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PROF. PATRICK C. IGBOJINWAEKWU

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EDITORIAL

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Prof. Patrick C. Igbojinwaekwu
Editor-in-Chief

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INFLUENCE OF FARMERS SOCIO-ECONOMIC VARIABLES ON ADOPTION OF IMPROVED CASSAVA VARIETIES IN ANAMBRA STATE

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Abstract

The study assessed the influence of the socio-economic characteristics of farmers on adoption of improved cassava varieties. Anambra state served as the areas 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 socio-economic variables such as: age, sex, *marital status, educational level, household size, farming experience, farm size, extension contact and annual income. The data collected was analyzed using the multiple regression models. This is to test the relationship between the socio-economic variables and adoption of improved varieties of farmers. The study discover among other things that out of the 9 variables considered educational level, farming experience and extension contact were positively correlated and statistically significant at 9% probability level.*

Keywords: Farmers, Socio-Economic Variables, Cassava Varieties

Introduction

Agriculture is the major sector in the Nigerian economy, providing food, income and employment, for sustainable livelihood of both rural and urban population (Anyikwa, Ezeano, Anunobi, Umeh & 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 & 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 an 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 & 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 Osculenta 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 & 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 & 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 pasts and diseases (Orimolonye & 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 arc 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 dystric 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 & 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, (2017) 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 fufu/ 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 purpose these study is to ascertain how the s socio-economic characteristic of farms influence their adoption of improved

cassava varieties. If there is relationship between farmers socio-matrix and adoption of improved varieties.

Purpose of the Study

The purpose of this study is to ascertain if the socio-economic variables of farmers influence their adoption level of improve cassava varieties.

Research Questions

Does socio-economic variables of farmers influence affect the level of adoption improve cassava varieties?

Research Hypothesis

Socio-economic variables of the cassava farmers do not statistically and significantly influence the adoption level of improved cassava varieties.

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 various socio-economic variable such as; age, sex, marital status, educational level, household size, farming experience, farm size, extension contact and annual income.

The Data collected for the study was analyzed using the multiple regression models. This is to determine the effects of socio economic factors influencing the adoption of improved cassava varieties.

Multiple Regression Result of Socio-Economic Variable on Adoption of Improved Cassava Varieties.

Variable	Co-efficient	t-ratio
Constant	3.425	16.761
X1(age)	0.015	1.072
X2 (sex)	0.027	0.673
X3 (marital status)	0.157	2.100
X 4 (educational level)	0.053	0.000xx
X 5 (household)	0.025	0.571
X6 (farming experience)	0.014	0.002xx
X7 (farm size)	0.032	0.701x
X 8 (extension contact)	0.137	0.004xx
X 9 (annual income)	0.065	1.903

Result

The result of multiple regression analysis of socio-economic variable on adoption of improved cassava variable were as shown in table 4.4. The analysis was adopted to predict the influence of the respondent's socio-economic variable on adoption of improved cassava varieties. The selected variables considered in the analysis were age (XI), sex (X2)m marital status (X3) educational level (X4), farming experience (X5), household size (X6), farm size (X7), extension contact (X8), and annual income (X9). Out of the nine variables considered as independent variable, educational level, farming experi4nce and extension contact were positively correlated and statistically significant at 5% significance level. Also age, marital status, household size, and annual income

were positively correlated but not significant at any probability levels. Equally, gender was negatively correlated and not significant.

With regards to educational level, the *a-priori* expectation was met as its co-efficient was positive and significant at 5% probability level. This implies that any unit increase in the cassava farmer's level of education, increases the corresponding increase in level of adoption of improved cassava varieties. This is so because, they are expected to understand better the instructions of new innovation more than their counterparts who are not literate. This is in agreement with Ironkwo, Ezebuiro and Ewuziem (2016) on adoption of root and tuber technologies disseminated to farmers by National Root Crop Research Institute Umudike, Abia State, Nigeria in Anambra State, Nigeria. Also, Oyewole and Eforoku (2019) argues that low level of literacy usually have negative effect on the rate of adoption of new innovations. They further observed that educated farmers are more progressive in nature and hence preferred by extension agents because they understand easily the basic instructions and are eager to adopt new innovation for increased production and productivity.

The co-efficient of farming experience was positively correlated and statistically significance at 5% probability level. This implies that a unit increase in farming experience, corresponds to a unit increase in adoption of improved cassava varieties. The implication of this is that experience farmers are more likely to adopt new innovation that the less experienced ones. This findings gave credence to Jean et al (2019) on the determinant of adoption and farmer's preference for cassava varieties in Kabara Territory, Eastern Democratic Republic of Cong, Nenna (2015) also observed that "the higher the farming experience, the more the farmer would have gained more

knowledge and technological ideas on how to tackle farm production problems, and the high would be his/her output and income"

Extension contact was positively correlated and significance at 5% significance level. This implies that increase in extension contact, increases agents are likely to get the right information on adoption of new technologies that would be profitable in farming business and livelihood. This finding is in line with Janatu et al (2021) who opined that the most determinant of adoption of improved cassava varieties is contact with extension agents and having adequate access to extension education with an average visit of 15 times per annum (Omolehim, 2020).

The co-efficient of farm size was positively correlated and significant at 10% probability level. The findings agrees with Acheapmong (2021) who opined that farm size would influence farmer's adoption of improved cassava varieties, as farmers with large farm holding should be able to try new technology conveniently on some portion of his/her land, this is because large portion of cultivable land ten to increase adoption as some portions of the farm land would be mapped out for demonstration plots. Other independents variable such as age, marital status and annual income were positively correlated but not statistically significant at any probability levels. Also sex was negatively correlated and not significant. This implies that increase in sex has no influence on adoption of improved cassava varies as male or female has no special role to play in planting and harvesting of cassava.

The result of multiple regression analysis revealed that the co-efficient of multiple determination was 0.37. this implies that 37% of the variation in adoption of improved cassava varieties (dependent variable) was explained by the actions of the socio-

economic varieties (dependent varieties) considered, while the remaining (63%) was a result of error beyond the researcher. Sarstedt and Mooi (2014), Obianefo et al (2019), and Uchemba et al (2021) succinctly opined that R2 value of 0.25 was acceptable while studying human behaviour, since human behaviour is unpredictable for scientific research or experiment but however considered as weak size. The overall result of the regression analysis was found to be statistically significant as f-statistics of 12.746 was significant at 5% level of significance.

However, the result show that out of the variable considered, education level, farming experience, and extension contact were positively correlated and statistically significant at 5% probability level.

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