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Relational Analysis of Knowledge and Adoption of Organic Farming Practices in Gujarat State

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ABSTRACT

Organic agriculture may be considered as a development vehicle for developing countries like India, in particular with this context research study was undertaken for 180 farmers in capacity building of farmers through training on organic farming practices in Surendranagar, Jamnagar and Rajkot district of Gujarat state. The results shows that majority of trained and untrained farmers had medium level of knowledge and medium level of adoption about organic farming practices. Among all the variables education, extension participation, organic farming experience, localite cosmopolite value orientation, risk orientation, scientific orientation had positive and significant association with the knowledge and adoption of organic farming practices in both trained and untrained farmers. While in addition to this trained farmers' had also positive and significant association with social participation, innovativeness and mass media exposure, market of organic produce and herd size.

Key words: Association, knowledge, adoption, correlation coefficient

INTRODUCTION

"Organic agriculture is an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimum use of off-farm inputs and on management practices that restore, maintain and enhance ecological harmony." The concept of organic farming is almost as old as the human civilization However, due to unprecedented growth in demand of agricultural produce followed by the need to achieve higher yield in shorter period, organic farming fell redundant. Organic agriculture has grown from 15.8 million hectares to 37.2 million hectares worldwide and India rates fifth in the world for speed of uptake and this has occurred with some support from the Indian government. India ranks seventh in the world with 1.2 million hectares of certified organic agriculture, which constitutes about 0.6 per cent of India's total cultivable area. Total geographical area of Gujarat State has an about 189.3 thousand sq.km. Land under organic management is only 0.5 per cent in Gujarat state. Fruits and vegetables belt of South Gujarat and groundnut and sesame belt of Saurashtra can easily be brought under organic farming as these all crops have export potential. The resource poor areas of Surendranagar and Kutch districts also have good opportunities in organic farming and these both districts cover major parts with certification and accreditation standards in organic farming.

More and more area increased under organic farming which is becoming demand of present and coming era. Training are being imported to improve the organic cultivation. Farmers follow many organic farming practices for their crops, health consciousness and increasing crop yield. On the basis of this question arise on mind that, why they have to follow organic farming, what is covered under training and what is about training method and level of knowledge of organic farming practices followed by respondents.

METHODOLOGY

The study was under taken in Surendranagar, Rajkot and Jamnagar district of Gujarat State which are having major dominance over organic farming practices. Six talukas were selected from each district and three villages from each taluka were selected randomly. Thus total eighteen villages from three districts were considered for the study. Five trained and five untrained respondents

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were selected randomly from each selected village. Total one hundred eighty respondents were selected from the selected villages by random sampling method.

To measure the trained and untrained farmers' knowledge about organic farming practices, the teacher made knowledge test was developed. The pretesting was done to find out whether the questions were clear to respondents or not. For measuring the adoption of recommended Organic Farming Practices, the adoption index was developed using adoption quotient developed by Chattopadhyay (1974) with slight modification. The data were collected by personal interview of the respondents. They were analyzed and interpreted in view of the objectives Bhushan, *et al.* (2016).

RESULTS AND DISCUSSIONS

Level of knowledge

A critical perusal of the table 1 indicated that more than one half (58.89 %) of the trained farmers possess moderate knowledge about organic farming practices whereas, 16.67 per cent had low and 24.44 per cent had high level of knowledge about organic farming practices, while in case of untrained farmers from Table 2 it is clear that 43.33 per cent farmers had medium level of knowledge about organic farming practices followed by 35.56 per cent and 21.11 per cent had low level and high level of knowledge respectively.

Table 1: Distribution of Trained farmer based on their knowledge about organic farming practices

n=90

Category	Knowledge score	Frequency	Percentage	Mean	Standard deviation
Low	Below 25.07	15	16.67		
Medium	Between 25.07 to 45.59	53	58.89	35.33	10.26
High	Above 45.59	22	24.44		
	Total	90	100		

Table 2: Distribution of Untrained farmer based on their knowledge about organic farming practices

n=90

Category	Knowledge score	Frequency	Percentage	Mean	Standard deviation
Low	Below 20.31	32	35.56		
Medium	Between 20.31 to 39.21	39	43.33	29.76	09.45
High	Above 39.21	19	21.11		
	Total	90	100		

This might be due to the fact that knowledge of organic practices is obtained mainly as an ancestral property. Other reasons might be that the respondents had medium extension participation and high innovativeness. These facts may be helped to trained farmers in acquiring medium knowledge about organic farming practices, lacking of above aspects were found in case of untrained farmers. This finding was in conformity with the findings of Thippeswamy *et al.* (2008), Munir *et al.* (2009), Sidram *et al.* (2009), Jaitawat *et al.* (2010), Oyesola *et al.* (2011), and Rekha *et al.* (2012).

Level of adoption

The data in Table 3 revealed that 71.11 per cent of the trained farmers had medium level adoption. Remaining 18.89 per cent and 10.00 per cent of them had high and low extent of adoption, respectively. In case of untrained farmers, result indicated in Table 4 that 58.89 per cent were found with medium level of adoption, where as 26.67 per cent and 14.44 per cent had low and high level of adoption of organic farming practices.

Table 3: Extent of adoption of organic farming practices by trained farmers.

n=90

Extent of adoption	Frequency	Per cent	Mean	S.D.
Low (Below 45.57 score)	09	10.00		
Medium (45.57 to 85.35 score)	64	71.11		
High (Above 85.35 score)	17	18.89	65.46	19.89
Total	90	100.00		

Table 4: Extent of adoption of organic farming practices by Untrained farmers

n=90

Extent of adoption	Frequency	Per cent	Mean	S.D.
Low (Below 36.08 score)	24	26.67		
Medium (36.08 to 75.56 score)	53	58.89		
High (Above 75.56 score)	13	14.44	55.82	19.74
Total	140	100.00		

Hence, it can be concluded that majority (71.11 per cent) of trained farmers possess medium extent of adoption of organic farming practices. Such a high adoption has been observed may be in trained farmers towards organic farming. Moreover they all were found educated, having good contact with NGOs, other progressive farmers and were receiver of farm literature too. With untrained farmer point of view in adoption level some impede were found illiterate, low extension participation and low contact with Govt. and Non Govt. Organizations. Similar findings were reported by those of Kamani (2007), Thippeswamy et al. (2008), Dhandhalaya et al. (2010), and Singh et al. (2010).

Relationship of selected characteristics with knowledge & adoption

It was evident from table 5 that out of 14 variables, size of land holding and annual income were non significant association with the knowledge of trained as

well as untrained farmers' about organic farming practices. It can be inferred that there was no relationship between knowledge of organic farming practices of trained as well as untrained farmers and their size of land holding and annual income. This might be due to the fact that, irrespective size of land holidng; any farmers need to acquire the technical know-how of organic farming practices equally. In case of annual income, respondents irrespective of annual income were going for recommended technologies to ensure higher production and they did not have any concern about the organic farming. In this way they were aware of different recommended technologies.

Table 5: Correlation between knowledge about organic farming practices followed by the farmers and the independent variables

Name of the independent variables	r- Value	
	Trained Farmers n= 90	Untrained Farmers n = 90
Age	- 0.2493*	-0.2113*
Education	0.3326**	0.2275*
Size of land holding	0.0869^{NS}	0.0524^{NS}
Social participation	0.2055*	0.1255^{NS}
Annual income	- 0.1019^{NS}	-0.0893^{NS}
Organic Farm Experience	0.2188*	0.2070*
Extension participation	0.3233**	0.2014*
Mass Media Exposure	0.2237*	0.0715^{NS}
Innovativeness	0.2335*	0.0950^{NS}
Risk orientation	0.3001**	0.2245*
Localite-cosmopolite value orientation	0.3102**	0.2008*
Market of Organic Produce	0.2146*	0.1427^{NS}
Scientific Orientation	0.2952**	0.2206*
Herd Size	0.2048*	0.1214^{NS}

* Significant at 0.05 level r = 0.2071
** Significant at 0.01 level r = 0.2690
NS = Non significant

There was a significant association of the knowledge of trained farmers' about organic farming practices with their social participation, mass media exposure, innovativeness, market of organic produce and size while in untrained farmers all five variables were non significantly associated with their knowledge of organic farming practices that of land holding and annual income were non significant association with the extent of adoption of trained as well as untrained farmers' about organic farming practices. It can be inferred that there was no relationship between adoption of organic farming practices of trained as well as untrained farmers and their size of land holding and annual income. It can be said that there was no association between farmers' level of adoption towards organic framings practices on their annual income. This might be due to the fact that the farmers are not adopting majority of the organic farming practices on their farm, so they believe that the variation in income is not due to the organic farming practices.

Table 6: Correlation between adoption about organic farming practices followed by the farmers and the independent variables

Name of the independent variables	r- Value	
	Trained Farmers n= 90	Untrained Farmers n = 90
Age	- 0.2457*	-0.2389*
Education	0.3278**	0.2362*
Size of land holding	0.0802^{NS}	0.0145^{NS}
Social participation	0.2031*	0.1032^{NS}
Annual income	- 0.0955^{NS}	-0.1059^{NS}
Organic Farm Experience	0.2086*	0.2027*
Extension participation	0.3441**	0.2371*
Mass Media Exposure	0.2288*	0.0992^{NS}
Innovativeness	0.2389*	0.1193^{NS}
Risk orientation	0.3037**	0.2153*
Localite-cosmopolite Value orientation	0.3161**	0.2012*
Market of Organic Produce	0.2122*	0.1058^{NS}
Scientific Orientation	0.2952**	0.2206*
Herd Size	0.2048*	0.1214^{NS}

* Significant at 0.05 level r = 0.2071
** Significant at 0.01 level r = 0.2690
NS = Non significant

There was a significant association of the adoption of trained farmers' about organic farming practices with their social participation, mass media exposure, innovativeness, market of organic produce and heard size while in untrained farmers all five variables were non significantly associated with their adoption of organic farming practices.

CONCLUSION

It can be concluded from the results that majority of trained and untrained farmers had medium level of knowledge but second most majority fall in high and low level knowledge about organic farming practices of trained and untrained farmers respectively. In case of adoption, majority of the farmers had medium level of adoption about organic farming practices. It was also found that almost all the independent variables of trained farmers except size of land holding and annual income had significant relationship with knowledge and adoption of organic farming practices. While in case of untrained farmers all the independent variables except social participation, mass media exposure, innovativeness, market of organic produce and heard size had significant relationship with knowledge and of organic farming practices. With a view to promote organic farming

practices, it is essential to increase level of knowledge and adoption of trained as well as untrained farmers. The independent variables which had significant relationship with knowledge and adoption should be considered during dissemination of organic farming practices.

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