Farmers' Awareness and Perceptions of Crop Insurance in Erode District, Tamil Nadu

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Abstract

The study's goals are to investigate farmers' knowledge of crop insurance and perceptions of various agricultural risks, as well as to discover the elements that contributed to the premium amounts paid by farmers for crop insurance schemes in the study area. Between June and August 2019, 125 farmers were interviewed in the Erode District of Tamil Nadu, who were spread across all income-generating villages in the district. The Tobit regression, Probit regression, and Simple Percentage regression models were utilised. The results show that getting farmers involved in social activities will make them more aware of crop insurance plans. The level of education has also become an important factor in making people aware of the new crop insurance solutions. It has been found that things like agricultural income, the ability to get financing, and being happy with the premium rate have a big and positive effect on how many people get insurance. The study has made it clear how important it is to come up with more creative products with as little human help as possible. To get more people to use crop insurance programmes and reach the target group, there needs to be better communication with stakeholders and programmes to build people's skills.

Key words: Farmers, Awareness Perceptions Crop insurance, Probit Model, Tobit Model.

1. Introduction

Agriculture is a risky business in places where floods, droughts, and cyclones are likely to happen. India's economy is based on agriculture, which makes up 24% of the country's GDP. Any change in agricultural output has a ripple effect on the country's economy and is likely to happen. India's economy is based on agriculture, which makes up 24% of the country's GDP. Any change in agricultural output has a ripple effect on the country's economy. Policymakers and academics worry a lot about how to manage risks in agriculture because economic growth and agricultural growth are closely linked. Because people don't want to take risks, they don't invest enough in agriculture, which makes it less efficient. Crop insurance helps keep the income of farmers and the amount of food they grow stable. This helps the manufacturing process make the best use of its resources. The Indian government is worried about the rising risks in agriculture, which have caused farmers in Maharashtra to kill themselves. Over time, different countries have come up with different ways to protect farmers from uncertainty and risk in agriculture. These include guaranteed prices, subsidised loans, and crop insurance, all of which are important in the short term. Crop insurance is widely seen as one of the most important ways to keep farm income stable by supporting technology, encouraging investment, and making it easier for farmers to get credit. Crop insurance is based on the idea that people who do similar things in the same area share losses. Also, losses in bad years are made up for by the money saved in good years (Dandekar, 1976). Crop insurance gives farmers more confidence and self-esteem by giving them the right to sue for money if they lose their crops. So, it lessens the effect of crop loss by protecting farmers from things they can't control, like natural disasters. India's national and state governments have put in place a number of crop insurance policies in the past few years as a safety net.

The various study conducted on the Farmers Perception and Awareness about Crop Insurance (Lawal, B, 2014; Kangale et al. 2016; Ganesh, B, 2020; Rao, N. M. 2021; Suresh, N.,2022;), Attitude of paddy farmers towards crop insurance (Sivaraj et al. 2016; Ghazanfar et al. 2015), Farmers' Awareness And Perception About Livestock Insurance (Jha, A. K. 2021), and Farmers Awareness and Perception towards Crop Insurance as a Risk Management Tool (Rathod et al. 2016; Ghazanfar 2014). Thus, study's goals are to investigate farmers' knowledge of crop insurance and perceptions for crop insurance schemes in the study area.

3. Material and Methods

The study was done in Tamil Nadu's Erode District. Interviews were done with 125 farmers in the income-generating villages of the district. To get the most information, the sample was made up of farmers who were eligible for the Indian government's "Cost of Growing Major Crops" plan. Farmers from small and large farms were chosen to grow all important crops for one or two seasons in different agro-ecological settings, such as reservoir irrigation, groundwater irrigation, canal irrigation, and rainfed agriculture. Between June and August of this year, the information was gathered. Using simple percentage models, probit regression models, and tobit regression models, the results were found.

The Probit model Equation:

$$Y = \alpha + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \beta 4\ X4 + u \text{ ----- } (1)$$

Where,

Y = Awareness Level about crop insurance (1= aware about crop insurance) and 0 = Otherwise)

X1= Extension agency contact of farmer (1 = Yes and 0 = Otherwise)

X2 = Newspaper reading habit of farmer (1 = Yes and 0 = Otherwise)

X3= Education level of farmer

X4 = Farming experience of farmers (years)

The Tobit model Equation:

$$Y = \alpha + \beta 1\ X1 + \beta 2\ X2 + \beta 3\ X3 + \beta 4\ X4 + \beta 5\ X5 + \beta 6\ X6 + \beta 7\ X7 + u \text{ -------- (2)}$$

Where,

Y = Amount of insurance premium paid (Rs)

X1 = Size of holding (acre)

X2 = Annual income from agriculture (Rs)

X3 = Annual income from other than agriculture (Rs)

X4 = Number of earning members in the family (No.)

X5 = Occurrence of risk (1 = Occurrence and 0 = non-occurrence)

X6 = Credit availed (1 = Credit Availed and 0 = Otherwise)

X7 = Satisfaction towards crop insurance schemes (1 = Satisfied and 0 = Otherwise)

3. Results and Discussion

The results of the study are discussed in terms of socioeconomic factors and how farmers feel about their knowledge of and satisfaction with crop insurance. In tables 1 through 4, you can see what happened. In table 1, the farmers' social and economic traits are looked at and given.

Table-1: Socio-economic Characteristics of Sample Farmers

Socio-economic Characteristics	**N**	Percent
Education Status		
Illiterate	8	6.40
Primary level	19	15.20
Secondary level	75	60.00
Higher Secondary level	13	10.40
College level	10	8.00
Farming experience of farmers (years)		
Below 3 year	16	12.80
3 - 6 years	64	51.20
Above 3 years	45	36.00
Number of earning members in the family (No.)		
1 member	35	28.00
2 members	47	37.60
3 members	35	28.00
4 members	8	6.40
Income from agriculture (Rs)		

Below 25000	45	36.00
25000-50000	61	48.80
Above 75000	19	15.20
Income from other than agriculture (Rs)		
Below 25000	33	26.40
25000-50000	76	60.80
Above 75000	16	12.80
Total	125	100.00

Source: Primary data

According to the above table, 60.80 percent of the 125 farmers chosen for the study have a secondary education, 48.80 percent have 3-6 years of farming experience, 35.20 percent of farmers have two earning members in their farm households, 47.20 percent have an annual income category of Rs.25000-Rs.50000 from agricultural, and 65.40 percent have an annual income category of Rs.25000-Rs.50000 from other than agricultural.

Table 2 shows farmers' perceptions of Extension agency interaction, newspaper reading habits, crop insurance awareness, risk occurrence, credit obtained, and satisfaction with crop insurance schemes.

Table-2: Farmers perception about various risks involved in crop insurance

Opinion about	N	Percent
Extension agency contact of farmer		
Otherwise	31	24.80
Yes	94	75.20
Newspaper reading habit of farmer		
Otherwise	52	41.60
Yes	73	58.40
Awareness Level about crop insurance		
Otherwise	31	24.80
Aware	94	75.20
Occurrence of risk		
non-occurrence	38	30.40
Occurrence	87	69.60
Credit availed		
Otherwise	40	32.00
Credit Availed	85	68.00
Satisfaction towards crop insurance schemes		
Otherwise	51	40.80
Satisfied	74	59.20
Total	125	100.00

Source: Primary data

Table 2 shows that of the 125 farmers chosen for the study, 76.80% have an opinion about contacting an extension agency, 57.60% regularly read the newspaper, 74.40% know about crop insurance, 66.40% have crop insurance risk, and 63.20% have credit available. The probit regression was used to find out what made farmers aware of the government's and other financial organisations' crop insurance plans and other financial products. The estimates made by the Probit model are shown in Table 3.

Table-3: Estimates of Probit regression model of farmers' awareness about crop insurance

Particulars	**Coef.**	**Std. Err.**	**z**	**P>z**
Cons	1.199	0.741	4.566	0.012
X1	0.240**	0.129	7.326	0.019
X2	0.374*	0.175	6.726	0.008
X3	0.589**	0.328	4.606	0.011
X4	0.255**	0.25	4.806	0.044
LR chi2(4)	7.516			
Prob > chi2	0.069			
Log likelihood	-67.315			
Pseudo R2	0.643			

Source: Calculated data *Significant at 1% level **Significant at 5% level

The estimated regression co-efficients of the variables pertaining to the Erode district data, namely, farmer education level (X1), farming experience (X2), extension agency contact of farmer (X3), and newspaper reading habit of farmer (X4), are shown in table-II. The value of 0.587 for the coefficient of multiple determination (Pseudo R2) is easy to see. All of these numbers suggest that the Probit regression model may be able to explain a big part of the difference in how many people know about crop insurance. All of the co-efficients show signs that make sense. At 5% and 1%, farmer co-efficients that are based on their education level and farming experience are positive and significant. Based on the size of the co-efficients, if a farmer's level of education and years of farming experience both go up by one year, their chances of knowing about crop insurance schemes go up by 24% and 37%, respectively. At the 5% level, the farmer co-efficients for Extension agency contact and reading the newspaper are both positive and significant. Based on the size of the coefficients, if farmers contact Extension agencies and read newspapers 1% more, their chances of knowing about crop insurance schemes go up by 58.9% and 25.5%, respectively. The Tobit regression was used to figure out which factors affected the amount of crop insurance premiums that farmers had to pay. Table-4 shows the results of the Tobit regression.

Table 4: Estimates Results of Tobit regression on factors influencing the premium paid

Particulars	**Coef.**	**Std. Err.**	**t**	**P>|t|**
Constant	15.545	34.242	0.506	0.651
X1	34.456*	33.556	7.076	0.007
X2	68.148**	32.562	2.146	0.038

X3	437.267*	15.385	28.446	0.001
X4	193.44	149.739	1.346	0.198
X5	3.170*	45.886	3.126	0.045
X6	13.301	17.426	0.816	0.448
X7	15.545	34.242	0.506	0.651
/sigma	174.231	11.130	152.158	196.303
LR chi2(7)	466.486			
Prob > chi2	0.000			
Log likelihood	-704.365			
Pseudo R2	0.417			

Source: Calculated data *Significant at 1% level **Significant at 5% level

All of the estimated Tobit regression co-efficients for the variables in the Erode district data, including the occurrence of risk (X1), credit availed (X2), and satisfaction with crop insurance schemes (X3), size of holding (acres) (X4), annual income from agriculture (Rs) (X5), annual income from other sources (Rs) (X6), and number of earning members in the family (X7), show the expected signs. At the 1% and 5% levels, parameters like the occurrence of risk, the availability of credit, satisfaction with crop insurance schemes, and annual income from agriculture have a positive effect on whether farmers in the research area take out insurance and pay the premium.

5. Conclusion

The results show that getting farmers involved in social activities will make them more aware of crop insurance plans. The level of education has also become an important factor in making people aware of the new crop insurance solutions. It has been found that things like agricultural income, the ability to get financing, and being happy with the premium rate have a big and positive effect on how many people get insurance. The study has made it clear how important it is to come up with more creative products with as little human help as possible. To get more people to use crop insurance programmes and reach the target group, there needs to be better communication with stakeholders and programmes to build people's skills.

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