Extended Abstract
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Paper/ Poster Title	**Factors Influencing Adoption of Climate Smart Agricultural Practices among Maize Farmers in Ondo State, Nigeria**

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Abstract	***200 words max***

The study examined the factors influencing adoption of climate smart agricultural practices among maize farmers in Ondo State, Nigeria. A Multi-stage sampling procedure was used to randomly select one hundred respondents for the study. Primary data were collected from the respondents with aid of a structured questionnaire and analysed using descriptive statistics and probit regression model. The results of this study showed that crop diversification was the most adopted climate smart agricultural practice by the respondents and adoption of Climate Smart Agricultural practices is still very low among the respondents. Result of probit regression revealed that marital status, access to extension services, farming experience, membership of farmers' association and access to credit had a positive influence on adoption of climate smart agricultural practices while age, farmsize and total income had a negative influence. Based on the findings of the study, it was recommended that government should develop suitable policies that will encourage farmers especially rural farmers to adopt and utilize Climate Smart Agricultural Practices (CSAP). Equally, the study also recommended government should be geared towards supporting improved extension services, providing on-farm demonstration training, and disseminating information about climate smart agricultural practices and provide credit facilities through the Agricultural Credit Guarantee Scheme Fund and bank credit to farmers in order to enhance adoption.

Keywords	Adoption, Agriculture, Climate smart, Farmers, Maize
JEL Code	Microeconomics B21, Agriculture Q13, Farmhousehlds Q12, Climate Q54 see: www.aeaweb.org/jel/guide/jel.php?class=Q

Introduction	*100 – 250 words*

Climate-Smart Agriculture (CSA) represents a set of strategies that can help combat the above stated challenges of climate change by increasing resilience to weather extremes, adapting to climate change and decreasing agriculture's greenhouse gas (GHG) emissions that contribute to global warming (Steenwerth *et al.* 2014). Climate variability and extremes are a major cause of increased food insecurity, with impacts affecting all aspects of food security (FSIN, 2018; FAO, IFAD, UNICEF, WFP & WHO, 2018; Tripathi *et al.*, 2016). Therefore, climate change will not only lead to lower food production and availability, but also lower food quality (**Alehile** *et al.*, 2022; Tripathi *et al.*, 2016). Smallholder farmers are one of the most vulnerable groups to climate change and variability.

Climate change and variability has resulted into decline and instability in production worsening the existing food insecurity and poverty in developing countries. The effects of these climatic changes will become even more pronounced among small scale farmers, whose farming activities are weather dependent and vulnerable to climate change, and already adversely affected by environmental degradation and socio-economic risks. To ensure resilience, adoption of climate smart practices among small-scale farmers is required. This study aims to identify the climate smart practices adopted, estimate the level of adoption of climate smart agriculture, determine the factors influencing the adoption of climate smart agricultural practices and identify the reasons for non-adoption of climate smart agriculture.

Methodology	*100 – 250 words*

Sampling Technique and Sample Size

Multi-stage sampling procedure was used in the selection of respondents in the study area. The first stage involved a random selection of two Local Government Areas (LGAs) in Ondo State. The second stage involved a random selection of five (5) communities from each of the selected LGAs where maize farmers are dominant, while the third stage involved random selection of ten (10) farmers from each of the selected communities. This gave a total of hundred (100) respondents that were sampled for the study.

Analytical Techniques

Descriptive statistics such as frequency distribution and percentages were used to identify the climate smart agricultural practices adopted by farmers, determine level of adoption of climate smart agricultural practices and identify the reasons for non-adoption of climate smart agricultural practices. Probit regression model was used to examine the factors influencing adoption of climate smart agricultural practices.

Probit Regression Model

The model is given as:

$$P\left(Y_t = \frac{1}{x_i}\right) = \frac{\exp(x_i\beta)}{1+\exp(x_i\beta)} \qquad (1)$$

X_1 = Age (in years), X_2 = Marital status (married =1, 0 = others), X_3 = Sex (male =1, female = 0), X_4 = Household Size (in numbers), X_5 = Education Level (years of formal education), X_6 = Farm Size (in hectares), X_7 = Exposure to extension agent (Yes =1, No = 0), X_8 = Years of experience (in years), X_9 = Membership of co-operative societies (Yes =1, No = 0), X_{10} = parameters, ε = error term

Results	100 – 250 words

Among the ten practices, only crop diversification recorded an adoption percentage of about 21%, which happens to be most adopted climate smart practice in the study area. Specifically, Planting of drought and heat tolerant crops, and conservation agriculture were the second and third most adopted climate smart agricultural practices by 14% and 11% of the respondents respectively. About 28% of respondents had 50% and above adoption of the Climate Smart Agricultural Practices while about 72% of respondents had below 50% adoption of Climate Smart Agricultural Practices. The results of the probit regression model revealed that age, marital status, farm size, access to extension agents, farming experience, membership to cooperative society, access to credit and the farmer's total income significantly affected the adoption of climate smart agricultural practices by medium and low adopters in the study area. The reasons for non-adoption of climate smart agriculture by maize farmers in the study area were cited by respondents which ranges from lack of finance (22%), low level of income (15%), lack of labour (6%), high cost of agrochemicals (10%), lack of extension agent (17%), inadequate credit facilities (8%), unavailability of improved varieties which are drought and heat tolerant (14%), and lastly inadequate access to farm machineries (8%).

Discussion and Conclusion	100 – 250 words

This article examined the factors influencing adoption of climate smart agricultural practices among maize farmers in Ondo State, Nigeria. The study revealed that the most adopted climate smart agricultural practices in the study area was crop diversification. Adoption of climate smart agricultural practices is still very low among the respondents despite policymakers and scientist advocacy for more adoption of climate smart agricultural practices to mitigate the effects of climate change on agricultural productivity and improved farmers' livelihoods. Also, maize farmers' adoption level of climate smart agricultural practices is positively influenced by marital status, access to extension services, farming experience, membership of farmers' association and access to credit. However, age, farm size and total income negatively influenced farmers' adoption level of climate smart agricultural practices. Many reasons were cited by respondents for not taking up the climate smart practices which ranges from lack of finance, poor extension contact, high cost of agrochemicals, inadequate credit facilities, inadequate

access to farm machineries, lack of labour and unavailability of improved varieties which are drought and heat tolerant. Based on the findings of the study, the following were recommended that:

- Government should develop suitable policies that will encourage and educate farmers especially the old and risk averse rural farmers to adopt and utilize Climate Smart Agricultural Practices (CSAPs).
- Government should provide and support on-farm demonstration training and dissemination of information about climate smart agricultural practices to the farmers by the extension agents to enable farmers who are not willing to adopt CSAPs see the need to adopt.