

EVALUATION OF THE LEVEL OF ADOPTION OF IMPROVED CASSAVA VARIETIES AMONG FARMERS IN ANAMBRA STATE

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ABSTRACT

This study examined the level of adoption of improved cassava varieties among cassava farmers. Anambra state served as the area of the study of which the entire cassava farmers in Anambra State comprised of the population of the study. 120 cassava farmers were randomly selected from the Awka, Anambra and Agwata Agricultural zones of the State. Questionnaire was used to collect data for the study whose items border on the various improved cassava varieties in agricultural information. The data collected was analyzed using the descriptive statistical of such as frequency, percentage and mean score. It was discovered among other things that The findings further revealed that based on the 10 improved cassava varieties introduced, TME 419, TMS 98/0505, TMS 98/0581, TMS 4(2)1425 and TMS 4(2) 1405 were adopted the cassava farmers obtain agricultural information mainly through the radio fellow farmers and it was recommended among others that the government, ministry of Agricultural organization should work in collaboration to overhaul the extension delivery system and also make information on cassava varieties available to cooperative society and community leaders to reach out to farmers.

Keywords: Evaluation, Adoption, Improved Cassava Varieties, Farmers, Anambra State.

Introduction

Agriculture is the largest sector in the Nigerian economy, providing food, income and employment, for sustainable livelihood of both rural and urban population (Anyikwa, Ezeano, Anunobi, Umeh and Anyawu, 2019). It is fascinating that more people are realizing that among the various sectors of the economic development in Nigeria. "Agriculture has become the most profitable and has been identified as the largest employer of labour in Africa, particularly in Nigeria" (Amechi and Okafor, 2018). Agriculture in Nigeria employs about two third of the total labour force of the nation, and provides a livelihood of the poor living the rural areas (Adepoju and Salman, 2013). Agricultural sector is a major source of foreign exchange earnings contributing 23% of the gross domestic product (GDP). It has annual growth rate of 5.5% and it is assumed to employ about 70% active workforce of the population (CBN, 2014).

Adoption is a mental process through which an individual when hearing about the new idea, embrace it and makes it a part of his behavior. (Ahmed, Awad, Tadez, Filipez and Skvwron, 2025). Adoption is the final decision made by an individual/group of persons to make use of the most recent technology. Adoption of an improved agricultural technology has been associated with higher earnings and lower poverty; improved national status, lower staple food prices; increase employment opportunities as well as earnings for landless labourers (Marangi and Kariauka, 2015). Alade (2011) defined adoption as any innovation or idea or a mental process which an individual pass through before deciding to continue the full use of any innovation or not. Loevinsohn, Sumberg and Diagne (2013) defined adoption as the integration of a new technology into an existing practice adaptation. Chavas and Nauges, (2019) reported in their study that adoption decision are part of a general innovation process that starts with discovery of new knowledge, relating to how resources are used in the production of goods and services. Margareth and Samuel (2015), explained the two categories of adoption in their study which are rate of adoption and intensity of adoption. According to them, rate of adoption is relative speed which the farmer adopt an innovation while intensity of adoption refers to the level of use of a given technology over a given period of time.

Cassava (*Manihot Oculenta* Crantz) also called tapioca in Asia: manioc, Yucca and Madioca in Latin America, it is a perennial vegetatively propagated shrub growth throughout the low land tropics for its starchy, thickened roots. (Ola and Adedayo, 2020), Cassava originates from tropical America, introduced in Africa by the Portuguese in the Congo basin around 1558 (Anyikwa et al, 2019). Cassava is a starch stoning root crop that is an important source of dietary energy in the tropical regions of the world (Oluwabusayo, Peter and Tim, 2019). The majority (88%) of cassava produced in Africa is used for human food, with over 50% used in the form of processed products. (Oyewole and Eforuoku, 2029).

“Cassava has the potential to increased farmers income, reduce rural and urban poverty and help close food insecurity gaps” (Okonkwo, Nwaru, Nwokoro, Ukeje, 20218) because cassava grows in high rain fall between 508mm and 1524mm and also, in semi arid region because of its drought tolerance and high resistance and high resistance to pests and diseases (Orimolonye and adegun, 2017).

As a result of the benefits gotten cassava, many improved cassava varieties have been developed particularly in Nigeria. The cassava varieties were bred for high yield (high dry matter content), pest and disease resistance, good product quality and early maturity. (Nwabueze, 2010), improved cassava varieties for pest and disease resistance are those improved cassava varieties capable of resisting the attack of common cassava disease known as Cassava Mosaic Institute of Tropical Agriculture (IITA), Ibadan released a total number of thirty-one improved cultivars of cassava that are high yielding. resistant to pests and diseases with low HCN contents to Nigerian farmers from 2000 to 2005. Cassava varieties are also differentiated from one another by their morphological characteristics such as colour of stem, petiole leaves. Cassava varieties are usually grouped into two main categories: *Manihot Palmata* (bitter) and *Manihot aipi* (sweet) cassava.

This grouping is a matter of economic convenience, as it is difficult to distinguish the two groups by botanical characteristics. (Nwabueze,2009), International fund for Agricultural

Development (IFAD) .2016) listed two main types of cassava varieties existing as (TMS 98/0505) and (2)

Sweet varieties (TMS 4 (2) 1425). These varieties contain hydrogen cyanide (Prussic acid) that is harmful when eaten raw (TMS 98050S) which the better variety has acid on the root whereas (TMS 4 (2) 1405) have the acid mainly on the leaves. Other improved cassava varieties TMS 992132, TMS 98/0581/TMS 98/0505/, TMS 4(2) 1405, TMS 980510. TMS 97/2205, TMS 30572, TMS 4(2) 1425,NRS 032, NR 8O82 and Tme419 (Udensi et al. 2011).

Cassava is produced largely by small scale farmers in Nigeria. It is an important crop in the farming systems of Nigeria due to its inherent attributes which includes its ability to give good breturns under poor soils such as dystic aerosol and plinthic ferrosols and adverse weather conditions such as drought's ability to store in the field until needed for use and amendability to Processing into various food forms such as tapioca, garri, fufu, chin chin, bread, cake, mio-mio. bean cali livestock feed and industrial raw materials such as ethanol (Uchemba, Nenna and Obianeto, 2021).

Nigeria has remained the global leader in production of cassava as they contributed about 50metric tones GDP to Nigeria annually (F.A O. 2019). It is expected that it's contribution will reach 60million tones by 2020 (Anyikwa et al, 2019). Nigeria accounts for cassava production up to 20 percent and of the world 34 percent of africa's and about 13.63 metric tons per hectare (ha), as against potential yield up to 40 metric tons per hectare (ha) (Uchemba et al, 2021). They further reported that close to two thirds (66 percent) of the total production is in the southern part of the country, while about s0 percent is in the north central and 4 percent in other part of the north.

According to Donkor, Onakuse, Bogue, Camenado, (2o17) cassava has engaged most of the labour force, provide the industries with raw materials and food commodities to the populace and is currently an income generating activity, The tuber of flesh is composed of about 62% water, 36% carbohydrates, 1-2 fibre and 1% mineral matter, (Cock, 2015) cassava leaves compare favorably with soyabeans in protein quality and are higher in lysine but deficiency in methionine and possibly tryptophan (Cock, 2015)

Olutosin and Barbara (2019) stated that garri accounted for about 70% of human food from cassava, Other common cassava products mainly for human consumption include: elubo/lafun lufu/ akpu. abacha among others the major industrial products of cassava in Nigeria are cassava starch. High quality cassava flour or bakery flour, cassava chips and pallets (Nwike,2010). The effort of the government at both Federal and State Levels to improve agriculture through the provision of improved imparts such as planting materials and others, the extension agency are encouraged farmers to adopt improved technologies as well this study seeks to ascertain the level of adoption of the improved cassava varieties recommend to them.

Population and Sampling Technique

The population for the study comprises of all registered cassava farmers in Anambra State and a multi-stage sample technique was use to select 120 respondent for the study. The stage

(1) involved random sampling of three agricultural zones due to intensive cassava production activities which included Aguata zone, Awka zone, Anambra zone.

The data for these study was obtained through the use of questionnaire whose items border on adoption levels of various improve cassava varieties.

The Data collected for the study was analyzed using the descriptive statistic such frequency, percentage and mean score.

Table of Data Analysis: Level of adoption of improved cassava varieties

Variable	Awar eness	Interes t	Evolutio nal	trial	Adoptio n	mean	Remark/decisi on
TMS 419	8(1)	5(2)	4(3)	3(4)	100(5)	5	Adoption
TMS 30572	0	102	6	8	0	2	stage
TMS 4(2)1405	3	5	7	8	97	5	Interest stage
TMS 98/0581	10	2	0	10	98	5	Adoption
TMS 98/0505	3	4	7	11	95	5	stage
TMS 9897/2205	2	7	0	4	98	5	Adoption
TMS	30	82	8	0	0	2	stage
NRS 032	21	10	86	3	0	3	Adoption
NR 8082	10	10	8	90	2	4	stage
NR 8083	10	10	7	89	4	4	Adoption
							stage
							Interest stage
							Evaluation
							stage
							Trial stage
							Trial stage

Discussion of Result

Table shows the results of the adoption of improved cassava varieties. 5point likert scales of awareness (1), interest (2), evaluation (3), trial (4) and adoption (5) the mean threshold of adoption among cassava farmers. They were used to ascertain the adoption stages of cassava varieties among cassava farmers of 3.0 were used. Variable individuals were classified as 1-1.9(awareness stage), 2-2.49(interest stage),3-3.49 (evaluation stage) 4-4.9(trial stage) and 5-5.49(adoption stage) as adopted from Obianeto et al,(2020). The result shows that among 10 selected cassava varieties introduced in the study area, Tme 419, Tms 98/ 0505. Tms 98/0581/, Tms 4(2) 1425 and Tms 4(2) 1405 . These were used to ascertain the adoption level of improved cassava varieties in the study area. This is in line with the findings of Apu and Nwachukwu (2011) who reports in their study that the level of adoption of improved cassava Varieties (TMS 30575,NRS 8082) by farmers in the study area was quite high and as a result of this, farmers in the study area made reasonable income in and out of sales of cassava its by products.

Conclusion

The findings further revealed that based on the 10 improved cassava varieties introduced, TME 419, TMS 98/0505, TMS 98/0581, TMS 4(2)1425 and TMS 4(2) 1405 were adopted. The overall adoption showed that the respondents had reasonable adoption level of the improved cassava varieties introduced in the study area. Therefore, for farmers to increase their production potentials, even after adopting and adapting improved cassava varieties, there has to be appropriate encouragement for the cassava farmers to sustainably increase their production productivity in cassava venture. Efforts should be made by the Government of Anambra State through the Ministry of Agriculture and other relevant agricultural agencies to encourage farmers to embrace improved cassava varieties which will increase cassava production in Anambra State, Nigeria.

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