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Gender and choice of forestry as alternative career among science-based students in University of Ibadan, Nigeria

By

Azeez, Ismail O.

Abstract

Forestry education is imperative to coping with new demands in forest management and has also been observed to have its advantages on the Nigerian economy. However, years of neglect have left very huge gaps in producing the required number of graduates of the discipline. It is important to note that training females is important if forestry is to move forward. This study investigated the prospect of inculcating and improving gender consideration in student enrolment into the forestry profession. Using questionnaire survey research design, a two-stage stratified random sampling technique was adopted for the study where the entire University of Ibadan community was stratified into faculties. About 30% of the faculties whose admission requirement met that of the Department of Forest Resources Management (DFRM), University of Ibadan, Nigeria, and 10% of the students registered in each selected faculty were randomly selected for the study. Respondents were interviewed using two hundred and fifty sets of structured questionnaire. More than half of the respondents (52.9%) believe in the prosperous future of forestry profession but, 29.3% and 6.7% of them were of the opinion that Nigeria is not ready for the profession and that a degree is not necessary to practice respectively. Gender was found to have limited impact on the respondent's perception of forestry as a profession. However, their rating of the forestry profession ($\chi^2 = 9.03$; $df = 3$; $Pr \leq 0.03$), its gender suitability ($\chi^2 = 39.44$; $df = 1$; $Pr \leq 0.01$) and competitiveness in the labour market ($\chi^2 = 4.22$; $df = 1$; $Pr \leq 0.04$) were all gender dependent. The study concluded that though partly impacting, gender suitability is not the main limitation to forestry education development in Nigeria. The need for curriculum review of forestry programme and extension of the forestry profession were suggested.

Keywords: Gender, forestry profession, forestry education and economic development

Introduction

According to Clawson (1958), forests represent the most important incentive to industrialization. Much of the water used in homes, factories, for miscellaneous urban purposes and for irrigation flows from watersheds backstopped largely or wholly by forests (Lipper, 2007). In Nigeria, forest was reflected as an important source of re-investible capital and a source of income (FMANR, 1988). It also serves as a foundation for industrialization and enhances the stability of the rural

population (FMANR, 1988). Nonetheless, African natural forests have been reported to be under increasing pressure as a result of increasing demand for forest products (Hamid, 2004). It therefore became glaring that the available forest resources could not be taken for granted without conscious programme interventions. This necessitates a paradigm shift in forest management and hence a re-orientation in forestry training.

Apart from this, economic and social developments throughout the world are increasingly driven by the advancement and application of

knowledge. This was reposed by The World Bank (1999), which sees education in general and higher education in particular, as fundamental to the construction of a knowledge economy and society in all nations. According to Porter (1990), knowledge constitutes the foundation of a country's competitive advantage through its capacity to augment productivity. The study of forestry has also been observed to have its advantages on the Nigerian economy (Adeyoju, 1975; Nwoboshi, FAO, 2000). Thus, education is imperative to sustainable utilization and management of forest resources. Hanid (2004) submitted that forestry education is imperative to coping with new demands in forest management.

In Nigeria, there was no formal training for indigenous forestry staff prior to 1938 (Oseni, 1988). Yet, on the job trainings on elementary botany, useful timber species identification, simple survey, forest laws and protection and nursery techniques were provided. In the late fifties, a school of forestry was opened in Jos, Plateau State to provide a six month formal training on nursery practice and afforestation techniques in the savanna areas of Nigeria when the need for it was felt. Similar schools were established in Ibadan, Oyo State, and Obubra, Cross River State, in the late sixties and the seventies to impart experience from those parts of Nigeria on uniformed forestry staff. The Department of Forestry, University of Ibadan was established in 1963 to provide professional level forestry training not only in Nigeria but in the West Africa sub-region (Wyatt-Smith and Redhead, 1988). Presently, apart from Ibadan, there are over ten Nigeria universities offering forestry training at professional levels while vocational forestry training schools have also increased.

In spite of this progress as well as the prospect and importance of forestry in any nation's social and economic development, years of

neglect of the forestry discipline have left very huge gaps in producing enough managers to man Nigeria forests. Nair (2004) reported a decline in the state of professional forestry education both in developing and developed countries while symptoms of the decline were observed by Van Lierop (2003) to include reduction in funding to educational institutions and low student enrolment rate. It is also worthy of note that female enrolment for training in forestry management is low. As observed by Azecz and Aiyedun (1999), forestry in Nigeria has been a male dominated profession. Such observation is not limited to Nigeria alone. In the United States, Kuhns, Bragg, and Blahna (2002) observed that women and minorities are well established in many professions and they hold entry-level to upper management positions. However, the case is different with natural resources profession where entry and advancement of females and minorities is lagging behind what is needed (Otero and Brown, 1996). This was corroborated by comparing forestry employment data with overall United States of America (USA) labor force demographics (U. S. Census Bureau, 1998). However, there is need to involve the female sex if forestry is to move forward (Caswell, 1998). This study therefore investigated the prospect of improving female students enrolment into the forestry profession.

Scope of Study

The University of Ibadan was established in 1948 at the Northern part of Ibadan city, which is between latitude 7° 26' and 7° 28'N and longitude 3° 52' and 3° 55'E. The university as at 2006 has 13 Faculties (www.ui.edu.ng/facultyandunits, 2006), 9 of which are science based with the exclusion of Faculty of the Social Sciences. Requisite qualification into the Department of Forest Resources Management includes credit passes in physical and biological sciences, which does not apply in the

social sciences. Hence, the non-inclusion of Faculty of The Social Sciences, University of Ibadan, in this study.

The study was carried out among science-based students of University of Ibadan and was restricted to students in the Faculties of Agriculture and Forestry, Veterinary Medicine and Technology. The Faculty of Agriculture and Forestry was established in 1949 and presently comprises seven Departments. There are 1,168 students in the Faculty as at 2001/02 session (Table 1). The then Department of Forestry now Department of Forest Resources Management was established in 1963 by the Federal Government of Nigeria with assistance from the Food and Agricultural Organization of the United Nations. Faculty of Technology was established in 1967. As at 2001/02 session, there are seven Departments in the Faculty with 1,095 student population. Faculty of Veterinary Medicine was established in 1963 and it has eight Departments and 490 students as at 2001/02 session.

Sampling and Study Population

A two-stage stratified random sampling technique was adopted for the study where the entire university community was stratified into Faculties and only those faculty (69.2%) whose admission requisite meet that of the Department in focus were selected. At the second stage, about 30% of the Faculties selected were then randomly selected as the study sites. Thus, the study covered 3 Faculties with a total of 2,753 as at the time of the study (2001/02 academic session). However, final selection of respondents for the study was not based on departments but their level of study in the selected faculties. Respondents were then interviewed using two hundred and fifty copies of structured questionnaire out of which 225 were retrieved (Table 1); 126 males, 98 females and one none response to gender (Fig. 1). The skewness in questionnaire administration was natural – more males were enrolled in the Faculties under study. About 10% of the students registered in each Faculty were interviewed for the study.

Table 1: Questionnaire Distribution and Retrieval on Faculty Basis among Respondents' in the Study Area

Faculty	Questionnaires			Total Number of Students
	Distributed	Retrieved	%	
Agriculture and Forestry	100	89	89	1,168
Technology	100	87	89	1,095
Veterinary	50	49	98	490
Total	250	225		2,753

Source: Field Survey 2002

The questionnaire was designed to elicit information on the background of respondents, their awareness of forestry, the forestry profession and perception of the profession as a career. The test instrument was validated via the face and content

validity procedure involving scholars in forestry education and extension. A test retest reliability of 0.92 from surveys, which were carried out at the University of Agriculture, Abeokuta, Nigeria confirmed the reliability of the test questionnaire.

Results and Discussion

Respondent's Demography

Table 2: Distributions of Respondents by Age, Marital Status and Religious Background

	Indices	Frequency	%
Age (Years)	15 -- 20	34	15.1
	>20 ≤ 25	154	68.4
	> 25 ≤ 30	34	15.1
	>30 ≤ 35	2	0.9
	No Response	1	0.4
Marital Status	Single	224	99.6
	Married	1	0.4
Religious background	Christianity	191	84.9
	Islamic Religion	33	14.2
	African Traditional Religion	1	0.4

Source: Field Survey, 2003

The study (Table 2) found that majority of the respondents (98.6%) fall within 15 and 30 years age bracket. Only 0.9% of them were above 30 years of age. Also, Majority of the respondents (99.6%) for the study were single and were mostly (84.9%) Christians. Only 14.7% and 0.4% of the respondents practised Islamic and African

Traditional Religions respectively. However, the view of all the respondents are important if the forestry profession is to move forward. As submitted by Chesney (1981) minorities are needed in forestry professions so that their different cultural viewpoints are included in policy and decision-making processes.

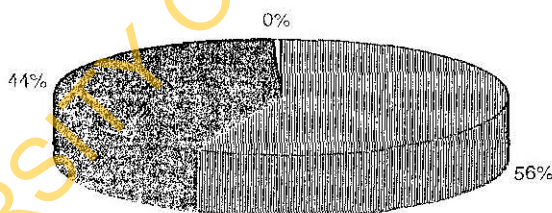


Figure 1: Pie-Chart Showing Gender Distribution among Respondents

Gender distribution among respondents (Figure 1) reveals that more males (56.0%) were interviewed compared to 43.6% of their female counterparts. This is due to the skewness of student enrolment in favour of the male in the three Faculties under study. It may also be explained by higher education enrollment growth rates, which were highest in the Southern Region,

followed by the North-East Region (Saint *et al.*, 2003). The distribution deviates from NUC's student enrolment record during the 1990s in sciences, which is 34% for female and 59% for male (NUC, 2002). However, it is an improvement on the 21.8% female forestry researcher documented for Nigeria by Spilsbury, Kowero and Tchala-Abina (1999).

Table 3: Frequency Distribution of Respondents' Position among their Siblings

Identified Positions	Frequency	%
First	50	24.2
Second	40	17.8
Third	37	16.4
Fourth	38	16.9
Fifth	20	8.9
Sixth	16	7.1
Seventh	4	1.8
Eighth	2	0.9
No response	18	8.0
Total	225	100.0

Source: Field Survey, 2003

On positions of respondents in their respective families, the study (Table 3) found that this range from being the first to the eighth. Although 8% of the respondents did not respond to the poser, more than half (56.4%) fall within the first and the third position in their family. Another 25.8% fall

within the fourth and fifth position. As submitted by NICEC (1996), the position that young people and their family occupy in the social structure affects their view on career choice and thus influences their aspiration and expectation.

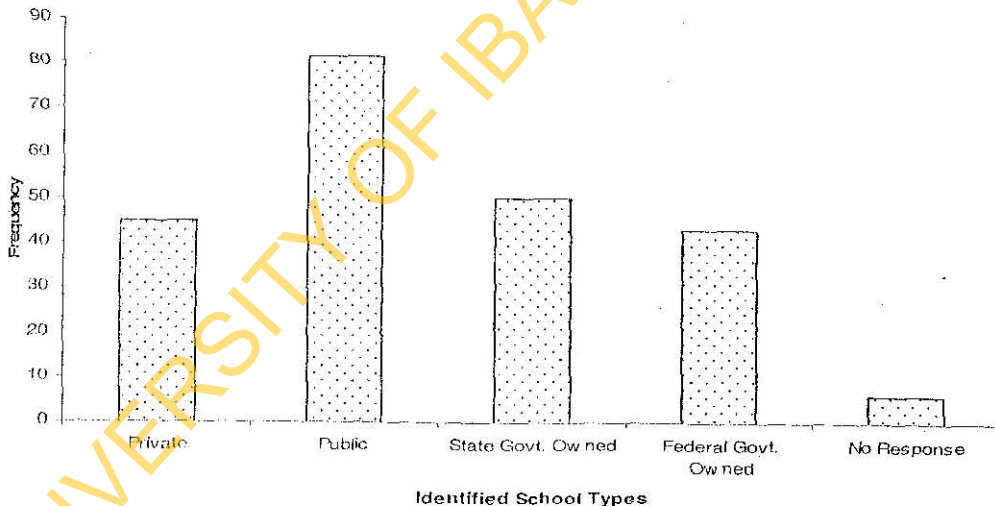


Fig. 2: Bar Chart Showing Types of Secondary Schools Attended by Respondents

The study (Figure 2) also revealed that only 20% of the respondents attended private schools. The rest attended public secondary schools. However, some of the public schools fall within government model secondary schools both at federal and state levels. These schools admitted candidates from different part of the country. About 41.3% of the respondent attended

such public schools while 36% attended the locally patronized public schools which are financed by state governments. The implication of this is lack of or inadequate counseling on the forestry profession among 80% of the respondents who are in public schools. Leatherberry and Wellman (1988) also noted that high-school guidance counselors may inadequately

inform minority students or may even give negative impressions of forestry careers.

Table 4: Distribution of Respondents by Level of Study at the University

Identified Levels	Frequency	%
600	02	0.9
500	29	12.9
400	45	20.0
300	65	28.9
200	25	11.1
100	55	24.4
No response	4	1.8
Σ	225	100.0

Source: Field Survey, 2003

The study (Table 4) sampled opinions from respondents at different levels of study in the university, but more than

half of them (60.0%) are in their 200 to 400 level of study. Only 0.9% of them are in their 600 level of study.

Table 5: Distribution of Respondents by their Parents Occupation

Identified Occupation Types	Mother's		Father's	
	Frequency	%	Frequency	%
Civil service	88	39.1	77	34.2
Private Business	94	41.8	92	40.9
Corporate Business	12	5.3	18	8.0
Peasant farming	3	1.3	11	4.9
Artisan	3	1.3	03	1.3
No Response	25	11.1	24	10.7
Σ	225	100.0	225	100.0

Source: Field Survey, 2003

Examining the parental background of the respondents (Table 5), the study found that 40.9% of the respondent's fathers are engaged in private businesses while the fathers of another 34.2% of them are civil servants. The fathers of 8.0% of them are in corporate businesses while that of 1.3% are peasants. On their mother's occupation, the mothers of 41.1% of them are in private businesses and that of another 39.1% are civil servants. The mothers of 5.3% are in

corporate businesses while those of 1.3% are artisans. According to NICEC (1996), apart from career advisers, parents are the most potent influence on young people's career choice. It was also observed (NICEC, 1996) that most people whose parents are in skilled and professional occupations tend to have more aspirations and more access to career opportunities. However, the danger portend in this is that some parents aspiration may be inappropriate for their wards.

Table 6: Distribution of Respondents Perception of the Prospect of Forestry Profession in Nigeria

Identified Perception	Frequency	%
Highly Prosperous	33	14.7
Prosperous	86	38.2
Not Prosperous	40	17.8
Highly Unprosperous	4	1.8
Can not say	58	25.8
No Response	4	1.8
Total	225	100.00

Source: Field Survey, 2003

Opinions of respondents were also sought on the prospect of forestry profession in Nigeria (Table 6). The study found that more than half of the respondents (52.9%) perceived a

prosperous future for the forestry profession while 19.6% held contrary opinion. Another 25.8% are indifferent to the profession probably owing to their lack of awareness about it.

Table 7: Distribution of Reasons advanced by Respondents for their Perception of the Prospect of Forestry Profession in Nigeria

Identified Sources	Frequency	%
Nigeria is not ready for the profession	66	29.3
Degree is not necessary for its practice	15	6.7
The future is bright	36	16.0
Forestry professionals are few	38	16.9
World can not do without forestry	63	28.0
No Response	7	3.1
Total	225	100.00

Source: Field Survey, 2003

Advancing reasons for their perception of forestry profession prosperity (Table 7), 29.3% and 6.7% of the respondents were of the opinion that the country is not ready for the profession and that a degree is not necessary to practice the profession respectively. Such conclusion may be adduced to brain drain resulting in 53% staff shortage documented in the science discipline in Nigerian tertiary institutions (NUC, 2002). Forest resources can be strategically tapped for development through research (Temu, 2004), which could only be successfully conducted through synergistic interplay of different skills (Spilsbury *et al.*, 1999). However, human resources survey in Forestry Research Institutions in some west and central Africa (Spilsbury *et al.*, 1999) revealed that the least qualification is a bachelor's degree

among researchers. Hence, the negative perception of respondents may also be attributed to low or lack of awareness about the forestry profession among them.

However, another school of thought (16.0%) sees a bright future for the profession while some (28%) believe the world cannot do without the profession. This may hinge on the expected impact of special campus refurbishment and rehabilitation grants of substantial size, awards for university capital projects from the Petroleum Trust Fund, and similar grants from the Education Tax Fund (Saint, Teresa and Strassner, 2003). It may also be due to the awareness level of these groups of respondents about the importance of forests resources to development.

Gender and Perception of the Forestry Profession among Respondents
Table 8: Summary of Chi-Square Analyses on Impacts of Gender on Perception of the Forestry Profession among Respondents

Perception parameters	Pearson's X ² Value	Degree of Freedom	Pr
Studying heart-desired profession?	0.01	1	≥ 0.90
Level of study at the University	15.06	5	≤ 0.01*
Know Faculty of Agric. and Forestry?	0.16	1	≥ 0.69
Know Department of Forest Resources Mgt.?	0.15	1	≥ 0.69
Consideration of a career in DFRM?	0.47	1	≥ 0.49
Derive benefit from forest resources?	1.00	1	≥ 0.31
Rating of the prospect Forestry Profession	3.64	4	≥ 0.46
Competitiveness of Forestry in labour market	4.22	1	≤ 0.04*
Forestry contributes to national development?	1.24	1	≥ 0.26
Is forestry profession suitable to any gender?	39.44	1	≤ 0.01*
Would you love your spouse to be a forester?	0.74	1	≥ 0.30
Need to encourage the study of forestry?	0.002	1	≥ 0.96
Relative job prospect for forestry profession.	1.68	3	≥ 0.64
Do forests have adversities?	0.34	1	≥ 0.56
Rating of forestry profession on preference scale	9.03	3	≤ 0.03*

* Significant at $P \leq 0.05$

Examining some selected parameters against gender distribution among respondents (Table 8), it was observed that gender has limited impact on their perception of forestry as a profession. For example, the rating of forestry profession, gender suitability of the forestry profession and the profession's competitiveness in the labour market are all dependent on gender distribution among respondents (Table 8). However, interest of respondents on having a forester spouse, popularity of the Department of Forest Resources Management (DFRM) and even the

Faculty of Agriculture and Forestry (FAF), consideration of a career in the DFRM and the rating of the prospect of forestry profession are not dependent on gender of respondents. This might be due to the less-orientation of girls and women than boys and men toward participation in science-oriented education and careers for a number of reasons (American Association of University Women, 1998), though Leslie, McClure, and Oaxaca (1998) feel that this predisposition is largely determined prior to women entering college.

Table 9: Cross-Tab Analyses of Impacts of Gender on Respondents' Perception of the Forestry Profession

Indices of Perception	Indices of Rating	Sex		Total
		Male	Female	
Level of study at the University	100 Level	40 (74.1)	14 (25.9)	54 (100.0)
	200 Level	11 (44.0)	14 (56.0)	25 (100.0)
	300 Level	34 (52.3)	31 (47.7)	65 (100.0)
	400 Level	28 (62.2)	17 (37.8)	45 (100.0)
	500 Level	11 (37.9)	18 (62.1)	29 (100.0)
	600 Level	2 (100.0)	0 (0.0)	2 (100.0)
SUM (100.0)				217
Is forestry Competitive in the Labour Market?	Yes	35 (16.9)	15 (7.2)	50 (24.2)
	No	84 (40.6)	73 (35.3)	157 (75.8)
SUM (100.0)				207
Gender suitability of Forestry Profession	Yes	104 (47.7)	42 (19.3)	146 (67.0)
	No	19 (8.7)	53 (24.3)	72 (33.0)
SUM (100.0)				218

Rating of Forestry as alternative Profession	1 st Choice	81 (53.6)	70 (46.4)	151 (100.0)
	2 nd Choice	18 (47.4)	20 (52.6)	38 (100.0)
	3 rd Choice	7 (63.6)	4 (36.4)	11 (100.0)
	Can't Say	20 (83.3)	4 (16.7)	24 (100.0)
SUM (100.0)				224

* Percentages of total are in parentheses for level of study and rating of forestry only, others are percentage of sum.

Except at 500 level, more male were interviewed for this study while all respondents interviewed at 600 level were male (Table 9). Also, the perception of respondents on the competitiveness of forestry profession in the labour market is low. However, male respondents (70.0%) perceive the forestry profession more competitive than their female counterparts (30.0%). On gender suitability of the profession, the study generally reveals forestry profession as suited to any gender but the skewness of the respondents towards the male gender may partly be responsible for this. Even though 146 (66.97%) of the 218 respondents favour gender suitability, more of the optimists (71.2%) were

males. The ratio of optimists to pessimists among the females was 42:53 as compared to 104:19 among the male (Table 9). The profession might be unattractive to the female gender as observed by Kuhns *et al.* (2002), who hindered female and minority participation in urban forestry professions on attractiveness of the profession.

Feeling the pulse of respondents on their alternative profession, more males (53.6%) than female (46.4%) opted for forestry as their first alternative choice. However, more females (52.6%) prefer the profession as second alternative.

Table 10: Summary of Chi-Square Analyses on Age Distribution and Perception of the Forestry Profession among Respondents

Perception parameters	Pearson's χ^2 Value	Degree of Freedom	Pr
Sex	10.29	3	$\leq 0.02^*$
Rating of own discipline	12.20	9	≥ 0.20
Studying heart-desired profession?	7.48	3	≥ 0.06
Know Faculty of Agric. and Forestry?	36.51	3	$\leq 0.01^*$
Know Dept. of Forest Resources Management?	5.11	3	≥ 0.10
Consider a career in DFRM?	5.40	3	≥ 0.14
Derive benefit from forest resources?	7.60	3	≥ 0.06
Do forests have adversities?	16.23	3	$\leq 0.01^*$
Rating of the prospect of Forestry Profession	14.13	12	≥ 0.29
Is forestry competitive in labour market?	12.46	3	$\leq 0.01^*$
Is forestry profession suitable for any gender?	13.76	3	$\leq 0.01^*$
Would you love your spouse as a forester?	3.23	3	≥ 0.36

* Significant at $P \leq 0.05$

Age of respondents was found to have significant ($Pr \leq 0.05$) impact on respondents' acknowledgement of the existence of DFRM, their consent to forest having adversities, their

perception of the competitiveness of forestry in the labour market and their consent to gender suitability of the forestry profession (Table 17).

Table 11: Cross-Tab Analyses of Impacts of Respondents Age on their Perception of the Forestry Profession

Indices of Perception	Indices of Rating	Age of Respondents (Years)				Total
		15 - 20	21 - 25	26 - 30	31 - 35	
Gender	Male	15 (6.7)	85 (38.1)	26 (11.7)	0 (0.0)	126 (56.5)
	Female	19 (8.5)	68 (30.5)	8 (3.6)	2 (0.9)	97 (43.5)
SUM						
223 (100.0)						
Know Faculty of Agric. and Forestry?	Yes	32 (14.3)	149 (66.5)	30 (13.4)	0	211 (94.2)
	No	2 (0.9)	5 (2.2)	4 (1.8)	2 (0.9)	13 (5.8)
SUM						
224 (100.0)						
Do forests have adversities?	Yes	30 (14.2)	138 (65.4)	21 (10.0)	1 (0.5)	190 (90.1)
	No	1 (0.5)	11 (5.2)	9 (4.3)	0	21 (10.0)
SUM						
211 (100.0)						
Is forestry competitive in the labour market?	Yes	12 (5.8)	26 (12.6)	12 (5.8)	0	50 (24.2)
	No	21 (10.1)	119 (57.5)	15 (7.2)	2 (1.0)	157 (75.8)
SUM						
207 (100.0)						
Is forestry profession suitable for any gender?	Yes	22 (10.1)	95 (43.4)	30 (13.7)	0	147 (67.1)
	No	11 (5.0)	56 (25.6)	3 (1.4)	2 (0.9)	72 (32.9)
SUM						
221 (100.0)						

* Percentages of sum are in parentheses.

Generally (Table 11), respondents are aware of the Faculty of Agriculture and Forestry where the Department of Forest Resources Management is domicile in the University of Ibadan. Also, more of them believe the forests have adversities and that the forestry profession is suitable for any gender (Table 11). However, minority are optimistic on the competitiveness of the profession in the labour market (Table 11).

Examining how age impacts on respondent's perception of the forestry profession (Table 11), it was found that while most of the respondents know the Faculty of Agriculture and Forestry, none of those above 30 years of age know the Faculty. Also noteworthy is that all those in this age bracket believe forests have adversities. Such believe increase with age among respondents. Majority of

the respondents fall within 21 and 25 years age bracket and that explains why more than half of those in agreement with the competitiveness of forestry profession in the labour market fall within this age bracket. Suffice to say that four of every five respondents in the 26 to 30 years age bracket believe in the marketability of the forestry profession (Table 11). Gender suitability of the forestry profession did not follow any age trend, but none of the respondents above 30 years believe in the suitability of the forestry profession for any gender. Also, majority of the respondents within the age bracket of 26 to 30 years believe the profession is gender sensitive.

Conclusions

A large number of students believe in the prosperous future of the forestry profession. Although rating of the

profession and the profession's competitiveness in the labour market were all gender dependent, gender as a factor has limited impact on the perception of forestry as a discipline. Therefore, gender suitability is not the main limitation to forestry education development in Nigeria. Positions among siblings, parental background and the state of forestry development in the nation are critical factors found to influence gender perspective of the choice of forestry as alternative career among students.

Like in many other professions in the world such as, Medicine, Engineering, Architecture, the military etc., forestry traditionally has been viewed as a male "domain. However, mainstreaming gender consideration in student enrolment into the forestry profession requires a thorough understanding of the sharp differences between sex and gender itself. Whereas sex is biologically created and refers to the fact of being male or female, gender is socially and culturally conditioned. To enhance the contribution of the forestry profession to the overall goal of sustainable development, the need for gender-balance (particularly as it relate to the women folk) in forestry education cannot be over-emphasized. Women are needed in the forestry profession as extension agents especially in those parts of the country where male extension workers are restrained from talking to women. They are also required as researchers and academics.

In the light of the foregoing, and in order to inculcate and improve gender consideration in student enrolment into the forestry profession the following recommendations are made:

- i. There is the need for curriculum review of forestry programme to address gender issues as relates to the development of the profession. Forestry education should also be properly linked to societal needs for socio and economic

development and environmental conservation.

- ii. The Federal Department of Forestry, the Ministry of Environment, the Federal Ministry of Agriculture and other related bodies should inculcate strategies of appointing women in key managerial positions. This is with a view to providing gender perspective to forestry activities in the country.
- iii. Forestry bodies should also encourage female Academics by providing them scholarships, grants and other incentives to study and carry out forestry research.

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