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Determinants of Cassava based Farmers' Choice of Adaptation Strategies in Akwa Ibom State, Nigeria

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Abstract

This study examined the Determinants of Cassava based Farmers' Choice of Adaptation Strategies in Akwa Ibom State, Nigeria. Specifically, the study described the socioeconomic and farm site characteristics of respondents influencing climate change adaptation and investigated the determinants of cassava farmers' choices of adaptation strategies employed in the study area. Data were obtained from three hundred and forty six (346) cassava farmers selected through a multi-stage random sampling technique with a structured questionnaire and personal interviews while secondary data were sourced from journals and text books. Descriptive statistics such as frequency, means and percentage, and Principal Component Analysis (PCA) were employed in analyzing the data. Results showed that majority of the respondents were male (58.6 %), with age range of 41 to 50 years, 92.3 % were married and literate, 57.5% had small household sizes (3-6members), 79.1% were experienced in cassava production, 70.3 % belonged to farm associations, 94.9% depended on personal savings, 92.3% had plots sizes of less than 1.2 Ha and 82.0 % preferred flat seed beds to cultivate cassava. The major determinants of cassava based farmers' choice of adaptation patterns were; inadequate knowledge of how to build resilience to climate change, inadequate finance to cope with the changing climate among others. It was recommended that government and developing partners should mainstream the determining factors of adaptation strategies into climate change related policies and projects. Also policies which incorporate institutional, infrastructural support system and metrological information/training be developed and actually implemented.

Keywords: Determinants, climate change, cassava, adaptation.

Introduction: Cassava is one of the major crops produced in Nigeria that is affected by climate change and variability (Owoeye, 2020.; IPCC, 2013). Cassava which is a root tuber contributes in the building of Nigeria's food economy, where it is consumed locally and also serves as raw materials for industrial use (Ikuemonisan, 2020). Nigeria is the major producer of cassava on a global scale, followed by South-East Asia, Brazil, Indonesia, Thailand, and Vietnam (FAO, 2021). According to FAO, (2020), the crop is predominantly grown by smallholders and the total area under cassava cultivation in Nigeria is about 3.7 million hectares. Although the world leader in cassava production, Nigeria is not an active participant in cassava trade in the international market due to the uncompetitive nature of its production and weak processing systems. Cassava is regarded as an essential crop, it is one of the most vital crops for farmers in Nigeria; the most commonly cultivated crop and provides food and income to more than 30 million farmers and large numbers of processors and marketers. Sanni, Daniels, Udah, Elechi, Oruwa, and Tijani, (2011); FAO, (2020). Recent extreme weather conditions in Nigeria such as flooding, prolonged drought, increased temperature, and erratic rainfalls has resulted in reduced cassava output. Owoeye and Sennuga, (2020). There are evidences that climate change has induced an increase in the incidence of pests and diseases, stunted growth, discoloration of cassava roots, leaves, and reduced cassava tubers Schlenke and Lobell, (2010). These ugly phenomenon has also increased the rate of tuber decays and pre-harvest losses in cassava farming Metmilola (2017) and invariably raised the unit cost of cassava derivatives Owoeye and Sennuga, (2020). Consequently, farmers pay dearly when these disasters strike. Owoeye and Sennuga, (2020); Ojo and Baiyegunhi,(2018). The income and profitability of farmers are impacted by the rapid deterioration of the cassava tubers on the farmland and after harvest (Ekundayo et al., 2021). In view of these, rural farmers must adapt to the persisting climate change effects by using adaptation strategies that contribute to the realization of a climate smart agriculture. It is reported that Nigeria's cassava crop would continue to decrease as long as climate change persists (Anarah et al., 2019). Nigeria is the sixth least prepared to adapt to climate change and the 53rd most vulnerable nation, according to the ND-Gain Country Index (2021), Notre Dame Global Adaptation Index. This necessitates a comprehensive strategy and a thorough process of raising awareness among Nigerian rural farming households on how to adapt to climate change, Federal Ministry of Agriculture Rural and Development, FMARD (2021). To make up for lost ground in the global adaptation index, Nigeria urgently needs to embrace tried-and-true adaptation solutions. These strategies are known to scale up cassava production and mitigate climate change sternly (Susanto et al., 2020).

Adaptation to climate change refers to adjustments in natural or human systems in response to actual or expected climate stimuli or their effects which moderate harm or exploits beneficial opportunities. Adaptation is a necessary and fundamental element of climate change policy (IPCC, 2010). Adaptation strategies are vital components in response to climate change because it helps farmers achieve their food, income and livelihood objectives in the face of the changing climatic conditions and extreme weather conditions (Chigavezira, 2012). It has been determined that with adaptation strategies to climate change, economic losses and vulnerability could be reduced. Adaptation measures are crucial to assist

vulnerable communities to face severe weather and associated climatic variations, Bosello *et a*l., (2012). The ability and capability to adapt are influenced by system attributes (e.g., agro-ecological) that are called the 'determinants of adaptation', Alam, *et al.*, (2016). Understanding the determinants of adaptation can never be over emphasized in the adaptation process. This knowledge assists policy development by strengthening adaptation through investing in these factors, Yohe and Tol, (2002); Alam, *et al*., (2016).

Several researchers have studied the adaptation strategies of farmers to climate change. Fosu-Mensah, Vlek and Manschadi (2010) and James *et al.*, (2013) looked at farmers' perception and adaptation to climate change. However, very few researchers studied the socioeconomic and choice determinants of climate change adaptation strategies adopted by cassava farmers. This paper will investigate the major determinants of choice of cassava based farmers in Akwa Ibom State, Nigeria.This study is guided by the following objectives;To identify the socioeconomic and farm site characteristics of cassava farmers influencing climate change adaptation strategies and To examine the choice determinants of climate change adaptation strategies by farmers in the study area.

Methodology: Study area: Akwa Ibom State is the study area and one of the thirty-six states of the federation of Nigeria. It has its administrative capital at Uyo and located at latitudes 4^0 32' and 5^0 32' North and Longitudes 7^0 25' and $8^0$25' East of the equator. It is bordered by Rivers State in the West, Abia and Imo States in the North, Cross River State in the East and the Atlantic Ocean in the South. The state has thirty-one Local Government Areas (LGAs). These LGAs are further classified into 6 Agricultural Zones (Uyo, Ikot Ekpene, Abak, Etinan, Eket, and Oron zones) as delineated Akwa Ibom State Agricultural Development Programme. It covers an area of 8,412 square kilometers with a population of 3.9 million based on the national census figure of 2006 and an average population density of 350 inhabitants per square kilometer. It has 3 distinguishable vegetation; saline, fresh and rain forest. It has a mean annual rainfall of 2200mm and 3500mm with sunshine of between 1400 to 1500 hours per year, and its average temperature ranges from 23^0C to 31^0C. The following crops are widely grown in the State: cassava, yam, cocoyam, maize, rice, cowpea, melon, oil palm, coconut, rubber, cocoa, raffia palm, gmelina, kolanut, plantain, banana, pineapple, pawpaw, mango and African pears. Vegetable crops include; leafy vegetable, okro, pepper and tomatoes. About 80 % of the work forces are into Agricultural production.

Sampling procedure and size: The study was carried out across the Six (6) Agricultural Zones of the State (Uyo, Ikot Ekpene, Abak, Etinan, Eket, and Oron zones) as delineated by Akwa Ibom State Agricultural Development Program. To ensure proportionate representativeness, even spread, effective data gathering and credibility in generalization of results from research findings, all the zones and the blocks were represented and a multi-stage sampling technique was adopted. In stage 1, fifty per cent (50%) of the total number of cells from each of the blocks were randomly selected across the zones (Kothari and Garg, 1986). In the second stage, the list of registered farmers in the cells was obtained and three respondents from each of the chosen cells in stage 1 were randomly chosen, making a total of 423 respondents across the state and were used as the sample size. At the end of the field work, 350 questionnaires were properly completed and returned.

Method of Data Analysis: Descriptive statistics such as frequency, means, percentages, and Principal Component Analysis (PCA) were employed in analyzing the data.

Model Specification: Descriptive Statistics: Objective 1, which was aimed at identifying the socioeconomic and farm site characteristics of cassava farmers influencing climate change adaptation strategies was analyzed using descriptive statistics such as frequency, percentages and means.

Principal Component Analysis (PCA): Objective two (2) which was aimed at examining the choice determinants of climate change adaptation strategies by farmers in the study area was analyzed using PCA.. PCA is a technique of removing relevant variables from a wide set of variables present in a data set. The principal components may now be utilized as criterion variables in further analyses. A principal component is a translational mix of peak-weighted identified variables. The general form of the principal component analysis is as contained in this equation.

$C_1 = b_{11}(X_1) + b_{12}(X_2) + \ldots + b_{1n}(Xp)$ (ii)

$C_2 = b_{21}(X_1) + b_{22}(X_2) + \ldots + b_{2n}(Xp)$ (iii)

$C_3 = b_{31}(X_1) + b_{32}(X_2) + \ldots + b_{3n}(Xp)$ (iv)

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$C_1 = b_{n1}(X_1) + b_{n2}(X_2) + \ldots + b_{nn}(Xp)$ (v)

Where,

C_1 = subject's score on principal component 1 (the first component extracted)

b_{1p} = regression coefficient (or weight) for seen variable p

X_p = subject's score on observed variable p.

Its interpretation relies on finding which variables are most strongly related with each component. It needs to be determined at what extent the relationship is of significance. For the purpose of this study a correlation above 0.5 is deemed important.

Results and Discussion: **Socioeconomic and Farm Site Characteristics of Farmers** : Results from Table 1 showed that 58.6 % were male while 41.4 % were female, indicating that males tend to be more involved in cassava farming and climate change adaptation strategies than females. This may be due to their culture as a male dominant livelihood; also the culture does not favour women in terms of ownership /inheritance of land. It could also be attributed to the outcome of the sampling. This finding agrees with Akerele *et al.* (2018), Fadina and Barjolle (2018), Weli and Bajie (2017), Apata (2016), Obasi, *et al*.(2015), Ifeanyi-obi and Nnadi (2014). who all reported having male respondents as majority, 64.3 %, 76.7 %, 78.8 %, 90.0 %, 78.13 %, 70.6 % and 62 % respectively. Based on age, majority (55.7 %) were in the age range of 41 – 50 years indicating that farmers were in their active middle-age and capable of withstanding the drudgery of farming and practices of adaptation strategies. Weli and Bajie (2017), Apata (2016), Idumah *et al* (2016), Itam *et al*., (2014), Ifeanyi-Obi and Nnadi (2014) made similar findings in their separate studies.

TABLE 1

Socio-economic characteristics of the respondents

Variable	Frequency	Percentage
Sex		
Male	205	58.6
Female	145	41.4
Total	350	100
Age(years)		
21- 30	5	1.4
31-40	70	20.0
41-50	195	55.7
51-60	77	22.0
Above 60	3	0.9
Total	350	100
Mean	46.211	
Standard deviation	6.8048	
Marital status		
Single	6	1.7
Married	323	92.3
Divorced	4	1.1
Separated	3	0.9
Widow(er)	14	4.0
Total	350	100
Educational level		
No formal Education	12	3.4
Primary education	74	21.1
Secondary education	163	46.6
Tertiary education	101	28.9
Total	350	100

Source: Field survey (2023)

Majority (92.3%) were married, meaning that they were relatively responsible, mature and economically stable enough to enable them carry out the farm business. Ifeanyi-Obi and Nnadi (2014) and Obasi (2013) also reported that majority of their respondents were married. Results on educational level (96.6%) showed that 46.6 % of the respondents had attended secondary school, while 28.9 % and 21.1 % attended tertiary and primary schools respectively. This suggests that majority of them were literate, hence were able to easily understand, evaluate and likely adopt the climate change adaptation strategies and other agricultural technologies that would help them boost cassava production. Ashley-Dejo, *et. al.,* (2020), Ogwuike, *et. al.,* (2019), Abdul-Kareem and Sahinli, (2018), Fadina and Barjolle (2018), Unaeze, *et al*., (2018), and Adeoti *et al.* (2016) also reported that majority of their respondents were literate and had tertiary, secondary or primary education. Results from Table 2 revealed that the distribution of respondents according to house hold sizes were 3 – 6 persons (56.6 %), 7-10 persons (40.9 %), 11-14 persons (1.4 %), below 3 persons (0.9 %) and above 14 persons (0.30%), meaning majority of the respondents had medium and considerable family sizes probably due to the influence of their high literacy level. This implies that majority of them were economically stable and could invest more into the farm business and the adaptation strategies to enhance production since they did not have to spend so much to support the family. This agrees with Ashley-Dejo, *et.al.,* (2020), Ogwuike, *et.al.,* (2019), Unaeze, *et.al.,* (2018), Akerele *et al.* (2018), Weli & Baije, (2017) and Okeke *et al.* (2016) .

The result of farming experience showed that 79.1 % had 13years and above experience. This suggests that the farmers were well experienced in cassava production and also had been in the business long enough to be able to recognize the changes in the climate

variables, the effects on their crops and the appropriate adaptation strategies to use.. Farming experience tends to have a positive relationship with efficiency and high productivity. This conforms to the findings of IPCC (2007) that reported at least a decade to observer climate change, Osasogie & Omorogbe (2018), Fadina and Barjolle, (2018) who all had majority of their respondents with higher percentages of farming experience. The majority of farmers (70.3 %) belonged to one form of organization or the other (either a Cassava Farmers Association, a Cooperative or Age grade). This suggests that the farmers were able to meet often to share ideas on how to improve their farm business, the effective adaptation strategies to adopt and also they could collectively acquire financial assistance to expand their productivity through these associations. Fadina and Barjolle (2018) reported that most of their respondents belonged to an association. Based on financial assistance received, majority of the respondents (94.9 %) said they did not receive any form of financial assistance while 5.1 % received financial assistance from the following sources, Government credit agency (1.1 %), Commercial banks (0.3 %), and Private Credit institution (3.7 %). This means that majority of the respondents depended on their personal savings for the farm business and as such may not be able to expand their production capacity due to limited capital. Lack of capital also affects the farmers' level of adopting some of the adaptation strategies which may be capital intensive. This also explains why majority of them resorted to a small scale/ subsistence level of production. This conforms to the studies of Fadina and Barjolle, (2018).

TABLE 2

Socioeconomic characteristics of the respondents

Variable	Frequency	Percentage
House hold size		
1- 3	3	0.9
3-6	198	56.6
7-10	143	40.9
11-14	5	1.4
Above 14	1	0.3
Total	350	100
Mean	6.271	
Standard deviation	1.8568	
Farming experience (years)		
1- 5	2	0.6
6-12	66	18.9
13-20	159	45.4
21-28	63	18.0
29-36	55	15.7
Above 36	5	1.4
Total	350	100
Mean	19.566	
Standard deviation	7.4476	
Membership to association		
Farmers association	45	12.9
Cooperative society	153	43.7
Cassava farmers association	44	12.6
Age grade	4	1.1
None	104	29.7
Total	350	100
Financial Assistance		
Yes	18	5.1
No	332	94.9
Total	350	100
Source of Financial Assistance		
Government credit agency	4	1.1
Commercial banks	1	0.3
Private credit institution	13	3.7
No assistance	332	94.9
Total	350	100

Source: Field survey data (2023)

From Table 3, the distribution of respondents according to farm size showed that, about 68.6 % of the farmers had less than 1ha plot size meaning they were operating on a small scale and subsistence level. This could be attributed to their limited capital and inability to access credit to expand, also land fragmentation is a major hindrance to large scale mechanized agriculture and adoption of some adaptation strategies. Adeoti *et al.* (2016), Aminu & Okeowo (2016), Daud *et al* (2015) also reported having small scale farmers as majority.Land topography of the farmers were majorly plain (75.1 %) which is suitable for agricultural purpose; also majority (82.0 %) of the farmers preferred cultivating their cassava on flat seed beds because this method of seed bed preparation was less strenuous and cheaper considering their low capital base. Results of cassava varieties showed that majority (34.0%) of the farmers cultivated the 'Vitamin A' variety most probably due to its high content in vitamin A and high yielding ability. About 7.4% of the farmers cultivated the local best varieties, while majority (92.6%) cultivated improved varieties, this suggests that the majority of them were already using the different types of improved cassava varieties as adaptation strategies and also to boost productivity. Improved cassava varieties have high yielding capacity and high resistance to drought, pest and diseases. Results on table 3 showed that majority (99.7%) of the farmers said they were aware of the presence of extension agents, 53.1% of them received visits once every two weeks (fortnightly), 32.6% received visits more than once every two weeks and 14.3% were visited at any possible time. The dominant presence and

visits of extension agents has a direct influence on use of the

TABLE 3

Farm site characteristics of respondents

Variable	Frequency	Percentage
Farm size		
Less than 0.1	8	2.3
0.1-0.3	125	35.7
0.4-0.6	99	28.3
0.7-0.9	8	2.3
1.0-1.2	83	23.7
Above 1.2	27	7.7
Total	350	100
Mean	0.6097	
Standard deviation	0.46191	
Farm age (years)		
3-10	140	40.0
11-18	123	35.1
19-26	40	11.4
27-34	19	5.4
Above 34	28	8.0
Total	350	100
Mean	16.226	
Standard deviation	12.0066	
Land topography		
Plain	263	75.1
Sloppy	87	24.9
Total	350	100
Type of land preparation		
Mounds	56	16.0
Ridges	7	2.0
Flats	287	82.0
Total	350	100
Cassava varieties		
TMS 419	36	10.3
TMS 30572	85	24.3
Pro Vit. A	119	34.0
NR8082	17	4.9
Local best	26	7.4
4(2)1425	8	2.3
98/5050	1	0.3
Mixed variety	40	11.4
555	7	2.0
TMS 92/0057	11	3.1
Total	350	100

Source: Field survey data (2023)

adaptation measures for the efficiency and productivity of the farmers. These findings agree with that of Fadina and Barjolle (2018).

Determinants of Cassava based Farmers' Choice of Climate Change Adaptation Strategies: The result showed that out of the eighteen determinants, only seven mutually exclusive and major determinants were identified as significant by the factor analytic procedure as shown on Table 4. The major determinants were named as follows: Fac_1: Extension contact (at least fortnightly visit) and farming experience; Fac_2: Educational level, access to improved cassava varieties and phone access (ownership of phone); Fac_3: Non-farm income and access to credit; Fac_4: Farm size and farm income; Fac_5: Farming of mixed farming/cropping, age and household size; Fac_6: Weather information access and perception on reduction in rainfall; Fac_7: Perception on increase in temperature. The high significance of extension contact (0.822) shows that the dominant presence of extension trainings and visits has a positive effect on the farmers' ability to understand, evaluate and select the most appropriate and suitable strategies that will enhance the efficiency and productivity of farmers. This finding agrees with Francis, *et.al.*, (2021), Adeagbo, *et. al.*, (2021), Orifah, *et.al.*, (2020), Mequannt, *et. al.*, (2020), Ashley-Dejo, *et. al.*, (2020), Ademe, *et. al.*, (2019), Ojo, *et. al.*, (2018), Aisha, *et. al.*, (2018), Ndamani *et. al.*, (2016), Iheke and Agodike (2016), who also reported access to extension services as a feasible choice determinant. The high significance of farming experience (0.813) as a choice determinant suggests that most farmers were experienced in cassava production business long enough to be able to recognize the changes in the climate variables, their effects on the crops and also the most suitable adaptation strategies to employ in any given situation to protect their crops. Farming experience has a direct relationship with efficiency, high productivity and is a significant choice determinant. Francis, *et. al.*, (2021), Adeagbo, *et. al.*, (2021), Orifah, *et.al.*,

Table 4

Determinants of farmers' choice of adaptation strategies.

Source: Field survey data (2023)

(2020), Mequannt, *et. al.*, (2020), Ashley-Dejo, *et. al.*, (2020), Ademe, *et. al.*, (2019), Ojo, *et. al.*, (2018), Aisha, *et. al.*, (2018),

Adaptation Choice Determinants	Fac_1	Fac_2	Fac_3	Fac_4	Fac_5	Fac_6	Fac_7
Age	-.014	.159	.238	-.009	**.621**	.171	.094
Access to credit	-.061	-.028	**.724**	-.039	.155	.065	.404
Distance of farmers residence from the farm	-.279	.221	.352	.473	.384	.022	.038
Marital status	.492	.231	-.393	.241	.146	-.189	.314
Farming experience	**.813**	.146	.090	.157	-.002	-.105	-.125
Extension contact (at least fortnightly)	**.822**	-.067	-.024	.052	-.013	.224	-.001
Farm income	.129	.204	-.226	**.674**	-.168	.273	-.137
Farm size	.311	.190	.005	**.732**	-.036	-.167	.081
Access to improved cassava varieties	-.029	**.781**	-.026	.241	-.105	.094	-.009
Household size	-.045	-.290	-.242	.375	**.607**	-.100	-.123
Perception on increase in temperature	-.057	.088	.073	-.042	.002	.015	**.884**
Phone access (ownership of phone)	.322	**.580**	.202	.147	.265	-.300	-.033
Educational level	.043	**.799**	.008	.030	.127	.007	.104
Mixed farming/cropping	.086	.071	.084	-.172	**.776**	.085	.011
Non-farm income	.018	.081	**.799**	-.096	.052	.100	-.035
Perception on reduction in rainfall	-.037	-.225	.074	.007	.158	**.711**	.327
Weather information access	.096	.184	.144	.025	.088	**.742**	-.201
Sex	.348	-.012	.530	.420	.146	.019	-.218

Ndamani *et. al.*, (2016),Fadina and Barjello (2018), Osasogie and Omorogbe (2018), Adeoti *et al.* (2016) and Iheke and Agodike (2016) all listed farming experience as a significant determinant. The significance of educational level (0.799) as a choice determinant reveals that the farmers were literate, hence were able to easily understand, evaluate and choose the best adaptation strategies. Francis, *et.al.*, (2021), Adeagbo, *et. al.*, (2021), Orifah, *et.al.*, (2020), Mequannt, *et. al.*, (2020), Ashley-Dejo, *et. al.*, (2020), Ademe, *et. al.*, (2019), Ojo, *et. al.*, (2018), Aisha, *et. al.*, (2018), Fadina and Barjello (2018), Osasogie and Omorogbe (2018), Ndamani *et. al.*, (2016), Adeoti *et al* (2016), Iheke and Agodike (2016) and Oyekale and Oladele (2012) also reported educational level as a significant determinant. Access to improved cassava varieties (0.781) was a significant choice determinant possibly because majority (92.6%) of the farmers cultivated improved varieties, implying that majority of them were already using improved cassava varieties as adaptation strategies and also to boost productivity. Improved cassava varieties have the capacity of high resistance to drought and also high yielding ability. Adeoti *et al.* (2016) also listed planting of improved varieties as an important determinant. The significance of phone access (0.580) is probably due to the fact that phone communication is a faster and more efficient means of information transfer where the farmer needs to get more information or clarification from the extension personnel or other farmers on adaptation strategies to employ when the situation arises. Non-farm income and access to credit were also found to be significant, this implies that the ability for farmers to choose a strategy is determined by credit access appreciation in earnings. The finding agrees with Francis, *et.al.*, (2021), Adeagbo, *et. al.*, (2021), Orifah, *et.al.*, (2020), Mequannt, *et. al.*, (2020), Ashley-Dejo, *et. al.*, (2020), Osasogie and Omorogbe (2018) and Iheke and Agodike (2016) also listed income and access to credit as significant choice determinants. The significance of farm size (0.732) as a choice determinant shows that small farm size can be well controlled in terms

of cost efficiency, farms in the study area were mostly small to medium sizes. This implies that the large farm sizes are more labour and cost intensive in terms of the adaptation strategies employed unlike the smaller farm sizes. This is in line with the studies of Francis, *et.al.*, (2021), Adeagbo, *et. al.*, (2021), Orifah, *et.al.*, (2020), Mequannt, *et. al.*, (2020), Ashley-Dejo, *et. al.*, (2020), Fadina and Barjello (2018), Osasogie and Omorogbe (2018) and Adeoti *et al* (2016). Age of farmer (0.621**)** and house hold size (0**.**607) were found to be significant in factor five. This could be because farmers are in their creative middle-age, mature and capable of withstanding the drudgery involved in employing the adaptation strategies, hence enhanced food production. Also, larger house hold sizes tend to supply household labour that is required to carry out these strategies. These findings are in line with those of Osasogie and Omorogbe (2018), Iheke and Agodike (2016). Weather information, perception on reduction of rainfall and perception on increase of temperature were significant under factor six and seven. This means that having pre-knowledge of the expected weather conditions helped the farmers choose the type of strategies to employ. Also their perception on reduction in rainfall and appreciation in temperature due to experience over the years enabled the farmers know the type of strategy to employ on their farms. This result conforms to the results from the studies of Francis, *et.al.*, (2021), Adeagbo, *et. al.*, (2021), Orifah, *et.al.*, (2020), Mequannt, *et. al.*, (2020), Ashley-Dejo, *et. al.*, (2020), Osasogie and Omorogbe (2018), Adeoti *et. al.* (2016), Arimi (2014) and Eisenack and Stecker (2010).

Conclusion and Recommendations: The major determinants of climate change adaptation strategies of cassava farmers were inadequate knowledge of how to build resilience to climate change, inadequate finance to cope with the changing climate, presence of extension contacts, farming experience, educational level, access to improved varieties, farm size, among others. Also a combined effects of socio-economic and farm site variables were observed to have an influence on choice of adaptation practices in the study area. It was therefore recommended that there should be more efforts from the government to strengthen the provision of credit facilities centered towards the agricultural sector. Government and developing partners should mainstream the determining factors of adaptation strategies into climate change related policies and projects. Policies which incorporate institutional, infrastructural support system and metrological information/training be developed and actually implemented. Access to regular extension contacts by farmers should be encouraged to enhance and strengthen dissemination of information (innovations), training workshops and advisory services.

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