



PERCEPTION ON THE ROLES OF AVENUE TREES IN THE PROVISION OF ENVIRONMENTAL SERVICE FUNCTIONS IN THE PREMISES OF UNIVERSITY OF BENIN CAMPUSES, BENIN, NIGERIA

Ilaide. E. and Opeyemi I. A.

Department of Social and Environmental Forestry, University of Ibadan, Ibadan, Nigeria

*Corresponding Author: ilaideetinosa@gmail.com; +234 706 293 9630

ABSTRACT

This study assessed the perception on the roles of avenue trees in the provision of environmental service functions in the premises of the university of Benin (UNIBEN) Ugbowo and Ekehuan campuses. Data for the assessment of perception and willingness of the members of the University community to participate in urban tree projects were obtained using well-structured questionnaires administered to 484 respondents and the data obtained were analyzed with descriptive statistics. Tobit model was also used to evaluate public willingness to finance avenue tree planting at both Campuses of the UNIBEN of all the benefits derivable from avenue trees for both Ugbowo and Ekehuan campuses cooling the environment ranked highest with 51.8% and 51.2%. For both ugbowo and Ekehuan campuses 50.7% and 57.1% of the populace showed willingness to support green development. The study revealed that the benefits derivable from the trees in order of preference are important for cooling of the environment, beautification and provision of shade e.t.c. This implies that with increased tree planting in these premises, the environment becomes cleaner and pollution free. This must be taken serious as well as we should bear these aforementioned services in mind and should therefore look for species that can optimally provide these services without comprising the safety of the people and the totality of the work environment.

Keywords: Avenue trees, Perception, Benefits of Trees, Environmental service function.

Correct Citation of this Publication

Ilaide. E and Opeyemi I A. (2023). Perception on the roles of avenue trees in the provision of environmental service functions in the premises of university of Benin campuses, Benin, Nigeria. *Journal of Research in Forestry, Wildlife & Environment* Vol. 15(4): 103 - 113

INTRODUCTION

Urban forests are a distinct component of the urban landscape fundamental to the composition of urban green areas and they are ecosystems characterized by the presence of trees and other vegetation in association with human developments (Nowak *et al*, 2001), They include ornamental, street and parkland trees, protected forests and green areas found in cities (Kuchelmeister, 2000). They are also major constituent of growth in the quality of life of the population, especially in large urban centres and also in towns (Rodrigues; Copatti,2009). Avenue trees as one of the major components of urban

forests and as a concept outside the forest is not only for aesthetics but also functions of both environmental and socio-economic uplift (Kohli *et al.*, 1998). Traditionally, an avenue tree in landscaping refers to a straight path or road with a row of trees or large shrubs running parallel to each other. As documented by McPherson *et al.*, (1999) urban trees influence global climate change through direct removal of greenhouse gases from the atmosphere. They also help in amelioration of urban climate and mitigation of air pollution (Nowak, 2000). As documented by Singh (2002), trees, serve the functions of carbon sequestration, watershed protection, providing

shades and homes to many life forms and above all, acting as purifier to the ecosystem. Street trees with their canopies overhanging the roadway help to protect asphalt from deterioration by sunlight (Mcphersoner *et al.*, 1993) and reduce storm-water runoff from impervious surfaces (Nowak and Crane, 2002). Their shade keeps pedestrians, parked cars, and nearby buildings cool in summer (Scott *et al.*, 1999; Akbari, 2002).

Avenue trees found within University campuses in various cities are part of the urban forests and they play immense beneficial role in making the University environment conducive for impacting knowledge. Trees are purposely left or planted in academic areas for many reasons one of it been the environmental services it performs (Egunjobi, 1989; Babalola, 2010; Gutscher and Bauer, 2011). Regardless of the numerous beneficial environmental service functions trees perform; few studies have been conducted with respect to people's perception and preference for such trees in academic environments. Also many individuals in this environment have developed some negative perception and attitude towards trees some as a result of their belief hence making it difficult for them to accept and support the practice of tree management and conservation within their institutions. This therefore calls for survey of campus occupants in academic institutions to determine their preferences for trees around them and their perception on the environmental benefits these trees perform.

As revealed from preliminary literature searches, there is no information on perception by the university populace on the environmental services avenue tree performs in the study area, hence for adequate management strategy for trees in the study area, it is very important to understand the public's shared beliefs and attitudes towards trees, because trees exist and are found in different parts of the world and their management strategies differ widely. Statistically sound data on the avenue tree perception are required to properly assess the magnitude of these benefits. In another view, in as much as tree species diversity are location specific, this may likely influence perception of people of trees around them. Despite this, there is no concrete evidence to link people's perception to

environmental services provided by trees within their immediate environment.

This study is therefore aimed at addressing three pertinent questions on people's perceptions on the environmental service function avenue trees plays in UNIBEN campuses : (i) what are the perceptions of populace in the study area as regards avenue trees in UNIBEN? (ii) Is there is connection between people's perception and the roles avenue tree plays in terms of it environmental service function? (iii) How willingly the populace is to engage in greening activities? To answer these questions, a survey on the perceptions of urban populace in university of Benin is required, and analyzing this against the benefits that these trees provide. However, in as much as the study is localized, it is envisaged that the findings could initiate further research in other universities and lessons therein could further assist in formulating appropriate management strategy in these institutions. This study is therefore aimed at ascertaining the environmental perceived benefits of avenue trees by members of the university community.

METHODOLOGY

Study Area

This research was carried out at the University Benin Ugbowo and Ekehuan Campuses, Benin, Edo state. The University of Benin (UNIBEN) is one of Nigeria's Federal universities founded in 1970. The university started as an Institute of Technology and was accorded the status of a full-fledged University by National Universities Commission

(NUC) on 1st of July 1971. It is located in Benin (Egor and Oredo local government areas for the Ugbowo and Ekehuan campuses respectively), Edo State, Nigeria (Bello, 2015). The University of Benin (UNIBEN) has two sites, which are site A and site B. Site A has two campuses which is located at Ugbowo and Ekehuan parts of Benin City, with a distance of 9.7km apart. Ugbowo campus site A has a land area of 361 hectares while Ekehuan campus site A has a land area of 24heactres. Site B which is under development has a land mass of 1,387he. The University of Benin (UNIBEN) started from Ekehuan campus in the year 1970 and later moved to Ugbowo

campus in the year 1973, (UNIBEN history handbook 1987)

UNIBEN currently has 15 faculties and colleges with three centers of Excellence. The Ekehuan campus of UNIBEN currently has a centre of excellence, two faculties which are the faculty of Arts (Theatre arts, Pine and Applied Arts and Mass communication departments) and Education (Public Health and Adult Education). Ugbowo campus of UNIBEN currently has 15 faculties and colleges and 3 centres of excellence, with about 86 departments spread across the various faculties. The faculties presently at the

Ugbowo campus are the Faculties of Agriculture, Arts, Basic Medical Sciences, Dentistry, Education, Engineering Environmental Science, Law, Life Science, Management Sciences, Pharmacy, Physical Science, Social Sciences, College Medicine, and Veterinary Medicine.

Ugbowo campus (Fig 1) is between longitudes 5°36'0" E and 5°36'12" E; and between latitudes 6°20'0" N and 6°20'12" N. Ekehuan campus (Fig 2) on the other hand is between longitudes 5°35'0" E and 5°36'0" E; and between latitudes 6°19'0" N and 6°20'0" N.

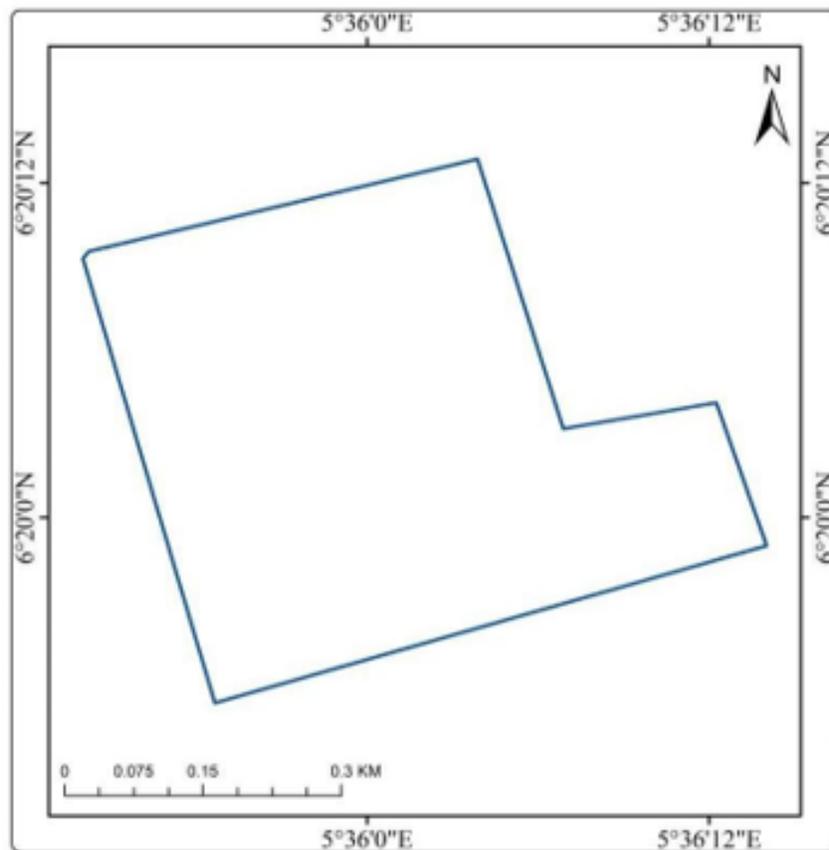


Figure 1: Map of study area showing Ugbowo Campus

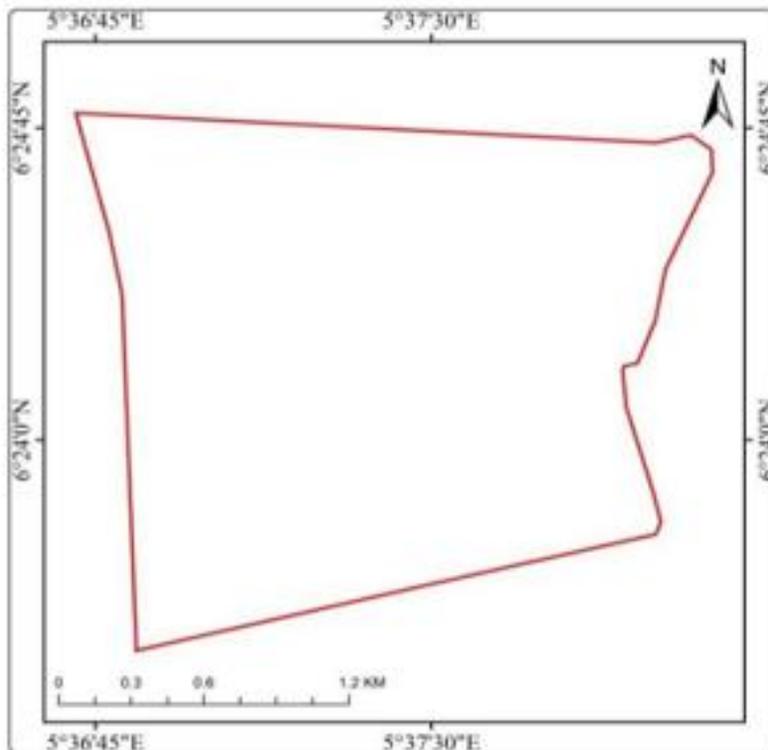


Figure 2: Map of study area showing Ekehuan campus

Data Collection and Analysis

Primary and secondary data were collected in carrying out this study, Primary data were collected using structured questionnaire while the secondary data for this work were obtained from textbooks, journals, and past research work related to the project. A total of 400 questionnaires were randomly administered at the Ugbowo campus, and 24 questionnaires were randomly administered at the Ekchuan campus on the staffs, students and other members of the university community. The data for the assessment of perception of the members of the University of Benin and their willingness to participate in greening exercises was carried out using well-structured questionnaires in which stratified random sampling procedure was used to randomly administer these questionnaires. Descriptive statistics was used for ascertaining people's perceptions on trees on the campuses and it was represented in percentages and tables. The tobit regression model was also used to ascertain the willingness of the university community members to engage in greening of the campuses. As used by Tobin, 1958 and adopted by Ajewole (2015), Willingness to participate in urban

forestry development is conceptualized to involve a two-step simultaneous decision by the respondents. This entails:

- i. Whether or not to be physically involved in the project; and
- ii. The number of hours the decision maker is willing to commit after the initial decision has been made.

Model Specification: The one limit Tobit model for this study is specified as follows:

$$\gamma = \gamma^* = x_i\beta + \varepsilon_i = 0 \dots \dots \dots (1)$$

$$\text{If } x_i\beta + \varepsilon_i > 0$$

$$\text{If } x_i\beta + \varepsilon_i \leq 0 \dots \dots \dots (2)$$

Where

$i = 1,2,3 \dots n$ observations

x = the vector of explanatory variables

γ = limited dependent variable

γ^* = continuous dependent variable which is observed only when it is positive

$\beta =$ vector of unknown coefficients $\varepsilon_i =$ error term : $\sim N_{i(0,\sigma^2)}$

RESULTS

Awareness of UNIBEN Community on Avenue Trees

Results in Table 1 reveal that 35.8% of the respondents have heard about avenue trees while 64.2% haven't heard about avenue trees at the UNBEN Ugbowo campus. Five percent of the respondents stated that they did not like having trees in the Ugbowo campus environments and

95.5% enjoys the presence of trees in the campus premises. Also 74.2% of the respondents have trees planted around them while 25.89% do not have trees planted around them.

For Ekehuan campus 29.8% of the respondents have heard about avenue trees while 70.2% haven't heard about avenue trees. Furthermore, 8.3.0% of the respondents stated that they did not like having trees in the campus environments and 91.7% enjoys the presence of trees in the campus premises. Also 73.8% of the respondents have trees planted around them while 26,28% do not have trees planted around them.

Table 1: Awareness of Avenue Trees by UNIBEN Populace

Awareness	Ugbowo		Ekehuan	
	N	%	N	%
Knowledge of Avenue Trees by Respondents				
Yes	143	35.8	25	29.8
No	256	64.2	59	70.2
Do you like having trees in this environment?				
No	20	5.0	7	8.3
Yes	378	95.0	77	91.7
Do you have tress planted around your personal office space/resident				
Yes	294	74.2	62	73.8
No	102	25.8	22	26.2

Perception of UNIBEN Community on Avenue Trees

Results in table 2 for both Ugbowo and Ekehuan revealed that in terms of functions, cooling the environment ranked highest (51.8% and 51.2%) while provision of fruits ranked lowest (20.7% and 30.5%). On the other hand, shade for pedestrians ranked highest (40.8% and 57.3%) as benefits derived from the trees, while the use of tree parts for herbal medicine ranked lowest (12.6% and 19.5%). The next important benefit is provision of shade for sitting (40.3% and 52.4%) and beautification of environment (45% and 50%). Furthermore, 60.5%, 37.4%, 53.4 %, 50%, 28.2%, 20.8%, (Ugbowo campus) and 64.2%, 45.7%, 65.4%, 50.6%, 38.3%, 28.4% (Ekehuan campus) of the total respondents recommended that more trees be planted to cool the environment, provide shade for walking, provide shade for sitting. beautify the environment, provide fruits and herbal medicine respectively. This implies

that that tree planting in these premises should bear these aforementioned services in mind and should therefore look for species that can optimally provide these services without comprising the safety of the people and the totality of the work environment. In a study carried out by Ajewole *et al*, (2013) on the Survey and Perspectives of amenity trees in Secretariats premises in Ibadan metropolis, it was revealed that the respondents stated the benefits derivable from the trees in order of preference and importance to be the cooling of the environment, beautification and provision of shade.

It was also revealed that in management of existing avenue trees within the premises 29.4%, 66.2% 59.1%, 56.7%, (Ugbowo campus), and 46.2%, 69.2%, 62.8%, 59.0% (Ekehuan campus) of the total respondents stated that management should put up a physical barrier-like fence all around the trees, make policies to protect these

trees, educate the urban populace on trees and other opinions respectively. The study further showed that 51.2% and 53.5% for Ugbowo campus, while 56.4% and 60.3%, for Ekehuan campus of the total respondents observed the following events which are trees falling on the road because of windstorm, and fruits /leaves littering the environment. Furthermore 54.59%, 42.8%, 24.9 %, (Ugbowo campus) and 62.7%, 46.7%, 37.3 % (Ekehuan campus) of the total respondents stated that the observed events occur

because the trees are not well maintained, too old, and are not healthy. In terms of beneficial role trees plays results revealed that 60.5%. 37.4%, 53.4%, 50%. 28.2%, 20.8%. (Ugbowo campus). and 64.2%. 45.7%. 65.4%. 50.6%. 38.3%, 28.4%. (Ekehuan campus) of the total respondents on campus observed that trees serve the following functions which are cool the environment, provide shade for walking, provide shade to sit, trees to beautify the environment, provide fruits and herbal medicine respectively.

Table 2: Perceived importance of Avenue Trees by UNIBEN Populace

Importance of Avenue trees	Ugbowo		Ekehuan	
	N	%	N	%
Purposes of trees planted in these premises have you personally benefited from				
Cooling the environment	98	24.5	16	19.6
Provision of shade for pedestrians	77	19.3	18	22.0
Provision of a shaded place to sit for relaxation etc.	76	19.1	17	20.1
Beautification of the environment	85	21.3	16	19.2
Provision of fruits	39	9.8	10	11.7
Use of tree parts for herbal medicine	24	5.9	6	7.5
Total	400	100.0	84	100.0
Benefits of tree planting will make you recommend more trees to be planted				
Cooling the environment	97	24.2	18	21.9
Provision of shade for pedestrians	60	14.9	13	15.6
Provision of a shaded place to sit for relaxation etc.	85	21.3	19	22.4
Beautification of the environment	80	20.0	15	17.3
Provision of fruits	45	11.3	11	13.1
Use of tree parts for herbal medicine	33	8.3	8	9.7
Total	400	100.0	84	100.0
Management of existing avenue trees within the premises				
Management should put up a physical barrier-like fence all around the trees	56	13.9	16	19.5
Management should put up policy, laws and infrastructural frameworks to manage and protect the existing trees	125	31.3	25	29.2
The populace should be educated about the importance of trees in the establishment	112	28.0	22	26.5
Others	107	26.8	21	24.9
Total	400	100.0	84	100.0
Observed events in premises				
Trees falling on the road because of windstorm	104	25.9	17	20.8
Trees falling on houses because of windstorm	49	12.3	14	16.5
Branches of trees falling and breaking cars windscreen	53	13.2	12	14.2
Fruits and seeds of trees falling and breaking cars windscreen	41	10.4	11	13.2
Tree roots breaking infrastructures such as sewage pipes, roads, culverts etc.	44	11.1	11	13.2
Fruits and leaves littering the environment	108	27.1	19	22.2
Total	400	100.0	84	100.0
Purpose do you think the trees in these premises serve				
Cooling the environment	97	24.2	18	21.9
Provision of shade for pedestrians	60	14.9	13	15.6
Provision of a shaded place to sit for relaxation etc	85	21.3	19	22.4
Beautification of the environment	80	20.0	15	17.3
Provision of fruits	45	11.3	11	13.1
Use of tree parts for herbal medicine	33	8.3	8	9.7

Total	400	0.0	84	100.0
What do you think is responsible for the events observed				
Trees not well maintained	178	44.6	36	42.7
Trees too old	140	35.0	27	31.8
Trees not healthy	82	20.4	21	25.5
Total	400	100.0	84	100.0

Willingness of UNIBEN Community to Support Green Development of their Campuses

Results in table 3 for Ugbowo campus showed that 50.7% and 49.3% of the respondents are willing and not willingly to participate in a project to plant avenue trees if such a project is set up by management. Where 68.0%, 20.2%, and 10.8% gave their reasons for not willingly to plant as time consuming, labor and capital intensive respectively. one percent gave other reasons for not planting. Furthermore, 61.7%, 27.2%, 8.3%, 1.5% each revealed that they were willingly to contribute 1-2hours, 3-4hours, 5-6hours, 7-8hours, and more than 10hours of their time respectively. Also 31.9%, 14.7%, 32.4%, 15.2%, and 5.9% were willingly to finance planting projects with 100-200A 300-400A 500-1000N, 2500-5,000N and A 10,000 above respectively.

While for Ekewan campus it was revealed that 57.1% and 42.9% of the respondents were willing and not willingly to participate in a project to plant avenue trees if such a project is set up by management. Where 64.6%, 18.8%, 14.6%, and 12.1% gave their reasons for not willingly to plant as time consuming, labour and capital intensive and other factors respectively. Furthermore, 58.3%, 33.3%, 5.6%, and 2.8% revealed that they were willingly to contribute 1-2hours, 3-4hours, 5-6hours, and more than 10hours of their time respectively. No respondents for this study showed interest to invest time of 7-8hours. Also 45.7%, 8.6%, 31.4%, and 14.3%, were willingly to finance planting projects with 100-200A, 300-400A, 500-1000A, and 2500-5,000AL respectively. No respondents for this study showed interest to invest 10,000 to tree planting and maintenance.

Table 3: Descriptive Statistics for Willingness to Engage/Finance Greening Exercises

Willingness to Engage/Finance Greening Exercises	Ugbowo		Ekehan	
	N	%	N	%
Would you be willing to participate in a project to plant avenue trees within these premises if such a project is set up by management				
No	203	50.7	48	57.1
Yes	197	49.3	36	42.9
If no can you state the reasons				
Time consuming	138	68.0	31	64.6
Labour intensive	41	20.2	9	18.8
Capital intensive	22	10.8	7	14.6
Others	2	1.0	1	2.1
How many hours will you be personally willing to contribute weekly to the tree planting and maintenance within these environments				
1-2 hours	127	61.7	21	58.3
3-4 hours	56	27.2	12	33.3
5-6 hours	17	8.3	2	5.6
7-8 hours	3	1.5	0	0.0
More than 10 hours	3	1.5	1	2.8
Which of the following amounts of money would you be willing to contribute yearly for tree planting and maintenance				
₦ 100-200	65	31.9	16	45.7
₦ 300-400	30	14.7	3	8.6
₦ 500-1000	66	32.4	11	31.4
₦ 2500-5000	31	15.2	5	14.3
₦ 10000 and above	12	5.9	0	0.0

The result in Table 4 shows respondent interest in active participation in tree management, the extent of their participation and how willing they are to contribute to having a sustainable green environment. For sustainable urban green it must be participatory involving all relevant stakeholders in this case the direct users of this resource. Results in table 4 for Ugbowo campus revealed that 40.9% of the respondents would like to partake in urban tree planting by being part of the committee that will plan and take decision on urban green project, 58.1% of the respondents showed interest in be involved in educating and mobilizing people for the project and 33.5% of the respondents agreed to Set up a volunteer

group (tree care group) in assisting the management unit in taking care of and monitoring planted trees within the premises. While for Ekehaun campus 35.3% of the respondents revealed that they would like to partake in urban tree planting by being part of the committee that will plan and take decision on urban green project, 58.8% of the respondents showed interest in be involved in educating and mobilizing people for the project and 26.5% of the respondents agreed to Set up a volunteer group (tree care group) in assisting the management unit in taking care of and monitoring planted trees within the premises.

Table 4: Descriptive Statistics showing participation in Greening exercises

Participation in Greening exercises	Ugbowo		Ekehaun	
	N	%	N	%
Areas to Participate in Greening Project				
Being part of the committee that will plan and take decision on the project	83	40.9	12	35.3
Be involved in educating and mobilizing people for the project	118	58.1	20	58.8
Set up a volunteer group in assisting the management unit in taking care/monitoring planted trees within the premises	68	33.5	9	26.5

Results from table 5 below show the Tobit regression analysis associating the demographic characteristics of the respondents in Ugbowo Campus and their willingness. It shows that occupation, monthly income and family are

significant predictors of willingness, while the other variables are not significant. It also shows that income and family size have positive contribution to willingness while occupation showed a negative impact.

Table 5: Tobit Model Estimates for Evaluation of Public Willingness to Finance Avenue Tree planting at Ugbowo Campus

```

-> Location = Ugbowo

Iteration 0: log likelihood = -275.51081
Iteration 1: log likelihood = -275.51081

Tobit regression
Limits: lower = -inf
        upper = +inf
Number of obs = 400
Uncensored = 400
Left-censored = 0
Right-censored = 0

Log likelihood = -275.51081
Wald chi2(9) = 30.64
Prob> chi2 = 0.0003

```

C26	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Gender	.0114035	.0506	0.23	0.822	-.0877706	.1105777
Occupation	-.0306545	.0115628	-2.65	0.008	-.0533172	-.0079919
MaritalStatus	-.0481968	.0548841	-0.88	0.380	-.1557677	.059374
LOE	-.0044388	.045186	-0.10	0.922	-.0930018	.0841241
LivingStatus	.0764806	.051372	1.49	0.137	-.0242068	.1771679
Employed	-.0630209	.0625918	-1.01	0.314	-.1856985	.0596567
AgeGroup	.0324518	.0492629	0.66	0.510	-.0641018	.1290053
Income Naira	.0583685	.0258381	2.26	0.024	.0077267	.1090103
FamilySize	.1583573	.0429686	3.69	0.000	.0741404	.2425742
cons	.1311584	.2996342	0.44	0.662	-.4561139	.7184307
var(e.C26)	.2321613	.0164163			.202116	.2666729

Results from Table 6 show the Tobit regression analysis associating the demographic characteristics of the respondents in Ekehan Campus and their willingness. It shows that none

of the variables show significant relationship with willingness showing that occupation, monthly income and family are not significant predictors of willingness.

Table 6: Tobit Model Estimates for Evaluation of Public Willingness to Finance Avenue Tree planting at Ekehan Campus

```

-> Location = Ekenhuan

Iteration 0: log likelihood = -56.317337
Iteration 1: log likelihood = -56.317337

Tobit regression
Limits: lower = -inf
        upper = +inf
Number of obs = 84
Uncensored = 84
Left-censored = 0
Right-censored = 0

Log likelihood = -56.317337
Wald chi2(9) = 7.92
Prob> chi2 = 0.5425

```

C26	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Gender	.1574175	.1130759	1.39	0.164	-.0642072	.3790422
Occupation	.0096559	.0267106	0.36	0.718	-.0426959	.0620077
MaritalStatus	-.1765543	.1445976	-1.22	0.222	-.4599603	.1068518
LOE	-.057944	.1595572	-0.36	0.716	-.3706703	.2547824
LivingStatus	.1663905	.1245311	1.34	0.182	-.0777839	.410565
Employed	-.0685595	.1286081	-0.53	0.594	-.3206267	.1835077
AgeGroup	-.0912994	.1212755	-0.75	0.452	-.328995	.1463963
Income Naira	-.0319758	.0628812	-0.51	0.611	-.1552207	.0912691
FamilySize	-.0574995	.0819572	-0.70	0.483	-.2181327	.1031337
cons	1.01315	.7921527	1.28	0.201	-.5394405	2.565741
var(e.C26)	.2238032	.0345336			.1653953	.3028375

DISCUSSION

For an individual to be able to comment effectively on a resource, such individual must be aware of the existence of the resource and probably has some level of direct or indirect contact with the resource. Results as shown for Table 1 for both study areas it can be inferred that a large number of the university population surveyed in this project has a limited knowledge on the concept of avenue trees even though they liked having trees within the campus environment and also have trees planted around their working and living premises.

The results in table 2 show marked difference between awareness of the functions of trees personal benefits derived from the trees, and knowledge on tree management activities on going in the campus. Also the number of functions of trees campus identified by a respondent can in a way be used to indicate the extent of knowledge of such a respondent on the services of the trees, while the number of benefits a respondent claim to have enjoyed from the trees can also be used to indicate the importance of the trees to such an individual. In the present study, quite a number of the respondents have little or no understanding of these intangible or indirect benefits that the trees provide. Babalola (2010 and Babalola and Raji (2016) in a study conducted at University of Ibadan and university of Ilorin respectively equally stated that respondents have little understanding on the beneficial role trees can play in an urban community. The level of understanding about services provided by trees could be link to available information or awareness created about such services and benefits to the people. In most cases, people take environmental services provided by trees for granted and give more focus on the direct benefits such as timber, fruits and other tangible products (Wolf, 2003). Furthermore, Also the respondents from the study revealed the benefits derivable from the trees in order of preference and importance to be the cooling of the environment, beautification and provision of shade This implies that tree planting in these premises should bear these aforementioned services in mind and should therefore look for species that can optimally

provide these services without comprising the safety of the people and the totality of the work environment.

Results from table 3 from both campuses shows that individuals are willingly to participate in planting exercises if given the right incentives. Results in table 4 shows that with increased awareness residents in this study shows interest in urban programs if given the opportunity for public participative urban forestry, and citizen-led initiatives (Harper *et al.*, 2018) to enable community-based planning, involves co-management agreements with residents to improve tree maintenance (Mincey and Vogt, 2014), and increasing volunteering programs to plant more trees (Daniels *et.al.*, 2014). All of these specific mechanisms of public participation were mentioned in this study. This study also agrees with (Ajewole, 2002), that participatory urban forestry development has some socio-psychological benefits to urban residents, and can play a crucial role in improving urban living conditions. The results from the tobit regression carried out on both campuses for Ugbowo campus shows that occupation, monthly income and family are significant predictors of willingness for respondents while that of Ekewan campus shows that occupation, monthly income and family are not significant predictors of willingness.

CONCLUSION

This study has shown that the campus populace of University of Benin have different perception avenue trees are valued due to their various roles these trees plays. The findings from this study has also added to the existing knowledge and help broaden our understanding on the people's perception as well as significance of trees around them as majority of the populace are very much interested in the management of the avenue trees due to the environmental benefits enjoyed.

Recommendations

Based on this study the following recommendations are made:

- i. Enactment of strict policies and awareness of such policies should be brought to the notice of the public

- through the appropriate channels against abuse and destruction of the urban landscape.
- ii. Active involvement of public and private partnership for funding avenue tree projects like planting exercises etc. within the campus premises.

REFERENCES

- Akbari, H. (2002), Shade trees reduce building energy use and CO₂ emissions from power plants, *Environmental Pollution* 116:ST19-S126.
- Ajewole O, Olajuyigbe O.S, and Gbadamosi S (2013). Survey and Perspectives of amenity trees in Secretariats premises in Ibadan metropolis, *Nigeria Journal of forestry* 43(3): 68 -76
- Babalola, F.D and Raji, I.A (2016). Perception of Urban Trees at Main Campus of University of Ilorin, Ilorin, Kwara State, *Nigeria applied Tropical Agriculture* 21(1): 60-67.
- Babalola F.D (2010): Issues and option for appropriate management strategies of campus tree at University of Ibadan, Nigeria. *Nigerian Journal of Ecology*. 11:33-42
- Egunjobi, L. (1989). Perception of urban environmental problems: A pilot study centered on the City of Ibadan, Nigeria. *African Urban Quarterly*, 1: 211- 214.
- Gutscher, H. and Bauer, N. (2011). Walking in "wild" and "tended" urban forests: The impact on psychological well-being Dörte Martens. *Journal of Environmental Psychology*, 3(1):36-44
- Kohli, R.K., Singh, H.P., and Daizy, R.B (1998). An inventory of multipurpose avenue trees of Urban Chandigarh, India.
- Kulchmeister, G. (2000): Trees for the urban millennium: Urban forestry update. *Unasylva* vol. S1: pp. 49- 55
- McPherson, E. G., Simpson, J.R., Pepcr, P.J., Xiao, Q. (1999). Benefit-cost analysis Modesto's municipal urban forest. *Journal of Arboriculture*, 25(5):235-248.
- McPherson, E.G., and Rowntree, R.A., (1993). Energy Conservation Potentials of Urban Tree Planting. *Journal of Arboriculture* 19(6):32 1-331
- Nowak, D.J., M.H. Noble, S.M. Sisinni, and J.F. Dwyer (2001). People and trees: Assessing the U.S. Urban forest resource. *J. 99(3):37-42.*
- Nowak, D.J. (2000): The interactions between urban forests and global climate change. In: Abdollahi, K.K.; Ning, Z.H.; Appeaning, A., eds. *Global climate change and the urban forest*. Baton Rouge: Gulf Coast Climate Change Assessment Council (GCRCC) and Franklin Press: 3|-44.
- Nowak D.J. and Crane D.E. (2002), Carbon storage and sequestration by urban trees in the USA. *Environmental Pollution* 116(3):381-389
- Rodrigues, L. S.; Copati., C. E. (2009) Diversidadearbórea das escolas da áreaurbana de São Vicente do. Sul/RS. - PUCRS, v.7, n.1, p.7-12.
- Singh, J.S. (2002).The biodiversity crisis: a multifaceted review.*Current Science*, 82:638-647.
- Scott, K.I., Simpson, J.R., and McPherson, E.G., (1999). Effects of tree cover on parking lot microclimate and vehicle emissions. *Journal of Arboriculture* 25(3): 129-142
- Wolf, K.L., (2003) Freeway roadside management: The urban forest beyond the white line. *Journal of Arboriculture* 29(3):127-136