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Attitude of Ragi Growers towards Agricultural Technology Management Agency

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Abstract

The present study was carried out during 2018-19 in Chikkaballapura and Kolar districts of Karnataka state to analyse the attitude of ragi growers towards Agricultural Technology Management Agency. Ninety ragi growers (who had availed benefits under ATMA) from Shidlaghatta taluk of Chickaballapura district (45 Nos.) and Kolar taluk of Kolar district (45 Nos.) were randomly selected for the present study. Ex-post-facto research design was followed for the research study. The results revealed that a majority of beneficiary ragi growers (71.10%) were having favourable to more favourable attitude towards ATMA. Education, achievement motivation, management orientation, innovativeness, cosmopoliteness, mass media exposure training on ATMA, extension agency contact and extension participation of beneficiary ragi growers had significant to highly significant association with their attitude towards ATMA.

Keywords: ATMA, Ragi growers, Attitude, Mass media and Extension participation

Agricultural Technology Management Agency (ATMA) is a centrally sponsored scheme launched under National Agricultural Technology Project implemented to provide support to State Extension Reforms by the Indian Council of Agricultural Research during 1998-99. ATMA was implemented on a pilot basis in four districts of each of the states of Andhra Pradesh, Bihar, Himachal Pradesh, Jharkhand, Maharashtra, Orissa and Punjab. ATMA was launched under the guidance of National Institute of Agriculture Extension Management (MANAGE), Hyderabad. The evaluation report of Indian Institute of Management, Lucknow revealed that ATMA's extension approaches have been proving to be promising in execution of the reforms and thus ATMA was extended to other states of the country.

ATMA programme was launched in Karnataka during 2005-06 in districts namely, Bidar, Gulabarga, Koppala, Bijapura, Hassan, Shivamogga, Chamarajanagara and Kolar (undivided). During the year 2006-07, ATMA programme was spread to Belgaum, Chitradurga, Chickamagalur and Kodagu districts. After 2007-08, the remaining districts have been included under ATMA in the state.

ATMA is a registered society consisting of stake holders (farmers, line / development departments, non-government organizations, input dealers, mass media, agri-business companies, farmers organizations, etc.) engaged in agriculture and allied activities for bringing the sustainable agricultural development in the district. It provides flexible working environment and establishes effective co-ordination of all the stake holders at the district level. Having linkages with all line departments, ATMA is aided as a key point for integrating research and extension activities and decentralizing day to day management of Public Agricultural Technological System (Shamshadunnisa *et al.,* 2018). The specific features of ATMA include: (1) demand driven farmer-based activities, (2) public private partnership for extension services, (3) development of village level institutions like farmers associations, farmers interest groups or commodity interest groups, (4) creation of rural infrastructure and marketing, (5) decentralized decision-making and bottom up approach, (6) integrated farming system approach, (7) market led extension, (8) formation and strengthening of farmer's interest group, and (9) in-service training to increase competence extension personnel.

The success of any programme depends upon the attitude of farmers / beneficiaries regarding various aspects / components of the programme. The analysis

of attitude of farmers / beneficiaries towards programme will help us to trace and upgrade the manipulable variables (personal, socio-economic and communication characteristics) for developing favorable attitude of ragi growers towards ATMA. Against this background, the present study has been taken up with the following specific objectives:

1. To know the personal, socio - economic, psychological and communication characteristics of beneficiary ragi growers
2. To analyze the attitude of beneficiary ragi growers towards ATMA
3. To find out the association between personal, socio-economic, psychological and communication characteristics of beneficiary ragi growers with their attitude level towards ATMA

METHODOLOGY

The study was conducted during 2018-19 in Chikkaballapura and Kolar districts of Karnataka state. Un-divided Kolar (Kolar and Chikkaballapura) district was one of the eight districts in Karnataka, where ATMA was first implemented in the state during 2005-06. Hence, Kolar and Chikkaballapura districts were selected for the study. Ragi is the main staple crop cultivated in all the six taluks of Chikkaballapura district and five taluks of Kolar district, hence ragi crop was selected for the study. The major area under ragi was in Shidlaghatta taluk (11,122 ha) in Chikkaballapura district and Kolar taluk (13,112 ha) of Kolar district during 2017-18. Hence, Shidlaghatta taluk from Chikkaballapura district and Kolar taluk from Kolar district was purposively selected for the study.

Ninety ragi growers (who had availed benefits under ATMA) from Shidlaghatta taluk of Chickaballapura district (45 Nos.) and Kolar taluk of Kolar district (45 Nos.) were randomly selected for the present study. Ex-post-facto research design was followed for the research study. Data was collected personally using a pre-tested interview schedule.

Attitude of Farmers towards ATMA (Dependent Variable)

Attitude of ragi growers towards ATMA in the present study is operationalized as the degree of positive or negative feelings of ragi growers towards ATMA. The respondent's attitude was measured using the scale developed by Patel *et al.* (2017). The scale consisted of 12 statements rated on a five-point continuum, namely 'Strongly Agree', 'Agree', 'Undecided',' Disagree', and 'Strongly Disagree' with assigned scores of five, four, three, two and one, for each statement. Ragi growers were asked to choose their response for each statement on a five-point continuum. The minimum and maximum possible score one could get was 12 and 60, respectively. On the basis of the total attitude score obtained for the 12 statements, the respondents were grouped into three categories namely, less favourable, favourable and more favourable considering mean (38.08) and half standard deviation (3.23).

Category	Criteria	Score
Less favourable	< (Mean – ½ SD)	Below 34.84
Favourable	(Mean $\pm$ ½SD)	34.84 to 41.82
More favourable	> (Mean + ½ SD)	Above 41.82

Fourteen personal, socio-economic, psychological and communication characteristics of ragi growers (Age, education, family size, land holding, farming experience, achievement motivation, management orientation, innovativeness, cosmopoliteness, mass media exposure, training on ATMA, extension agency contact and extension participation) were considered as independent variables for the research study. They were measured using a standardized procedure/suitable scales. The collected data were score, tabulated and analyzed using frequency, percentage, standard deviation, chi square test and multiple regression analysis.

RESULTS AND DISCUSSION

1. Personal, Socio-Economic, Psychological and Communication Characteristics of Beneficiary Ragi Growers

The data in Table 1 presents the findings of the personal, socio-economic, psychological and communication characteristics of beneficiary ragi growers.

Table 1 reveals that as high as 45.56 per cent of the beneficiary ragi growers were belonging to middle age group, while one-third (33.33%) of the beneficiary ragi growers were belonging to old age group and the remaining 21.11 per cent of the beneficiary ragi growers were belonging to young age group. It is also observed from the Table 1 that 17.81, 16.66, 15.55. 14.44, 10.00 and 7.77 of beneficiary ragi growers had studied up to higher secondary, high school, middle school, primary school, graduation and diploma, respectively. Whereas, ten per cent of the beneficiary ragi growers were able to read and write and 7.77 per cent of them were illiterate.

The data in Table 1 reveals that a larger number of beneficiary ragi growers (45.56 %) had small family, while 31.11 and 23.33 per cent of the beneficiary ragi growers had medium and large family, respectively. Table 1 also shows that more number of beneficiary ragi growers were belonging to low income group (37.77 %), while 34.44 and 17.79 per cent of beneficiary ragi growers were belonging to high and medium income groups, respectively.

A larger number of the respondents interviewed were marginal farmers (47.78%), whereas 32.22 and 20.00 per cent of the respondents interviewed were small and big farmers, respectively (Table 1). The table also reveals that a greater number of beneficiary ragi growers (43.33%) had medium level of farm experience followed by 34.45 per cent of beneficiary ragi growers were having more farming experience and 22.22 per cent of beneficiary ragi growers were having less farming experience.

More number of beneficiary ragi growers (43.33%) were having medium level of achievement motivation, whereas 28.90 and 27.77 per cent of the beneficiary ragi growers were having high and low level of achievement motivation, respectively (Table 1). The table also shows that 43.33 per cent of the beneficiary ragi growers had medium level of management orientation, while one third (33.33%) and 23.34 per cent of the beneficiary ragi growers had high and low level of management orientation, respectively.

A greater number of beneficiary ragi growers (40.01%) were belonging to medium innovativeness category, while 31.11 and 28.88 per cent of the beneficiary ragi growers were belonging to high and low innovativeness category, respectively (Table 1). It is also observed from the table that more number of beneficiary ragi growers (43.34%) were having high level of cosmopoliteness, whereas a little over one third (34.44%) and 22.22 per cent of the beneficiary ragi growers were having low and medium level of cosmopoliteness, respectively.

Table 1 reveals that as high as 42.22 per cent of the beneficiary ragi growers were falling under medium level of mass media exposure, while 32.22 and 25.56 per cent of the beneficiary ragi growers were falling under low and high level of mass media exposure, respectively. The data in Table 1 also shows that a majority of the beneficiary ragi growers (70.00%) had undergone training on ATMA and the remaining 30.00 per cent of the beneficiary ragi growers had not undergone training on ATMA.

A greater number of beneficiary ragi growers (41.11%) were having high level of extension agency contact, while 30.01 and 28.88 per cent of the beneficiary ragi growers were having medium and low level of extension agency contact, respectively (Table 1). The findings in Table 1 also reveals that two-fifth (40.00%) of the beneficiary ragi growers had medium level of extension participation, whereas 31.12 and 28.88 per cent of the beneficiary ragi growers had high and low level of extension participation, respectively.

It is observed from the results in Table 1 that a larger number of beneficiary ragi growers were of middle

TABLE 1

Personal, socio-economic, psychological and communication characteristics of beneficiary ragi growers

(n=90)

Characteristics	Category	Ragi growers	
		Number	Per cent
Age	Young (< 35 years)	19	21.11
	Middle (35 to 50 years)	41	45.56
	Old (> 50 years)	30	33.33
Education	Illiterate	7	7.77
	Can read and write	9	10.00
	Primary school	13	14.44
	Middle school	14	15.55
	High school	15	16.66
	Higher secondary	16	17.81
	Diploma	7	7.77
	Graduation	9	10.00
Family size	Small	41	45.56
	Medium	28	31.11
	Large	21	23.33
Annual income	Low (< Rs.23798)	34	37.77
	Medium (Rs.23798 to Rs.34598)	31	34.44
	High (> Rs.34598)	25	17.79
Land holding	Marginal farmers	43	47.78
	Small farmers	29	32.22
	Big farmers	18	20.00
Farming experience	Less	20	22.22
	Medium	39	43.33
	More	31	34.45
Achievement motivation	Low	25	27.77
	Medium	39	43.33
	High	26	28.90
Management orientation	Low	21	23.34
	Medium	39	43.33
	High	30	33.33
Innovativeness	Low	26	28.88
	Medium	36	40.01
	High	28	31.11
Cosmopoliteness	Low	31	34.44
	Medium	20	22.22
	High	39	43.34
Mass media exposure	Low	29	32.22
	Medium	38	42.22
	High	23	25.56
Training on ATMA	Not undergone training	27	30.00
	Undergone training	63	70.00
Extension agency contact	Low	26	28.88
	Medium	27	30.01
	High	37	41.11
Extension participation	Low	26	28.88
	Medium	36	40.00
	High	28	31.12

age (45.56%), marginal farmers (47.78%), studied up to high secondary (17.81%), having small size family (45.56%) with medium level of farming experience (43.33%), achievement motivation (43.33%), management orientation (43.33%), innovativeness (40.01), mass media exposure (42.22%), extension agency contact (41.11%) and extension participation (40.00%). A majority of beneficiary ragi growers had undergone training on ATMA (70.00%) and were belonging to medium annual income group (34.44%) and high level of cosmopoliteness (43.34%). More or less similar findings were observed by Singh *et al. (*2016), Kailash *et al*. (2017) and Subhash (2018).

2. Statement-Wise Attitude of Beneficiary Ragi Growers towards ATMA

It is observed from Table 2 that among the 12 attitude statements, the statement 'ATMA enables farmers to increase knowledge regarding improved scientific technology' obtained an attitude score of 401 and was accorded the first rank, followed by the statement 'ATMA is an effective in increasing agricultural production' received a score of 400 and was ranked second. The statement 'ATMA has made extension system farmers driven and farmer accountable' obtained an attitude score of 378 and was ranked third by the beneficiary ragi growers. 'ATMA provide need based advisory service to the farmers' was ranked fourth with an attitude score of 371. The statement 'ATMA promotes group extension approach by promoting the formation of Farmers Organisations (FOs) / Farmers Interest Groups (FIGs)' received an attitude score of 369 and was ranked fifth. 'Farm scientists, extension functionaries and farmers work together to plan and implement ATMA activities in the village' obtained an attitude score of 360 and was ranked sixth.

The statement 'ATMA is a boon to farmers' obtained an attitude score of 351 and was ranked seventh, while the statement 'ATMA extends benefit to all the

TABLE 2

Statement-wise attitude of beneficiary ragi growers towards ATMA

(n=90)

Attitude statements	Beneficiary ragi growers	
	Attitude score	Rank
ATMA is a boon to farmers	351	VII
ATMA enables farmers to increase knowledge regarding improved scientific technology	401	I
ATMA is an effective in increasing agricultural production	400	II
ATMA extends benefit to all the categories of farmers	340	VIII
ATMA helps in getting agricultural inputs/technologies from both public and private sectors	301	IX
ATMA helps the farmers in procurement of improved seeds, fertilizers and pesticides on time	250	X
Farm scientists, extension functionaries and farmers work together to plan and implement ATMA activities in the village	360	VI
ATMA increases the capacity building of farmers	241	XI
ATMA helps in developing the confidence of farmers in agriculture	221	XII
ATMA provide need based advisory service to the farmers	371	IV
ATMA promotes group extension approach by promoting the formation of Farmers Organisations (FOs) /Farmers Interest Groups (FIGs)	369	V
ATMA has made extension system farmers driven and farmer accountable	378	III

categories of farmers' received an attitude score of 340 and was ranked eighth. The statement 'ATMA helps in getting agricultural inputs / technologies from both public and private sectors' obtained an attitude score of 301 and was ranked ninth.

The remaining three statements, namely, 'ATMA helps the farmers in procurement of improved seeds, fertilizers and pesticides on time', 'ATMA increases the capacity building of farmers' and 'ATMA helps in developing the confidence of farmers in agriculture' were ranked tenth, eleventh and twelvth with attitude scores of 250, 241 and 221, respectively.

The findings clearly indicate that the beneficiary ragi growers have favourable attitude towards ATMA. It evidently proves that the ATMA extends benefits to all categories of farmers, farmers are involved in planning and implementation of ATMA activities in the villages, helps in getting the agricultural inputs of both public and private agencies, provide need based advisory services, enables farmers to increase knowledge regarding improved scientific technology and is effective in increasing agricultural production.

3. Overall Attitude of Beneficiary Ragi Growers towards ATMA

The data it Table 3 shows that more number of beneficiary ragi growers (36.68%) had more favourable attitude towards ATMA, followed by 34.42 per cent of the beneficiary ragi growers were having favourable attitude towards ATMA and the remaining 28.90 per cent of the beneficiary ragi growers were having less favourable attitude towards ATMA. It could be concluded that a majority of beneficiary ragi growers (71.10%) were having favourable to more favourable attitude towards ATMA. The beneficiary ragi growers are receiving Rs.4000 worth of agricultural inputs (seeds, *Trichoderma*, phosphorous solubilising bacteria (PSB) for seed treatment, bio fertilizer and micro nutrients (zinc sulphate and need based oil), enriched compost and pesticides) and the also reasons quoted under item 2 also holds-good here also for a greater majority (71.10%) of beneficiary ragi growers having favourable to more favourable attitude towards ATMA. The findings of the study in line with the findings reported by Nisha (2014) and Shamshadunnisa *et al.* (2018).

TABLE 3

Overall attitude of beneficiary ragi growers towards ATMA

(n=90)

	Beneficiary ragi growers	
	Number	Per cent
Less favourable (< 34.84 score)	26	28.90
Favourable (34.84 to 41.82 score)	31	34.42
More favourable (> 41.82 score)	33	36.68
Total	90	100.00

Mean= 38.08; Standard deviation= 6.47

4. Association between Personal, Socio-Economic, Psychological and Communication Characteristics of Beneficiary Ragi Growers with their Attitude towards ATMA

The data in Table 4 shows the association between personal, socio-economic, psychological and communication characteristics of beneficiary ragi growers with their attitude towards ATMA. A perusal of Table 4 reveals that age, family size, annual income, land holding and farming experience of beneficiary ragi growers had no association with their attitude towards ATMA. Education, achievement motivation, management orientation, innovativeness, cosmo politeness and mass media exposure of beneficiary ragi growers had significant association with their attitude towards ATMA at five per cent level. Variables, such as training on ATMA, extension agency contact and extension participation of beneficiary ragi growers had highly significant association with their attitude towards ATMA. Similar findings was reported by Subhash (2018). The explanation for the independent variables having significant to highly significant association with the attitude towards ATMA is given in the ensuring paragraphs.

Education widens the vision and minds of people, besides orienting them to the outside world. Educated farmers might have contacted the agricultural extension workers to obtain the information on ATMA

TABLE 4

Association between personal, socio-economic, psychological and communication characteristics of beneficiary ragi growers with their attitude towards ATMA

(n=90)

Characteristics	Degrees of freedom	Chi-square value
Age	4	1.69 NS
Education	4	10.16 *
Family size	4	2.60 NS
Annual income	4	3.11 NS
Land holding	4	0.99 NS
Farming experience	4	5.78 NS
Achievement motivation	4	11.67 *
Management orientation	4	10.01 *
Innovativeness	4	12.61 *
Cosmopoliteness	4	9.99 *
Mass media exposure	4	12.66 *
Training on ATMA	4	15.11 **
Extension agency contact	4	13.67 **
Extension participation	4	14.11 **

NS = Non-significant, * = Significant at 5% level, ** = Significant at 1% level

(importance, operative mechanism and the benefits to farmers) and have developed favourable attitude towards ATMA. Achievement is the value associated with an individual that drives them to excel in farming and thereby attain a sense of personal accomplishment. In order to achieve this distinction, the farmers would have availed the benefits of ATMA in the form of getting subsidy for agricultural inputs and technical guidance. Management orientation offers a chance for better management of resources resulting in greater efforts toward excellence in farming. The urge to perform better than others will act as an instrument to acquire and adopt managerial components relating to agriculture. ATMA provide need based advisory service to the farmers and increases the capacity building of farmers thereby helping the beneficiary in managing their farm enterprise. The interest and desire of the farmers to adopt new farm technologies predisposes them to seek more information from agricultural extension functionaries and participation in extension activates organized for popularizing ATMA.

A cosmopolitan farmer always looks for more information on improved agricultural technologies and various schemes implemented by the Development departments. Hence, these farmers will more frequently visit the offices of the Department developments located at towns to derive more benefits from State and Centrally sponsored agricultural programmes. As a consequence, there exists a highly significant association between the cosmopoliteness of beneficiary ragi growers and their attitude towards ATMA. Exposure to mass media like radio, television, newspaper, magazines etc., has helped the beneficiary ragi growers in knowing the various schemes and benefits under ATMA. The farmers feel that the ATMA enables them to increase their knowledge on improved cultivation aspect and is an effective means to increase agricultural production. Training provides an opportunity to the beneficiaries about the various schemes / benefits available to farmers and gain knowledge on the improved agricultural technologies. Frequent contacts with the agricultural extension functionaries have helped the farmers in knowing about the benefits available to farmers under ATMA. The farmers believe that ATMA would help in increasing the crop productivity and income. Frequent and active participation of beneficiaries in extension activities organized under ATMA might act as strong motivational factor for possessing favourable attitude towards ATMA.

Frequent contact with extension personnel and regular participation of beneficiary ragi growers in the agricultural extension activities [meetings, demonstrations, field days, farm school, krishimela / fairs, district level exhibitions, kissan gosties (farmers-scientist's interaction), agricultural campaign etc.] will help the farmers in familiarizing the activities and deriving full benefits of ATMA. Further, mass media has significantly influenced the beneficiary ragi growers in developing favourable attitude towards ATMA, therefore the Agricultural Department should publish/telecast/broadcast on the various benefits available for farmers under ATMA through mass

media (radio, newspaper, television, internet etc.) helping the farmers to utilize the benefits of ATMA, which leads to developing favourble attitude towards ATMA.

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