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Level of Acceptability of *Moringa oleifera* Diversified Products among Rural and Urban Dwellers in Nigeria

Mojisola F. Oyewole, Franscisca T. Adetoro, Nkiru T. Meludu

Abstract*—Moringa oleifera* is a nutritious vegetable tree with varieties of potential uses, as almost every part of the *Moringa oleifera* tree can be used for food. This study was conducted in Oyo State, Nigeria, to find out the level of acceptability of *Moringa oleifera* diversified products among rural and urban dwellers. Purposive sampling was used to select two local governments' areas. Stratified sampling technique was also used to select one community each from rural and urban areas while snowball sampling technique was used to select ten respondents each from the two communities, making a total number of forty respondents. Data were analyzed using frequencies, percentages, Chi-square, Pearson Product Moment Correlation and regression analysis. Result from the study revealed that majority of the respondents (80%) fell within the age range of 20-49 years and 55% of them were male, 55% were married, 70% of them were Christians, 80% of them had tertiary education. The result also showed that 85% were aware of the *Moringa* plant and (65%) of them have consumed *Moringa oleifera* and the perception statements on the benefits of *Moringa oleifera* indicated that (52.5%) of the respondents rated *Moringa oleifera* to be favorable, most of them had high acceptability for Moringa egusi soup, Moringa tea, Moringa pap and yam pottage with Moringa. The result of the hypotheses testing showed that there is a significant relationship between sex of the respondents and acceptability of the diversified *Moringa oleifera* products (x^2=6.465, p = 0.011). There is also a significant relationship between family size of the respondents level of acceptability of the *Moringa oleifera* products (r = 0.327, p = 0.040). Based on the level of acceptability of *Moringa oleifera* diversified products; the plant is of great economic importance to the populace. Therefore, there should be more public awareness through the media to enlighten people on the beneficial effects of *Moringa oleifera*.

***Keywords*—**Acceptability, *Moringa oleifera*, Diversified, Product, Dwellers.

I. Introduction

MORINGA oleifera tree is a versatile tree useful not only for human beings but also for animals and also in various industrial applications. It has been found useful in nutrition, soil control, water purification, industrial use, livestock, fisheries, cattle feed and also for treating various types of illnesses in human and livestock. *Moringa oleifera* is a perennial softwood tree with timber of low quality, which for centuries has been advocated for traditional medicinal and industrial uses. It is also the most widely cultivated species of a monogeneric family. This rapidly-growing tree (also known as the drumstick tree, arising from the shape of the pods, resembling the slender and curved stick used for beating the drum) is called gawara by Fulani, zogale in Hausa, oduduoyinbo or okochiegbu in Igbo, chigbanwawa by Nupe and ewele or idagbomonoye ("the tree which grows crazily") in Yoruba [1]. *Moringa oleifera* provides the boost in energy, nutrition and health and its leaves have been used to combat malnutrition, especially among infants and nursing mothers. It is a remarkable tree whose leaves, pods and flowers contain 7 times the vitamin C in oranges, 4 times the calcium in milk, 4 times the vitamin A in carrot, 3 times the potassium in banana, 3 times the iron in spinach and 2 times the protein in milk [2].

Moringa oleifera as a leafy vegetable when dried can be used as food ingredient or condiment which serves as rejuvenating nutrients for the body. Based on the importance of dietary diversification, *Moringa oleifera* is a vegetable crop which can be diversified in order to generate income, reduce poverty and improve the health of people by proper nutrition. *Moringa* plantation can help provide a more diversified farm economy and also potentially stimulate the rural economy as a whole, encouraging the development of more stable commodities [3]. The acceptability of this nutritious vegetable crop calls for its sensory evaluation in different forms.

The products of the plant (*Moringa oleifera)* can therefore be made to undergo sensory evaluation in order to determine their acceptability among different groups of people.

Many developing countries including Nigeria are faced with the problem of food insecurity which is caused by a continuous decline in food production, post-harvest losses and inadequate of agriculture-related policies. Food insecurity is one of the major causes of malnutrition, which is a condition that results from inadequate diet in which certain nutrients are lacking in excess or in the wrong proportion.

According to Food Agricultural Organization, there were 848million undernourished people in the world during 2003-2005, nearly 95% of which live in developing countries [4]. Micronutrients are vitamins and minerals required in minute quantities and they perform specific biochemical and physiological functions. Plants and food rich in micronutrients include fruits and vegetables like *moringa*. Micronutrient deficiencies otherwise known as hidden hunger elicits various diseases and imbalances in the body. The leafy vegetable is an exceptional resource for developing countries, processed or fresh, the Moringa leaf is not only a new, promising source of income and employment, but also an outstanding, nutritionally rich vegetable for families and businesses [5]. But in spite of

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these proven efficacies in medicinal, nutritional and economic benefits, *moringa* is yet to be appreciated and accepted in many communities. While a number of studies have been carried out on the origin, morphology and chemistry of *Moringa*, little or no efforts have been made to unearth the prevailing socio-cultural perceptions and willingness to adopt innovations on the plant among its custodians [6]. Therefore this study investigates the socio- economic characteristics of the respondents, the rate of consumption of *Moringa oleifera*, how available is *Moringa oleifera* to the respondents in the study area, the perception of respondents on the benefits of using *Moringa oleifera*, the level of its utilization in rural and urban areas, and to determine the acceptability of *Moringa oleifera* diversified product to the respondents in the study area.

A. Hypotheses of the Study

This study investigated the following null hypotheses:

1) There is no significant relationship between selected socio-economic characteristics and the level of acceptability of diversified *Moringa oleifera* products.
2) There is no significant relationship between the respondents' perception on the benefits of using *Moringa oleifera* and the level of acceptability of diversified *Moringa oleifer*a products.
3) There is no significant relationship between the consumption of *Moringa oleifera* and the level of acceptability of diversified *Moringa oleifera* products.
4) There is no significant difference in the level of acceptability of *Moringa oleifera* products in rural and urban areas.

II. Material and Method

A. Study Area

This study is to be carried out in Oyo state. Oyo State is one of the 36 states of Nigeria and is located in the South Western region of the country. The State was created in 1976 out of the old Western region and has a population of 5,580,894. It is bounded in the north by Kwara State, in the east by Osun State, in the south by Ogun State and in the west partly by Ogun State and the Republic of Benin. Ibadan is located between longitude 70 20' and 70 40' East of the Greenwich meridian and between latitude 30 55'and 40 10' North of the equator. The city lies in the equatorial rain forest belt and has a land area of 463.33km². Ibadan land has 11 local governments made up of five within the metropolis and six at the periphery of the metropolis. Its central location gives it transport and economic advantage.

B. Research Design

Research Design is the strategy, plan and structure of conducting a research project. The essence of research design in this study is to be able to provide answers to research questions. The steps involved in carrying out this study include: i. Experiment ii. Data collection

C. The Experiment

In course of the study, experiments were carried out in the Home Economics Laboratory of the Department of Agricultural Extension and Rural Development, University of Ibadan, Nigeria. The results obtained from the experiments were used to collect data from respondents. The reasons for experiment were to obtain the right methods and measurements for preparing the dishes. Four experiments were carried out for each of the dishes using different measurements. The diversification of *Moringa oleifera* was done by carrying out experiments to produce different dishes with *Moringa oleifera* leaves. The experiment that was carried out includes:

1. Experiment 1: (Dry Blended *Moringa* Leaves Added to Pap)

The measurement of ingredient used in preparing pap includes: two hundred gram (200g) of dry blended *moringa* leaves and five hundred grams of (500g) of pap (ogi).

Procedure: Boiling water was added to 500g of pap which was covered for 3 minutes, and then 200g of dry blended *moringa* leaves was added, stirred and covered for a minute.

2. Experiment 2: (Fresh *Moringa* Leaves Added to Egusi Soup)

The measurement of ingredients used in preparing *moringa* soup includes: 15 table spoons of palm oil, 1 bulb of onion, 25 table spoons of grinded pepper, one and half (1½) cups of egusi (melon), meat stock, stock fish, boiled meat, 2 cubes of magi, salt to taste (½ teaspoon), 1 table spoon of locus bean (iru) and 100g of fresh *moringa* leaves.

Procedure: Oil palm was poured in a pot on fire for a minute, onion was added and allowed to fry for two minutes, followed by the pepper, egusi, meat stock, stock fish, boiled meat, 2 cubes of magi, salt to taste, locus bean, which was covered and allowed to simmer for 20 minutes then 100g of *Moringa oleifera* was added, stirred and simmer for two minutes.

3. Experiment 3: (*Moringa oleifera* Tea)

Measurement of ingredients used in preparing *moringa* tea includes: 10g blended *moringa* and 50cl tea cup of boiled water.

Procedure: Fresh *moringa* leaves were air dried for two weeks and then blended. The purpose of air drying was to retain the green color of the leaves. Fifty grams of blended *moringa* were put in a tea bag. A tea bag was put in a 50cl tea cup of boiled water.

4. Experiment 4: (Fresh *Moringa oleifera* Leaves Added to Pottage)

Measurement of ingredients used in preparing *moringa* pottage includes: One and half (1½) tubers of yam, 2 tea spoons of salt, 2 cubes of magi, 12 table spoons of pepper, 2 tea spoons of dry blended pepper, 15 table spoons of palm oil and 25g of fresh *moringa* leaves.

Procedure: One and half tubers of Pealed yam was boiled for 30 minutes, 2 tea spoons of salt was added, 2 cubes of

magi, 12 table spoons of pepper, 2 tea spoons of dry blended pepper, 15 table spoons of palm oil and 25g of fresh *moringa* leaves was then added, stirred and allowed to simmer for 2 minutes.

D. Sampling Procedure and Sample Size

Purposive sampling was used to select two Local Governments namely; Ibadan North (urban) and Ido (rural) in Oyo State. This is because *Moringa oleifera* could be found in the two areas, then stratified sampling technique which was used to select one community each from rural and urban area while snowball sampling technique which was used to select 10 respondents each from the two communities making a total number of 40 respondents. Snowball was used because *moringa* is a new plant which is not common and is also not easy to get, therefore one respondent leads to another in getting the plant.

E. Method of Data Collection

Data were collected through interview schedule and analyzed using the descriptive and inferential statistics. The data collected was on personal characteristics of respondents, (Age, Sex, Marital status, Religion, Family size, Level of Education, Primary occupation and Monthly Income) and level of acceptability of *Moringa oleifera* diversified products among rural and urban dwellers.

F. Data Analysis

The data collected was analyzed with the use of both descriptive and inferential statistics. Frequency count and percentage distribution were used to analyze the personal characteristics of the respondents and other variables.

III. Results and Discussion

A. Socioeconomic Characteristics of Respondents

The age distribution in Table I shows that larger proportion (80%) of the respondents is between 20-49 years while 20% are 50 years and above. This distribution indicates that majority of the respondents are still in their productive age. The result as presented further in Table I also shows that more than half (55%) of the respondents are male while less than half (45%) are female. This implies that more male are involved in the utilization of *Moringa* than female due to the benefits they derive from the usage. The same table shows that majority (55%) of the respondents are married. Considering the religion of respondents, 70% are Christians while less than half (30%) are Muslim. Few (40%) of the respondents are within the family size of 6-8. This implies that larger house hold consume the product based on the benefits derived from it.

Considering the educational level of the respondents, majority (80%) had tertiary education while very few (20%) had no form of education or the other. This means that majority of the respondents who utilize *Moringa oleifera* have high literacy level. Higher proportion of the respondents (50%) are civil servant, 35% are students while 15% are farmers and traders. This means that the higher proportions consume it more. Most of the respondents (70%) earn less than fifty thousand naira while very few 30% earn more than fifty one thousand naira. This in line with the findings of [7], that literate people consume *Moringa oleifera* than illiterate people.

TABLE I
Distribution of Respondents Based On Their Socio-economic Characteristics

Variable	Frequency	Percentage (%)
Age		
10-19	1	2.5
20-29	5	12.5
30-39	13	32.5
40-49	14	35.0
50-59	4	10.0
60 and above	3	7.5
Total	**40**	**100.0**
Sex		
Male	22	55.0
Female	18	45.0
Total	**40**	**100.0**
Marital Status		
Single	16	40.0
Married	22	55.0
Divorced	1	2.5
Widow	1	2.5
Total	**40**	**100.0**
Religion		
Christian	28	70.0
Muslim	12	30.0
Total	**40**	**100.0**
Family Size		
0-2	10	25.0
3-5	14	35.0
6-8	16	40.0
Total	**40**	**100.0**
Level of Education		
No Formal Education	1	2.5
Primary Education	4	10.0
Secondary Education	3	7.5
Tertiary Education	32	80.0
Total	**40**	**100.0**
Primary Occupation		
Farming	1	2.5
Civil Servant	20	50.0
Trading	5	12.5
Student	14	35.0
Total	**40**	**100.0**
Monthly Income		
< 50,000	28	70.0
50,000-100,000	5	12.5
101,000-150,000	4	10.0
Above 150,000	3	7.5
Total	**40**	**100.0**

B. Awareness of Moringa Oleifera

The data collected on the awareness of *Moringa oleifera* shows that majority of the respondents (85%) have heard about *Moringa oleifera* while 15% have not heard about it. This means that majority of the respondents are aware or know about the crop. The same table shows that 77.5% of the respondents have seen *Moringa oleifera* while 22.5% have not seen it. This indicates that majority of the respondents have seen the plant. This is contrary to the finding of [7] that many (61.87%) of the respondents were ignorant of the plant. This

could imply that more people are getting to know about the plant.

TABLE II
DISTRIBUTION OF RESPONDENTS BASED ON AWARENESS AND CONSUMPTION OF *MORINGA OLEIFERA*

Variable	Frequency	Percentage (%)
Have you heard of *Moringa oleifera*		
No	6	15.0
Yes	34	85.0
Total	**40**	**100.0**
Have you seen *Moringa oleifera*		
No	9	22.5
Yes	31	77.5
Total	**40**	**100.0**

C. Level of Consumption of Moringa oleifera

The result on Table III stated that 65% of the respondents have in one way or the other consumed *Moringa oleifera* while few have not consumed it. This implies that majority of the respondents consume the plant. The same table stated that majority 55% of the respondents consume *Moringa oleifera* for medicinal purpose, 35% of the respondents have not consume it, 7.5% says it is nutritional, while 2.5% says it is bitter. This implies that majority of the respondents benefit from *Moringa* as it protects the body against diseases.

It was also shown from the table that far below half (20%) of the respondents consume *Moringa oleifera* weekly while very few (12.5%) consume it occasionally. The table also further shows that 32.5% of them consume *Moringa oleifera* as vegetable, few (30%) consume blended one while very few (2.5%) consume it as capsule. This indicates that the consumption rate of the plant is high despite the scarcity. The same table shows that higher percentage (45%) of the respondents makes use of the leaf. This is consistent with the findings of [8] that more than 1 million of respondents in Kano State consume *Moringa* in different forms.

D. Availability of Moringa oleifera

Table IV indicated that *Moringa oleifera* is available to a higher percentage (70%) of the respondents while it is not available to 30% of them. It is also stated from the same table that 47.5% of respondents said it is available always while very few (30%) said it is not available. This implies that *Moringa oleifera* is becoming more available. It further stated that 32.5% does not get it at all, very few (15%) get it monthly, 22.5% get it weekly and 30% get it daily.

E. Benefits of Moringa oleifera

The result on Table V (ii) shows the perception statement on the benefits of *Moringa oleifera*. This was obtained by pulling the total scores of respondents on the perceived benefits and acceptability of *Moringa oleifera* products. Respondents were exposed to 20 questions in which 10 were positive statements and the other 10 were negative statements. The results obtained from their response about the perception on the benefits of *Moringa oleifera* were categorized into "favourable" and "unfavourable".

TABLE III
DISTRIBUTION OF RESPONDENTS ON THE CONSUMPTION OF *MORINGA OLEIFERA*

Variable	Frequency	Percentage (%)
Do you consume *Moringa oleifera*		
No	14	35.0
Yes	26	65.0
Total	**40**	**100.0**
Why do you consume *Moringa oleifera*		
Bitter	1	2.5
Medicinal	22	55.0
Nutritional	3	7.5
Not applicable	14	35.0
Total	**40**	**100.0**
How often do you consume		
Daily	6	15.0
Weekly	8	20.0
Monthly	7	17.5
Occasionally	5	12.5
Not applicable	14	35.5
Total	**40**	**100.0**
Form of consumption		
Capsule	1	2.5
Vegetable	13	32.5
Powdery form	12	30.0
Not applicable	14	35.0
Total	**40**	**100.0**
If no why		
Never heard about it	4	10.0
It is bitter	3	7.5
Not readily available	4	10.0
It is poisonous	2	5.0
Not applicable	27	67.5
Total	**40**	**100.0**
Part of *Moringa* used		
Seed	7	17.5
Flower	1	2.5
Leaf	18	45.0
Not applicable	14	35.0
Total	**40**	**100.0**

TABLE IV
CATEGORIZATION OF RESPONDENTS' LEVEL OF AVAILABILITY OF *MORINGA OLEIFERA*

Variable	Frequency	Percentage (%)
Availability of *Moringa oleifera*		
No	12	30.0
Yes	28	70.0
Total	**40**	**100.0**
How available		
Not available	12	30.0
Moderately available	9	22.5
Always available	19	47.5
Total	**40**	**100.0**
How often is *Moringa oleifera* got		
Monthly	6	15.0
Weekly	9	22.5
Daily	12	30.0
Not applicable	13	32.5
Total	**40**	**100.0**

The results on Table V (ii) show that more than half (52.5%) of the respondents fell into the category of people that have favourable perception on the benefits of *Moringa oleifera* while 47.5% fell into the category of people that have unfavourable perception on the benefits of it. This implies that majority of the respondents benefit on the use of *Moringa*

oleifera. This is consistent with the finding [9] that *Moringa oleifera* is beneficial to human health, prevents malaria, anaemia and malnutrition.

TABLE V (i):
DISTRIBUTION OF RESPONDENTS ON THE BENEFIT OF *MORINGA OLEIFERA* (1)

S/N	Benefits of *Moringa oleifera*	Strongly Disagree		Disagree		Undecided		Agree		Strongly agreed		Not Applicable	
		F	%	F	%	F	%	F	%	F	%	F	%
1	Protects the body against diseases	2	(5.0)	4	(10.0)	4	(10.0)	17	(35.0)	20	(50.0)		
2	Boiled *M. oleifera* can be used to treat cold	3	(7.5)	4	(22.5)	9	(22.5)	20	(50.0)	4	(10.0)		
3	Leaf increases body weight and overall health	4	(10.0)	6	(37.5)	15	(37.5)	10	(25.0)	2	(52.0)	3	(7.5)
4	Mental and emotional balance	4	(10.0)	6	(27.5)	11	(27.5)	16	(40.0)	3	(7.5)		
5	Increases the flow of mother's milk	4	(10.0)	5	(40.0)	16	(40.0)	12	(30.0)	2	(5.0)	1	(2.5)
6	Healthy blood sugar level	1	(2.5)	5	(17.5)	7	(17.5)	20	(50.0)	6	(15.0)	1	(2.5)
7	The crop is of great economic importance	1	(2.5)	1	(22.5)	9	(22.5)	22	(55.0)	6	(15.0)	1	(2.5)
8	Acceptable to the cultural value in the community	2	(5.0)	2	(30.0)	12	(30.0)	15	(37.5)	9	(22.5)		
9	Has medicinal value	-	-	3	(22.5)	9	(22.5)	18	(45.0)	10	(25.0)		
10	Cures anemia in pregnant women	-	-	6	(42.5)	17	(30.0)	11	(27.5)	6	(15.0)		
11	Reduces physical energy	3	(7.5)	3	(12.5)	5	(22.5)	21	(52.5)	8	(20.0)		
12	Reduces rate of recovery	1	(2.5)	3	(35.0)	14	(42.5)	15	(37.5)	7	(17.5)		
13	Dangerous to health	2	(5.0)	9	(25.0)	10	(12.5)	8	(20.0)	10	(25.0)	1	(2.5)
14	Has no value	4	(10.0)	8	(40.0)	16	(35.0)	8	(20.0)	4	(10.0)		
15	Nothing special about the crop	4	(10.0)	12	(30.0)	15	(25.0)	5	(12.5)	4	(10.0)		
16	Excess use of *M. oleifera* causes hypertension	9	(22.0)	6	(15.0)	19	(40.0)	5	(12.5)	1	(2.5)		
17	Not edible when raw	8	(20.0)	16	(40.0)	10		4	(10.0)	2	(5.0)		
18	Pollutes water	11	(27.5)	16	(40.0)	10		2	(5.0)	1	(2.5)		
19	Does not contain vitamins	10	(25.0)	15	(37.5)	8		3	(7.5)	3	(7.5)	1	(25)
20	Does not contain minerals	8	(20.0)	6	(15.0)	14		8	(20.0)	3	(7.5)	1	(2.5)

TABLE V (ii)
DISTRIBUTION OF RESPONDENTS ON THE BENEFIT OF *MORINGA OLEIFERA* (2)

Perception category		
Variable	Frequency	Percentage
Favorable	21	52.2
Unfavorable	19	47.6
Total	40	100.0

F. Respondents' Level of Utilization of Moringa oleifera

Table VI shows that higher proportions (42.5%) of the respondents have never used *Moringa* as a spice. It could mean that they don't really know about the spice. This is contrary to the findings of [9]. The same table shows that majority (65%) of the respondents use *Moringa* as nutritional additives. It means that most of them have been using it. This is consistent with the result of [10].

G. Moringa oleifera Products Based On High and Low Level of Acceptability

Fig. 1 shows that higher percentage of the respondents rated *moringa* pap, Egusi soup, Tea, and pottage highly acceptable while few of the respondents rated it low.

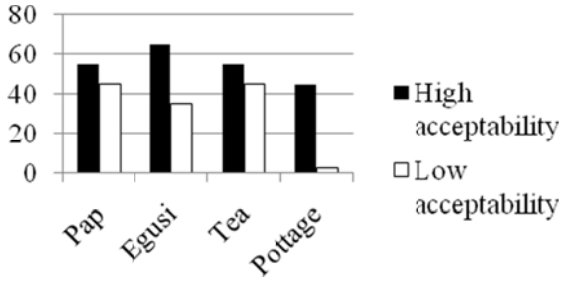

Fig. 1 Distribution of respondents on *Moringa oleifera* products based on high and low level of acceptability

TABLE VI
DISTRIBUTION OF RESPONDENTS ON THE UTILIZATION OF *MORINGA OLEIFERA*

	Usage of *Moringaolaifera*	**Never**		**Occasionally**		**Always**	
1	Animal feed	24	(60.0)	12	(30.0)	4	(10.0)
2	Spice	17	(42.5)	11	(27.5)	12	(30.0)
3	Cream	27	(67.5)	8	(20.0)	5	(12.5)
4	Soap	28	(70.0)	7	(17.5)	5	(12.5)
5	Herb	17	(42.5)	10	(25.0)	13	(32.5)
6	Vegetable	15	(37.5)	11	(27.5)	14	(35.0)
7	Living fence	22	(55.0)	12	(30.0)	6	(15.0)
8	Lubricant oil	29	(72.5)	9	(22.5)	2	(5.0)
9	Added to other dishes	14	(35.0)	14	(35.0)	12	(30.0)
10	Fertilizer	26	(65.0)	9	(22.5)	5	(12.5)
11	Water purifier	27	(67.5)	7	(17.5)	6	(15.0)
12	Natural medicine	18	(45.0)	12	(30.0)	10	(25.0)
13	Alley cropping	24	(60.0)	12	(30.0)	4	(10.0)
14	Ornamental	26	(65.0)	6	(15.0)	8	(20.0)
15	Domestic cleaning agent	28	(70.0)	8	(20.0)	4	(10.0)

TABLE VII
RELATIONSHIP BETWEEN RESPONDENTS' SOCIO-ECONOMIC CHARACTERISTICS AND THE LEVEL OF ACCEPTABILITY OF DIVERSIFIED *MORINGA OLEIFERA* PRODUCTS

Variable	Df	X^2 value	P value	Decision
Sex	1	6.465	0.011	S
Marital status	3	2.000	0.572	NS
Religion	1	1.905	0.168	NS
Primary occupation	3	3.943	0.268	NS
	N	**r - value**	**P – value**	**Decision**
Age		-0.251	0.118	NS
Family size		-0.327	0.040	S
Level of Education		0.089	0.586	NS
Monthly income		-0.327	0.059	NS

Table VII shows that there is significant relationship between sex (X^2=6.465, p=0.011; P≤0.05), family size (r = -0.327, P = 0.040≤0.05) of respondents and the level of acceptability of diversified *Moringa oleifera* products. This could mean that male counterparts participate more in the production of *Moringa* and family size derive more benefit in the usage. The same table shows that age (r = -0.251,P= 0.118), marital status (X^2 = 2.000, P = 0.572), Religion (X^2=1.905; P = 0.168), primary occupation (X^2= 3.943, P =0.268), level of education (r=0.327, P = 0.586) and monthly income (r= -0.0327, P=0.059) are not significant because P >0.05. The null hypothesis is therefore accepted. This implies that age, marital status, Religion, primary occupation level of education and monthly income had no effect on the level of acceptability of the products.

TABLE VIII
RELATIONSHIP BETWEEN RESPONDENTS BENEFITS OF USING *MORINGA OLEIFERA* AND THE LEVEL OF ACCEPTABILITY OF DIVERSIFIED *MORINGA OLEIFERA* PRODUCTS

Variable	r-value	P-value	Decision
Perception Versus Acceptability	0.171	0.292	NS

The result from the table shows that respondents perception on the benefits of use of *Moringa olifera* is not significant (r=0.171, P = 0.292) because P>0.05, therefore the null hypothesis is accepted. This implies that the benefits on use of *Moringa* to the respondents have no effect on the level of acceptability of diversified *Moringa oleifera* products.

TABLE IX
TEST OF SIGNIFICANT RELATIONSHIP BETWEEN THE CONSUMPTION OF *MORINGA OLEIFERA* AND THE LEVEL OF ACCEPTABILITY OF DIVERSIFIED *MORINGA OLEIFERA* PRODUCTS

Variable	r-value	p-value	Decision
Consumption of *Moringa*	0.115	0.480	NS

The result from the above table shows that there is no significant relationship between the consumption of *Moringa oleifera* (r = 0.115, P = 0.480) and the level of acceptability of diversified *Moringa oleifera* products as P>0.05. Therefore null hypothesis is accepted. This implies that consumption of *Moringa oleifera* has no effect on the level of acceptability of diversified *Moringa oleifera* products.

TABLE X
DIFFERENCE IN THE LEVEL OF ACCEPTABILITY OF *MORINGA OLEIFERA* PRODUCTS IN RURAL AND URBAN AREAS

Variable	F-value	P-value	Decision
Level of acceptability of *Moringa oleifera* products between rural and urban areas	0.060	0.808	NS

Table X shows that there is no significant difference in the level of acceptability of diversified *Moringa oleifera* products in rural and urban areas (F= 0.060, P = 0.808). The null hypothesis is therefore accepted. This means that the location of the respondents does not affect the level of acceptability of the *Moringa oleifera* products.

IV. CONCLUSION

Based on the findings of this study, it was observed that the respondents' sex and family size enhance the acceptability of diversified *Moringa oleifera* products. The results also revealed that *Moringa* products are highly acceptable by the respondents.

V. RECOMMENDATION

The following recommendations are made from the findings of this study:

- Processing industries should harness better processing and packaging of *Moringa oleifera* plant for human use.
- Training should be giving to farmers by extension workers on the best practices that are related to cultivation of *Moringa oleifera* plant.
- There should be public awareness through the media on various uses and health benefits of *Moringa oleifera* plants.

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