

Original Research Article

<https://doi.org/10.20546/ijcmas.2019.810.192>

Socio-Economic Correlates and Information Sources utilization by Paddy Farmers in Bishnupur District, Manipur, India

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ABSTRACT

Keywords

Paddy, Information sources, Farmers, Bishnupur, Manipur

Article Info

Accepted:
12 September 2019
Available Online:
10 October 2019

Paddy is the principle food crop in North-Eastern region of India. Paddy is an important cultivated crop in the state of Manipur, which is the single largest source of livelihood of about 70 per cent of the population of the state. It is the most cultivated crop in Bishnupur district of Manipur with a cultivated area of 31.48 thousands ha having an average yield of 3.6 MT/ha. Agricultural information influences agricultural productivity in a variety of ways. Agricultural productivity can be improved by relevant, reliable and useful information and knowledge. The present study was undertaken to investigate the use of agricultural information sources and services by farmers for improving the productivity of paddy in the Bishnupur district of Manipur. Under Bishnupur district Moirang block and Bishnupur block were selected and two villages predominant in growing paddy among all paddy growing villages in each of these blocks were selected randomly. From each village 20 farmers were randomly selected making a sample size of 80 respondents. Findings revealed that majority of the paddy farmers were male who belonged to middle age group, had marginal land holding size, medium level of knowledge and attitude towards improved paddy cultivation. Major information sources utilized by the farmers included Radio, TV, newspaper, progressive farmers, VLW and friends. Analysis revealed that the variables education, land holding size, area under paddy crop, annual income, income from paddy crop, training exposure and social participation were found positive and highly significant when correlated with the utilisation pattern of information sources by the paddy farmers. The study concluded that variables found significant should be taken into cognizance for selecting the paddy farmers for appropriate training with regards to improved paddy cultivation technology thereby increasing the productivity of paddy and prosperity of the farmers in the state of Manipur.

Introduction

Paddy (*Oryza Sativa* L.) is the primary staple food crop of the people in South-East Asia. 90 per cent of the rice is produced and consumed

in Asia where nine of the world's top ten rice producing countries are located. In India total production of rice was reported as 168.5 million tons from an area of 43.789 million ha (FAO, 2017). Ellur *et al.*, (2013) reported that

production of unmilled rice from 115 countries was 696.3 million tons. More than half of the world's population depends on paddy for food calories (21%) and protein (15%), especially in developing countries (Zibae, 2013).

India is the second largest country in the world having a total cultivated area of 179.9 million hectares. According to Central Statistics Office, agricultural sectors contribute to 17.4% of the gross value added (GVA) at current prices during the year 2015-16. Paddy is a major cultivated crop in India, it holds the second position as most widely cultivated crop in the world and accounts for 22.3% of all world rice production (Khatkar, 2016).

Rice is the principle food crop in North-Eastern region in India which is widely grown in 72 districts. Manipur is one of the north eastern state in India and 90% of gross crop area (GCA) of the state is under paddy cultivation (Singha and Mishra, 2015). Rice being major cultivated crop in Manipur, it covers 72% of the total crop area and accounts about 95% of the total food grains production (Singh and Bera, 2017). 80% of the population in Manipur are engaged in agriculture and allied sectors (Roy *et al.*, 2018).

Rice is one of the most cultivated crops in Bishnupur district of Manipur with a cultivated area of 31.48 thousands ha having an average yield of 3.6 MT/ha. Rice cultivation is a major sector which is vital for the survival of modern man. Role of information technology is increasing rapidly in society as well as in agriculture. Practicing improved paddy cultivation technology largely depends upon the utilization pattern of information sources and their effectiveness in terms of getting the latest technical know how about the crop and related management practices. Information technology and information sources have a great potential in

the context of agriculture. The information channel utilized by the paddy growers are directly or indirectly associated with improvement in productivity, economic well being and empowerment of farmers (Mitra, 2014). Hanglem *et al.*, (2015) found low access of communication sources in both Bishnupur and Imphal west district in most of the agricultural practices. Therefore, a study was undertaken to know the information sources utilized by the paddy farmers in Bishnupur district of Manipur and how the socio-economic factors influenced their utilization pattern.

Materials and Methods

The study was conducted in Bishnupur district of Manipur located in the North eastern part of India. From this district both the blocks viz., Moirang and Bishnupur blocks were selected and two villages growing paddy in each of these blocks were selected randomly. From each of these villages 20 farmers were randomly selected making a sample size of 80 respondents. Primary data were collected from the selected respondents with the help of a pre-tested structured schedule by conducting personal interview. The utilization pattern of information sources was studied under the dimensions of mass media information source, formal information sources and informal information sources.

Results and Discussion

Socio economic attributes of paddy farmers

Table 1 revealed that majority (63.75%) of the respondents belonged to the middle age group (35-55), 92.50 per cent of them were male, 71.25 per cent of them had medium size of family (4 to 7 members), 52.50 per cent of them had nuclear family and majority (26.25%) of the paddy growers were educated only upto middle school level whereas 23.75

per cent of them were illiterate. It shows the respondents of the selected study area have high strength of family, energetic, adventurous, potential to use information technology resources and high capacity to assess the different information sources for adopting improved paddy cultivation practices.

Majority (66.25%) of the respondents had marginal size of average land holding (1.98 acre) while 80.00 per cent of the respondents had marginal land holding size (1.39 acre) under paddy. This result shows that most of the farmers had marginal farm size limiting the expansion of area under paddy cultivation. It is probable that most of the respondents had low economic condition thereby making them contented with marginal land holding.

Majority (32.50%) of them had annual income ranging Rs.40000-Rs.80000, whereas majority (53.75%) of them had income less than Rs.40000 from paddy. Only 2.50 per cent of the respondents had annual income above Rs.120000 from paddy. Income from paddy depends upon improved method of cultivation practices followed by the respondents and crop yield. Low income from paddy crop might be due to low productivity, less area under paddy crop, more investment & low return, improper knowledge of cultivation practices a reason to reduced crop yield. Majority (66.25%) did not attend any training related to improved paddy cultivation. This might be due to the fact that farmers were not aware about the training programmes being conducted by the state department.

Social participation provides the farmers an opportunity to come in contact with other individuals in the social system. In context of social participation, majority (51.25%) of the respondents had medium level of social participation, 27.50 per cent of them had low level of participation in any social

organizations. Respondents should be made aware about the importance of their participation in social organizations which may result in enriching them with new information, community benefit or ownership and share opinion.

Table 1 revealed that majority (80.00%) of the respondents had favourable attitude towards the improved paddy cultivation practices, 63.75 per cent of them had medium knowledge level towards improved paddy cultivation, 85.00% of them had medium level of scientific orientation and 77.50 per cent of them had medium level of marketing orientation. It may be inferred that providing more information on improved farming through different information sources can be the best way to increase farmers' knowledge, help them to modify their attitude and bring them the best possible solution of the problem.

Utilisation pattern of information sources

Sources of information tend to have close association with the adoption of improved paddy cultivation practices followed by the paddy growers. Findings are discussed under the following heads:

Mass media sources of information

It was revealed from Table 2 that the "radio" was the most often utilized information source by majority (48.75%) of the paddy farmers. Radio might be easy to operate, cheaper in price and more affordable to the farmers. Radio can overcome long distance, it has immediate effect, does not required literacy and is familiar in most rural household (Egge *et al.*, 2011 and Okwu *et al.*, 2007). Television (30.00%) and newspaper (26.25%) sources were the second and third most often used information sources. It might be due to the fact that respondents find TV as most appropriate sources for getting information

related to agriculture through television programme with agricultural expert, agriculture inputs, new technology are advertised and also has more enjoyable entertainment programmes. Newspaper is relatively cheaper, easily available in rural households for getting latest information about daily updated news. Video conferencing information sources were never utilized by any paddy growers. This result was in line with the findings of Yadav *et al.*, (2015) and Kumar *et al.*, (2018).

Informal information sources

Table 2 revealed that majority (23.75%) contacted progressive farmers most often followed by 40.00 per cent contacted sometimes with their friends and 70.00 per cent never contacted their relatives for getting information about improved paddy cultivation. This might be due to the fact that progressive farmers have high level of knowledge of farming, adopt the latest technology, more favourable attitude towards farming, more implements, participate in organisations and have greater contact with information sources. Friends were the second most utilized information sources. This might be due to the reason that whenever two or more farmer's friends meet they transact their views and ideas and meanwhile they also give and take agricultural information. Friends have common understandings they seek information frankly from each other and then in the practice. This finding was in line with the finding of Khan *et al.*, (2010).

Formal information sources

Table 2 revealed that 8.75 per cent of the paddy farmers contacted VLW most often, followed by 6.25 per cent of them who contacted ATMA, 3.75 per cent contacted AO/SDAO/DAO, 1.25 per cent of them contacted KVK and 25.00 per cent of them

contacted VLW sometimes, followed by 13.75 per cent of them contacted ATMA, 8.75 per cent contacted AO/SDAO/DAO, 7.50 per cent contacted KVK and 6.25 per cent contacted NGO. These findings were in line with the findings of Khan *et al.*, (2010).

Association of information sources utilization pattern with the socio-economic and psychological variables

Table 3 revealed that variables viz., education status, total land holding size, land holding size under paddy crop, total annual income, income from paddy crop, social participation and training exposure had positive and highly significant association with information sources utilization pattern with respect to the improved paddy cultivation practices. It was also observed that variables viz., age, sex, family size, family type, knowledge level, attitude, scientific orientation and market orientation were non-significant. The result indicated that non-significant variable didn't bear any relation with information sources utilization pattern of farmers. It may be inferred that farmers having high education status, land holding size, land under paddy crop, annual income, income from paddy crop, social participation and training exposure had more access to different information sources which might be helpful for them to get latest technical know how about improved package of practices of paddy cultivation.

Multiple regression analysis of the predictor variables with utilization pattern of information sources of paddy growers

Table 4 depicts 't' values of the regression coefficients of predictor variables with the response variable information sources utilization pattern. The regression equation included predictor variables viz; age, education, annual income, and social participation.

Table.1 Socio-economic profile and selected characteristics of respondents

Sl. No.	Characteristics	Categories	Frequency (%)
1.	Age (Years) Mean=49.40; SD=11.56	Young age (<35)	9 (11.25)
		Middle age (35-55)	51 (63.75)
		Old age (>55)	20 (25.00)
2.	Gender Mean=1.94; SD=0.24	Male	74 (92.50)
		Female	6 (7.50)
3.	Family size Mean=5.75; SD=2.22	Small (<4 members)	7 (8.75)
		Medium (4-7 members)	57 (71.25)
		Large (>7members)	16 (20.00)
4.	Family type Mean=1.48; SD=0.50	Joint	38 (47.50)
		Nuclear	42 (52.50)
5.	Education level Mean=2.69; SD=1.45	Illiterate	19 (23.75)
		Primary level upto 4 th	10 (12.50)
		Middle upto 8 th	21 (26.25)
		Secondary upto 10 th	12 (15.00)
		Higher secondary upto 12 th	9 (11.25)
		Graduate	7 (8.75)
6.	Total land holding size Mean= 1.98; SD=2.38	Above graduate	2 (2.50)
		Marginal (<1ha)	53 (66.25)
		Small (1-2ha)	24 (30.00)
		Semi-medium (2-4ha)	1 (1.25)
		Medium (4-10ha)	1 (1.25)
		Large (>10ha)	1 (1.25)
7.	Area under paddy crop Mean=1.39; SD=1.28	Marginal (<1ha)	64 (80.00)
		Small (1-2ha)	14 (17.50)
		Semi-medium (2-4ha)	1 (1.25)
		Medium (4-10ha)	1 (1.25)
8.	Annual income Mean=127650.00; SD=168185.94	Between Rs. 40000-80000	26 (32.50)
		Rs. 80000-120000	18 (22.50)
		Rs. 120000-160000	14 (17.50)
		Above Rs. 160000	22 (27.50)
9.	Net Income from paddy Mean=31911.25; SD=49507.44	Below Rs. 40000	43 (53.75)
		Rs. 40000-80000	24 (30.00)
		Rs. 80000-120000	11 (13.75)
		Above Rs. 120000	2 (2.50)
10.	Training exposure Mean=0.31; SD=0.47	Respondents who attended training	27 (33.75)
		Respondents who did not attend training	53 (66.25)
11.	Social participation Mean= 1.10; SD=1.11	Low (0)	22 (27.50)
		Medium (1-2)	41 (51.25)
		High (>2)	17 (21.25)
12.	Attitude Mean=30.96; SD=4.95	Less favorable (<26.01)	10 (12.50)
		Favourable (26.01-35.91)	64 (80.00)
		Highly favourable (>35.91)	6 (7.50)
13.	Knowledge level Mean=4.15; SD=1.87	Low (2.28)	14 (17.50)
		Medium (2.28-6.02)	51 (63.75)
		High (>6.02)	15 (18.75)
14.	Scientific orientation Mean=20.35; SD=3.12	Low (<17.23)	8 (10.00)
		Medium (17.23-23.47)	68 (85.00)
		High (>23.47)	4 (5.00)
15.	Market orientation Mean=5.19; SD=1.23	Low (<3.96)	5 (6.25)
		Medium (3.96-6.42)	62 (77.50)
		High (>6.42)	13 (16.25)

Table.2 Utilization pattern of information sources by the paddy growers

Sl. No.	Mass media information sources	Frequency of contact		
		Most often No. %	Sometimes No. %	Never No. %
1.	Radio		26 (32.50)	
2.	Television	39 (48.75)	31 (38.75)	15 (18.75)
3.	Newspaper	24 (30.00)	28 (35.00)	25 (31.25)
4.	Exhibition	21 (26.25)	11 (13.75)	31 (38.75)
5.	Printed media	6 (7.50)	9 (11.25)	63 (78.75)
6.	Mobile phone	5 (6.25)	10 (12.50)	66 (82.50)
7.	videoconferencing	8 (10.00)	0 (0.00)	62 (77.50)
		0 (0.00)		80 (100.0)
Sl. No.	Informal information sources			
1.	Friends	14 (17.50)	32 (40.00)	34 (42.50)
2.	Relatives	5 (6.25)	19 (23.75)	56 (70.00)
3.	Neighbours	7 (8.75)	30 (37.50)	43 (53.75)
4.	Progressive farmers	19 (23.75)	21 (26.25)	40 (50.00)
Sl. No.	Formal information sources			
1.	VLW	7 (8.75)	20 (25.00)	53 (66.25)
2.	AO/SDAO/DAO	3 (3.75)	7 (8.75)	70 (87.50)
3.	KVK	1 (1.25)	6 (7.50)	73 (91.25)
4.	ATMA	5 (6.25)	11 (13.75)	64 (80.00)
5.	NGOs	0 (0.00)	5 (6.25)	75 (93.75)

Table.3 Association of independent variables with utilisation pattern of information sources

Sl. No.	Variables	Coefficient correlation
1	Age	-0.094 ^{NS}
2	Sex	0.096 ^{NS}
3	Family size	0.006 ^{NS}
4	Family type	-0.069 ^{NS}
5	Education	0.358**
6	Total size of land holding	0.532**
7	Size of land holding under paddy	0.471**
8	Total annual income	0.466**
9	Income from paddy	0.527**
10	Training exposure	0.363**
11	Social participation	0.535**
12	Knowledge level	0.107 ^{NS}
13	Attitude	0.094 ^{NS}
14	Scientific orientation	0.095 ^{NS}
15	Market orientation	0.103 ^{NS}

** =significant at 1% α, * =significant at 5% α, NS =Not significant

Table.4 Multiple linear regression of predictor variables with utilization pattern of information sources of paddy growers

Sl. No.	Particular	b	SE(b)	t value	Pr > t
1.	Intercept	3.739	1.241	3.010	0.004
2.	Age	0.486	0.359	1.350	0.180
3.	Education	0.000	0.000	1.710	0.092
4.	Annual income	5.395	1.203	4.480**	<.0001
5.	Social participation	3.627	0.801	4.530**	<.0001

R²=0.5023, F Value=14.94, **= significant level at 1% α, *=significant at 5% α

The regression coefficient of variables ‘annual income’ and ‘social participation’ were found positive and highly significant.

It was revealed from Table 4 that variables viz., annual income and social participation had positive and highly significant ‘t’ values at 1 per cent level of probability. The remaining two variables included in the regression equation could not emerge as significant contributors to explain the sources of variation in information utilization pattern of the respondents. The F value (14.94) was also significant. All these variables explained to the extent of 50.23 % variations in the utilization pattern of information sources by the paddy growers. It could be inferred from this result that assured annual income and social participation is conducive by proper utilization of information sources for adopting the improved cultivation practices by the paddy farmers.

The study revealed that among the mass media information sources - radio, television, newspaper; among the informal information sources, progressive farmers and friends and among the formal information sources-VLW and ATMA personals proved to be the most important sources of information utilized by the paddy farmers in Bishnupur district of Manipur. Other information sources like exhibition, print media, video - conferencing, mobile, KVKs, NGOs, AO/ADAO/SDO etc. were not so popular among the respondents for getting required information about improved paddy cultivation practices.

Respondents were found curious to know more about advance technological updates with respect to improved paddy cultivation. Analysis of the facts revealed that mass media information sources were readily available at home for the farmers for their access at any time as per their convenience whereas for getting information from various formal information sources they had to wait which might delay their farming operations.

Thus it may be concluded that apart from utilizing mass media sources there is a need to popularize ICT measures so that farmers can get maximum benefit as and when they need during their farm operations.

Participation of female farmers were found less so a proper strategy may be developed to bring about gender mainstreaming and empowering rural women for having equal access to the utilization of information sources. Majority of the farmers had low training exposure; therefore steps should be taken by the state department of agriculture to organize relevant training's for the farmers for adopting improved paddy cultivation practices.

While selecting farmers for requisite training programmes, care should be taken to include more marginal and small farmers to improve upon their attitude and develop proper marketing orientations so that they come forward to adopt improved paddy cultivation practices thereby increasing productivity and profitability.

Acknowledgment

The authors acknowledge to Dr. K.K. Jha, Professor, SASRD, Medziphema Campus, Nagaland University for the enormous guidance and valuable suggestions during the study.

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How to cite this article:

Bidyapati Thangjam and Kaushal Kumar Jha. 2019. Socio-Economic Correlates and Information Sources utilization by Paddy Farmers in Bishnupur District, Manipur. *Int.J.Curr.Microbiol.App.Sci*. 8(10): 1652-1659. doi: <https://doi.org/10.20546/ijemas.2019.810.192>