Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development
Vol. 18, Issue 3, 2018
PRINT ISSN 284-7995, E-ISSN 2285-3952

ASSESSMENT OF RURAL YOUTH ADOPTION OF CASSAVA PRODUCTION TECHNOLOGIES IN SOUTHWESTERN NIGERIA

Julius Olatunde AYINDE[1], Samuel Oluwaseun OLATUNJI[1], Abiodun Oladayo AJALA[2]

[1]Obafemi Awolowo University, Faculty of Agriculture, Department of Agricultural Extension and Rural Development, Ile-Ife, Osun State, Nigeria, Phone: +2348035719389, Emails: tundeyjoy@yahoo.com; jayinde@oauife.edu.ng
[2]Landmark University, Department of Agricultural Economics and Extension, Omu-Aran, Kwara State, Nigeria.

Corresponding author: tundeyjoy@yahoo.com; jayinde@oauife.edu.ng

Abstract

This study assessed rural youth's adoption of cassava production technologies in Southwestern, Nigeria and determined the extent of usage of the technologies among them. A multistage sampling procedure was used to select 135 respondents. A well structured interview schedule was used to elicit information from the respondents. The data collected were analyzed using descriptive and inferential statistics. The results showed that the average age of rural youths that were engaging in cassava production in the study area was 29 ± 2.6 years with average farm size of 2.5 ± 0.3 hectares. Also, household size ($r = 0.249$; $P \leq 0.01$) and extent of usage of the technologies ($r = 0.363$, $p \leq 0.01$) shows significant relationship with level of adoption of the technologies at 0.01 while age ($r = 0.097$; $P \leq 0.05$) and years of former education ($r = 0.181$; $P \leq 0.05$) were significant at 0.05. It was concluded that the extent of usage of the technologies in the communities affect the rate of adoption positively and this might enhance the positive perception of youths on cassava production thereby ensure food security in the study area.

Key words**:** *assessment, rural youths, Cassava production technologies, food security*

INTRODUCTION

In Nigeria, agricultural production is still carried out using physical strength, which declines with age. This has therefore been observed as one of the major constraints to agricultural production in Nigeria [10]. Though youths have desirable qualities that can promote agriculture, most of them have strong apathy toward it [2][4]. The development of the agricultural sector of the Nigerian economy therefore depends on the young people, more especially the rural youths. This is because a larger population of youths represents the link between the present and the future as well as a reservoir of labour [10].

There are challenges faced by rural youth in participating in agricultural production. Some of these challenges are: strong beliefs in traditions and customs that are often in conflict with development and change concern; low education level, lack of relevant information, limited job opportunity, limited financial support available for rural youth and low management capabilities of youth leaders in the rural areas [12].

Cassava (*manihot spp*) is one of the most popular root crops grown in West Africa especially in Nigeria. Cassava is a major staple food in Nigeria. In 2004, the estimated cassava output from Nigeria was approximately 34 million tones. This production performance had rated Nigeria as the largest cultivator of cassava in the world [9]. In 2002, cassava suddenly gained prominence in Nigeria following the pronouncement of the presidential initiatives on the crops. This initiative was aimed at using cassava production as engine of growth in Nigeria. In 2011, the federal government came up with a programme tagged Agricultural Transformation Agenda (ATA) which focus in enhancing the role of agriculture as an engine of inclusive growth leading to rural employment, wealth creation, and diversification of the economy.

The initiative focus on ten major agricultural products value chain which includes: cassava, rice, maize, soybeans, cotton, tomato, fishery,

oil palm, poultry and fruit. [16] reported that despite the ongoing cassava revolution in Nigeria and the high level of awareness of associated technologies, lower levels of cassava technologies usage are still predominates. Cassava has being a versatile staple food for the people in south western region of Nigeria for a long time in which the adults and youths participate actively in the production, but the use of the improved technologies have not been maximized to make cassava always available for the people and also to export. Social systems theory is adopted for this study. The study was laid on social system theory of corporate actors, which look into the way social life is organised and, sometimes, transformed ([6], [7] and [11]). It questions the everyday assumptions which sharpen individual lives and reflects in a systematic manner on such issues as the division of power, nature of identity, forms of agency and rationality; and human experiences as pre-modern, modern or post-modern subjects. It serves as a field of critical inquiry which is interdisciplinary in character, and addresses the various social and human sciences on adoption of Cassava production technologies in the study area. The foregoing arouse the quest to assess rural youths adoption of cassava production technologies by identify and determine the awareness of cassava production technologies available to the youths and determines the level of adoption of these technologies among these youth. The null hypothesis tested was that there is no significant relationship between the adoption of cassava production technologies and rural youth personal characteristics.

MATERIALS AND METHODS

The study was conducted in Southwest, Nigeria. A multistage sampling procedure was adopted for the study. In the first stage, two states were purposively selected in southwest, Nigeria which were Osun (It lies between longitude 6 º51'N and 8 º10'N on the North-South pole and latitudes 4 º 05'E and 5º02'E on the East - West pole with estimated population of 4,137,627 [8] estimation)and Oyo (It lies in the coordinate of 8º00'N 4º00'E with estimated population of 6,617,720 ([8] estimation) states due to high level of cassava production and access to cassava production technology in the areas. In the second stage, purposive sampling technique was used to select two local governments each from the states selected which are Ibarapa central (Igbo-Ora) and Ibarapa East (Eruwa) Local Government Areas (LGAs) in Oyo state; and Ife North (Ipetumodu) and Ede South (Oke Ireesi) LGAs in Osun State. In the third stage, proportionate sampling technique was used to randomly select five; four, six and four communities from the selected LGAs respectively representing 20 percent of the rural communities in them, in all 19 communities were selected. In the fourth stage, Snow ball sampling technique was used to select about 7 rural youths in each community selected to make a total of 135 respondents. Validated structured interview schedule was used to elicit information from the respondents

RESULTS AND DISCUSSIONS

Demographic characteristics of youths

Results in Table 1 shows that the average age of the respondents was 29.13±4.86 years, majority (67.4%) were male, majority (95.8%) were single, their average years of former education was 11.9±3.15 years and their average farm size was 2.5± 0.98 hectares with average income of about ₦191,444.44 ± 88,656.78 per month.

This finding reveals that they are still in their active age based on the]15] categorization of youth and Torimiro [13] which defined youth as a group of people that are found within the age group of 13 to 30 years of age.

Also, [14] asserted that farming occupation in rural areas is dominated by male gender as a mean of livelihood.

Their low income might be connected with their low involvement in Cassava production because the uses of the improved technologies have not been maximized to make cassava always available for the people and also to export.

Table 1. Showing the Socio-economic Characteristics of the respondents

Variables	Frequency	Percentage	Mean	Std. Dev
Age				
15 - 19	10	5.9		
20 - 24	37	7.4	**29.13**	**±4.86**
25 - 29	80	27. 4		
30 - 35	135	59.3		
Total		100.0		
Sex				
Male	91	67.4		
Female	44	32.6		
Marital Status				
Single	115	95.8		
Married	5	4.2		
Divorce	-	-		
Total	135	100		
Years of Formal education				
0	1	0.7		
1 - 6	20	14.8		
7 - 12	74	54.8		
13+	40	29.7	**11.9**	**±3.15**
Total	**135**	**100**		
Average stipend per month				
<216,000	93	68.9		
216,000 - 431,999	36	26.7	**₦19,144.44**	**± ₦ 8,656.78**
432,000 - 647,999	5	3.7		
864,000+	1	0.7		
Total	**135**	**100**		
Farm size (in hectares)				
1 - 2.99	83	61.5		
3 - 6	52	38.5	**2.5**	**± 0.98**
Total	**135**	**100**		

Source: Field Survey, 2015.

Awareness and adoption of cassava production technologies

Table 2 shows the awareness and adoption of the cassava production technologies that available to the rural youth in the study areas among which were improved varieties of cassava (such as TMS 30572, TMS 4 (2)1425, TMS 50395, TMS 63397), use of tractor, use of herbicide for weeding, plant population density of 10,000 plants/ha to mention a few.

Table 2. Awareness and adoption of cassava production technologies by rural youth

Technologies	Awareness	Adoption
Improved cassava varieties that are low in HCN level and resistance to diseases	89(65.9)	75(55.6)
Use of tractor	64(47.4)	55(40.7)
Use of herbicides	84(62.2)	58(43)
Plant population density of 10,000 plants/ha	65(48.1)	51(37.8)
Use of appropriate length of cutting per stand	66(48.9)	57(42.2)
Appropriate spacing of 1m by 1m	59(43.7)	54(40)
Early weeding at least twice in 30 days	74(54.8)	60(44.4)
Fertilizer dose (NPK 15:15:15)	76(56.3)	65(48.1)
Intercropping of cassava with maize/cowpea	82(60.7)	74(54.8)
Supplying of missing stand	71(52.6)	65(48.1)
Use of pesticides	77(57)	55(40.7)
Timely harvesting	98(72.6)	79(58.5)

Figures in parenthesis represent percentage.
Source: Field survey, 2015

Further analysis shows that 65.9 percent of the respondents were aware of the availability of improved cassava varieties while 55.6 percent adopted it and 62.2 percent of the respondents were aware of use of tractor for land preparation while 43 percent of them adopted it among others. This is in agreement with findings of [5] that more than average of the youth who are involved in agricultural production in the study areas were aware of the availability of improved varieties of agricultural planting materials but fairly number of them adopted it.

Extent of usage of the cassava production technologies available to the rural youth

The results in Table 3 show ranked means of usage of these technologies to see the order of their usage. The result shows that improved cassava varieties are the technologies used mostly (2.51±0.76) by the respondents, followed by intercropping (2.34±0.83) and supplying missing stands (2.27±0.77) among others.

Table 3. Extent of usage of the cassava production technologies available to the rural youth

Technologies	Extent of usage		
	Mean	Std Dev.	Rank
Improved cassava varieties that are low in HCN level and resistance to diseases	2.51	0.76	1st
Use of tractor	2.24	0.73	4th
Use of herbicides	2.22	0.84	5th
Plant population density of 10,000 plants/ha	1.96	0.83	10th
Use of appropriate length of cutting/ stand	2.00	0.78	9th
Appropriate spacing of 1m by 1m	1.94	0.92	11th
Early weeding at least twice in 30 days	2.01	0.91	8th
Fertilizer dose (NPK 15:15:15)	2.16	0.87	7th
Intercropping of cassava with maize/cowpea	2.34	0.83	2nd
Supplying of missing stand	2.27	0.77	3rd
Use of pesticides	1.90	0.74	12th
Timely harvesting	2.18	0.88	6th

Source: Field survey, 2015.

Hypothesis testing

In order to establish relationship between the demographic characteristics of the respondents and their level of adoption of Cassava production technologies, data were subjected to correlation ® and chi-square (X^2) analyses. Results in Table 3 shows that there was significant relationship with level of adoption of the technologies and household size ($r = 0.249$; $P \leq 0.01$), extent of usage of the technologies ($r = 0.363$; $P \leq 0.01$) at 0.01 while age ($r = 0.097$; $P \leq 0.05$) and years of former education ($r = 0.181$; $P \leq 0.05$) were significant at 0.05.

Table 3. Result of Pearson's correlation analysis showing relationship between socio-economic characteristics of the rural youth, extent of usage and adoption of cassava production technologies

Variables	Correlation coefficient (r)	P-value	Decision
Age in years	0.097*	0.706	S
Household size	0.249**	0.004	S
Years of residence	0.511	0.196	NS
Farm size	0.034	0.701	NS
Income in farming per year	0.034	0.127	NS
Years of formal education	0.181*	0.036	S
Extent of usage	0.363**	0.010	S

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)
S= Significant
NS= Not significant
Source: Field survey, 2015.

Also, the results in Table 4 reveal that marital status (χ^2=1.802 P≤ 0.05) had positive and significant associated to the level of adoption of Cassava production technologies by the rural youth at 0.05 level of significant. This agrees with [3] and [1] who opined that youth are less conservative in their nature and are more receptive to change. These results imply that there were significant relationship between the adoption of cassava production technologies and some selected rural youth socio-economic characteristics, therefore, the null hypothesis is rejected.

Table 4. Result of Chi square analysis showing relationship between socio-economic characteristics of the rural youths and adoption of cassava production technologies

Variable	X^2–value	Df	P-value	Decision
Sex	0.167	1	0.821	NS
Marital status	1.802*	1	0.043	S

*significant at the 0.05 level (2-tailed)
S= Significant
NS= Not significant
Source: Field survey, 2015

CONCLUSIONS

The study concluded that farming activities is still male dominated, their income was low (₦19,000.00k) that about $60 per month, 71 percent had secondary education and in most cases the level of awareness of the cassava production technologies among the respondents was higher than adoption. The adoption and extent of usage of cassava production technologies (r = 0.363, p ≤ 0.01) by rural youths are significantly related at 0.01 significant level. Therefore, if more technologies are introduced to the youths and they are thought how best to use them, they might make maximum use of the technologies, change their strong apathy towards agriculture which may enhance the positive perception of youths on cassava production thereby ensure food security in the study area.

REFERENCES

[1]Adebayo, K., Omotayo, A. M., Garforth, C. J., Awotunde, M., 2002, Small farmers' perception of the charateristics of new farm practices in Ogun State, Nigeria. Journal of Extension Systems.18: 79-93

[2]Adedoyin, S. F., 2005, Youth and Children Programme in Nigeria, Agricultural Extension in Nigeria. (ed.Adedoyin, S. F.) 251 pp.

[3]Adesope, O.M., 2006, Evaluation of Youth Participation in Community Development Projects in River State. Nigeria. Unpublished M. Sc Thesis, Department of Agricultural Economics and Extension, Federal University of Technology (FUTO), Owerri, Imo State, Nigeria.

[4]Adewale, J. G., Oladejo, J.A., Ogunniyi, L.T., 2005, Economic Contribution of Farm Children to Agricultural Production in Nigeria: A case study of Ekiti State, J. Soc. Sci. 10(2):149 – 152.

[5]Ajieh, P. C., 2014, Adoption of Improved Cassava Production and Processing Technologies in Oshimili North Local Government Area of Delta State, Nigeria. Indian Res. J. Ext. Edu. 14 (1), January, 2014.

[6]Bertalanffy, L. V., 1951, Problems of General System Theory; A New Approach to Unity of Science, Human Biology, Vol. 23, No. 4, 302- 312.

[7]Bukley, W., 1967, Sociology and Modern Systems Theory, Englawood Cliffs. N. J. Prentice Hall, pp. 41.

[8]National Population Commission (NPC). (2007). Population Census of Federal Repuplic of Nigeria: Analytical Report at the National Level, 22 – 54.

[9]Nweke and Akorhe, 2002, Adoption behavior of Farmers towards yam mini sets technology in Imo State Nigeria. A paper presented at the 25th annual conference of Agricultural Science Society of Nigeria. Federal University of Technology Oweri, 5-6th September 1989, 18-21.

[10]Okeowo, T. A., Agunbiade, J. B., Odeyemi, L. A., 1999, An Assessment of the Level of Involvement of Farm-Children in Farming Decisions in Ikorodu Area of Lagos State.In "Farm Children and Agricultural Productivity in the 21st Century", Proceedings of the Second Annual Conference of Children-In-Agricultural Programme (CIAP) held at the Conference Centre, O.A.U., Ile-Ife (eds Stella, B.W.; Oginni, F.O. and Akinloye, J.F.), 275 – 282.

[11]Patterson, O., 2007, Babies are born to single mothers-is undoubtedly a major cause ofyouthdeliqueency.Available:

http/www.nytimes.com/2007/09/03/opinion/30patterson.html. Accessed May 3, 2008.
[12]Srithirath, V., 2005, Drug and other Impact on LAO Rural youth, p 23. In: Report on National rural youth, Food security and sustainable Rural Development in LAO people's democratic Republic, RAP publication 2005.
[13]Torimiro, D.O., 1999, Hail, African youth! A farewell poem to participants at the International Roundtable Conference on Youth, Agriculture and Development in Africa, Held between 5-6, August, 1999 at the Nigerian Institute of Oceanography and Marine Research (NIOMR), Victoria Island, Lagos.
[14]Torimiro, D.O., Oluborode, A.A., 2006, Exploring Socio-economic Correlates of Production Needs for Southwest Nigeria. J. Appl. Sci. Res., 5: 248–255.
[15]United Nations For Food and Agricultural Organisation (FA0), 2005, Rural Youth Building a World without hunger. Available: www. Fao.org/rural youth. Accessed May 23, 2009.
[16]Yahaya, M.K., Olayide, R.B., 2006, Perceived Efficiency of Indigenous Media in Agricultural. Information Dissemination in Ihila Local Government Area of Anambra State, Nigeria Journal of Rural Sociology, 5 (1&2):30-36.