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PERSONAL AND SOCIO-PSYCHOLOGICAL FACTORS INFLUENCING THE KNOWLEDGE LEVEL OF AGRO-MET ADVISORY SERVICE (AAS) FARMERS

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ABSTRACT
The study was conducted in 2 villages of Chickaballapura District of Karnataka to find out the association between selected personal and socio-psychological factors and climate change knowledge of farmers. Data was collected from 90 farmers with the help of a pre-tested interview schedule. It was found that farmers land holding, cosmopoliteness, extension participation, Mass Media Exposure, Irrigation Potential and scientific orientation had significant to highly significant association with climate change Knowledge of farmers.

KEY WORDS: AAS, Knowledge, climate change.

INTRODUCTION

Agriculture in India and entire world is mostly dependent on the persisting weather conditions. The alteration in Global warming has dramatically affected agriculture and its productivity. The increase in temperature has significantly led to a change in the agricultural zones and shift in the growing seasons. On the other hand the change in the rainfall pattern is the serious threat to the agriculture, which in turn affects the country's economy and food security. The delayed or inadequate monsoons also cause influence on the sale of the agriculture inputs such as fertilizers, agro-chemicals, tractors *etc*. Thus, finally affecting the farmers' income. Keeping this concept, Meteorological department of University of Agricultural science, Bangalore is providing Agro-met Advisory services to the beneficiaries. They are providing weekly once AAS bulletins, guidelines by facilitators, scientists. Considering the above facts, the research study was conducted with the following specific objective, to find out the association, if any, between the selected personal and socio-economic factors of AAS farmers with Knowledge on climate change.

MATERIAL & METHODS

The study was conducted in Chickballapur district of Karnataka. In chickaballapur district, two villages Nayanahalli, Pattrenahalli were purposively selected for the study. From each village 45 respondents were purposively selected who were receiving the Agro-met Advisory Services. Thus, the total sample size constituted 90 farmers from 2 villages of selected district. Ex-post facto research design was employed for conducting the study.

Knowledge on climate change (Dependent Variable): It is operationally defined as the extent of information/facts that a farmer possesses with respect to climate change. Quantification of the knowledge items were made by giving a score of one for correct answer and zero for incorrect answer on each items resulting with minimum score of zero and maximum score of 25 for each respondents. The mean and standard deviation were calculated for knowledge of AAS farmers. The mean knowledge was 19.28 with standard deviation of 1.28. Based on the knowledge scores, AAS farmers were grouped into three categories using mean and standard deviation as a measure of check.

Categories	Score	Frequency
Low <(Mean - $^1/_2$ SD)	Below 18.64	17
Medium (Mean ± $^1/_2$ SD)	18.64to 19.92	23
High >(Mean + $^1/_2$ SD)	Above 19.92	50

Information on six selected personal, socio-psychological factors, namely Land holdings, Cosmopoliteness, Extension Participation, Mass Media Exposure, Irrigation Potential and Scientific orientation was collected with the help of a structured schedule using suitable scales. Later the respondents were categorised into three groups namely Low, Medium and high based on their respective means and standard deviation as follows:

Total	Category
Less than (Mean - $^1/_2$ SD)	Low
Between (Mean ± $^1/_2$ SD)	Medium
More than (Mean + $^1/_2$ SD)	High

Chi-square test was applied to find out the association between knowledge of farmers (dependent variable) and selected personal, socio-psychological variables (independent variables).

RESULTS & DISCUSSION

Association between Landholding and Knowledge of farmers: Table 1 indicates that 46.42 percent of Marginal farmers had low knowledge of climate change, whereas, 96.77 per cent of Big farmers had high knowledge about climate change. Statistical test reveals the significant association between land holdings with knowledge of farmers at 1 per cent level.

It is obvious that farmers with large landholdings will generally acquire more knowledge. As they will be having higher land holdings, they have higher knowledge requirement to know more regarding the climate change as it will adversely affect the farmer's income. This finding is in conformity with the findings of Pottappa (2008).

Association between Cosmopoliteness and Knowledge of farmers: Table 2 indicates that 42.86 percent of farmers who are less cosmopolite had low knowledge of climate change, whereas, 84.09 per cent of farmers who are high cosmopolite had high knowledge about climate change. The chi-square value revealed significant association between cosmopoliteness with knowledge of farmers at 1 per cent level.

It was well accepted that the cosmopoliteness of the farmers increases the contact with outside world so that individual may expose to the new ideas and one more reason for increased cosmopoliteness is nearness of villages to town or city. This result is supported by Nethravathi (2007).

TABLE 1: Association between Landholding and knowledge level on climate change (n = 90)

Sl. No	Landholding	Knowledge level								χ^2 Value
		Low (<18.64)		Medium (18.64-19.92)		High (>19.92)		Total		
		No.	%	No.	%	No.	%	No.	%	
1	Marginal Farmers (<2.5 acres)	13	46.42	13	46.42	02	7.16	28	100.00	
2	Small Farmers (2.5-5.0 acres)	04	12.90	09	29.04	18	58.06	31	100.00	49.98**
3	Big Farmers (>5.0 acres)	00	0.00	01	3.23	30	96.77	31	100.00	
	Total	17	-	23	-	50	-	90	-	-

** Significant at 1% level χ^2 (0.01, 4df) =13.277

TABLE 2: Association between Cosmopoliteness and knowledge level on climate change (n = 90)

Sl. No	Cosmopoliteness	Knowledge level								χ^2 Value
		Low (<18.64)		Medium (18.64-19.92)		High (>19.92)		Total		
		No.	%	No.	%	No.	%	No.	%	
1	Low (<6.01)	06	42.86	05	35.71	03	21.43	14	100.00	
2	Medium (6.01 – 7.27)	10	31.25	12	37.50	10	31.25	32	100.00	30.86**
3	High (>7.27)	01	2.27	06	13.64	37	84.09	44	100.00	
	Total	17	-	23	-	50	-	90	-	-

Mean = 6.64, Standard Deviation = 1.25

**Significant at 1% level χ^2 (0.01, 4df) =13.277

Association between Extension Participation and Knowledge of farmers: Table 3 reveals that 24.24 percent of farmers with low extension participation had low knowledge of climate change, whereas, 88.24 percent of high extension participation farmers had high knowledge of climate change. The chi-square test indicates significant association between cosmopoliteness and knowledge of farmers.

Extension participation is highly associated with knowledge of farmer's knowledge which implies that participation of farmers in extension activities promotes acquisition of knowledge. Extension activities conducted in the area have direct effect on gain in knowledge level about climate change. It is essential to increase their participation so that their knowledge level would go up. This finding is in conformity with the findings of Sunil Kumar (2004).

Association between Mass Media Exposure and Knowledge of farmers: It can be seen from Table 4 that 31.58 per cent of the farmers with low mass media exposure had low knowledge whereas, 27.00 per cent of the farmers with high mass media exposure had high knowledge. The chi-square test analysis was found to be significant at one per cent level.

The higher levels of exposure to mass media would facilitate the individuals to develop habits of gathering more information about innovations through radio, newspaper and other literature related to climate change. Such individuals will be in readiness to accept the improved practices than others, who don't have exposure

to mass media. In other words, exposure to mass media develops modern orientation among farmers and makes them more efficient in acquiring, retaining and evaluating the effectiveness of subject matter leading to increased Knowledge. This finding is in conformity with Sakharkar (1995).

Association between Irrigation Potential and Knowledge of farmers: 35 percent of farmers with low Irrigation potential had low climate change knowledge. On the other hand, 71.42 per cent of farmers having higher irrigation potential had high knowledge (Table 5).

The statistical analysis was found to be significant at five per cent revealing the strong association between irrigation potential with knowledge of farmers. This can be better explained higher the irrigation potential farmer have, he will be having more exposure in their farming as they have higher scope for adopting mitigation strategies to cope up with climate change ill effects.

Association between Scientific Orientation and Knowledge of farmers: It can be seen from Table 6 that 46.15 per cent of the farmers with low scientific orientation had low knowledge, whereas, 88.24 per cent of high scientific oriented farmers had high climate change knowledge. The chi-square test indicates significant association between scientific orientation and knowledge. The probable reason might be due to the reason that high scientific orientation might have helped the farmers to enhance their knowledge and farmer who is highly proned to scientific knowledge.

TABLE 3: Association between Extension Participation and knowledge level on climate change (n = 90)

Sl. No	Extension Participation	Knowledge level: Low (<18.64) No.	%	Medium (18.64-19.92) No.	%	High (>19.92) No.	%	Total No.	%	χ^2 Value
1	Low (<14.20)	08	24.24	15	45.45	10	30.30	33	100.00	
2	Medium (14.20-15.98)	08	34.78	05	21.74	10	43.48	23	100.00	28.05**
3	High (>15.98)	01	2.94	03	8.82	30	88.24	34	100.00	
	Total	17	-	23	-	50	-	90	-	-

Mean = 15.09, Standard Deviation = 1.78

** Significant at 1% level χ^2 (0.01, 4df) =13.277

TABLE 4: Association between Mass-Media Exposure and knowledge level on climate change (n = 90)

Sl. No	Mass Media Exposure	Knowledge level: Low (<18.64) No.	%	Medium (18.64-19.92) No.	%	High (>19.92) No.	%	Total No.	%	χ^2 Value
1	Low (<6.34)	12	31.58	15	39.47	11	28.95	38	100.00	
2	Medium (6.34-8.54)	05	20.00	08	32.00	12	48.00	25	100.00	33.24**
3	High (>8.54)	00	0.00	00	0.00	27	100.00	27	100.00	
	Total	17	-	23	-	50	-	90	-	-

Mean = 7.44, Standard Deviation = 2.20

** Significant at 1% level χ^2 (0.01, 4df) =13.277

TABLE 5: Association between Irrigation Potential and knowledge level on climate change (n = 90)

Sl. No	Irrigation Potential	Knowledge level: Low (<18.64) No.	%	Medium (18.64-19.92) No.	%	High (>19.92) No.	%	Total No.	%	χ^2 Value
1	Low (<32.18)	07	35.00	07	35.00	06	30.00	20	100.00	
2	Medium (32.18-49.46)	04	14.29	10	35.71	14	50.00	28	100.00	11.86*
3	High (>49.46)	06	14.29	06	14.29	30	71.42	42	100.00	
	Total	17	-	23	-	50	-	90	-	-

Mean = 40.82, Standard Deviation = 17.28

* Significant at 5% level χ^2 (0.05, 4df) =9.488

TABLE 6: Association between Scientific Orientation and knowledge level on climate change (n = 90)

Sl. No	Scientific Orientation	Knowledge level								χ^2 Value
		Low (<18.64)		Medium (18.64-19.92)		High (>19.92)		Total		
		No.	%	No.	%	No.	%	No.	%	
1	Low (<5.26)	06	46.15	04	30.77	03	23.08	13	100.00	
2	Medium (5.26-6.42)	10	16.67	18	30.00	32	53.33	60	100.00	15.76**
3	High (>6.42)	01	5.88	01	5.88	15	88.24	17	100.00	
	Total	17	-	23	-	50	-	90	-	-

Mean = 5.84, Standard Deviation = 1.15

** Significant at 1% level χ^2 (0.01, 4df) = 13.277

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