Relationship Between Farmer's Profile with their Perception about Climate Change

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Abstract

The present study was conducted randomly in Aurangabad, Hingoli and Jalna district of the Marathwada region of Maharashtra state during the year 2018-2019. From this three district six tahsils were selected randomly. From each selected taluka two villages were selected randomly for the study. Ten (10) respondents were selected randomly from each selected villages. Thus comprising total 120 respondents were selected from Marathwada region for research study. It was found that majority (35.84%) of the respondents were educated up to middle school category, more than half 67.50 per cent of the respondents belonged to medium farming experience, majority (41.67%) of the respondents were having medium level of social participation, majority 70.84 per cent of respondents are engaged in agriculture as main occupation, majority (40.84%) of respondent belongs to marginal land holding category, near half about 66.67 per cent of respondents depend upon well as main source of irrigation, majority (46.66%) of farmers belong to medium annual income category, found that 66.67 per cent of respondents belong to medium socio-economic status category, almost 98.33 per cent farmers know about the crop insurance scheme, majority (55.84%) respondents belonged to medium level of extension contact, majority (55.00%) of the respondents belong to medium innovativeness category and majority (60.83%) of the respondents belong to medium risk orientation category.

The results revealed that variable like Education, Farming experience, Social participation, Occupation, Land holding, Irrigation facilities, socioeconomic status, crop insurance, Innovativeness, Risk orientation found to be had positive and significant relationship with perception of farmers about climate change. Likewise Extension contact had found positive and highly significant relationship with the perception about climate change. Whereas annual income found non-significant relationship with perception of farmers about climate change.

Climate change and agriculture have a very strong linkage. Agriculture still depends fundamentally on the weather. Climate change is already responsible for the decrease in the agricultural productivity because of the severely changing weather patterns. Climate change is responsible for continuous occurrences of floods, worsening desertification process and disrupts growing season. Climate change can affect agricultural productivity in many ways.

Beyond a certain temperature range, warming cause a decrease in the annual yield because more warming cause the process of development of crops speedier, thereby producing less than normal grains in the process. Since the concentration of greenhouse gases is continuously increasing, this cause a much serious concern as it would have a direct as well as indirect effect on agriculture productivity.

The Marathwada region of Maharashtra is just coming out of the worse drought in 40 years. While the drought of the magnitude in 2016 will always bring hardship to local people which causes the effects of extreme weather on local livelihood. The district of Marathwada witnessing maximum farmers suicides in Maharashtra face higher risk to climate change. According to the Central Research Institute for Dry land Farming, the districts in Marathwada face very high risk to climate change.

Materials and Methods

The present study was conducted randomly in Aurangabad, Hingoli and Jalna district of the Marathwada region of Maharashtra state during the year 2018-2019. Selected district six tahsils were selected randomly. From each

selected taluka two villages were selected randomly for the study. Ten (10) respondents were selected randomly from each selected villages. Thus comprising total 120 respondents were selected from Marathwada region for research study. Ex-post facto research design was adopted in this study. The data were collected with the help of pretested interview schedule. The statistical methods and tests such as frequency, percentage, mean standard deviation and coefficient of correlation were used for the analysis of data.

Objective

1. To study the profiles of farmers.

2. To study relationship between perception of farmers about climate change and profile of farmers

Result

Personal and socio-economic characteristics of the farmer's perception about climate change

Education

The data in the Table 1 showed that 35.84 per cent respondents were in middle school category, 15.84 per cent respondents were found illiterate category. Only 15.00 per cent were College/ post graduation category, near about 12.50 per cent respondents had education level up to primary school whereas, 11.66 per cent re-

spondents were found in high school category, 9.16 per cent of the respondents were found that they can read and write. While no body respondents were found under can read only category.

Farming experience

It is clear from the table 2 that majority of the respondents (67.50%) had 'Medium' farming experience i.e. (9 to 28 years) and followed by 18.34 per cent of high' level of farming experience (29 year and above) and followed by 14.16 per cent of 'Low' level of farming experience (up to 8).

Social participation

The results compiled in the Table 3 clearly revealed that majority (41.67%) of the respondents were having medium level of social participation, where as, 33.33 per cent and 25.00 per cent belonged to low and high category respectively.

Occupation

The data presented in Table 4 clearly shows that agriculture was the main occupation of the respondents and majority of respondents (70.84%) of them were engaged in farming alone. Near about 12.50 per cent of them were doing agriculture along with labour, whereas, nearly 6.66 per cent of the respondents were practicing

Table 1. Distribution of the respondents according to their level of education

Sr. No.	Educational Level	Frequency	Percentage
1	Illiterate	19	15.84
2	Can read only	00	00.00
3	Can read and write	11	09.16
4	Primary school	15	12.50
5	Middle school	43	35.84
6	High school	14	11.66
7	College level	18	15.00
	Total	120	100

Table 2. Distribution of the respondents according to their farming experience

Sr. No.	Category	Frequency	Percentage
1	Low	17	14.16
2	Medium	81	67.50
3	High	22	18.33
	Total	120	100

Table 3. Distribution of respondents according to their social Participation

Sr. No.	Category	Frequency	Percentage
1	Low (Up to 2)	40	33.33
2	Medium (3 to 4)	50	41.67
3	High (5 and Above)	30	25.00
	Total	120	100
Mean : 3.40			SD: 1.68

Table 4. Distribution of the farmers according to their Occupation

Sr. No.	Category	Frequency	Percentage
1	Labour	15	12.50
2	Caste occupation	07	05.84
3	Business	05	04.16
4	Farming	85	70.84
5	Service + Framing	08	06.66
	Total	120	100.00

Table 5. Distribution of the farmers according to their land holding

Sr. No.	Category	Frequency	Percentage
1	Marginal (Up to 1 Ha.)	49	40.84
2	Small (1.01 to 2.00 Ha.)	44	36.66
3	Medium (2.01 to 4.00 Ha.)	12	10.00
4	Big (Above 4.01 Ha)	15	12.50
	Total	120	100.00

agriculture along with service + Farming as their main occupation while 5.84 per cent were engaged in agriculture along with their caste occupation. Where as only 4.16 per cent of respondents engaged in agriculture + business as their occupation.

Land holding

The data in Table 5 clearly indicates that 40.84 per cent of the respondents were possessing up to 1 ha of land and belonged to marginal farmers category, while, 36.66 per cent of the respondents were possessing 1.01 to 2.00 ha of land and belonged to small farmers category, 12.50 per cent of the respondents were having more than 4.01 ha land holding which comes under big farmer's category. Only 10.00 per cent of the respondents belongs to medium farmers (2.01 to 4 ha).

Irrigation facilities

It was elucidated from table 6 that, majority (66.67%) of farmers had well as irrigation source, followed by (28.33%) had bore well as irrigation facility while, 2.50 per cent farmers depend upon the canal as source of irrigation whereas; 1.67 per cent farmers had pond as irrigation facility. Only 0.83 per cent of farmer had farm pond as source of irrigation. Whereas no one farmer was used river and dam as source of irrigation.

Annual income

It was elucidated from Table 7 that, majority (46.66%)

Table 7. Distribution of the farmers according to their annual income

Sr. No.	Category	Frequency	Percentage
1	Low (Up to ₹ 50462)	50	41.68
2	Medium (₹ 50463 to ₹ 278661)	56	46.66
3	High (₹ 278662 and above)	14	11.66
	Total	120	100.00
Mean : 164562.49		SD:114100	

Table 6. Distribution of the farmers according to their irrigation facilities

Sr. No.	Irrigation Facilities	Frequency	Percentage
1	River	00	00.00
2	Pond	02	01.67
3	Well	80	66.67
4	Farm pond	01	00.83
5	Dam	00	00.00
6	Canal	03	02.50
7	Tube well	34	28.33
	Total	120	100.00

of farmers had medium annual income (₹ 50463 to ₹ 278661) followed by 41.67 per cent respondents belongs to low (Up to ₹ 50462) annual income category per year whereas; 11.66 per cent farmers had high annual income (₹ 278662 and above) category.

Socio-economic status

The information presented in Table 8 indicated that, majority (66.67%) respondents belonged to medium level of socio-economic status followed by high socio-economic status (18.33%) and about (15.00%) of respondents belonged to low socio-economic status.

Crop Insurance

From Table 9 it is clearly inferred that, majority (80.84%) farmers had medium awareness about crop insurance followed by 14.16 per cent of farmers belong from low level category whereas 5.00 per cent farmers belong from high level of awareness category.

Extension contact

The information presented in Table 10 indicated that, majority (55.84%) respondents belonged to medium level of extension contact followed by high extension contact (25.83%) and about (18.33%) of respondents be-

Table 8. Distribution of the farmers according to their socio-economic status

Sr. No.	Category	Frequency	Percentage
1	Low (Up to 24)	18	15.00
2	Medium (25 to 32)	80	66.67
3	High (33 and above)	22	18.33
	Total	120	100.00
Mean : 28.51		SD: 4.77	

Table 9. Distribution of respondents according to their crop insurance

Sr. No.	Category	Frequency	Percentage
1	Low (Up to 4)	17	14.16
2	Medium (5 to 7)	97	80.84
3	High (8 and Above)	06	05.00
	Total	120	100
Mean : 5.59			SD : 1.10

Table 11. Distribution of respondents according to their innovativeness

Sr. No.	Category	Frequency	Percentage
1	Low (Up to 9)	30	25.00
2	Medium (10 to 12)	66	55.00
3	High (13 and above)	24	20.00
	Total	120	100.00
Mean : 10.95			SD:1.71

longed to low extension contact.

Innovativeness

It can be inferred from the Table 11 that 55.00 per cent of study area farmers were in the medium innovative proneness category, while, 25.00 and 20.00 per cent of them were in low and high innovativeness category, respectively.

Risk orientation

The results compiled in the Table 12 clearly revealed that majority (60.83%) of the respondents were having medium level of risk orientation, whereas, 22.50 per cent and 16.67 per cent belonged to high and low category respectively.

Relation Analysis

Relationship between perception of farmers about climate change & profile of farmers.

Findings presented in Table 13 reveals that, out of twelve independent variables like Education, Farming experience, Social participation, Occupation, Land holding, Irrigation facilities, socio economic status, crop insurance, Innovativeness, Risk orientation found to be had positive and significant relationship with perception of farmers about climate change. Likewise Extension contact had found positive and highly significant relationship with the perception about climate change. Whereas

Table 10. Distribution of respondents according to their extension contact

Sr. No.	Category	Frequency	Percentage
1	Low (Up to 25)	22	18.33
2	Medium (26 to 31)	67	55.84
3	High (32 and Above)	31	25.83
	Total	120	100
Mean : 28.51			SD:3.83

Table 12. Distribution of respondents according to their risk orientation

Sr. No.	Category	Frequency	Percentage
1	Low (Up to 5)	20	16.67
2	Medium (6 to 8)	73	60.83
3	High (9& above)	27	22.50
	Total	120	100.00
Mean : 7.20			SD:1.80

Table 13. Relationship between perception of farmers about climate change and profile of farmers

Sr. No.	Independent Variables	Correlation coefficient (r)
1.	Age	0.204**
2.	Education	0.465**
3.	Category	0.013NS
4.	Family size	0.016 NS
5.	Land Holding	0.039NS
6.	Occupation	0.546**
7.	Annual income	0.459**
8.	Family type	0.365**
9.	Social participation	0.638**
10.	Source of information	0.621**
11.	Extension contact	0.567**
12.	Economic motivation	0.586**

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

Annual income found non-significant relationship with perception of farmers about climate change.

Conclusion

Majority (35.84%) of the respondents were educated up

to middle school category, more than half (67.50%) of the respondents belonged to medium farming experience, majority (41.67%) of the respondents were having medium level of social participation, majority 70.84 per cent of respondents are engaged in agriculture as main occupation, majority (40.84%) of respondent belongs to marginal land holding category, near half about 66.67 per cent of respondents depend upon well as main source of irrigation, majority (46.66%) of farmers belong to medium annual income category, found that 66.67 per cent of respondents belong to medium socio-economic status category, almost 98.33 per cent farmers know about the crop insurance scheme, majority (55.84%) respondents belonged to medium level of extension contact, majority (55.00%) of the respondents belong to medium innovativeness category and majority (60.83%) of the respondents belong to medium risk orientation category.

The study on relational analysis of farmer's profile with their perception about climate change found that, out of twelve independent variables, like Education, Farming experience, Social participation, Occupation, Land holding, Irrigation facilities, socioeconomic status, crop insurance, Innovativeness, Risk orientation found to be had positive and significant relationship with perception of farmers about climate change. Likewise Extension contact had found positive and highly significant relationship with the perception about climate change. Whereas annual income found non-significant relationship with perception of farmers about climate change in Marathwada region of Maharashtra.

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