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Assessment of Peri-Urban and Rural Cassava Farmer`s Perception of Orthodox and Traditional Healthcare Facilities in Enugu State, Nigeria.

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ABSTRACT

The study analyzed the perception of peri-urban and rural cassava farmers' performance of orthodox and traditional healthcare facilities in Enugu State, Nigeria. Multi-stage sampling technique was adopted for this research. Four LGAs out of the seventeen LGAs in Enugu State that produces cassava were purposively selected for this research based on their cassava output figures. LGAs were considered peri-urban and rural based on their population, several government parastatals and business establishments were found in these LGAs. Four communities were selected using the systematic random sampling technique. In each community, (15) cassava farmers were also randomly selected, making a total of (60) respondents in each LGA and a total of (240) respondents. The age bracket of 41-50 years (44.58%) of the respondents dominated cassava farming in the study area. The major perception problems amongst the respondents were; Inadequate/lack of orthodox healthcare facilities, problems of adulteration of drugs, poor government funding, risk of poisoning associated with overuse of drugs, practitioners not usually cordial and friendly in the handling of patients, the harmful buildup of chemicals in the body from drugs, lack of external supervision of healthcare facilities by health inspectors and efficacy of drugs and treatment in the rural LGAs. More so, the result compared the profitability level of the two categories of farmers in the study area. It showed that an average of ₦186,210.56k was incurred as a cost of production per hectare for cassava farms in the rural local government areas compared to ₦183,805.08k per hectare for farmers in the peri-urban local government areas. An average of ₦288,741.11k was recorded as total revenue per hectare for farmers in the rural LGAs compared to ₦296,517.54k recorded per hectare for farmers in peri-urban areas. For the peri-urban and the rural LGAs, the double log functional form was chosen as the lead equation based on some significant variables, the R-square, Adjusted-R square, the F-ratio and the conformity to a priori expectations.

1.0 Introduction.

Healthcare is the prevention, treatment and management of illness as well as the preservation of mental, physical and spiritual well-being of humans through the services offered in healthcare facilities. According to the World Health Organization [WHO] (2000), healthcare embraces all the goods and services designed to promote health, including preventive, curative and palliative intervention, whether directed to individuals or to the whole population.

Agrarian, rural dwellers in Nigeria produce about 95% of locally grown food commodities. The low accessibility and affordability of orthodox medicine by rural dwellers and the need to keep healthy to be economically productive have led to their dependence on traditional medicine.

The fact that traditional medicine practitioners' concept of disease is on a wider plane vis-à-vis orthodox medicine practitioners` has culminated in some socio-cultural and magico-religious practices observed in the preparation and use of plant sources for farmers' health management (Mafimisebi, et al; 2010). The rural populace, which constitutes about 70% of the country's total population and provides virtually all of the nation's home-produced food, usually has little or no access to quality orthodox medicine (Oluwatayo, 2008). In addition, disease incidences are higher in rural areas because of higher levels of illiteracy, poverty, and ignorance (National Bureau of Statistics, 2006).

Katung, (2001) asserts that most rural dwellers, usually approach traditional healthcare services first when they are sick and that they only resort to orthodox medicine vendors when they perceive that traditional healthcare prescriptions have failed. He explained that going to the primary healthcare centers or hospitals was usually the last resort when all else had failed. The superiority of orthodox healthcare facilities over traditional healthcare facilities seems not to be in doubt (WHO, 1978). Tanhashi (1978) explained that a functional health facility or service may be measured by the degree to which it is accessible, affordable, acceptable and available to its potential users.

Following the foregoing, this research was aimed at examining the effects of access to orthodox and traditional healthcare facilities on the performance of rural and peri-urban cassava farmers in Enugu State, Nigeria, with the following research objectives; to describe the socio-economic characteristics of the respondents, examine the perception of respondents about the two healthcare facilities, measure the costs and returns of cassava farmers in the study area, determine the factors affecting the performance of cassava farmers under the healthcare facilities.

2.0 Research methodology

2.1 Study Area

This research was carried out in Enugu State, Nigeria. The state covers a total of 7,161square kilometers of land mass and it is bounded in the South by Abia State and in the North by Kogi State. To the West, it is bounded by Anambra State while on the East it is bounded partly by Benue State and partly by Ebonyi State. Enugu State is found on latitude 6.5000^0N and longitude 7.5000^0E. The State is made up of seventeen (17) Local Governments Areas (LGAs). According to the 2006 census, the Enugu State population stood at 5,590,513 people thus making it rank among the most populous states in the country. The major occupations of the people living in the State are farming and trading while a few work as civil servants. Both cash crops and food crops including fruits and vegetables are produced in Enugu State. Cash crops like cashew, palm produce and food crops like yam, cassava, cocoyam, maize and rice are also produced in the state. Bananas and other fruits and vegetables are also produced in Enugu State. There are two distinct seasons namely wet and dry seasons.

2.2 Sampling Procedure and Sample Size

The multi-stage sampling technique was adopted for this research. Four LGAs out of the seventeen LGAs in Enugu State that produces cassava very well were purposively selected for this research based on their cassava output figures. These LGAs are Uzo Uwani LGA, Igbo Etiti LGA, Nsukka and Igbo Eze South LGAs. Nsukka and Igbo Etiti LGAs were considered as the peri-urban LGAs while Igbo Eze South and Uzo Uwani LGAs were considered the rural LGAs, based on the population, number of Government Parastatals and business establishments found in these LGAs. From each LGA, four communities were selected using the systematic random sampling technique. In each community, fifteen (15) cassava farmers were also selected for interview using the systematic random sampling method, making a total of sixty (60) respondents in each LGA, and a total of 240 cassava farmers were interviewed for this research.

Focus Group Discussion (FGD) was also used in this research. Four (FGDs) were conducted one for female respondents and the other for male respondents. Each FGD group consisted of at least six farmers, the essence of this was to validate some of the data in the questionnaire used for this research. Thus, farmers who participated in the FGD were excluded from the personal interview. The third set of focus group discussions was with Chief Medical Directors of orthodox healthcare facilities while the fourth FGD was with the traditional medicine custodians of traditional healthcare facilities in the study area. The essence of this was to ascertain what types of diseases these cassava farmers suffer from, how accessible and affordable orthodox and traditional healthcare facilities are and know the factors that prevent the cassava farmers from seeking healthcare in the healthcare facilities in the study area.

2.3 Sources of Data

Both primary and secondary data were used for this study. The primary data for this research were sourced by administering a semi-structured questionnaire to cassava farmers. To fulfil the specific objectives of this research, the following analytical tools were employed namely, descriptive statistics such as mean, frequency distribution, percentages and Likert scale. Probit model regression and Ordinary Least Squares (OLS) were also employed. Objectives 1 and 2, that is to describe the socio-economic characteristics of the respondents and to examine the perception of respondents about the two healthcare facilities were analyzed using descriptive statistics namely; percentages, frequency distribution and Likert scale. Objective 3, to measure the costs and returns of cassava farmers in the study area, budgetary analysis was used. Objective 4, to determine the factors affecting the performance of cassava farmers in healthcare facilities, the ordinary least square (OLS) with the four functional forms were used. Four functional forms (linear, semi-log, double log and exponential) were fitted and the best equation, based on the following criteria of adjusted R^2, F-value, R^2, numbers of significant variables/signs of the coefficients and a priori expectations, was chosen. The implicit form of the OLS regression is as: Y = f (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18} + e), while 'e' represents the error term and;

Y = Output of cassava (kg/ha)
X_1 = age of cassava farmers (years)
X_2 = amount spent on labour (naira)
X_3 = Quantity of agrochemicals (litres)
X_4 = farm size (ha)
X_5 = cost of planting materials (naira/ha)
X_6 = amount spent on farm implements (naira)
X_7 = level of education of farmers (years)
X_8 = distance to hospital in (km)
X_9 = number of unhealthy days (days)
X_{10} = access to improved new varieties
X_{11} = distance to markets (km)
X_{12} = extension agents visits (days)
X_{13} = farming experience (years)
X_{14} = health insurance (1=yes, 0=no)
X_{15} = issue of down payment before commencement of treatment (1=yes, 0=no)
X_{16} = cost of seeking treatment (naira)
X_{17} = access to personal means of transportation (1=yes, 0=no)
X_{18} = cost of transportation to healthcare facilities (naira)

3.0 Results and discussions.

3.1 Socio-Economic Characteristics of Farmers

The following Socio-Economic Variables were sampled as presented in table 1.

Table 1: Distribution of Socio-Economic Characteristics of the Respondents

Socio-Economic Variables	Frequency (N=240)	Percentage (%)
Age Range (Years)		
<30	5	2.08
31-40	35	14.58
41-50	107	44.58
51-60	78	32.50
>60	15	6.25
Total	240	100
Household Size		
1-3	31	12.91
4-6	152	63.33
7-9	55	22.91
>9	2	0.83
Total	240	100
Gender		
Male	156	65.0
Female	84	35.0
Total	240	100
Level of Education		
No of Education	39	16.25
Primary School	57	23.75
Secondary School	39	16.25
NCE/OND	41	17.08
HND	28	11.66
B.Sc	36	15.01
Total	240	100
Marital Status		
Married	192	80.0
Single	28	11.66
Widowed	20	8.33
Total	240	100
Area of Land (ha)		
<2	122	50.83
2.1-4.0	88	36.66
4.1-6.0	30	12.51
Total	240	100
Distance in Kilometers		
<2	150	62.50
2.1-4.0	59	24.58
4.1-6.0	31	12.92
Total	240	100

Source: Field Survey, 2021

Table 1, showed that there was a major age bracket that dominated cassava farming in the study area and that is the age bracket of 41-50 years accounting for (44.58%) of the respondents, followed by a close age range of 51-60 years which represents (32.50%). This indicates that cassava farming as an occupation provided more job opportunities for farmers within the age bracket of 41-60 years, implying that middle-aged farmers have greater strength to tackle labour-intensive farming activities like cassava production, and also explains why younger farmers 30 years and below with (2.08%) were not major producers. The result further implied that cassava farmers within the economically active age bracket access and utilize healthcare services more than the elderly ones because they still have more energy to travel any distance to access healthcare from any healthcare facility in the study area. The result in Table 1 above showed that (63.33%) of the respondents have a household size of 4-6 persons, followed by those of 7-9 persons with (22.91%).

This shows that the farmers can partly satisfy their labour needs and depend less on hired labour. Some other families had 1-3 persons with (12.91%), showing they spend more on hired labour, and those with household size exceeding 9 persons with (0.83%) were very conscious of the interplay between population growth and scarce resources. The result in Table 1, indicates that the majority of the respondents indulging in cassava production in the study area were mostly males with (65.0%) and this is so because cassava farming like most root-tuber cultivation is mostly done by men. The study also presented that only (35.0%) of females indulged in cassava production in the study area. The result from Table 1, shows that (83.75%) of the respondents are literate as most of them fall within the range of primary school and tertiary levels of education. The respondents are more likely to react positively to innovations that will enhance their productivity. The respondents with the highest percentage were those with a primary school level of education (23.75%), followed by

NCE/OND holders (17.08%). The respondents with HND and B.Sc level of education accounted for (26.67%). Educa-

tion promotes the rate of adoption of innovation by farmers and it's a vital tool as it helps them to react sharply and con-

Table 2: *Distribution of Respondents by Perception Statements for Orthodox Healthcare Facilities in the Peri-Urban LGAs.*

S/N	Perception Questions	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed	Total Score	Mean	Ranking
1.	Easily Accessible	53	68	43	40	36	782	3.2583	18th
2.	Affordable Cost	65	70	65	40	-	880	3.6666	2nd
3.	Standardized Procedure	58	66	60	56	-	846	3.5250	6th
4.	Involves expert/skilled professional	58	65	59	58	-	843	3.5125	8th
5.	Use advanced and sophisticated equipment and tools	48	73	62	57	-	832	3.4666	11th
6.	Short time period between commencement of treatment and discharge of patients	58	72	58	52	-	856	3.5666	5th
7.	Efficacy of drugs and treatment	64	70	62	44	-	874	3.6416	3rd
8.	Low risk of drug residual or side effect	64	71	60	45	-	964	4.0166	1st
9.	Effective for curing chronic disease conditions	62	69	53	50	-	857	3.5708	4th
10.	Practitioners are usually cordial and friendly in handling patients	50	68	52	59	11	834	3.3625	15th
11.	Wastage of ample time in the process of accessing treatment	55	72	54	50	9	807	3.4750	9th
12.	Harmful buildup of chemical in the body	57	67	50	40	26	809	3.3708	13th
13.	High cost of drugs	55	68	40	39	38	783	3.2625	17th
14.	Increased rate of unqualified/uncertified practitioner	40	70	60	52	18	782	3.2583	18th
15.	Inadequate or lack of healthcare facilities	38	65	55	47	35	744	3.1000	27th
16.	Poor economic status of most farm families	41	68	58	50	23	774	3.2250	20th
17.	Problem of adulteration	37	64	54	46	39	734	3.0583	29th
18.	Do you agree there is risk of poisoning associated with overuse of drugs from this healthcare facility	39	66	56	48	31	754	3.1416	24th
19.	Do you agree with the usual claim that one drug can cure several illnesses	38	65	55	47	35	744	3.1000	27th
20.	Absence of standardized measurement of drugs	40	67	57	49	27	764	3.1833	22nd

Source: Field Survey, 2021

Table 2: *Distribution of Respondents by Perception Statements for Orthodox Healthcare Facilities in the Peri-Urban LGAs. (Cont'd)*

S/N	Perception Questions	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed	Total Score	Mean	Ranking
21.	Do you agree that there are socio-cultural beliefs attached to this healthcare facility	58	67	51	49	15	824	3.4333	12th
22.	Do you agree that the personnel in these healthcare facilities are efficient	53	69	51	47	20	808	3.3666	14th
23.	Do you agree that the personnel in these healthcare facilities are available on demand	37	67	57	49	30	752	3.1333	26th
24.	Do you agree that this healthcare facility lacks external supervision from healthcare inspectors	61	68	57	42	12	844	3.5166	7th
25.	Do you agree that there is lack of awareness of about the existing healthcare facility in your area	56	63	52	37	32	794	3.3083	16th
26.	Do you agree these healthcare facilities has poor government funding	35	65	55	47	38	732	3.0500	30th
27.	Do you agree you dispose this healthcare facility dosage of medicines immediately after getting well	60	66	58	40	16	834	3.4750	9th
28.	Do you agree that this healthcare facility is very well advertised in the media	50	55	52	46	37	755	3.1458	23rd
29.	Do you agree that there should be a policy to overhaul this healthcare facility in your area	50	57	49	45	39	754	3.1416	24th
30.	Do you agree you approach this healthcare facility after first self-medication has failed	54	67	39	38	42	773	3.2208	21st

Source: Field Survey, 2021

structively to changes in their environment Respondents with no formal education were just (16.25%). This implies that there will be ease of adoption of new ideas and innovations as well as the ability to plan and take risks amongst the respondents in the study area. The level of literacy of these cassava farmers will also enhance their use of healthcare facilities. Cassava production in the study area was engaged in by all categories of people, married, single and widowed. The result in Table 1, clearly shows that most of the cassava farmers with (88.75%) were married. Single respondents are just 3.33% and those that were widow(ers) accounted for 7.92% of the respondents. This indicates that since most of the respondents were married, additional costs will be incurred to maintain the health status of the family members which may lead to an increase in the participation of the married respondents in sourcing more funds for the treatment of illnesses and diseases in healthcare facilities. The result from Table 1, also showed that land as input is fairly available in the study area. The majority of the farmers 50.83% cultivated less than 2ha of land. Few of the farmers, 36.66% and 12.51% respectively cultivated between 2.1-4.0 and 4.1-6.0 hectares of land respectively for cassava production. Land is known to be one of the limiting inputs in agriculture due to population growth. The result from Table 1, implies that those farmers who cultivated over 2hectares of land may make more income and seek quality treatment from any healthcare facility of their choice.

Table 1 further indicated that (62.50%) of the cassava farmers in the study area live close to 2.0 km to a healthcare facility. About (25.0%) of the cassava farmers live within 2.1-4.0 km to a healthcare facility in the study area. Another (12.92%) of the farmers live 4.1-6.0 km away from healthcare facilities in the study area. This means that some of the cassava farmers will be finding it difficult accessing a healthcare facility and also since their farming activities are done manually, the number of kilometers they trek to a healthcare facility reduces the strength which would have been put into the production of cassava.

3.2 Perception of Respondents about the Healthcare Facilities in the Study Area.

From the result in Table 2 above, the respondents agreed with the perception statements about orthodox healthcare services in the peri-urban LGAs. Their mean is indicated after each statement. From the opinions of the respondents in the study area, low risk of drug residue or side effects had the highest mean (4.0666) and was ranked first indicating that the farmers believed that drugs administered/prescribed by these orthodox healthcare facilities to the farmers do not affect their health in any way at all in the study area. Affordable cost of treatment/services in these orthodox healthcare facilities with a mean of (3.6666) was ranked second showing that the farmers in the study area could afford the services they render. Efficacy of drugs and treatment with a mean of (3.6416) and Effectiveness in curing chronic disease conditions with a

mean of (3.5708), were ranked third and fourth highest in Table 2, indicating that the drugs/services administered by the orthodox healthcare facilities had a very good effect on the illnesses they were meant to cure on the farmers in the study area. The short time between the commencement of treatment and discharge of patients (3.5666) and standardized procedures (3.5250) were also ranked fifth and sixth respectively in Table 2. However, Inadequate /lack of healthcare facilities and the usual claim that one drug treats

all illnesses had the same mean of (3.1000) and was ranked twenty-seventh in Table 2. The problem of adulteration of drugs (3.0583) was ranked twenty-ninth while the farmer's opinions on government funding of these orthodox healthcare facilities in the peri-urban areas was the least ranked thirtieth with a mean of (3.0500), indicating that government funding is required in the orthodox healthcare facilities in the Peri-Urban LGAs.

Table 3: Distribution of Respondents by Perception Statements for Traditional Healthcare Facilities in the Peri-Urban LGAs.

S/N	Perception Questions	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed	Total Score	Mean	Ranking
1.	Easily Accessible	40	67	57	49	27	764	3.1833	22nd
2.	Affordable Cost	58	67	51	49	15	824	3.4333	12th
3.	Standardized Procedure	53	69	51	47	20	808	3.3666	14th
4.	Involves expert/skilled professional	37	67	57	49	30	752	3.1333	26th
5.	Use advanced and sophisticated equipment and tools	61	68	57	42	12	844	3.5166	7th
6.	Short time period between commencement of treatment and discharge of patients	56	63	52	37	32	794	3.3083	16th
7.	Efficacy of drugs and treatment	50	57	49	45	39	754	3.1416	24th
8.	Low risk of drug residual or side effect	60	66	58	40	16	834	3.4750	9th
9.	Effective for curing chronic disease conditions	50	55	52	46	37	755	3.1458	23rd
10	Practitioners are usually cordial and friendly in handling patients	35	65	55	47	38	732	3.0500	30th
11.	Wastage of ample time in the process of accessing treatment	50	68	52	59	11	834	3.3625	15th
12.	Harmful buildup of chemical in the body	55	72	54	50	9	807	3.4750	9th
13.	High cost of drugs	57	67	50	40	26	809	3.3708	13th
14.	Increased rate of unqualified/ uncertified practitioner	55	68	40	39	38	783	3.2625	17th
15.	Inadequate or lack of healthcare facilities	40	70	60	52	18	782	3.2583	18th
16.	Poor economic status of most farm families	38	65	55	47	35	744	3.1000	27th
17.	Problem of adulteration	41	68	58	50	23	774	3.2250	20th
18.	Do you agree there is risk of poisoning associated with overuse of drugs from this healthcare facility	37	64	54	46	39	734	3.0583	29th
19.	Do you agree with the usual claim that one drug can cure several illnesses	39	66	56	48	31	754	3.1416	24th
20.	Absence of standardized measurement of drugs	38	65	55	47	35	744	3.1000	27th

Source: Field Survey, 2021

Table 3: *Distribution of Respondents by Perception Statements for Traditional Healthcare Facilities in the Peri-Urban LGAs.*
(Cont'd)

No.	Statement						Total	Mean	Rank
21.	Do you agree that there are socio-cultural beliefs attached to this healthcare facility	53	68	43	40	36	782	3.2583	18th
22.	Do you agree that the personnel in these healthcare facilities are efficient	65	70	65	40	-	880	3.6666	2nd
23.	Do you agree that the personnel in this healthcare facility is available on demand	58	66	60	56	-	846	3.5250	6th
24.	Do you agree that this healthcare facility lacks external supervision from healthcare inspectors	58	65	59	58	-	843	3.5125	8th
25.	Do you agree that there is lack of awareness of about the existing healthcare facility in your area	48	73	62	57	-	832	3.4666	11th
26.	Do you agree these healthcare facilities has poor government funding	58	72	58	52	-	856	3.5666	5th
27.	Do you agree you dispose this healthcare facility dosage of medicines immediately after getting well	64	70	62	44	-	874	3.6416	3rd
28.	Do you agree that this healthcare facility is very well advertised in the media	64	71	60	45	-	964	4.0166	1st
29.	Do you agree that there should be a policy to overhaul this healthcare facility in your area	54	67	39	38	42	773	3.2208	21st
30.	Do you agree you approach this healthcare facility after first self-medication has failed	62	69	53	50	-	857	3.5708	4th

Source: Field Survey, 2021.

Results from Table 3 show that most respondents agreed that the traditional healthcare facilities in the peri-urban LGAs are beneficial. Most of the respondents agreed that the traditional healthcare facilities in the Peri-Urban LGAs were well advertised in the media with a mean of (4.0166) ranking first in Table 3, also the respondents agreed that the personnel in the traditional healthcare institutions were effective with a mean of (3.6666) ranking second on Table 3. Most of the respondents agreed that they dispose of drugs gotten from these traditional healthcare facilities when they get well with a mean of (3.6416) ranking third on the table. The respondents also agreed that they do most often approach these traditional healthcare facilities in the Peri-Urban LGAs after they have first self-medicated (3.5708) and ranked fourth.

The result from Table 4 further revealed that the respondents agreed that the orthodox healthcare facilities in the rural LGAs of the study area were also beneficial because of the following; Most farm families with poor economic status usually patronize these orthodox healthcare facilities in the rural LGAs because of the standardized procedures they follow during treatment and rendering of healthcare services with a mean of (4.0166) ranking the highest on Table 4. Efficacy of drugs and treatments (3.6666) was ranked second highest while affordable cost of treatment and services rendered by the orthodox healthcare facilities in the rural LGAs (3.6416) was ranked third also involvement of experts/ skilled professional (3.5708) was ranked fourth in the rural LGAs while easy accessibility in terms of distance to the rural communities (3.5666) was ranked fifth on Table 4. Furthermore, the respondents opined that the drugs from the orthodox healthcare facilities in the rural LGAs could lead to harmful buildup of chemicals in the body (3.0583) and ranked twenty-ninth on Table 4 and lack of external supervision from healthcare inspectors (3.0500) on the orthodox healthcare facilities because they are located in the rural LGAs where these healthcare inspectors rarely visit, was ranked thirtieth, the least.

Table 4: *Distribution of Respondents by Perception Statements for Orthodox Healthcare Facilities in the Rural LGAs.*

S/N	Perception Questions	Strongly Agreed	Agreed	Unde-cided	Disa-greed	Strongly Disa-greed	Total Score	Mean	Ranking
1.	Easily Accessible	58	72	58	52	-	856	3.5666	5th
2.	Affordable Cost	64	70	62	44	-	874	3.6416	3rd
3.	Standardized Procedure	64	71	60	45	-	964	4.0166	1st
4.	Involves expert/skilled professional	62	69	53	50	-	857	3.5708	4th
5.	Use advanced and sophisticated equipment and tools	50	68	52	59	11	834	3.3625	15th
6.	Short time period between commencement of treatment and discharge of patients	53	68	43	40	36	782	3.2583	18th
7.	Efficacy of drugs and treatment	65	70	65	40	-	880	3.6666	2nd
8.	Low risk of drug residual or side effect	58	66	60	56	-	846	3.5250	6th
9.	Effective for curing chronic disease conditions	58	65	59	58	-	843	3.5125	8th
10.	Practitioners are usually cordial and friendly in handling patients	48	73	62	57	-	832	3.4666	11th
11.	Wastage of ample time in the process of accessing treatment	41	68	58	50	23	774	3.2250	20th
12.	Harmful buildup of chemical in the body	37	64	54	46	39	734	3.0583	29th
13.	High cost of drugs	39	66	56	48	31	754	3.1416	24th
14.	Increased rate of unqualified/uncertified practitioner	38	65	55	47	35	744	3.1000	27th
15.	Inadequate or lack of healthcare facilities	40	67	57	49	27	764	3.1833	22nd
16.	Poor economic status of most farm families	55	72	54	50	9	807	3.4750	9th
17.	Problem of adulteration	57	67	50	40	26	809	3.3708	13th
18.	Do you agree there is risk of poisoning associated with overuse of drugs from this healthcare facility	55	68	40	39	38	783	3.2625	17th
19.	Do you agree with the usual claim that one drug can cure several illnesses	40	70	60	52	18	782	3.2583	18th
20.	Absence of standardized measurement of drugs	38	65	55	47	35	744	3.1000	27th

Source: Field Survey, 2021.

The result from Table 5 shows the opinions of respondents about the traditional healthcare facilities in the rural LGAs of the study area; Most of the respondents agreed that there is a risk of poisoning associated with the overuse of drugs from the traditional healthcare facilities in the rural LGAs (4.0166) and ranked first on Table 5. More so, most respondents believe that the harmful buildup of chemicals could arise from the overuse of drugs from these traditional healthcare facilities in the study area. Adulteration of drugs poses plenty of problems in the traditional healthcare facilities in the rural LGAs (3.6416) and ranked third in Table 5. Claims of one drug cures several illnesses (3.5708) ranked fourth while the poor economic status of most farm families (3.5666) makes the rural farmers patronize these traditional healthcare facili-

ties in the rural LGAs. However, perception statements with the least means were the Efficacy of drugs and treatments from these traditional healthcare facilities (3.0583) and lack of supervision (3.0500) from healthcare inspectors on the traditional healthcare facilities because they are located in the rural LGAs. Summarily, the respondents agreed to so many perception questions as shown in Table 2-5. The major perception problems deduced in this study area amongst the respondents relate primarily to; Inadequate/lack of orthodox healthcare facilities, problems of adulteration of drugs, poor government funding, risk of poisoning associated with overuse of drugs, practitioners not usually cordial and friendly in the handling of patients, the harmful buildup of chemicals in the body from drugs, lack of external supervision of

Table 4: Distribution of Respondents by Perception Statements for Orthodox Healthcare Facilities in the Rural LGAs. (Cont'd)

S/N	Perception Statement						Total Score	Mean	Ranking
21.	Do you agree that there are socio-cultural beliefs attached to this healthcare facility	50	57	49	45	39	754	3.1416	24th
22.	Do you agree that the personnel in these healthcare facilities are efficient	60	66	58	40	16	834	3.4750	9th
23.	Do you agree that the personnel in this healthcare facility is available on demand	50	55	52	46	37	755	3.1458	23rd
24.	Do you agree that this healthcare facility lacks external supervision from healthcare inspectors	35	65	55	47	38	732	3.0500	30th
25.	Do you agree that there is lack of awareness of about the existing healthcare facility in your area	54	67	39	38	42	773	3.2208	21st
26.	Do you agree these healthcare facilities has poor government funding	58	67	51	49	15	824	3.4333	12th
27.	Do you agree you dispose this healthcare facility dosage of medicines immediately after getting well	53	69	51	47	20	808	3.3666	14th
28.	Do you agree that this healthcare facility is very well advertised in the media	37	67	57	49	30	752	3.1333	26th
29.	Do you agree that there should be a policy to overhaul this healthcare facility in your area	61	68	57	42	12	844	3.5166	7th
30.	Do you agree you approach this healthcare facility after first self-medication has failed	56	63	52	37	32	794	3.3083	16th

Source: Field Survey, 2021

Table 5: Distribution of Respondents by Perception Statements for Traditional Healthcare Facilities in the Rural LGAs.

S/N	Perception Questions	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed	Total Score	Mean	Rank-ing
1.	Easily Accessible	55	72	54	50	9	807	3.4750	9th
2.	Affordable Cost	57	67	50	40	26	809	3.3708	13th
3.	Standardized Procedure	55	68	40	39	38	783	3.2625	17th
4.	Involves expert/skilled professional	40	70	60	52	18	782	3.2583	18th
5.	Use advanced and sophisticated equipment and tools	38	65	55	47	35	744	3.1000	27th
6.	Short time period between commencement of treatment and discharge of patients	41	68	58	50	23	774	3.2250	20th
7.	Efficacy of drugs and treatment	37	64	54	46	39	734	3.0583	29th
8.	Low risk of drug residual or side effect	39	66	56	48	31	754	3.1416	24th
9.	Effective for curing chronic disease conditions	38	65	55	47	35	744	3.1000	27th
10.	Practitioners are usually cordial and friendly in handling patients	40	67	57	49	27	764	3.1833	22nd
11.	Wastage of ample time in the process of accessing treatment	53	68	43	40	36	782	3.2583	18th
12.	Harmful buildup of chemical in the body	65	70	65	40	-	880	3.6666	2nd
13.	High cost of drugs	58	66	60	56	-	846	3.5250	6th
14.	Increased rate of unqualified/ uncertified practitioner	58	65	59	58	-	843	3.5125	8th
15.	Inadequate or lack of healthcare facilities	48	73	62	57	-	832	3.4666	11th
16.	Poor economic status of most farm families	58	72	58	52	-	856	3.5666	5th
17.	Problem of adulteration	64	70	62	44	-	874	3.6416	3rd
18.	Do you agree there is risk of poisoning associated with over-use of drugs from this healthcare facility	64	71	60	45	-	964	4.0166	1st
19.	Do you agree with the usual claim that one drug can cure several illnesses	62	69	53	50	-	857	3.5708	4th
20.	Absence of standardized measurement of drugs	50	68	52	59	11	834	3.3625	15th

Source: Field Survey, 2021

Table 5: Distribution of Respondents by Perception Statements for Orthodox Healthcare Facilities in the Rural LGAs. (Cont'd)

No.	Statement								
21.	Do you agree that there are socio-cultural beliefs attached to this healthcare facility	50	57	49	45	39	754	3.1416	24th
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Source: Field Survey, 2021.

Table 6, compared the profitability level of the two categories of farmers in the study area. It showed that an average of ₦186,210.56k was incurred as a cost of production per hectare for cassava farms in the rural local government areas compared to ₦183,805.08k per hectare for farmers in the peri-urban local government areas. This is because peri-urban farmers mostly settle and reside in the peri-urban areas and therefore spend less on transportation looking for production inputs compared to the rural farmers in the rural local government areas who reside in these rural areas and spend much on transportation. Peri-urban farmers spend less on labour because they have easy access to labour, unlike rural farmers who pay for hired labour because most of the able-bodied men have migrated to the urban and peri-urban centres, therefore peri-urban farmers spend less on the cost of labour and the cassava farms in general. An average of ₦288,741.11k was recorded as total revenue per hectare for farmers in the rural LGAs compared to ₦296,517.54k recorded per hectare for farmers in peri-urban areas. This is because larger farms bring more income and profits. The average net revenue for farmers in the rural LGAs was recorded as ₦102,530.55 while that of the peri-urban farmers was ₦112,712.46K per hectare. This implied that cassava farmers in the peri-urban areas generated more revenue than cassava farmers in the rural LGAs. The percentage profit ratio of cassava farmers in the rural LGAs was calculated to be (0.55) which is 55% while that of peri-urban farmers was (0.61) which is 61%. A percentage profit ratio of 55% implies that when farmers obtain loans for cassava production, it is expected that they should be able to repay the loan at a commercial bank rate of at least 32% interest rate per annum if they got one. The expense structure ratio (ESR) of 0.20 implies that 20% of the total production cost was from total fixed costs/inputs for cassava farmers in the rural LGAs and 23% for peri-urban farms with an ESR of 0.23.

From Table 7, in both the peri-urban and the rural LGAs, the double log functional form was chosen as the lead equation based on a number of significant variables, the R-square, Adjusted-R square, the F-ratio and the conformity to a priori expectations. The R^2 value of 0.729 implied that about 72.9 percent of the total variability in cassava output is explained by the explanatory variables in the model. The result showed that in the peri-urban LGAs, the age of cassava farmers was significant at 1%, farm size was significant at 1%, level of education was significant at 5%, extension visits were significant at 5%, the farming experience was significant at 10% and access to improved varieties was significant at 1%. For the rural LGAs, age and farm size were significant at 1% apiece, level of education was significant at 10% while extension visits and farming experience were significant at 5% apiece. In the peri-urban LGAs, the result in Table 7 revealed that;

Age: The parameter estimate of age was positive and significant at 1%. This indicates that as the farmer is getting older, the output of cassava farmers will increase by 22.1%. This finding agrees with the findings of Ajibefun, et al; (2002) and Ojo (2003). They found out that technical inefficiency tends to increase with age.

Farm Size: The parameter estimate of farm size was positive and significant at 1%. This indicates that as farm size increases it translates into an 88.2% increase in the output of cassava farmers which is attributable to simple economy of scale, that as farm size increases in hectares output will also increase. The finding conforms with the findings of Nandi, et al; (2011) who worked on the analysis of cassava production in Cross River State.,

Level of Education: The parameter estimate for the level of education was also positive and significant at a 5% level. By implication increase in the level of education will increase output by 6.3%. This means that educated farmers can better understand and assimilate farming information than their illiterate counterparts. They are high-risk takers and domi-

nate the early adopters` category. Gbigi, et al; (2010) reported that educated farmers are more efficient in the use of productive resources to maximize output, presumably due to their enhanced ability to acquire knowledge. The findings corroborated that of Nandi, et al; (2011) who worked on the analysis of cassava production in Obubra Local Government Area of Cross River State, Nigeria.

Access to Improved Varieties: The parameter estimate for access to improved varieties was positive and significant at 1%. Indicating that increase in access to improved cassava varieties from the ADPs, the Ministry of Agriculture

3.3 Budgetary Analysis of Cost/Returns and Profitability of Cassava Farmers

Table 6: Estimated Cost/Returns and Profitability of Cassava Production from the Peri-Urban and Rural Cassava Communities

Cost of Estimation	Peri-Urban Cassava Farmers	Percentages (%)	Rural Cassava Farmers	Percentages (%)
Cost of labour	252,600.00	38.2	229,109	33.7
Cost of Agrochemicals	177,100.00	14.1	171,000	15.6
Cost of Processing/harvests	157,520	8.8	173,750	12.2
Cost of transportation	161,530.00	9.2	171,530	14.8
Contingency Cost	56,000	1.3	58,000	1.2
Total Variable Cost	804,750		803, 389	
Total Variable Cost/ha	149,027.77	88.2	140,945	78.1
Fixed Inputs				
Average Farm Size	5.4		5.7	
Land lease Cost	140,550.00	6.5	163,600	12.7
Depreciation Cost on Implements	60,237.00	1.1	80,700	4.3
Total Fixed Cost	200,787.00		244,300.00	
Total Fixed Cost/ha	37,182.77	7.2	42,859.64	18.9
Total Cost of Production/ha	186,210.56	78.6	183,805.08	84.0
Total Revenue	1,559,202		1,690,150	
Total Revenue/ha	288,741.11		296,517.54	
Gross Margin/ha	139,713.34		155,572.54	
Net Revenue/ha	102,530.55		112,712.46	
Percentage Profit Ratio	0.55		0.61	
Expense Structure Ratio	0.20		0.23	

Source: Field Survey, 2021.

and the research institutes led to an increase in the level of output by 3.8%. Farmers are encouraged to continue accessing improved cassava varieties from these agencies.

Extension visits: The parameter estimate for extension visits were positive and significant at 5% level. The plausible explanation to this is that extension agents bridge the information gap between farmers and research institutes. Farmers who have constant access to them are bound to be equipped with first-hand information regarding new farming practices and techniques. Hence improving upon their efficiency and output, and thus in this case increasing output by 17.6%. This result complements that of Achoja, et al; (2012) who worked on the determinants of export-led cassava production intensification among small-holder farmers in Delta State. Nigeria.

Farming Experience: The parameter estimate for farming experience was positive and significant at the 10% level, meaning that cassava output increases with the farmer`s ex-

perience. This is in line with a prior expectation because experienced farmers are known to be early adopters of agricultural innovations due to first-hand information gotten from extension agents and hence enhancing output levels by 0.5%. This finding is in line with Nwosu, et al; (2012), who worked on socio-economic determinants of fluted pumpkin leaf (Telferia occidentalis) production in Ezinihitte Mbaise Local Government Area of Imo State, Nigeria.

On the other hand, in the rural LGAs, the double log functional form was chosen as the lead equation based on a number of significant variables, the R-square, Adjusted-R square, the F-ratio and the conformity to a priori expectations. The R^2 value of 0.764 implied that about 76.4 percent of the total variability in cassava output is explained by the explanatory variables in the model. The result in Table 8 further revealed that age and farm size were both positive and significant at 1% level of significance, also the result shows that an increase in age and farm size led to increasing in output by 19.3% and 84.1% respectively. The level of education was

3.4 OLS Estimates of Effects of Access to Healthcare Facilities on Output

Table 7: *Estimates of OLS showing Effects of Access to Healthcare Facilities on Output*

Peri-Urban LGA`s				Rural LGA`s			
Variables	Linear	Semi-log	Double-log	Exponential	Linear	Semi-log	Double-log	Exponential
Age	1084.287	0.004	0.221***	56532.574	1190.194	0.006	0.199***	49327.467
	(0.379)	(0.529)	(0.003)	(0.323)	(0.075)	(0.260)	(0.003)	(0.114)
Agrochemicals	-207.018	0.002	0.020	3585.560	1452.336	-0.002	0.061	16838.538
	(0.870)	(0.759)	(0.595)	(0.637)	(0.068)	(0.804)	(0.236)	(0.017)
Farm Size	14225.213	0.342	0.882***	33219.351	13042.233	0.339	0.841***	31234.619
	(0.086)	(0.000)	(0.000)	(0.092)	(0.023)	(0.000)	(0.000)	(0.001)
Cost of planting materials	-0.085	-4.708	0.000	-1509.562	0.277	5.833	0.000	-533.515
	(0.626)	(0.611)	(0.962)	(0.717)	(0.354)	(0.020)	(0.970)	(0.274)
Amount spent on farm implement	-0.183	-3.601	0.010	2524.061	-.0.298	-6.233	0.010	1534.772
	(0.803)	(0.355)	(0.466)	(0.966)	(0.779)	(0.481)	(0.348)	(0.274)
Level of education of farmers	7277.478	0.033	0.063**	13542.956	-2090.020	0.002	0.001*	-5478.571
	(0.154)	(0.220)	(0.030)	(0.334)	(0.482)	(0.927)	(0.089)	(0.542)
Distance to hospitals	-4983.232	-0.019	-0.020	-4473.799	-3768.608	0.022	0.003	-3061.202
	(0.292)	(0.445)	(0.666)	(0.644)	(0.365)	(0.517)	(0.942)	(0.546)
Number of un-healthy days	-6085.974	-0.014	-0.045	-17811.62	-2141.485	-0.026	-0.061	-3609.178
	(0.145)	(0.520)	(0.520)	(0.218)	(0.474)	(0.302)	(0.348)	(0.680)
Access to improved new varieties	9082.766	-0.036	0.038***	8776.258	2462.297	0.026	0.011	1552.978
	(0.049)	(0.137)	(0.004)	(0.058)*	(0.280)	(0.172)	(0.540)	(0.540)
Distance to Markets	-1594.006	-0.003	0.000	170.850	-1103.018	-0.013	-0.035	-750.563
	(0.723)	(0.903)	(0.998)	(0.989)	(0.843)	(0.787)	(0.392)	(0.893)
Extension Agents	-27586.50	-0.219	-0.176**	-24687.90	4552.200	0.081	0.035**	1806.597
	(0.116)	(0.020)	(0.049)	(0.175)	(0.653)	(0.338)	(0.035)	(0.858)
Experience	768.342	-0.003	0.005*	1050.654	-1545.409	-0.013	-0.008**	-1279.809
	(0.757)	(0.814)	(0.061)	(0.667)	(0.138)	(0.130)	(0.027)	(0.193)
Health Insurance	27726.914	0.167	0.103	17534.388	-4554.400	0.035	0.064	5780.862
	(0.178)	(0.127)	(0.330)	(0.418)	(0.611)	(0.637)	(0.332)	(0.517)
Issue of down payment before commencement of treatment	4081.382	0.001	0.017	2432.037	-20356.64	-0.069	-0.105	-20647.480
	(0.802)	(0.993)	(0.843)	(0.887)	(0.057)	(0.436)	(0.185)	(0.055)
Cost of seeking treatment	-0.142	-7.532	-0.005	175.606	-0.054	-8.591	0.010	815.063
	(0.475)	(0.475)	(0.746)	(0.953)	(0.702)	(0.465)	(0.480)	(0.657)
Access to personal means of transportation	-901.283	-0.005	-0.022	-5395.365	8782.160	0.104	0.064	6382.199
	(0.825)	(0.828)	(0.253)	(0.169)	(0.146)	(0.040)	(0.157)	(0.296)
Waiting time before seeing a physician	713.018	0.004	0.026	4559.886	-66.662	4.761	-0.019	-2407.931
	(0.048)	(0.030)	(0.219)	(0.298)	(-0.668)	(0.971)	(0.392)	(0.424)
Cost of transportation to healthcare facility	-241.355	-0.001	-0.018	-6849.231	-29.080	0.000	-0.044	-9260.078
	(0.065)	(0.139)	(0.779)	(0.606)	(0.739)	(0.579)	(0.599)	(0.415)
	R²=0.316	R²=0.688	R²=0.729	R²=0.304	R²=0.332	R²=0.696	R²=0.764	R²=0.343
	R⁻²=0.194	R⁻²=0.632	R⁻²=0.677	R⁻²=0.171	R⁻²=0.213	R⁻²=0.642	R⁻²=0.721	R⁻²=0.225
	F-ratio =2.587	F-ratio =12.364	F-ratio =13.990	F-ratio =2.280	F-ratio =2.790	F-ratio =12.839	F-ratio =17.947	F-ratio =2.587

***Estimate is significant at 1%, **significant at 5%,P-values are in Parenthesis.

Source: Field Survey, 2021

positive and significant at 10% probability level. By implication, this means that as cassava farmers' level of education increased, output increased by 0.1%. Extension visits and Experience were both positive and significant at a 5% level apiece. Implying that an increase in extension visits and farming experience of cassava farmers led to an increase in output by 3.5% and 0.8% respectively. These findings lend credence to the work of Bassey and Okon (2008) who worked on socio-economic constraints to the adoption of improved cassava production and processing technologies in Mbo Local Government Area of Akwa Ibom State, Nigeria.

References

Achoja, F.O.; Idoge, D.E.; Ukwuaba, S.I.; Esowhode, A.E. 2012. Determinants of Export-Led Cassava Production Intensification among Small-Holder Farmers in Delta State, Nigeria

Ajibefun, I.A., G.E. Battese and A.G. Daramola, 2002. "Determinants of Technical Efficiency in Smallholder food crop farming: Application of Stochastic Frontier production Function". Quarterly J. Int. Agric., 41: 225–40

Bassey E Nsikan, Ubokudom E. Okon, Anselm A. Enete and. Technical efficiency and its determinants in garden egg (Solanum spp) production in Uyo Metropolis, Akwa Ibom State

Etuk, U. R; Olatunji, S. O. and Ekong, I. (2013) Analysis of health extension needs on self medication among rural farmers in Akwa-Ibom State, Nigeria. Nigerian Journal of Agriculture, Food and Environment 9 (1):63-66.

Katung, P.Y, (2001) Socioeconomic factors responsible for poor utilization of PHC Services in rural Communities in Nigeria,. Nigerian Journal of Medicine 10:28-29

Mafimisebi, T.E, Adegboyega E, and Oguntade, A.E (2010). Preparation and use of plant medicine for farmers health in south-western Nigeria. Journal of Ethnobiology and Ethnomedicine.Vol.6, No 1. Pp10. http://

www.ethnobiomed.com/content/6/1/1

Nandi, J. A., Gunn, P. and Yurkushi, E.N (2011). Economic Analysis of Cassava Production in Obubra Local Government Area of Cross River State, Nigeria. Asian Journal of Agricultural Science, 3(3): 205-209. 2011. ISSN: 2041-3890. Available from: https:// www.researchgate.net/ publication/236298935_Economic Analysis of CassavaProductioninObubraLocal_GovernmentAreaofCrossRiverStateNigeria [accessed Sep 18, 2017].

NBS (2006). Nigerian Core Welfare Indicators. National Bureau of Statistics. www.nigerianstat.gov.ng/nbsapps/ cwiq/2006/survey0/outinformation/cwiqreports.html

Nwosu, F. O., Oguoma, N. N.O., Lemchi, J. I., Ben–Chendo,G. O., Henri-Ukoha, A., Onyeagocha, S. U. O., and Ibeawuchi, I. I. (2012). Output Performance Of Food-Crop Farmers Under The Nigerian Agricultural

Insurance Scheme In Imo State, South East, Nigeria. Academia Arena, 2(6): 43-47.

Ojo S.O, Ogundari K, 2003. The determinants of technical efficiency in mixed crop food production in Nigeria: a stochastic parametric approach

Oluwatayo, I.B. (2008), Explaning Inequality and Welfare status of Households in Rural Nigeria. Evidence from Ekiti State. Humanity and social sciences Journal 3 (1):70-80.

Tanhashi, T. (1978) Health service coverage and its education. World Health Organization,. Geneva. 56: 296-312

World Health Organization (1978). Alma-ata Declaration. Primary Healthcare for all. No.1