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A study on profile characteristics of grape insured farmers in Nashik district of Maharashtra

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Abstract
Agriculture has a huge role in economy of India. Agriculture is the primary source of income for more than 58.00 percent of rural families. Crop insurance is an insurance arrangement aiming at mitigating the financial losses suffered by the farmers due to damage and destruction of their crops as a result of various production risks. The study was conducted in the year 2021, expost-facto research design was used for the study. 75 insured farmers under PMFBY weather based crop insurance scheme and 75 non –insured grape farmers are selected from Nashik district from three tehsils, from each tehsil three villages are selected, a total of 150 farmers are selected. Majority of the Grape insured farmers were of middle age (46.6%). Similarly in case of Grape non- insured farmers majority of the farmers were of middle aged (36%). Majority of the insured farmers are having education of Degree or higher education compared to the non -insured farmers. Three fourth of the insured farmers were doing Agriculture for living (77.33%), non-insured farmers 68% of the farmers are having agriculture as occupation. More than half of the grape insured farmers are small farmers (60%), non- insured farmers majority of the farmers are small (61.34%). Also majority of the insured and non- insured farmers were having fair cropping pattern. Majority of the farmers (insured and non-insured) were having medium sources of information, extension contacts, scientific orientation, economic motivation and risk orientation.

Keywords: PMFBY, crop insurance, grape farmers

1. Introduction

Agriculture is a dynamic combination of physical, socio-institutional, and techno-economic variables, its nature is always changing with the primary goal of boosting food grain production. Despite technological and economic developments, farmers' livelihoods remain precarious due to natural disasters and market swings. Drought years underscore the impact of this fluctuation, with reports of farmer suicides in many sections of the country. Crop insurance is one of the tools used in India to safeguard farmers from agricultural unpredictability.

Farmers are sensitive to agricultural risks and, as a result, require insurance. While India has had one since 1972, it has a number of flaws, including a lack of transparency, excessive rates, and non-payment or delayed payment of claims. The "individual farm method" was the basis for India's first crop insurance plan, which was ultimately abolished due to its unsustainable nature. The "homogeneous area technique" was then used to create the next insurance system. The Comprehensive Crop Insurance Scheme was launched in 1985 for a 15-year period, with enhancements based on an area approach combined with short-term crop credit. The National Agricultural Insurance Scheme, which succeeded it, was created to expand coverage for farmers, both those who had loans and those who didn't.

In comparison to its predecessors, the National Agricultural Insurance Scheme and the Modified National Agricultural Insurance Scheme, the Pradhan Mantri Fasal Bima Yojana has made numerous advancements. Pradhan Mantri Fasal Bima Yojana gives insurance based on yield and weather. In yield based Pradhan Mantri Fasal Bima Yojana, yield loss assessment is done based on crop cutting experiments, in case when there is no standard method of yield loss estimation, insurance is given based on weather aberrations

For the present study Grape is taken into consideration to study the profile characteristics of grape insured and non-insured farmers of Weather based Pradhan Mantri Fasal Bima Yojana. Grape is such fruit crops which are having very high value, but in last few years, due to climate change and adverse weather incidences there is yield loss and farmers are indebted. Hence, farmers to mitigate the risk, opt for PMFBY scheme which gives them insurance based on the crop losses due to adverse weather incidences.

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2. Methodology
The expost-facto research design was used for the study. For studying the profile characteristics of grappe insured and non-insured farmers we have selected Grape in fruit crop. The sampling frame consists of grape farmers belonging to Nasik district. Nashik district is selected purposively as there were more number of beneficiaries of grape in Nasik. 75 beneficiary farmers and 75 non -beneficiary grape farmers are selected from Nashik district from three tehsils, from each tehsil three villages are selected, a total of 150 farmers are selected. The interview schedule was drafted so as to collect the information in line with the objectives of the study. The interview schedule developed was pre-tested for its accuracy, simplicity and practicability with a group of thirty beneficiaries of scheme. Data is acquired by personal interview. The data is tabulated and analyzed using appropriate statistical tools.

3. Results and Discussion

Table 1: Socio-economic characteristics of grape insured and non-insured farmers

Sr. No	Variables	Insured(n=75)		Non- Insured (n=75)	
		f	%	F	%
1.	Age				
	Young (Up to 35 years)	22	29.33	25	33.34
	Middle (36 to 50 years)	35	46.66	27	36
	Old (above 50 years)	18	24	23	30.66
2.	Education				
	Illiterate	2	2.66	5	6.66
	Pre-Primary (Std. I to IV)	1	1.33	3	4
	Primary (Std. V to VII)	2	2.66	6	8
	Secondary (Std. VIII to X)	25	33.33	28	37.33
	Higher Secondary (Std. XI to XII)	18	24	16	21.33
	Degree or higher education	27	36	17	22.66
3.	Occupation				
	Agriculture	58	77.33	51	68
	Agriculture+ Service	6	8	9	12
	Agriculture + Business	11	14.66	15	20
4.	Land Holding				
	Small farmers (Up to 2 ha.)	45	60	46	61.34
	Semi-medium farmers (2.01 to 4.00 ha	15	20	14	18.66
	Medium farmers (4.01 to 10.00 ha)	12	16	9	12
	Big farmers (Above 10.00 ha.)	3	4	6	8

Table 2: Socio-economic characteristics of grape insured and non-insured farmers

Sr. No	Variables	Insured (n=75)		Variables	Non-Insured(n=75)	
		f	%		*f*	%
5.	Cropping Pattern					
	Poor (Up to 1)	10	13.33	Poor (Up to 1)	12	16.00
	Fair (2 to 4)	42	56.00	Fair (2 to 4)	45	60.00
	Good (5 and above)	23	30.67	Good (5 and above)	18	24.00

From Table 1 it is evident that majority of the Grape insured farmers were of middle age (46.6%) followed by Young farmers (29.33%) and old farmers (24%). Similarly in case of Grape Noninsured farmers majority of the farmers were of middle aged (36%). It can be inferred that the respondents were of middle aged in both the categories. The present findings are in line with Dhande and Jambavanth, S. (2017) [2], Sindhu *et al.* (2017) [10], Ghanghas (2018) [3].

The table 1 indicates that majority of the respondents were having Degree or higher education (36%) followed by secondary education (33.33%). In case of Non-insured grape farmers majority of the farmers were having secondary education (37.33%), followed by Degree or higher education (22.66%), Majority of the insured farmers are having education of Degree or higher education compared to the non-insured farmers which indicates that more educated grape farmers are opting for the insurance. Educated farmers are more aware and knowledgeable and are opting for the scheme. The findings are in agreement with the findings of Sundar *et al.* (2015) [11], Paulraj *et al.* (2020) [6]

From table 1 it is evident that majority of the insured farmers were doing Agriculture for living (77.33%), 14.66 percent of farmers were having Business along with Agriculture and 8 percent of the farmers were doing service along with agriculture. Similarly in non -insured farmers 68% of the farmers are having agriculture as occupation (68%) followed by Agriculture along with Business (20%) and Agriculture along with service (20%). The insured and non-insured farmers were performing the same type of occupation. The findings of the study are in line with Ghoslya (2016) [4], Ghanghas (2018) [3].

From the table 1 it is evident that majority of the grape insured farmers are small farmers (60%), 20 percent of the farmers are semi-medium farmers, 16 percent of the farmers are medium farmers and big farmers are about 4 percent. In case of non- insured farmers, majority of the farmers are small (61.34%) followed by semi-medium (18.66), medium (12%) and big farmers (8%). We can conclude that both the group farmers are homogenous in their land holding.
The findings are in line with Paulraj *et al*. (2020) [6], Swain *et al*. (2020) [12].

Table 3: Communicational characteristics of grape insured and non-insured farmers

Sr. No	Variables	Insured (n=75)		Variables	Non Insured (n=75)	
		f	%		*f*	%
1.	Sources of Information					
	Low (Up to 27)	12	16	Low (Up to 25)	13	17.33
	Medium (27 to 33)	48	64	Medium (26 to 32)	55	73.33
	High (34 and Above)	15	20	High (33 and Above)	7	9.34
	Mean = 30.1			Mean=28.64		
	SD = 3.25			SD = 3.73		
2.	Extension Contacts					

	Low (Up to 6)	16	21.33	Low (Up to 6)	20	26.67
	Medium (7 to 10)	47	62.66	Medium (6 to 9)	45	60
	High (11 and Above)	12	16	High (10 and Above)	10	13.33
	Mean = 8.26			Mean = 7.70		
	SD = 1.93			SD = 1.69		
3.	**Extent of awareness regarding scheme**					
	Low (Up to 14)	18	24	Low (Up to 11)	13	17.33
	Medium (15 to 19)	38	50.64	Medium (12 to 16)	52	69.33
	High (20 and Above)	19	25.33	High (16 and Above)	10	13.34
	Mean = 16.70			Mean = 13.81		
	SD = 2.65			SD = 2.38		

From the table 2 it is evident that majority of farmers are having medium sources of information (64%) followed by High (20%) and Low sources of information (16%). Similarly, in non- insured farmers majority of the farmers are having medium sources of income (73.33%) followed by Low (17.33%) and high sources of income (9.34%). By considering the mean 30.1 of insured farmers and 28.64 percent of non-insured farmers we can conclude that insured farmers are having more sources of information compared to non-insured farmers.

The findings are in line with Uvaneswaran et al. (2014) [13], Jamanal et al. (2019) [14].

From the above table 2 we can see that majority of the farmers are having medium extension contacts (62.66%) followed by low (21.33%) and High (16%). In case of non-insured farmers majority of the farmers are having medium extension contacts (60%) followed by low (26.67%) and high (13.33%). Considering the mean of the two categories, the insured farmers were having mean of 8.26, whereas, the mean score of non -insured farmers is 7.70, this implies insured farmers are having more extension contacts as compared to non-insured farmers.

Similar findings are found in the study of Jamanal et al. (2019) [14].

From the table 2 it is evident that majority of the insured farmers are having medium awareness (50.64%) followed by high (25.33%) and low (24%). In case of non- insured farmers majority of the farmers are having medium awareness (69.33%) followed by low (17.33%) and high (13.34%). The mean score of insured farmers is 16.70 and non- insured farmers is 13.81. The SD is 2.65 for insured farmers and 2.38 for non-insured farmers. We can infer that the insured farmers are more aware about the scheme when compared to the non-insured farmers. Similar findings were found in the study of Sundar et al. (2015) [11], Darshan (2021) [1].

Table 4: Psychological characteristics of grape insured and non-insured farmers

Sr. No	Variables	Insured (n=75)		Variables	Non-Insured(n=75)	
		f	%		F	%
1.	**Economic Motivation**					
	Low (Up to 13)	17	22.66	Low (Up to 12)	23	30.67
	Medium (14 to 19)	50	66.66	Medium (13 to 18)	39	52
	High (20 and Above)	8	10.67	High (19 and Above)	13	17.33
	Mean = 15.65			Mean = 14.90		
	SD = 2.90			SD = 3.38		
2.	**Scientific Orientation**					
	Low (Up to 14)	16	21.33	Low (Up to 12)	17	22.67
	Medium (15 to 19)	45	60	Medium (13 to 18)	49	65.33
	High (20 and Above)	14	18.67	High (19 and Above)	9	12
	Mean = 16.50			Mean = 15.12		
	SD = 2.56			SD = 2.94		
3.	**Risk Orientation**					
	Low (Up to 13)	20	26.67	Low (Up to 13)	17	22.67
	Medium (14 to 19)	46	61.33	Medium (14 to 18)	51	68
	High (20 and Above)	9	12	High (19 and Above)	7	9.33
	Mean = 16.14			Mean = 15.37		
	SD = 2.87			SD = 2.72		

From table 3 we can infer that majority of the farmers are having medium economic motivation (66.66%) followed by low (22.66%) and high (10.67%). In case of non -insured farmers maximum number of farmers are having medium economic motivation (52%) followed by low (30.67%) and high (17.33%). The mean score of economic motivation is 15.65 for insured farmers and for non-insured farmers mean is 14.90. We can infer that economic motivation of insured farmers and non- insured farmers is same on an average.

The findings are in line with the research of Javeed et al.

(2020) [5] and Pradhan et al (2021) [9].

From the table 4 it is evident that maximum number of farmers are having medium scientific orientation (60%) followed by low (21.33%) and high (18.67%). In the context of non- insured farmers majority of the farmers are having medium scientific orientation (65.33%), 22.67 percent of the farmers were having low scientific orientation and 12 percent of the farmers were having low scientific orientation. The mean score of scientific orientation is 16.50 for insured farmers and for non-insured farmers mean is 15.12. And SD is

2.56 and 2.94 for insured and non-insured farmers respectively. We can infer that economic motivation of insured farmers and non-insured farmers is same on an average.

The findings are in line with the research of Rao *et al.* (2012) [8], Palanisamy (2011) [7].

From the table 3.3it is evident that majority of the farmers have medium level of Risk Orientation (61.33%) followed by low (26.67%) and high (12%). In case of non-insured farmers majority of the farmers (68%) followed by low (22.67%) and high Risk Orientation (9.33%). The mean score of Risk Orientation is 16.14 for insured farmers and for non-insured farmers mean is 15.37 and SD is 2.87 and 2.72 for insured and non-insured farmers respectively. We can infer that Risk Orientation of insured farmers and non- insured farmers is same on an average. The findings are in line with Jamanal *et al.* (2019) [14].

4. Conclusions

Majority of the Grape insured farmers were of middle age (46.6%). Similarly in case of Grape non-insured farmers majority of the farmers were of middle aged (36%). Majority of the insured farmers are having education of Degree or higher education compared to the non- insured farmers. Three fourth of the insured farmers were doing Agriculture for living (77.33%), non- insured farmers 68% of the farmers are having agriculture as occupation (68%). More than half of the grape insured farmers are small farmers (60%), non-insured farmers majority of the farmers are small (61.34%). Also majority of the insured and non- insured farmers were having fair cropping pattern. Majority of the farmers (insured and non-insured) were having medium sources of information, extension contacts, scientific orientation, economic motivation and risk orientation.

The policy makers, administrators, banks and concerned authorities of PMFBY Scheme should emphasis on the above mentioned factors to implement and follow up the scheme. Spreading awareness regarding the scheme is one of the major factor, so that farmers can opt for the insurance. In this line extension contacts should be increased, farmers should be encouraged to participate in seminars, trainings, and involve in agriculture organization participation, so that farmers can get expertise advice and reap more benefits. Small farmers who are possessing fragmented land holdings are in need of the crop insurance, hence focus on small farmers should be there for their upliftment in terms of socio-economic conditions. The agriculture universities and research stations and state agriculture departments should center their attention towards building expert advice on grape orchard and emphasis on importance of crop insurance. Transparency in the scheme should be there so that more number of the farmers will opt for the crop insurance.

5. Future scope of study

Susceptibility of agriculture to natural disasters, price fluctuations, outbreak of epidemics, man-made disasters severely effect farmers production and income. Even though in recent times contract farming, future trading came in to light, agriculture insurance remains as an important risk management tool to stabilize the farm income. The study can be conducted in other aspects like field crops and other horticulture crops, insured and non-insured farmers. The study was confined with only one district, hence study can be conducted in wider areas to get a overall profile

characteristics of grape farmers. More variables can be included in the study like climate perception of the farmers.

6. Authors contribution
Battu Preethi: Collected the data, Contributed data or analysis tools, Performed the analysis, Wrote the paper

G.K. Sasane: Conceived and designed the analysis

Sonali Yashwant Gadmale: Performed the analysis.

8. Conflict of Interest
None.

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