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RELATIONSHIP BETWEEN PROFILE OF GROUNDNUT CULTIVATORS AND THEIR KNOWLEDGE LEVEL ON THE RECOMMENDED CROP PRODUCTION TECHNOLOGY IN SAURASHTRA REGION OF GUJARAT

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ABSTRACT

The present study was conducted Saurashtra region of Gujarat Stateusing ex-post facto research design. In order to know the relationship between selected independent variables with knowledge level of the groundnut growers about recommended groundnut crop production technology, a sample of 160 groundnut growers, representing 16 villages of 12 talukas of Junagadh, Jamnagar, Amreli, Bhavnagar, Gir-somnath and Rajkot of Saurashtra region of Gujarat state were drawn by multistage random sampling techniques.The beneficiaries of front line demonstration given by Krishi Vigyan Kendra under NMOOP project were selected for the study. The data was collected by personal interview through structured schedule. The simple statistical tools were used to analyze the data. The results revealed that in case of fourteen independent variables, three variables viz., education, social participation and extension participation showed positive and significant relationship at one per cent level ofprobability. Whereas, nine variables viz., size of land holding, annual income, mass media exposure, extension contact, innovativeness, scientific orientation, risk orientation, economic motivation and yield index showed positive and significant relation at five per cent level of probability with knowledge level. The remaining two variables namely, age showed negative and significant relation atfive per cent level of probability and only one variable size of family did not showed any significant relationship with knowledge level.

Keywords: *front line demonstration, NMOOP, groundnut growers, Saurashtra region.*

INTRODUCTION

Groundnut is a most important oilseed and cash crops of our country; it is also called as woundernut, peanut and poor man's cashew nut. Groundnut seeds contain high quality edible oil, digestible protein and carbohydrates. It is a rich source of calcium, iron and vitamin B complex like thiamine, riboflavin, niacin and vitamin A. In addition to domestic use as edible oil, groundnut provides raw materials to various industries and creates more employment opportunity to millions of people. It plays a vital role in the oil seed economy of India. Groundnut is a major crop under oil seeds cultivated in Saurashtra region of Gujarat State.

Indian Council of Agriculture Research Initiated Front Line Demonstrations on pulses &oilseed crops in the year 1990-1991. This Programme was conducted by Krishi Vegan Kendra and showed a great impact on enhancement of yield potential of oilseed and pulse crops. Realizing the importance of such type of technology dissemination Programme, through Cluster approach, Indian council of Agricultural Research (ICAR) has launched Cluster Demonstrations Programme on pulse and oilseed crops in the year 2015-2016. Krishi Vigyan Kendra an innovative science based institution plays an important role in bringing the research scientist face to face with farmers. Cluster Demonstrations is a novel approach to provide direct interface between scientists and farmers in planning, execution & monitoring phases of the demonstrations.

Cultivation of groundnut is the main source of income for many farmers. In order to meet the needs of increasing population, production targets have to go up. It would be possible only by training needs the improved production technologies in groundnut production knowledge is the important pre-requisite for training needs.

OBJECTIVE

To know relationship between selected independent variables with knowledge level of the groundnut growers about recommended groundnut crop production technology

METHODOLOGY

The research was carried out in Saurashtra region of Gujarat state. Out of eleven districtof Saurashtra region, five districts were selected purposively where FLDs were given under NMOOP. The five districts were Bhavnagar, Rajkot, Jamnagar, Gir-somnath and Amreli. The selected five districts in which total 12 talukas were selected, out of 12 talukas the 16 villages were selected purposively. The random sampling technique were used for the selection of the respondents. 80 demonstrator farmers and 80 non demonstrator farmers were selected randomly from selected village. Thus total 160 respondents were selected for this study. For measuring the knowledge of respondents of about recommended groundnut crop production technology, the teacher made knowledge test was developed and used. The respondents were asked whether they know particular recommended groundnut production technology. The total score of correct answer were calculated accordingly those who know that practices. Based on the response obtained, the knowledge level was quantified by using frequency and percentage. Karl Pearson's product movement correlation coefficient (Simple correlation coefficient) was employed as to assess the relationship between the dependent and independent variables. The correlation coefficient was computed by usingthe following formula. (Garret, 1967).

Where,

r = Co-efficient of correlation

X and Y = Two variables under study.

SP(XY) = Sum of product of the deviations on x and y from their means.

SS(x) = Sum of squares of deviations due to 'x' variable.

SS(y) = Sum of squares of deviations due to 'y' variable.

RESULTS AND DISCUSSION

Association between the selected characteristics of groundnut growers and their knowledge about recommended groundnut production technology

In order to ascertain the relationship between the level of knowledge (dependent variable) of the farmers and each of their selected characteristics (independent variables), the co-efficient of correlation ('r') were calculated. The empirical hypotheses were stated for testing the relationship and its significance of correlation are given in Table 1.

Table 1: Association between level of knowledge of respondents and their selected characteristics

(n = 160)

Sr. No.	Characteristics	r- value	
		Demonstrator respondents (n= 80)	Non-demonstrator respondents (n= 80)
X_1	**Age**	-0.2359*	-0.2256*
X_2	**Education**	0.3154**	0.2451*
X_3	**Size of family**	0.1039NS	0.0980NS
X_4	**Social participation**	0.3124**	0.2259*
X_5	**Size of land holding**	0.2456*	0.1690NS
X_6	**Annual income**	0.2358*	0.0587NS
X_7	**Extension participation**	0.2965**	0.2321*
X_8	**Mass media exposure**	0.2489*	0.1425NS
X_9	**Extension contact**	0.2426*	0.1340NS
X_{10}	**Innovativeness**	0.2359*	0.1456NS
X_{11}	**Scientific orientation**	0.2418*	0.1589NS
X_{12}	**Risk orientation**	0.2478*	0.1754NS
X_{13}	**Economic motivation**	0.2312*	0.1139NS
X_{14}	**Yield index**	0.2350*	0.1293NS

* 5 per cent level of significant ** 1 per cent level of significant NS = Non-significant

(1) Age and knowledge

The data presented in Table 1, indicated that the calculated value of correlation coefficient (r = -0.2359) of demonstrator farmers and calculated value ofcorrelation coefficient(r = -0.2256) of non-demonstrator farmers were negative and significant at 5 per cent level. Hence, null hypothesis was rejected. So it could be concluded that there was negative and significant association between the knowledge of demonstrator and non-demonstrator farmers

and their age. The direction of association was negative and significant which indicated that respondent's knowledge of groundnut crop production technology is increased significantly with decreased in their age.

This might be due to fact that the young age farmer played appreciable role in decision; further the young farmers might be progressive in nature and always eager to take risk. Thus age played an important role in shaping the positive knowledge towards the adoption of recommended groundnut crop production practices.

This finding was in conformity with the findings of Patoliya (2013), Lohare (2017), Tankodara (2019) and Shanmugaraja *et. al.* (2020).

(2) Education and knowledge

The data presented in Table 1, showed that the calculated value of correlation coefficient (r = 0.3154) of demonstrator farmers was positive and highly significant at 1 per cent level of significance, while in case of non-demonstrator farmers, calculated value of correlation coefficient (r = 0.2451) was positive and significant at 5 per cent level of significance. Hence, the null hypothesis was rejected. It could be concluded that there was positive and significant association between level of knowledge of demonstrator farmers and non-demonstrator farmers and their education.

This might be due to the fact the educated farmers generally have high extension participation, high innovativeness and high mass media exposure and also have progressive outlook and rational thinking. Thus, they understand the importance of recommended groundnut production technologies while these all were found less in case of non-demonstrator farmers.

This finding was in line with that Koli (2012), Chouhan *et al.* (2013), Patoliya (2013), Lohare (2017), Tankodara (2019) and Shanmugaraja *et. al.* (2020).

(3) Size of family and knowledge

The data presented in Table 1, indicated that the calculated value of correlationco-efficient (r = 0.1039) was found non- significant in demonstrator farmers and it was also found non-significant in case of non-demonstrator farmers (r = 0.0980). Hence, null hypothesis was accepted and it can be concluded that there was positive and non-significant association between level of knowledge of farmers and their size of family.

It can be concluded that there was not significant relationship between knowledge of the respondents and their size of family. It means knowledge of respondents was not related with the size of family of the respondents.

The present findings were in line with the findings of Khokhar (2007) and Pagar (2011).

(4) Social participation and knowledge

The data shown in Table 1, that the calculated value ofcorrelation coefficient (r = 0.3124)of demonstrator farmers were positive and highly significantat 1 per cent level of significance. So, null hypothesis was rejected. While, in case of non-demonstrator farmers calculated value of correlation coefficient (r = 0.2259) was positive and significant at 5 per cent level of significance. So, null hypothesis was rejected.

This might be due to fact that, demonstrator farmers were participated in the social programmes organized by various organizations and also might have been in close contact with extension personnel. These organizations might have facilitated them for getting latest information about recommended groundnut production technologies, while non-demonstrator farmers had less knowledge about groundnutproduction technologies as compared to demonstrator farmers due to lack of social participation.

This finding was in conformity with the finding of Mavani (2012), Patoliya (2013), Raviya (2017) and Tankodara (2019) and Shanmugaraja *et. al.*(2020).

(5) Size of land holding and knowledge

The data presented in Table 1 indicated that the calculated correlation coefficient value (r = 0.2456) of demonstrator farmers was positive and significant at 5 per cent level of significance. Thus, null hypothesis was rejected. While, in case of non-demonstrator farmers calculated correlation coefficient value (r = 0.1690) was positive and non-significant.Thus, null hypothesis was accepted.

It could be concluded that there was positive and significant relationship between the knowledge level of groundnut production technologies of the demonstrator farmers and their size of land holding. While, there was no relationship between knowledge of groundnut production technologies and size of land holding of non-demonstrator farmers.

It can be inferred that respondents have medium to large size of land holding were going for recommended practices of groundnut to ensure higher production, risk bearing capacity and trialability of improved practices. Where in case of non-demonstrator farmers they did not have any concern with their farming size of land holding to know the recommended groundnut production technology.

Similar finding had been reported by Humbal (2012), Hadiya (2013) Patoliya (2013) and Lohare (2017).

(6) Annual income and knowledge

The data presented in Table 1, stated that the calculated value of correlation coefficient (r = 0.2358) of demonstrator farmers were have positive and significant at 5 per cent level of significance, so the null hypothesis was rejected and the calculated value ofcorrelation coefficient (r = 0.0587) of non-demonstrator farmers were positive but non-significant. Hence, the null hypothesis was accepted.

It can be concluded that there was positive and significant relationship between knowledge of demonstrator farmers and their annual income but in case of non-demonstrator farmers there were positive and non-significant relationship between knowledge of non-demonstrator and their annual income.

This might be due to fact that the demonstrator farmers with better economic condition might have utilized suitable source of information to increase knowledge while in case of non-demonstrator farmers who might not utilized the source of information to enhance the knowledge.

This finding was in conformity with the findings of Humbal (2012) and Patoliya (2013).

(7) Extension participation and knowledge

The data shown in Table 1, that thecalculated value of correlation coefficient (r = 0.2965) of demonstrator farmer was positive and highly significant at 1 per cent level of significance. The calculated value of correlation coefficient (r = 0.2321) of non-demonstrator farmer was positive and significant at 5 per cent level of significance. It was indicated that these two variables were dependent on each other. Thus, null hypothesis was rejected.

The probable reason for this result could be that demonstrator farmers who have participated in various extension activities might have acquired higher knowledge and better understanding and ultimately they might have known more about different groundnut production technologies, while in case of non-demonstrator farmers it become found significant it inferred that participation in extension activities is less as compared to demonstrator farmers. It can be summarized that increase in extension participation is responsible for the increase in knowledge of groundnut production technologies.

Similar findings were reported by Patoliya (2013), Raviya (2017) and Tankodara (2019).

(8) Mass media exposure and knowledge

The data presented in Table 1, revealed that the calculated value of correlation coefficient (r = 0.2489) of demonstrator farmers was positive and significant at 5 per cent level of significance. Thus, null hypothesis was rejected. In case of non-demonstrator farmers calculated value of correlation coefficient (r = 0.1425) was positive and non-significant. Thus, null hypothesis was accepted.

It could be concluded that there was positive and significant relationship between level of knowledge of recommended groundnut production technologies and mass media exposure of demonstrator farmers, whereas, there was no relationship between knowledge of groundnut production technologies and mass media exposure of non-demonstrator farmers. It implies that an increase in mass media exposure was responsible for the increase in knowledge perceived by demonstrator farmers than non-demonstrator farmers.

This might be due to the fact that respondents having higher exposure to mass media including farm magazine, agricultural fair, farmers meeting, krishimahotsav, etc. could get more useful information for their farming. They could get more benefits of the mass media. Thus, mass media played vital role for the enhancement of knowledge in relation to recommended groundnut production technology. Therefore, they might have positively opined about various components under the knowledge of groundnut production technologies as compare to non-demonstrator.

This finding was in conformity with the findings of Mavani (2012), Patoliya (2013), Lohare (2017), Tankodara (2019) and Shanmugaraja *et. al.*(2020).

(9) **Extension contact and knowledge**

The data shown in Table 1, that the calculated correlation coefficient value (r = 0.2426) of demonstrator farmers was positive and significant at 5 per cent level of significance. Thus, null hypothesis was rejected. In case of non-demonstrator farmers calculated correlation coefficient value (r = 0.1340) was positive and non-significant. Thus, null hypothesis was accepted.

It can be inferred that there was positive and significant relationship between the knowledge of groundnut production technology and extension contact of the respondents. This means that respondents' level of knowledge about groundnut production technology increasedasincreased in their extension contact and through this, get more information and self-motivated and take risk as compared to non-demonstrator.

This finding was in line with findings of Shabbir (2012) and Lad (2013).

(10) Innovativeness and knowledge

The data presented in Table 1, revealed that the calculated value ofcorrelation coefficient (r = 0.2359) of demonstrator farmers was positive and significant at 5 per cent level of significance. Hence, the null hypothesis was rejected and it can be inferred that there was positive and significant association between the level of knowledge of demonstrator farmers and their innovativeness. So, farmers who had more knowledge and more innovativeness adopt groundnut production technologies more and early. While in case of non-demonstrator farmers calculated value ofcorrelation coefficient (r = 0.1456) was positive and non-significant. Hence, the null hypothesis was accepted.

The innovativeness of the demonstrator farmers increased their level of knowledge about groundnut production technologies which might be due to frequent contact with extension functionaries in their jurisdiction while no such type of task was found in case of non-demonstrator farmers, who did not adopt the recommended groundnut production technologies.

This finding was in line with Koli (2012), Patoliya (2013) and Tankodara (2019).

(11) Scientific orientation and knowledge

The data presented in Table 1, shown that thecalculated value ofcorrelation coefficient (r = 0.2418) of demonstrator farmers was positive and significant at 5 per cent level of significance. Hence, the null hypothesis was rejected and it can be inferred that there was positive and significant association between the level of knowledge of demonstrator farmers and their scientific orientation. So, it means that farmers who were highly oriented to the use of scientific methods in decision making in relation to adoption behaviour had higher level of knowledge about groundnut production technology. While in case of non-demonstrator farmers calculatedcorrelation coefficient value (r = 0.1589) was positive and non-significant. Hence, the null hypothesis was accepted.

The probable reason for this result might be that scientific orientation motivated them in acquiring more knowledge regarding the recommended practices of groundnut as compare to the non-demonstrator farmers.

This finding was in line with the findings of Lohare (2017) and Raviya (2017) and Tankodara (2019).

(12) Risk orientation and knowledge

The data presented in Table 1,indicated that the calculated value of correlation coefficient (r = 0.2478) of demonstrator farmers was positive and significant at 5 per cent levelof significance. Hence, the null hypothesis was rejected, while in case of non-demonstrator farmers calculated value of correlation coefficient (r = 0.1754) was positive and non-significant. Hence, the null hypothesis was accepted.

It could be inferred that there was significant relationship between level of knowledge and their risk orientation of demonstrator farmers. While in case of non-demonstrator farmers there was non-significant relationship between knowledge level and their risk orientation.

The probable reason for this result could be that farmers take more risk after they gain more knowledge about recommended groundnut production technology. Knowledge reduced risk and increased risk-bearing capacity among respondents.While in case of non-demonstrator farmers having less risk bearing capacity and not gain proper knowledge and not use proper scientific methods so this lead to the less risk.

This finding was in conformity with the findings of Humbal (2012), Patoliya (2013) and Shanmugaraja *et. al.*(2020).

(13) Economic motivation and knowledge

The data presented in Table 1, revealed that thecalculated value of correlation coefficient (r = 0.2312) of demonstrator farmers was positive and significant at 5 per cent level of significance. So, null hypothesis was rejected. While, the calculated value of correlation coefficient (r = 0.1139) of non-demonstrator farmers was positive and non-significant, so null hypothesis was accepted.

Economic motivation is a mental virus leading to a desired to improve the economic condition then others which has multiplayer effect or on other variable which is essential factor in technological change reflecting in to increase knowledge might be explanation of this result as compare to non-demonstrator farmers.

This finding was in conformity with the findings of Joshi (2004), Kakkad *et al.,* (2021) and Gajera *et al.,* (2022).

(14) Yield index and knowledge

The data presented in Table 1, indicated that thecalculated value of correlation coefficient (r = 0.2350) of demonstrator farmers was positive and significant at 5 per cent level of significance. So, null hypothesis was rejected. While, the calculated correlation coefficient value (r = 0.1293) of non-demonstrator farmers was positive and non-significant, so null hypothesis was accepted.

In case of demonstrator farmers there was significant relationship between level of knowledge of demonstrator farmers and yield index, the probable reason might be that respondents, whose yield index was high, became self-motivated to get more information and knowledge about groundnut production technology, whereas, in non-demonstrator farmers, they not used to proper recommended scientific practices and less contact with extension personnel so not having proper knowledge regarding groundnut production technology. So there was no relationship between knowledge about recommended groundnut production technologies and their yield.

This finding contradicted the finding of Pandya *and* Pandya (2008), Biradar *et al.,* (2013) and Patoliya (2013) and Paradva *et al.* (2021).

CONCLUSION

Results revealed that in case of demonstrator farmers the independent variables namely, age, education, size of land holding, annual income, social participation, mass media exposure, extension participation, extension contact, innovativeness, scientific orientation, risk orientation, economic motivation and yield index were found as determinant factors associated with knowledge status of the respondents towards groundnut production technology. The extension agencies and input agencies working in the area should make concentrated efforts to organize extension activities such groundnut crop demonstration, farmers' day, farmers' training and to persuade them to participate actively in these activities.

CONFLICT OF INTEREST

There is no conflict between author.

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