P-ISSN: 2618-0723
E-ISSN: 2618-0731

NAAS Rating (2025): 5.04
www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 8; Issue 10; October 2025; Page No. 105-108

Received: 10-08-2025
Accepted: 13-09-2025

Indexed Journal
Peer Reviewed Journal

Adoption of agriculture technology through mass media in West Godavari District of Andhra Pradesh

[1]Undi Anush and [2]Dipak Kumar Bose

[1]PG Scholar, Department of Agriculture Extension & Communication, SHUATS, Prayagraj, Utter Pradesh, India

[2]Associate Professor, Department of Agriculture Extension & Communication, SHUATS, Prayagraj, Utter Pradesh, India

DOI: https://www.doi.org/10.33545/26180723.2025.v8.i10b.2518

Corresponding Author: Undi Anush

Abstract

The study was carried out in Andhra Pradesh's West Godavari District to gauge the uptake of agricultural technologies through the media. To gauge the degree of agricultural technology adoption, 120 respondents in all were chosen at random from eight villages in the Ganapavaram block. Using a pre-planned interview schedule, the data was gathered through in-person interviews. Appropriate statistical analysis was then conducted to arrive at a reasonable conclusion. According to the poll, the most of respondents—45 percent—are in the middle age range, and 46.67% have completed upper primary and high school. It was discovered that the majority of respondents—58%—belong to the low land holding category, which includes 1-3 acres. The results also showed that 65% of those surveyed have a medium level of agricultural technology use.

Keywords: Interview schedule, adoption, pre-structured, technology, respondents

Introduction

Adoption

The process of adoption involves learning, making decisions, and acting over time. Adoption of a particular practice is the outcome of a sequence of decisions rather than a single decision to act (Wilkening, 1953) [12]. Everett M. Rogers defines adoption as the choice to fully utilize an innovation as the most effective available course of action. Rejecting an innovation is choosing not to embrace it.

In essence, adoption is a process of decision-making. The following steps are mentioned by Johnson and Haver (1995) [6] as part of the decision-making process: i) Observing the situation, ii) Analyzing it, iii) Selecting the available course of action, iv) Enrolling in courses, and v) Accepting the decision's implications.

Agricultural technology

The application of technology in agriculture, horticulture, and aquaculture with the goal of increasing output, efficiency, and profitability is known as agricultural technology, or agrotechnology (abbreviated agtech, agritech, AgriTech, or agrotech). Products, services, or applications derived from agriculture that enhance different input/output processes are referred to as agricultural technology. (2020, Anonymous) [2].

Role of Mass Media in Agriculture

Social media is being used by rural residents to read the news, interact with friends and family, and acquire information from their peers. Therefore, the agriculture industry and farm families may benefit by tying that to agriculture and using it to close the farmer extension gap (Saravanan and Suchiradipta 2017) [10]. A major factor in the spread of agricultural technologies is the mass media. The type and degree to which mass media is used to mobilize people for development is a major factor in the success of agricultural development programs. Additionally, it might be crucial in assisting farmers in communicating their problems and obtaining the information they require. The selection of communication media is crucial in a nation with a low literacy rate, such as India. In this sense, radio and television are important because they quickly spread modern agricultural technology to both literate and illiterate farmers, especially in rural areas. To educate farmers on the use of various technologies to enhance agricultural development, farm and home broadcasts with an agricultural focus were first established in India in 1966 (Purushothaman, 2003) [9]. There are currently 384 private FM radio stations in 112 cities throughout 26 States and 5 Union Territories. Furthermore, 483 All India Radio (AIR) stations nationwide are home to 523 FM transmitters operated by Prasar Bharati (Anonymous, 2021) [3]. Therefore, the media also contributes to agriculture's finance and investment. They can motivate political decision makers to take a more active role in agricultural and rural innovation processes by raising awareness. (Naorem, 2013) [8].

Research methodology

The study was conducted in West Godavari District of Andhra Pradesh to measure adoption of agricultural technology through mass media. Out of 48 blocks in West Godavari district, Ganapavaram block is selected

purposively based on maximum area covered under mass media utilization. A total number of 120 respondents were selected randomly from eight villages under Ganapavaram block to measure the level of adoption of agriculture technology. The data was collected by personal interview method by using pre-structured interview schedule and latter appropriate statistical analysis (i.e frequency, percentage, correlation etc) was done to draw logical conclusion.

Objectives for the study

1. To study the socio-economic characteristics of respondents.
2. To find out the adoption of Agricultural technology through mass media by the respondents.

Results and Discussion

Table 1: Distribution of respondents on the basis of socioeconomic characteristics and selected independent variables.

S. No	Independent variables	Category	Frequency	Percentage
1	Age	< 35	18	15.00
		36-55	54	45.00
		>55	48	40.00
2	Education	Illiterate + Primary	30	25.00
		Upper primary + Secondary	56	46.67
		Higher secondary + Graduate + above	34	28.33
3	Family size	Small (1-3)	16	08.34
		Medium (4-6)	94	78.33
		Large (above 7)	10	13.33
4	Annual income	< 1 lakh	14	11.67
		1-2 lakh	52	43.33
		> 2 lakh	54	45.00
5	Occupation	Agriculture	36	30.00
		Agriculture + Labor	32	26.67
		Agriculture + other	52	43.33
6	Land holding	<3 acre	70	58.33
		3-6 acre	24	20.00
		>7 acre	26	21.67
7	Farming experience	<10 years	32	27.00
		11-20 years	52	43.00
		> 20 years	36	30.00
8	Mass media experience	Low	34	28.34
		Medium	46	38.33
		High	40	33.33
9	Extension contact	Low	2	1.67
		Medium	66	55.00
		High	52	43.33
10	Risk bearing capacity	Low	29	24.17
		Medium	66	55.00
		High	25	20.83

Most of respondents (45%) were found to be middle-aged (36–50 years) based on Table 1. In terms of education, 46.67% had finished high school or upper primary. The majority (78.33%) were from medium-sized families with four to six people. 45% of respondents said they made more than Rs.3 lakhs a year. In terms of occupation, 43.33% worked in agriculture in addition to other occupations like employment, aquaculture, coconut farming, or driving a car. 58.33% of the respondents had minor holdings of one to three acres, according to their landholding status. A high degree of farming competence was shown by the fact that 43% of respondents had more than 30 years of experience. Regarding media exposure, 38.33% of respondents said they used mass media at a medium level. In a similar vein, 55% had medium extension contact levels. In terms of psychological traits, 55% of those surveyed showed a medium level of risk tolerance. Similar results were also reported by Stylianou and Adamides (2013) [1].

Table 2: Distribution of respondents based on their adoption of agricultural technology through mass media by the respondents.

S. No	Adoption of agricultural technology	Agree		Un-decided		Dis-agree	
		F	%	*F*	%	*F*	%
a	**Farming practices**						
1.	Crop rotation	25	20.83	71	59.16	24	20.83
2.	Mixed cropping	-	-	81	67.50	39	32.50
3.	Shifting to new crop	-	-	64	53.33	56	46.66
4.	New varieties of present crop	83	69.16	37	30.83	-	-
5.	Organic farming	12	10.00	91	75.83	17	14.16
6.	Natural farming	14	11.66	92	76.66	14	11.66
7.	Integrated farming	30	25.00	71	59.16	19	15.83
b	**New technology**						

8.	Tarrace gardening	22	18.33	82	68.33	16	13.33
9.	Vertical farming	-	-	101	84.16	19	15.83
10.	Hydroponics	-	-	-	-	120	100
11.	Rice transplanter	36	30.00	65	54.16	19	15.83
12.	Combine harvester	73	60.83	42	35.00	5	04.16
c	**Management practices**						
13.	Drip irrigation	-	-	56	48.33	62	51.66
14.	Vermi compost	31	25.83	65	54.16	24	20.00
15.	FYM	40	33.33	66	55.00	14	11.66
16.	Bio-fertilizers	32	26.00	54	45.00	34	28.33
17.	Bio-degraders	37	30.83	63	52.50	20	16.66
18.	Mulching	-	-	62	23.33	58	76.66
19.	Shade-net	-	-	-	-	120	100
d	**Plant protection**						
20	Bio-pesticides	38	31.66	64	53.33	18	15.00
21.	Bio-agents	-	-	-	-	120	100
22.	Traps (sticky, pheromone, grease, lamp etc)	33	27.50	67	55.83	20	16.66

F = Frequency,% = Percentage

We can find that 69.16% of respondents from the table-2 are agreed with adoption of new variety of present crop followed by combine harvester (60.83%), FYM (33.33%), Bio-pesticides (31.66%). 84.16% of respondents are un-decided to adoption of vertical farming followed by natural farming (76.66%), organic farming (75.83%), tarrace gardening (68.33%), mixed cropping (67.5%). 100% of respondents are dis-agree with adoption of hydroponics, shade net and bio agents followed by mulching (76.66%), drip irrigation (51.66%), shifting to new crop (46.66%). Similar findings are also reported by Chaurasia and Rai (2017) [4].

Table 3: Distribution of respondents according to their overall adoption.

S. No	Adoption	Frequency	Percentage
1.	Low	20	16.67
2.	Medium	78	65.00
3.	High	22	18.33
	Total	120	100.0

Low:<10, Medium:11-29 and high:>29

According to table no. 3, the majority of respondents (65%) had a medium level of adoption, followed by high (18.33%) and low (16.66%) levels. Kumar (2017) [7] also reports results that are comparable.

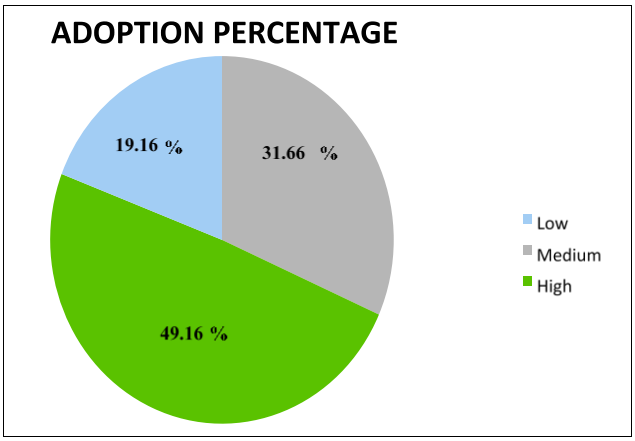

Fig 1: Graphical representation of respondents based on adoption of agricultural technology

Table 4: Relationship between Independent Variables and adoption of agriculture technology. (n = 120)

S. No	Independent Variable	Correlation coefficient(r)
1.	Age	0.894*
2.	Education	0.841*
3.	Family size	0.998*
4.	Annual income	0.051NS
5.	Occupation	-0.282*
6.	Land holding	0.893*
7.	Farming Experience	0.815*
8.	Mass media exposure	0.580*
9.	Extension contact	0.300*
10.	Risk bearing capacity	0.943*

* - Significant at 0.01 level of probability, NS - Non-significant

According to table no. 4 above, adoption of agricultural technology has a positive and non-significant correlation with annual income and a negative and significant correlation with occupation. On the other hand, adoption of agriculture technology has a positive and significant correlation with all other independent variables at a probability of 0.01%. For annual income, the null hypothesis is thus accepted; for the rest, it is rejected.

Conclusion

It was concluded that the age of the majority of respondents was medium and their education status is high in upper primary and high school. Majority of respondents possess low level of land holding. Majority of respondents have medium of mass media exposure and extension contact and risk bearing capacity is low. It was found that adoption of agriculture technology has positive and non-significant correlation with annual income, negative and significant correlation with occupation rest of all independent variables are positive and significant correlation with adoption of agricultural technology at 0.01% of probability. The overall adoption of agriculture technology was found under medium level. Hence the govt. should provide good content according to agriculture technology and provide proper guidance to the respondents for greater adoption.

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