



## Research Article

# EXPLORING THE ADOPTION LEVELS OF MAIZE FARMERS: INSIGHTS FROM KRISHNA DISTRICT

K. ATCHUTA RAJU<sup>1</sup> AND B. VENKATESHWARLU<sup>2</sup>

<sup>1</sup>Senior Scientist (TOT), DAATT Centre Ghantasala, 521133, Krishna District, Andhra Pradesh, India

<sup>2</sup>SMS (Crop Protection), Krishi Vigyan Kendra, Garikapadu, 522614, Krishna District, Andhra Pradesh, India

\*Corresponding Author: Email - atchutaraj@gmail.com

Received: February 01, 2021; Revised: February 25, 2021; Accepted: February 26, 2021; Published: February 28, 2021

**Abstract:** The study was conducted in Krishna district of Andhra Pradesh to identify the adoption levels. A well-structured interview schedule was used to collect data. The Krishna district is purposively selected. The District Agricultural Advisory and Transfer of Technology Centre (DAATTC) is the focal point for extension activities in the district. The adoption was influenced by factors such as the Family size, landholding, credit availability, Farming experience, Training exposure, education and extension contact.

**Keywords:** Maize, Adoption, Farmers

**Citation:** K. Atchuta Raju and B. Venkateshwarlu (2021) Exploring the Adoption Levels of Maize Farmers: Insights from Krishna district. International Journal of Agriculture Sciences, ISSN: 0975-3710 & E-ISSN: 0975-9107, Volume 13, Issue 2, pp.- 10625-10626.

**Copyright:** Copyright©2021 K. Atchuta Raju and B. Venkateshwarlu, This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

**Academic Editor / Reviewer:** Dr H. V. Pandya, Dr Prashant Shrivastava, Dr H S Randhawa

## Introduction

Maize is considered as an important cereal food crop of the world with highest production and productivity as compared to rice and wheat, it is the third most important cereal after rice and wheat for human food by contributing almost 9 % to India's food basket and 5 % to World's dietary energy supply. Maize is cultivated widely in Krishna district, with the result that the produce is of varying quality with varying productivity. Due to Different cropping patterns, quality and growing seasons, the production dynamics of maize are varying from season to season and unique to specific area.

To foster the production, it is obvious to enhance the productivity from the existing national average and also an increase in the area under the crop. Hence, this study has been designed to study the adoption level of the maize farmers.

## Material and Methods

The study was conducted by using ex-post facto research design. The Krishna district is purposively selected. The District Agricultural Advisory and Transfer of Technology Centre(DAATTC) is the focal point for extension activities in the district. The center coordinates the demonstrations and trails in the district. The Krishna district is purposively selected for the study. Maize growing farmers were the respondents for the present study. The primary data were collected using a structured interview schedule by conducting personal interview. The data obtained were analyzed with the help of R software, different statistical tools such as frequency, percentage and correlation were used for the study.

## Results and Discussion

### Adoption level of maize farming technologies

Hence, it was felt necessary to assess the adoption level of farmers on maize cultivation. The pertinent data with regard to overall adoption and technology-wise adoption were collected and is furnished in [Table-1] with respect to adoption level of the respondents.

Table-1 Adoption level of maize farming technologies

SN	Category	Frequency	Percentage
1	Low	33	27.50
2	Medium	73	60.83
3	High	14	11.66

It was observed from the [Table-1] that 60.83 percent of the farmers belonged to medium adoption level while 27.50 percent of them had low level of adoption followed by one tenth (11.66 %) in high adoption level.

The adoption level might differ due to varied reasons viz., lack of innovativeness, low level of training exposure, low level of awareness on critical technologies that particularly influences greater yield. Lack of adequate finance, the availability of labor and hesitation to invest more because the return is not assured due to natural calamities and price fluctuation could also be the reasons expressed for medium adoption by the respondents.

Table-2 Factors influencing adoption level Tobit model

SN	Variable	Coefficient	Standard Error
1	Age	-0.0624	0.0191
2	Family size	0.032*	0.0269
3	Educational level	0.084**	0.029
4	Land holding	0.192**	0.0754
5	Farming Experience	0.035	0.0184
6	Annual income	-0.006**	0
7	Training exposure	1.145**	0.415
8	Credit availability	1.264*	0.8552
9	Innovativeness	0.0423	0.0156
10	Extension contacts	0.068**	0.303
	Constant	-2.1842	0.8428

### Factors explaining the adoption level

Age has not shown any significance in estimating the probability of a farmer's decision to adopt recommended practice. The Tobit model had a sigma value of 1.39019 and is statistically significant at 1% level of significance indicating that the data were appropriate for the model. The log likelihood value of 165 is an indication of a high explanatory power of the Tobit model.

The results from the Tobit model presented in [Table-2] show that seven out of ten variables included in the model (Tobit) are significant in explaining the variation in the level of adoption. These variables include education, household size, distance from home to the family size, educational level, landholding, annual income, Training exposure, extension contact and credit availability.

Education is statistically significant and has a positive correlation with the adoption.

Thus, farmers with a relatively high level of education intensify the adoption of recommended practice than their counterparts with a low level of education. This is not surprising as many studies have reported a positive relationship between adoption and level of education. Landholding had a significant and positive influence on the adoption. Farming in Krishna district, particularly in the study area is more intensive as mechanization remains rare. Hence, having larger family size helps in the farm operations since maize requires some farm cultural practices such as frequent weeding and application of pesticides.

The probability of farmer's adoption is higher in households with larger farm sizes than those with smaller farm sizes. This is because farmers with larger farm sizes are usually into commercial farming and will usually maize for-profit maximization. Annual income did not meet our apriority expectation. The estimated results show that the probability of farmer's annual income had negative effect on adoption.

Farmers participating in demonstration training have a higher probability of allocating more significant proportion of their maize to those who did not participate as indicated in the empirical findings. Farmers learn more and become more sensitized through visuals and hands-on than hearing, hence the importance of Training.

Extension contact is very important determinant of technology adoption because, any newly developed technology is introduced to farmers through the activities of extension agents. A farmer whose contact with extension agents is very high is expected to be more familiar and more knowledgeable about the use of improved agricultural innovations. This variable shows a strong positively relation with adoption.

### Conclusion

Based on the findings it could be concluded that adoption was influenced by factors such as the Family size, land holding, credit availability, Farming experience, Training exposure, education and extension contact. Some significant lessons have emerged from this study which needed to be tackled comprehensively. First, the investigation revealed that education of farm households is key to enhancing adoption. FPOs and extension service delivery, have the potential to shape the decision-making process of the farmers. Hence formation of FPOs should be encouraged public education on farm management practices can also be intensified through radio, mobile phone services, and any available platform by MoA to re-enforce farmers' knowledge on adoption of agricultural technologies. Intensifying extension services in the rural areas where most agricultural production occurs will promote adoption of farm technologies.

**Application of research:** More attention should be given to the organization of on-farm trials with the farmers to enhance their technical and managerial abilities

**Research Category:** Agricultural Extension and Rural Development

**Acknowledgement / Funding:** Authors are thankful to Senior Scientist (TOT), DAATT Centre Ghantasala, 521133, Krishna District, Andhra Pradesh, India. Authors are also thankful to SMS (Crop Protection), Krishi Vigyan Kendra, Garikapadu, 522614, Krishna District, Andhra Pradesh, India

**\*\*Principal Investigator or Chairperson of research: Dr K. Atchuta Raju**

Institute: DAATT Centre Ghantasala, 521133, Krishna District, India  
Research project name or number: Research station study

**Author Contributions:** All authors equally contributed

**Author statement:** All authors read, reviewed, agreed and approved the final manuscript. Note-All authors agreed that- Written informed consent was obtained from all participants prior to publish / enrolment

**Study area / Sample Collection:** Krishna district

**Cultivar / Variety / Breed name:** Maize

**Conflict of Interest:** None declared

**Ethical approval:** This article does not contain any studies with human participants or animals performed by any of the authors.

Ethical Committee Approval Number: Nil

### References

- [1] Priya Y., Ponnusamy K.A. and Venkatapirabu J. (2014) *Journal of Extension Education*, 26(4), 2014.
- [2] Sisay D., Jema H., Degye G. & Abdi-Khalil E. (2015) *Journal of Agricultural Economics, Extension and Rural Development*, 3(5), 276-282.