

Knowledge and perception of Horticulture as a career

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ABSTRACT

Aim: The aim of this study was to evaluate knowledge status and perception of student towards horticulture as a career in Oyo State.

Method and Materials: Data were collected systematically and descriptive statistics such as bar chart graph and frequency table was used to analyze the data while inferential statistics such as regression analysis and t-test was used to evaluate significance.

Results: It was revealed that majority of the respondent were between 10-15 years of age, also majority of the students were in SS2 which indicates the set time for them to choose a career path that would usher them into the next stage of learning. Furthermore, the gender findings revealed that 34% were male, while 66% were female. This result clearly shows that the profitability of horticulture is not gender-based.

Conclusion: Majority of the respondents have good perceptions towards horticulture as a profession and aware of its benefits and profitability, which would result to a progressive effect on the capacity building of the horticultural sector. Horticulture remains as the better option for the new generation of professionals.

Keywords: Awareness, Horticulture, Inferential statistics, Purposive sampling techniques, Perception and Students.

Introduction

It has been observed that horticulture plays a prominent role in the development of agriculture, aesthetic purpose and economy at large. It brings about cultivation, processing and sale of fruits, nut, vegetables, ornamental plants and flowers as well as many additional services. It also includes plant conservation, landscape restoration, soil management, landscapes and garden design, alongside construction and maintenance, and also arboriculture. In contrast to agriculture, horticulture does not include large-scale crop production or animal husbandry [1].

Horticulturist apply their knowledge, skill, and technologies, to grow intensively plant for finished product for human food and non-food uses for personal or social needs. It is also involves plant propagation and cultivation with the aim of improving plant growth, yields, quality, nutritional value, and resistance to insect, diseases, and environmental stresses. Individuals in this field of study work as gardeners, growers, therapists, designers, and technical advisors in the food and non-food sector of horticulture. Horticulture even refers to the growing of plants in a field or garden [2].

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Our world is highly dependent on horticultural expertise to provide the technology and people necessary to meet the rapidly increasing global demand for fruits, vegetables, nuts, herbs, and ornamentals in the face of the changing global environment and limited natural and financial resources [3].

Horticulture is critical in improving the nutritional content of food, enhancing the safety of our produce supply and increasing the availability of healthy, local and sustainably produced foods [4]. In addition, horticulture plays a major role in promoting positive mental well-being; through the development of public botanic gardens, parks, and sports fields on a large scale, to individual home gardens on a small scale which is critical to our life today [5].

Horticulture is facing a crisis in many countries. There are simply not enough well trained people being produced in local institution to serve the broad range of careers that comprise the horticultural sector. Sectors within the horticultural industry are becoming very concerned at the reduction in the number of young people undertaking post-high school education in horticulture and/or horticultural science [6].

In the midst of this crisis, world population of fruits and vegetables increased about 32% over 2002-2012 with the largest increase occurring in

Africa and Asia regions where population growth has been greatest. There was a 62% increase of vegetable and fruits in Africa [7]. The major increase in fruits and vegetables would not have occurred without the concerted efforts of horticultural scientists and producers worldwide [6].

Yet science underpins successful horticultural development throughout the world, whether it is on large cooperate farms in developed countries or small subsistence units in developing countries [8]. Regrettably the perception that horticulture is low-tech and boring is false, because horticultural producers are among the initiators and first users of any new technology. They are avid users and rapid adopters of new ideas, new varieties and new high-tech innovations especially those that enable more sustainable and productive systems [6]. For horticulture to prosper in the future, more young people should be encouraged to undertake advanced education and trainings as the horticulture sector requires an adequate and skilled work force to fulfill its undoubted potential.

It was stated that despite the unending advocacy for sustainable greener planet, horticulture education has been undergoing a steady decline as evidence is shown by the 30% global reduction in enrolment into horticulture education and training programs. It is obvious that Nigerian youths are not exposed to the best practices of how to enhance career development, and in many schools, teachers do not have access to current textbooks on horticulture to guide the students properly [9].

Sustainable horticulture management cannot be achieved without adequate manpower to sustainably manage the demands for fruits and vegetables and other horticultural produce within and outside Nigeria

The importance of horticulture to economic development of most countries in the world (Nigeria inclusive) cannot be over stressed. Over the years, horticulture has undergone various changes and has gone beyond just the art and science of cultivating various plant species. Today's agriculture has put a high demand on horticulture which aims at long term methods of sustainable production of food alongside a habitable environment.

The adage that says a single tree cannot make a forest has proven in all ramifications, that for horticulture to attain great heights, all human

resources available must be utilized. The secondary school students who have untapped potential and abilities are needed particularly in horticultural activities where natural conservation has to be balanced with the production of food, and also to improve their self reliance as individuals. This research will focus on awareness and perception of secondary school student towards horticulture as a career in Oyo state.

Methods and Materials

Area of study

Ibadan South East Local Government Area was carved out of defunct Ibadan Municipal Government (IMG) in 1991. The Local Government Area inherited the administrative headquarters of the Ibadan Municipal Government (IMG) at Mapo. It covers a land area of 58.251 square kilometers with 2010 estimated population of 301,775, using a growth rate of 3.2% from 2006 census. It has a population density of 5,181 people per square kilometer. The Local Government area shares boundaries with Ibadan South West, Ibadan North East and Oluyole Local Government Areas.

It is an urban area and therefore no farming activity is taking place. Yoruba and other tribes dominate the area. The residents are engaged in various economic activities ranging from trading, transportation and civil service. The symbols of tradition are evident in the Local Government Area. The official residence of Olubadan of Ibadan, the Mapo hall, statue of Heroes and Heroines of Ibadan, Iba-Oluyole at Beere roundabout, Efunsetan at Orita challenge Ibadan among others are located in the area.

Ibadan South East Local Government Area is subdivided into 12 wards: the local government is governed by an elected chairman and 12 councilors, one elected from each ward.

Population of the study

The target populations of the study are senior secondary school students in some schools in Ibadan South East Local Government Area; One hundred (100) students were selected from four (4) schools namely: Ibadan Grammar School, St Anne's School Ibadan, Adelagun Memorial Grammar School, Odinjo, and Eyinni High school, Challenge, Ibadan.

Sampling procedure and Sampling size

Ibadan South East Local Government Area of Oyo State was purposely selected for this study because the local government has the highest number of secondary schools in the state. And the four (4) schools chosen were selected as a result of the large population of students. Twenty five (25) questionnaires were administered in each selected schools. A total of 100 questionnaires were administered for this study.

Data collection and analysis

Data was collected using a well structured questionnaire. The analysis outputs are in the form of descriptive statistics such as frequency tables, bar charts, graphs, percentages and multiple regression analyses while inferential statistic such as multiple regression analysis and T-test was used to test for its significance. The Logit model was used to determine the effects of the independent on the dependent variable. The model is explicitly stated as:

$$L_1n = \ln \left[\frac{P_n}{1 - P_n} \right] = z = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_nx_n + e_i \dots (1)$$

$$\Pr(Y_n) = \frac{\exp(\beta_0 + \beta_{11}x_1 + \beta_{21}x_2 + \dots + \beta_{k1}x_k)}{\sum \exp(\beta_0 + \beta_{11}x_1 + \beta_{21}x_2 + \dots + \beta_{k1}x_k)} \dots (2)$$

Where:

Y_n = Awareness and Perception of Secondary school students in the study areas.

The independent variables are as listed below:

- x_1 = Age (years)
- x_2 = Gender (1= Female, 2= Male, otherwise 0)
- x_3 = Class (1= SS1, 2= SS2, 3= SS3)
- x_4 = Perception of Horticulture
- e = Error term
- $\beta_0 - \beta_4$ are parameters to be estimated

Results and Discussion

The demographic and inferential analysis techniques applied in estimating the awareness and perception of senior secondary school students toward horticulture as a profession in Oyo State.

It showed in Table 1 that the distribution on the demographic data of the respondents where the age distribution cells showed majority of the respondents which account for 60% of this total respondents that participated in the study claimed to fall within the age range of 10-15years, 38% of this respondents also claimed fall within the age range of 16-20 years while just 2% of the respondents claimed above 20 years of age. Information on gender distribution revealed

majority of the respondents which account for 66% of the whole respondents to be female while 34% claimed to be male; the table also revealed that 58% of the respondents claimed to be in SS2, 38% of the claimed to be in SS1 while 4% of them claimed to be in SS3. Distribution on being a citizen showed 94% of these total respondents claimed to be a citizen of the country while 6% claimed not to be a citizen; it was also illustrated in Table 1 that 86% claimed to be a native of the locality while 14% disclaim this; and lastly, 67% of the total respondents that participated in this study revealed they have heard about horticulture before 33% claimed they have never heard about horticulture.

Table 1: Distribution on the demographics information of respondents

DEMOGRAPHICS	FREQUENCY	PERCENTAGE
10-15years	60	60.0%
16-20years	38	38.0%
Above 20years	2	2.0%
Mean	1.42	
GENDER		
Male	34	34.0%
Female	66	66.0%
Mean	0.66	
CLASS		
SS1	38	38.0%
SS2	58	58.0%
SS3	4	4.0%
Mean	1.66	
ARE YOU A CITIZEN OF THIS COUNTRY		
Yes	94	94.0%
No	6	6.0%
Mean	0.06	
ARE YOU A NATIVE OF THE LOCALITY		
Yes	86	86.0%
No	14	14.0%
Mean	1.4	
HAVE YOU HEARD ABOUT HORTICULTURE BEFORE		
Yes	67	67.0%
No	33	33.0%
Mean	0.33	

Source: Field survey, 2019

It showed in Table 2 that the distribution on the profitability and benefit of horticulture where majority of the respondents which account for 57.0% of them claimed horticulture always provides income, 32.0% of this respondents claimed horticulture sometime provides income

while 11.0% of this total respondent claimed horticulture never provides income. The table also revealed that 58.0% which takes the highest percentage of the respondents claimed horticulture always create employment; 59.0% of the respondents claimed horticulture always improves the economy; 69.0% which also takes the highest percentage of the total respondents claimed horticulture always beautify the environment; 53.0% of the respondents claimed horticulture is always beneficial for research purpose; 60.0% claimed horticulture always provides food while 29.0% of this respondent claimed horticulture sometimes provide food and 11.0% claimed that horticulture never provide food. The table also revealed that 49.0% and 41.0% of these respondents claimed horticulture always and sometimes gives admirable landscape respectively; 66.0% of the respondents claimed horticulture gives comfortable environment and lastly, 46.0% and 36.0% of the respondents claimed horticulture always and sometimes cause rural/urban migration. These findings were in agreement with [1].

The respondents perception on the orientation on horticulture activities (Table 3) where it was revealed that majority of the respondents which takes 96.0% of the respondents agree with the claim that horticulture is a simple agricultural activity while 4.0% of them disagree with the claim; 87.0% of the total respondents claim horticulture can be started with little capital while 13.0% do not support the claim; 89.0% of these respondents claimed horticultural activities requires little land area for a start whereby 11.0% of the respondents disagree with the claim; 87.0% of these total respondents claimed that horticultural plants get to point of transplanting/selling within a short period of time and 13.0% of them disagree with this claim. Lastly, the table also revealed that 84.0% of the total respondents that participated in the study claimed horticulture requires simple farm tools/equipments while 16.0% of these respondents disagree with this claim. We can therefore conclude from the responses of the respondents that majority of these respondents are in support of the claim about orientation on horticultural activities. Some researchers advocated similar findings [2,7].

The illustration in on table 4 above shows the distribution of respondents' responses on

horticultural interest where 83.0% of the respondents claimed to have interest in Floriculture; 86.0% of the respondents claimed they have interest in Olericulture; 63.0% claimed they have interest in Arboriculture; 83.0% of these total respondents claimed they have interest in Pomology; 82.0% of the respondents claimed they have interest in Landscaping while 72.0% of these respondents claimed their interest is in Viticulture and 67.0% claimed they have interest in 67.0%. This showed that many of the respondents gave interest in different fields in horticulture. Some researchers advocated similar findings [5,8].

The illustration on the distribution of capacity building in Horticulture (Table 5) where it was revealed that majority of the respondents which account for 96.0% of the total respondents that participated in the study claimed that horticulture requires hard working people; 81.0% claimed horticulture requires necessary innovation; 79.0% of these respondents claimed horticulture does not require only graduates; also, 84.0% of the respondents claimed horticulture requires skilled labour while 91.0% of these total respondents claimed horticulture requires good management and 88.0% of them also claimed horticulture accommodates other profession that shows interest. This reveals that majority of the respondents supported the claim about the capacity building in horticulture. Some researchers corroborated with these findings [4,9].

The illustration showing on table 6 is about the distribution on the perception of respondents to have horticulture as a course of study and it was revealed that 98.0% of the respondents claimed they love science subjects; 83.0% claimed they enjoy Agricultural science while 17.0% claimed they do not really enjoy the subject; 78.0% of these total respondents that participated in the research claimed their parents influence their choice of course while 22.0% claimed no; 59.0% of the respondents claimed they would like to study horticulture as a course and 41.0% claimed they have no plan studying horticulture as a course but rather, they are interested in other course of study. It can also be seen on the table that 59.0% of these respondents claimed they would prefer to learn horticulture as a skill and lastly, 72.0% of the respondents claimed they think horticulture should be taught as a

vocational subject in secondary schools while 28.0% of this overall respondents are not in support of it. Some authors advocated similar findings [3,5].

The Logit model analysis results of the variables (Table 7) which influence the perception of horticulture as a course of study in the study area. Age was positive but statistically insignificant ($p\text{-value}0.735 > 0.05$), this implied that progression in age number would lead to an increase of approximately 9.8%. The respondents' gender reveal a positive relationship of 0.236 but also statically insignificant at 0.05 alpha level ($p\text{-value}0.433 > 0.05$), this implied gender contributed positively an approximately 23.6% to the

perception of horticulture as a course of study. Class established a negative relationship to the perception of horticulture of -0.492 which is statistically insignificant at 0.05 alpha level ($p\text{-value}0.081 > 0.050$); this implies that a progression in class would lead to an approximately decrease of about 49.2% in the perception. Lastly, awareness showed a positive correlation of 0.023 that is statistically insignificant at 0.05 alpha level ($p\text{-value}0.939 > 0.050$); this showed that an increase in awareness would lead to an approximately increase of about 2% to the perception of horticulture as a course of study. Some authors corroborated with these findings [5,9].

Table 3: Orientation on Horticulture Activities

S.No.	ORIENTATION ON HORTICULTURE ACTIVITIES	AGREE	DISAGREE	Mean
1	Horticulture is a simple agricultural activity	96.0%	4.0%	0.04
2	It can be started with little capital	87.0%	13.0%	0.13
3	Horticultural activities requires little land area for a start	89.0%	11.0%	0.11
4	Horticultural plants get to point of transplanting/selling within a short period of time	87.0%	13.0%	0.13
5	Horticulture requires simple farm tools/equipments	84.0%	16.0%	0.16

Source: Field survey, 2019

Table 4: Horticultural Interest

S.No.	HORTICULTURAL ACTIVITIES	YES	NO	Mean
1	Floriculture (cultivation or ornamentals)	83.0%	17.0%	0.17
2	Olericulture (cultivation of vegetables)	86.0%	14.0%	0.14
3	Arboriculture (cultivation of trees)	63.0%	37.0%	0.37
4	Pomology (cultivation of fruits)	83.0%	17.0%	0.17
5	Landscaping (beautification of the environment)	82.0%	18.0%	0.18
6	Viticulture (Wine making)	72.0%	28.0%	0.28
7	Turf/Grass management	67.0%	33.0%	0.33

Source: Field survey, 2019

Table 5: Capacity Building in Horticulture

S.No.	CAPACITY BUILDING	YES	NO	Mean
1	It requires hard working people	96.0%	4.0%	0.04
2	It requires necessary innovation	91.0%	9.0%	0.09
3	It does not require only graduate	79.0%	21.0%	0.21
4	It requires skilled labour	84.0%	16.0%	0.16
5	It requires good management	91.0%	9.0%	0.09
6	It accommodates other profession that shows interest	88.0%	12.0%	0.12

Source: Field survey, 2019

Table 6: Perception as a Course of Study

S.No.	PERCEPTION	YES	NO	Mean
1	Do you love science subjects	98.0%	2.0%	0.02
2	Do you enjoy Agricultural science	83.0%	17.0%	0.17
3	Can your parents influence your choice of course	78.0%	22.0%	0.22
4	Will you like to study horticulture as a course	59.0%	41.0%	0.41
5	Will you prefer to learn horticulture as a skill	59.0%	41.0%	0.41
6	Do you think horticulture should be taught as a vocational subject in secondary schools	72.0%	28.0%	0.28

Source: Field survey, 2019

Table 7: Logit model analysis result of the relationship between socio-economic characteristics on perception of horticulture as a course of study

COEFFICIENTS ^a						
Model		Un standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.025	.558		3.628	.000
	Age	.098	.288	.037	.339	.735
	Gender	.236	.299	.080	.787	.433
	Class	-.492	.282	-.196	-1.746	.084
	Have you heard about horticulture before?	.023	.304	.008	.077	.939

a. Dependent Variable: Perception as a course.

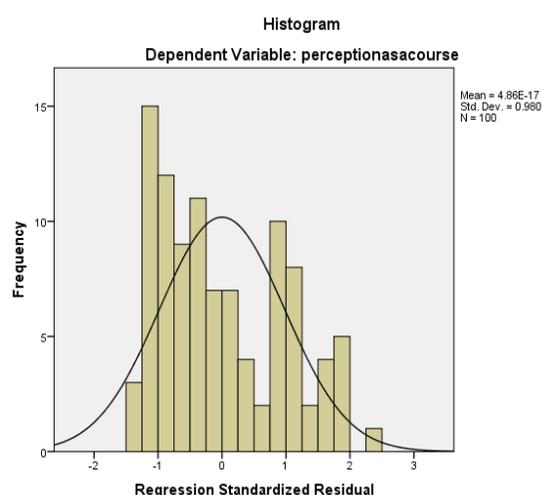


Fig. 1. Histogram of dependent variable as a course

Histogram and p-p plot showed the normality of the regression model and showed the residual i.e. the error margin allowed in the model estimation which is not more than 0.05.

Conclusion

It is revealed in the result that majority of the respondent, 50% were between 10-15 years of age while 38% were between 16-20 and 2% were 20 years and above. Also majority of the students were in SS2 which indicated that they are about to graduate from secondary school which is the next stage of chosen a life career before proceeding to high institution where the vision of the career will be fulfill. Further more the result based on the findings reveals that male were 34% while 66% were female. The result clearly shows that horticulture is profitable and beneficial to both human life and environment. Majority of the respondent concluded that they have interest in horticultural activities in the study area.

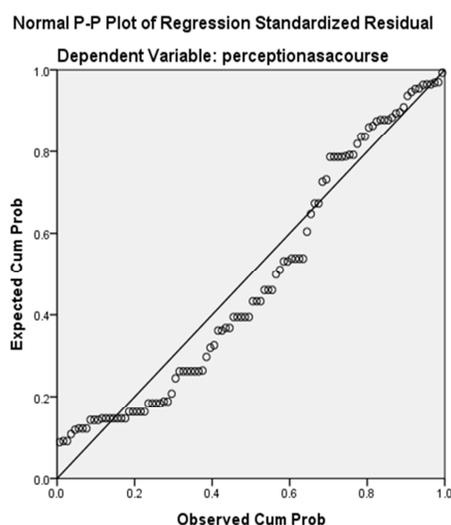


Fig. 2. Normal P-P plot for regression standardized residual

Lastly, majority of the respondents have good perception towards horticulture as a profession, which can influence their decision on choosing horticulture as a choice of career in future.

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