2018).

Table 3: Challenges to Effective Participation of Students in Forestry Programmes

Challenges	Major (%)	Minor (%)	Not a Challenge (%)
Poor internet access	55	25	20
Few or no field practical	43	32	25
Course too theoretical	32	56	12
Lack of modern facilities	39	41	20
Limited internship placement	31	47	22
Safety during field trips	36	38	26
Financial challenges	45	33	22
Gender favoritism	45	31	24
Poor funding of department	43	33	24
Lack of role models	42	33	25

Chi-Square Results

Relationship Between Selected Socio-Economic Characteristics and Students' Participation in Forestry Programmes (Chi-Square Analysis)

The Chi-square analysis presented in Table 4 showed the relationship between selected socio-economic characteristics and students' participation in forestry programmes. The results revealed that sex had no significant relationship with students' participation in forestry programmes ($\chi^2 = 2.31$, $p > 0.05$). This implied that both male and female students participated equally in forestry programmes. This finding supported the earlier result which showed a fairly balanced gender distribution among forestry students. However, age had a significant relationship with students' participation in forestry programmes ($\chi^2 = 8.42$, $p < 0.05$). This implied that students within certain age groups participated more actively

in forestry activities than others. This could be because older students were more academically mature and more involved in research, fieldwork, and internships.

Religion also had no significant relationship with students' participation ($\chi^2 = 1.76$, $p > 0.05$), which indicated that religious affiliation did not influence students' involvement in forestry programmes. Also, academic level showed a significant relationship with students' participation in forestry programmes ($\chi^2 = 12.64$, $p < 0.05$). This implied that students in higher academic levels (300 and 400 level) participated more actively in forestry programmes than students in lower levels. This finding agreed with Ede et al. (2021), who reported that senior students participated more in forestry practicals, seminars, research projects, and internships due to academic requirements and increased exposure to forestry training.

Table 4: Chi-Square Analysis of Relationship Between Socio-Economic Characteristics and Students' Participation

Variables	Chi-square (χ^2)	df	p-value	Decision
Sex	2.31	1	0.128	Not Significant
Age	8.42	2	0.015	Significant
Religion	1.76	2	0.415	Not Significant
Academic Level	12.64	3	0.005	Significant

CONCLUSION

The study concluded that students' participation in forestry programmes in tertiary institutions in Southwestern Nigeria was largely satisfactory in terms of academic engagement but inadequate in voluntary and extracurricular activities. The findings showed that students actively participated in lectures, practical sessions, research projects, and field excursions, which indicated that the core academic structure of forestry education was functional. However, the relatively low participation in activities such as tree planting, conservation programmes, and forestry-related clubs suggested a gap in holistic engagement. Furthermore, the study established that age and academic level significantly influenced participation, implying that maturity and academic exposure played important roles in shaping students' involvement. In contrast, gender and religion did not significantly affect participation, indicating inclusiveness within the forestry programmes. Despite these positive outcomes, several institutional and socio-economic challenges, including poor funding, inadequate facilities, financial constraints, and limited access to internships, were identified as major barriers to effective participation. Overall, the study emphasized the need for a more supportive academic and institutional environment that would not only sustain students' academic participation but also enhance their involvement in practical and voluntary forestry activities essential for professional development.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations were made:

- Tertiary institutions offering forestry programmes should increase funding to improve infrastructure, provide modern equipment, and support practical training activities.
- Institutions should strengthen internship and industrial training opportunities by establishing partnerships with forestry agencies, environmental organizations, and private sector stakeholders.
- There should be increased awareness campaigns to promote forestry as a viable and prestigious career path, thereby improving students' interest and commitment.

- Financial support mechanisms such as scholarships, grants, and subsidies should be provided to assist students in participating in field trips, excursions, and other practical activities.
- Departments should encourage students' participation in extracurricular activities such as tree planting, conservation programmes, and forestry clubs to enhance practical exposure and environmental responsibility.
- Improvement in internet facilities and access to digital learning resources should be prioritized to support research and academic development.

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