

EFFECTIVENESS OF MASS MEDIA IN ADOPTION OF RICE PRODUCTION TECHNOLOGIES

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ABSTRACT

The main objectives of this study were to determine the extent of effectiveness of mass media and explore the relationships between the selected characteristics of the farmers and their effectiveness of mass media in adoption of rice production technologies. The selected characteristics were age, education, family size, farm size, annual family income, wealth ownership, organizational participation, innovativeness, attitude towards modern technology and agricultural knowledge. Data were collected from 110 respondents from two villages through using a structured personal interview schedule. Karl's Pearson Correlation Co-efficient were used to test the relationship between the independent and dependent variables. The findings revealed that about one half of the respondents perceived mass media as medium effective while a little higher than one third of the respondents perceived mass media as highly effective and rest of the respondents considered it as low effective. In case of coefficient correlation farmers' education, wealth ownership, organizational participation, innovativeness and agricultural knowledge had highly significant relationship with the effectiveness of mass media however some other variables like age, farm size, family size, annual family income and attitude towards modern technology of the farmers had no significant relationship with their effectiveness of mass media in adoption of rice production technologies.

Key words: effectiveness, mass media and adoption.

INTRODUCTION

Bangladesh agriculture is rice-based occupying by about 77% of the total cropped area covering about 13.9 million hectares of land (FAO, 2005). Bangladesh grows only about 3.55 tons of rice/ hectare (FAO, 2005). On the other hand South Korea, Japan, North Korea, USA and Soviet Russia produce 6.2, 5.8, 5.4, 5.1 and 3.8 tons respectively (FAO, 2005). Therefore, it has the scope to increase per hectare yield. In Bangladesh rice production can only be increased if appropriate technologies are adopted by the farmers who are the primary unit of adoption of improved practices. Transfer of technologies means the movement of technology information from a research system through extension system to the client system (Kashem and Halim, 1991). Extension agents follow a number of extension methods such as result or method demonstration, farm publications, radio and television programme, progressive and contact farmers, local and opinion leaders, field tours, field days etc. Mass media play an important role especially in the awareness and interest stages (Kashem and Jones, 1995). Farm information through mass media can motivate, stimulate, induce and change their basic attitudes of the people at all cultural and age levels. Mass media covers far distances and leaps all kinds of natural barriers; it is swift in reaching a listener. Mass media are the cheapest but stimulate educational means by which farmers can learn rice production technologies (Schramm, 1994).

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The following objectives were formulated in order to give proper direction to the research work:

1. To determine the extent of effectiveness of the mass media in adoption of rice production technologies
2. To determine and describe some selected characteristics of the farmers
3. To explore the relationship between the selected characteristics of the farmers and their effectiveness of mass media in adoption of rice production technologies.

METHODOLOGY

Two villages namely Bagun Bari and Bhadua of Sayedpur Union of Pirganj Upazila under Thakurgoan District, an area of intensive rice production were purposively selected as the study area. Rice growers of the villages constituted population of this study. One hundred and ten growers from this population were selected proportionate randomly as the sample of the study. Data were collected from these selected 110 farmers by the researcher himself with the help of a pre-tested interview schedule during 21 October to 27 November 2006.

Considering personal, economic, social and psychological factors of the rural communities, time and resources available ten characteristics were age, education family size, farm size, annual family income, wealth ownership, organizational participation, innovativeness, attitude towards modern agricultural technologies and agricultural knowledge of the rice farmers were selected as independent variables. Effectiveness of mass media in adoption of rice production technologies was the dependent variable. Collected data were compiled, tabulated and analyzed in accordance with the objective of the study. For exploring the relationship between the effectiveness of mass media and the independent variables Karl's Pearson Correlation Co-efficient 'r' was computed. Rank order was also used to compare the effectiveness of different mass media in adoption of rice production technologies.

Measurement of dependent variable

The extent of effectiveness of mass media was measured on the basis of opinion of the farmers how effective the selected six mass media namely radio, television, newspaper, poster, field day and opinion leader in adoption of rice production technologies considering five stages of innovation decision process. It was measured by using a 4 point rating scale, such as very effective, effective, less effective and not at effective and scores were assigned 3, 2, 1 and 0 accordingly. Thus total effectiveness of mass media score could range from 0 to 90, while 0 indicating not effective and 90 indicating very high effective of mass media in adoption of rice production technologies.

For determining comparative effectiveness of the Mass Media Effectiveness Index (MMEI) for each media was computed by following formula and rank order also made on the basis of the MMEI.

$$\text{MMEI} = 3 \times \text{Fve} + 2 \times \text{Fe} + 1 \times \text{Fle} + 0 \times \text{Fne}$$

Where,

MMEI = Mass Media Effectiveness Index

Fve = Number of respondents opined very effective

Fe = Number of respondents opined effective

Fle = Number of respondents opined less effective

Fne = Number of respondents opined not effective.

The value of MMEI could range from 0 to 330, where 0 indicated not effective and 330 indicate very effective of mass media in adoption of rice production technologies.

RESULTS AND DISCUSSION

Effectiveness of mass media in adoption of rice production technologies

The computed effectiveness of mass media score of the respondents ranged from 20 to 84 against the possible range of 0 to 90. The mean and standard deviation were 44.94 and 13.98 respectively.

Table 1. Distribution of the respondents according to effectiveness of mass media as perceived by them in adoption of rice production technologies

Categories	Farmers		Mean	Standard deviation
	Number	Percent		
Low effective (up to 30)	16	14.55	44.94	13.98
Medium effective (31-60)	53	48.18		
Highly effective (61 and 90)	41	37.27		
Total	110	100		

Data showed in the table 1. that 48.18% of the farmers perceived mass media as medium effective while 37.27% to highly effective and 14.55% low effective. Thus, about 85% of the farmers opined that mass media had medium effectiveness to highly effectiveness in adoption of rice production technologies by the farmers in the study area.

Comparative effectiveness of the selected mass media

Among the selected six mass media television was identified as the best effective mass media with a MMEI of 252 and it was followed by opinion leader (235), radio (206), newspaper (192), field day (190) and poster (184).

Table 2. Mass Media Effectiveness Index (MMEI) of mass media and their rank order

Sl. No.	Mass Media	Extent of effectiveness				MMEI	Rank order
		Very effective	Effective	Less effective	Not at all effective		
1	Television (Mati-o-Manush)	60	26	20	4	252	1
2	Opinion leader	50	35	15	10	235	2
3	Farm Radio Talk	42	30	20	18	206	3
4	Newspaper	35	28	31	16	192	4
5	Field day	25	40	35	10	190	5
6	Poster	18	45	40	7	184	6

Thus it was revealed that television was more effective than other selected mass media in adoption of rice production technologies among the farmers of this study area (table 2.).

Selected characteristics of the respondents

For better understanding the distribution and features of the characteristics of the farmers are shown in table 3.

Table 3. Distribution and features of the farmers according to their selected characteristics

Characteristics	Measuring units	Categories	Farmers		Mean	Standard deviation
			Number	%		
Age	Years	Young (up to 35 yrs)	36	32.5	42.02	10.00
		Middle Aged (36-50 yrs)	61	55.7		
		Old (51 and above)	13	11.8		
Education	Schooling years	No Education (0)	14	12.7	6.66	5.20
		Primary Education (1-5)	34	30.9		
		Secondary Edu. (6-10)	32	29.1		
		Above Secondary (11-16)	30	27.3		
Family size	Number	Small (2-4)	54	49.1	6.02	1.88
		Medium (5-7)	50	45.5		
		Large (above 7)	6	5.5		
Farm size	Hectare	Marginal (up to 0.20 ha)	4	3.6	0.79	.47
		Small (0.21- 1.20 ha)	72	65.5		
		Medium (1.21- 2.05 ha)	29	26.4		
		Large (more than 2.05 ha)	5	4.5		
Annual family income	'000' taka	Low income (up to 75)	40	36.3	109.61	69.88
		Medium income (76-150)	52	47.3		
		High income (above 150)	18	16.4		
Wealth ownership	'000' taka	Low (up to 98.48)	32	29.1	161.70	126.44
		Medium (98.49-224.92)	56	50.8		
		High (above 224.92)	22	20		
Organizational participation	Scores	No participation (0)	26	23.6	10.07	4.18
		Low participation (1-5)	34	30.9		
		Medium parti. (6-10)	36	32.7		
		High parti. (11 & above)	14	12.7		
Innovativeness	Scores	Low (0-13)	39	35.5	16.15	4.28
		Medium (14-26)	53	48.2		
		High (27 - 40)	18	16.3		
Attitude towards modern agricultural.	Scores	Less favorable (up to 13)	36	32.7	27.63	12.96
		Favorable (14-26)	64	41.8		
Technologies		Highly favorable (27-40)	28	25.5		
Agricultural knowledge	Scores	Low (up to 10)	24	21.8	14.03	4.24
		Medium (11-20)	70	63.6		
		High (21 to 30)	16	14.5		

Relationships between Independent and Dependent Variables

Pearson's product-moment correlation co-efficient 'r' was determined to find out the effectiveness of mass media as perceived by the farmers and their selected characteristics.

Finding revealed that education, agricultural knowledge, wealth ownership, innovativeness and organizational participation of the respondents had a positive and highly significant relationship with the effectiveness of mass media on the other hand age, farm size, family size, annual income of the respondents were not related to their effectiveness of mass media in adoption of rice production technologies as perceived by the farmers.

Table 4. Relationships between the independent and dependent variables

selected characteristics	Correlation efficient 'r'	Co-	Tabulated Value of 'r' with 108 df.	
			0.05	0.01
Age	-0.031 ^{NS}		0.184	0.234
Education	0.450**			
Family Size	0.038 ^{NS}			
Farm Size	0.092 ^{NS}			
Annual family Income	0.020 ^{NS}			
Wealth ownership	0.304**			
Organizational Participation	0.307**			
Innovativeness	0.323**			
Attitude towards modern agricultural technologies	0.059 ^{NS}			
Agricultural Knowledge	0.387**			

** Significant at 0.01 level of probability; ^{NS} Non Significant

CONCLUSION

Taking the above results and discussion into consideration the following conclusion has been drawn:

1. Education, knowledge and the participation of different organizations enable individuals to gain more knowledge and thus, their power of understanding, consequently their outlook is broadened and horizon of knowledge is expanded which helps to adopt different innovations and technologies.
2. The educated and innovative persons used to have frequent contact with Radio; TV for local information's and is exposed to various external sources such as opinion leaders, fertilizer dealers, representative's fertilizer and pesticide, member and chairman of union council and so on.
3. Due to organizational involvement farmers get a change to share their ideas and views with other persons which helps to know about innovations and technological information. Besides these, it was concluded that with the increase of the level of agricultural knowledge of the farmers their effectiveness of mass media in adoption of rice production technologies.

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