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Prajakta Takte
PG Student, Department of Extension Education, College of Agriculture, Latur, Maharashtra, India

Dr. Jyoti Deshmukh
Associate Professor, Department of Extension Education, College of Agriculture, Latur, Maharashtra, India

Rachna Ghodke
M.Sc. Student, Department of Extension Education, College of Agriculture, Latur, Maharashtra, India

Yugandhara Pagare
PG Student, Department of Extension Education, College of Agriculture, Latur, Maharashtra, India

Vipin Samrit
PG Student, Department of Extension Education, College of Agriculture, Latur, Maharashtra, India

Corresponding Author:
Prajakta Takte
PG Student, Department of Extension Education, College of Agriculture, Latur, Maharashtra, India

Relational analysis between profile and adoption of dryland farming technologies

Prajakta Takte, Dr. Jyoti Deshmukh, Rachna Ghodke, Yugandhara Pagare and Vipin Samrit

Abstract
The study was carried out in three tehsils in the Latur District of Maharashtra: Latur, Ausa, Renapur. These villages were the sites of the dry land project activities. According to the study, the majority of farmers were in the medium adoption group for suggested dryland agriculture technology. Out of the twelve independent variables, the study also showed that eleven variables-education, family size, annual income, land holding, cropping pattern, social participation, use of information sources, extension contact, risk orientation, innovativeness and knowledge-had a significant and positive relationship with the adoption of dryland technology, while variable like age-had a significant negative relationship.

Keywords: Dryland technology, adoption, farming, constraints, farmers profile

Introduction
Agriculture sector is the backbone of the country's development. India ranks first in area under dryland. In India 69 percent (228 M ha) of the total net sown area (328 M ha) comes under dryland cultivation**,** out of that 35 percent of area receives rainfall between 750 mm and 1125 mm and is drought prone while 33 percent area receiving less than 750 mm is chronically drought prone. India has made remarkable footstep during the green revolution phase of its growth, but the green revolution is restricted to some specific crop and region only. An adequate attention has not been paid to dryland agriculture. We never imagined but today India occupies first position in population in world. The challenges for Indian agriculture is to feed the increasing population with the available limited land and other resources. To meet estimated requirement of food grain, the production of dryland has to be increased at least by 72.00 percent by using the dryland techniques.

Marathwada region is one of the four regions of Maharashtra state, cultivable area of 5.6 M ha and 85 percent of cultivated land is rain dependent. The Latur is no exception to this as the fortune of agriculture on a large chunk of area depends on temporal and spatial distribution of south-west monsoon rains. The state had made pioneering efforts in evolving improved dry farming technology or practices. All India Coordinated Research Project for Dryland Agriculture has been commissioned at Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani since January, 2005. Dryland Farming Research Station has evolved and recommended improved package of practices for dryland farming. Despite advancement in agriculture, we have yet not been able to evolve an accep Table package of practice for the dryland areas.

In light of this, an effort has been made to investigate the extent to which farmers have adopted recommended dry land agricultural technology in relation to their socioeconomic, communication, and psychological traits. Additionally, the researchers hope to identify the barriers that farmers perceive to their adoption of these technologies and provide recommendations for solutions.

Objective
To find out relationship between profile and adoption of dryland farming technologies.

Methodology
The current study was conducted in 2022–2023 in the Latur District of the Marathwada region of the state of Maharashtra. Latur, Ausa, and Renapur tehsils were chosen at random from among the ten tehsils in the Latur District.

Four villages were chosen for the study's purposes from each tahsil. For the study, a total of twelve villages were chosen from three tahsil.

Ten respondents were chosen at random from each of the villages that were chosen. Thus, a total of 120 respondents were taken into consideration as study of adoption. The selection of respondents was done by using simple random sampling method pertaining to the study's objectives. For estimating the research Ex-post-facto research design was used for the study.

The information gathered using a pretested interview schedule. Data analysis was conducted using statistical tests and methods, including frequency, percentage, mean, standard deviation, correlation coefficient and multiple regression.

Results and Discussion

Relational analysis between profile and adoption of dryland farming technologies

Adoption is nothing but decision to make full use of an innovation as the best course of action available. Finding revealed that, variables like education, family size, land holding, annual income, cropping pattern, risk orientation and innovativeness had positive and significant relationship with adoption while variables like social participation, sources of information, extension contact, and knowledge had positive and highly significant relationship with adoption only one variable age had negative and significant relationship. As shown in Table No. 1.

Table 1: Relational analysis between profile and adoption of dryland farming technologies

N=120

Sr. No.	Independent variables	Co-efficient of correlation
1.	Age	- 0.231*
2.	Education	0.235*
3.	Family size	0.216*
4.	Land holding	0.201*
5.	Annual income	0.203*
6.	Cropping pattern	0.224*
7.	Social participation	0.392**
8.	Sources of information	0.477**
9.	Extension contact	0.538**
10.	Risk orientation	0.218*
11.	Innovativeness	0.221*
12.	Knowledge	0.573**

*Significant at 0.05 level of probability
** Significant at 0.01 level of probability

Multiple regression of independent variable with their adoption of dryland farming technologies

It could be observed from Table No.2 that, co-efficient of determination (R2) of the independent variable was 0.54 it means that 54 percent of total variation in the adoption of dryland farming technologies was explained by the 12 selected independent variables. It was observed that, extension contact and knowledge are highly significant and social participation is significant. Age, education, annual income, cropping pattern, sources of information are positively non- significant with adoption of dryland farming technologies. Family size, land holding, risk orientation and innovativeness are negatively non-significant with adoption of dryland farming technologies. As shown in Table No. 2.

Table 2: 16 Multiple regression analysis between profile of dryland farmers and their adoption of dryland farming technologies

Sr. No.	Variables	Regression Coefficients (B)	Standard Error (SE)	't' value
1.	Age	0.022	0.132	0.170NS
2.	Education	1.034	0.732	1.412NS
3.	Family size	-0.014	0.659	-0.021NS
4.	Land holding	-0.706	0.669	-1.054NS
5.	Annual income	1.47E-05	8.8E-06	1.669NS
6.	Cropping pattern	0.219	0.564	0.388NS
7.	Social participation	0.386	0.168	2.298*
8.	Sources of information	0.172	0.099	1.733NS
9.	Extension contact	0.223	0.071	3.121**
10.	Risk orientation	-0.185	0.121	-1.531 NS
11.	Innovativeness	-0.03	0.123	-0.281NS
12.	Knowledge	1.74	0.309	5.628**

R2 = 0.54, F value = 10.70*
*Significant at 0.05 level of probability
** Significant at 0.01 level of probability
NS= Non-Significant

Conclusions

Regarding relationship between profile of farmers and adoption of dryland farming technologies, it was concluded that, variables like education, family size, land holding, annual income, cropping pattern, risk orientation and innovativeness had positive and significant relationship with adoption of dryland farming technologies at 0.05 percent probability. Variables like social participation, sources of information, extension contact, and knowledge had positive and highly significant relationship with adoption of dryland farming technologies at 0.01 percent probability. While age had negative but significant relationship with adoption of

dryland farming technologies.

It could be observed that, co- efficient of determination (R2) of the independent variable was 0.54 it means that 54 percent of total variation in the adoption of dryland farming technologies was explained by the 12 selected independent variables. It was observed that, extension contact and knowledge are highly significant at 0.01 level of probability and social participation is significant at 0.05 level of probability. Age, education, annual income, cropping pattern, sources of information are positively non-
significant with adoption of dryland farming technologies. Family size, land holding, risk orientation and innovativeness are negatively non-significant with adoption of dryland farming technologies.

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