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FACTORS INFLUENCING THE ADOPTION OF RABI VEGETABLE CROPS BY THE FARMERS OF BISHNUPUR DISTRICT, MANIPUR

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ABSTRACTS

The study was conducted on 150 farmers randomly selected from five villages under community Development block of Bishnupur district, Manipur. To find out the important factors responsible for adoption of Rabi vegetable crops by the farmers, 12 independent variables and one dependent variable were selected for the study. Data were collected by personal interview method in the months of February to march 2014 by the researcher. For analysis of the data, coefficient of correlation analysis was followed. It was found that educational status, annual income, use of mass media, economic motivation and innovative proneness were positively correlated and significant whereas age, operational land holding and risk orientation was negative significant relation with adoption of *rabi* vegetable crops.

Keywords: adoption; coefficient of correlation; motivation; *rabi* crop

INTRODUCTION

Vegetables comprises of a large number of plants, mostly, annual of which different parts like leaf, stem, flowers bud, flower, fruits, root are eaten. They are one of the cheapest sources of natural nutritive foods. Their consumption in sufficient quantity provides taste, palatability and increase appetite for maintenance of good health. Vegetables also play a beneficial role in protecting the human body against some degenerative diseases. They also help in neutralizing the acids produced during digestion of proteins and fats. It has been estimated that 150g of tropical leafy vegetables can provide 60-140mg of ascorbic-acid (vitamin-C), 150µg of folic acid, 4-7mg iron and 200-400 mg of calcium (Maisnam and Singh 2015). A large number of vegetables in India have been introduced. However , a planned development in the field of vegetable production will not only improve the nutritional requirement for masses but can also meet the challenge of adequate food supply to the growing population in India. There are number of vegetables namely potato, sweet potato, chilly, brinjal, cabbage, cauliflower, tomato and many spices *(Jati, et. al, 1980)*. In Manipur, the total area under vegetable production is 7254 ha with a production of 55936 metric tons. Although farmers grow rabi vegetables in some part of state but the production have not been able to meet the requirement. The production of rabi vegetables crops in Manipur is insufficient mainly due to lack of giving suitable irrigation methods practices and vegetables are imported from other neighbouring states. Arya, *et.al. (1984)* found that lack of awareness, co-ordination among farmers, groupism in village, low adoption by neighbors, traditional norms and adverse socio-political system in the villages are the most important constraints which do not permit farmers to accept and adopt new technology in vegetable farming. Adoption of a new technology is influenced by physical, socio-economic and mental factors; similarly, farmers' attitudes determine adoption of improved technology(Roger, 2003).The present study was conducted to study the factors influencing the adoption of Rabi vegetable crops by the farmers of Bishnupur district, Manipur.

MATERIALS AND METHODS

The present study was conducted under the Community Development block of Bishnupur district, Manipur. The purposive as well as simple random technique was adopted for the study. The district and block were purposively selected whereas villages were selected randomly. Under the Bishnupur block (CD) five villages namely Leimapokpam ,Khoijuman and Kwasiphai, Iringba, Toubul, Keinou, were selected. A total of 150 respondents, 20 respondents from each village have been selected by random sampling method. The data were collected in the month of February and March 2014 by personal interview method with the help of interview schedule. The independent variables used were age(X_1), education(X_2), annual income(X_3), operational land holding(X_4), family type (X_5), innovative proneness(X_6), economic motivation(X_7), Level of organic manure used(X_8) , Source of information (cosmopolite and localite)(X_9), risk orientation(X_{10}), contact with extension staff (X_{11}), mass media exposure(X_{12}) and one dependent variable Adoption(Y) was selected. Frequency distribution and coefficients of correlation were followed for the analysis of data.

RESULT AND DISCUSSION

RESULT:

Socio-economic and Agronomical attributes of farmers play a key role in adoption. In order to trace out factors responsible for the adoption of rabi vegetable crops few of the selected socio-economic and agronomical characteristics of farmers are described as below with help of frequency (Table 1-8).

Table 1: Distribution of farmers based on their age n=150

Variables	Index	Frequency
Age	Upto-25	2
	26-40	**38**
	41-50	24
	51-60	18
	More than 60	18

Table 1 shows that majority of the respondents were in the younger age group (26-40). This implies that younger aged farmers were more innovative and creative, comparatively more energetic in carrying out activities and more dedicated. Therefore the younger aged group formed the largest proportion of the farmers.

Table 2: Distribution of farmers based on their educational status n=150

Variables	Index	Frequency
Educational status	Illiterate	2
	Can read only	0
	Can read and write	12
	Primary	12
	Middle school	15
	High school	27
	College and above	**32**

It can be inferred that respondents were no longer confined to the traditional ways of living. They might have realized the importance of education and were eager to explore the platform that education has for them and therefore be able to stand firm on their own foundation. **(**Table 2)

Table 3: Distribution of farmers based on their annual income n=150

Variables	Index	Frequency
Annual income (Rs)	20,000-50,000	10
	50,001-80,000	29
	80,001-1,10,000	8
	1,10,001-1,40,000	4
	1,40,001-1,70,000	**46**
	1,70,001-2,00,000	3

Table 3 revealed that most of the respondents had strong economic background. The reason might be that in addition to their farm activities, they have other sources of income as well. The other sources would provide as a backup in case of failure of their crops.

Table 4: Distribution of farmers based on their operational land holding n=150

Variables	Index	Frequency
Operational land holding	Upto 2500 m^2	11
	2501-5000m^2	24
	5001-7500m^2	20
	7501-15000m^2	30

It was observed that majority of the respondents had land holding size of 7501-15000m^2.Therefore it may be concluded that most of the farmers land holding are more than average farmers**. (**Table 4)

Table 5: Distribution of farmers based on their innovative proneness n=150

Variables	Index	Frequency
Innovation proneness	High (index value 0-25)	4
	Medium (index value 26-50)	**70**
	Semi-medium (index value 51-75)	26
	Low (index value 76-150)	0

The table 5 revealed that majority of the respondents (70%) had medium level of innovative proneness followed by 26 per cent that had semi-medium level and 4 per cent of the respondents had high level of innovative proneness. It implies that most of the respondents had certain level of innovation proneness which in turn made them ready to adopt new ideas and techniques in order to upgrade their economic status. Medium level of innovative proneness would provide a wider space for the farmers to look for opportunities that might be available for them**.**

Table 6 Distribution of farmers based on their economic motivation n=150

Variables	Index	Frequency
Economic motivation	High (index value 0-25)	12
	Medium (index value 26-50)	**88**
	Semi-medium (index value 51-75)	0
	Low (index value 76-150)	0

Table 6 shows that majority of farmers (88%) had medium level of economic motivation and 12 per cent had high level of economic motivation. Further it is observed that there were no farmers in low and semi-medium category. Medium level of economic motivation might have helped to gain more information related to production and marketing of rabi vegetables and also other promising activities which would help them to gain more benefits.

Table 7: Distribution of farmers based on their risk orientation n=150

Variables	Index	Frequency
Risk orientation	High (index value 0-25)	17
	Medium (index value 26-50)	**83**
	Semi-medium (index value 51-75)	0
	Low (index value 76-150)	0

It is evident that majority (83%) of the farmers had medium level of risk orientation and 17 per cent had high level of risk orientation. There were no farmers in semi-medium and low category of risk orientation. It can be inferred that most of them were involved in risk taking although majority took moderate risks. This may be due to the fact that respondents do not prefer situations and commitments where the chance of desired outcome is unknown (Table 7).

Table 8: Distribution of farmers based on their mass media exposure n=150

Variables	Index	Frequency
Mass media exposure	High (index value 0-25)	11
	Medium (index value 26-50)	**55**
	Semi-medium (index value 51-75)	25
	Low (index value 76-150)	9

From table 8,it can be inferred that majority of farmers had mass-media exposure satisfactorily as farm information sources. The reason is in today's complex society which is moving fast towards change, everyone is eager to know what is happening in their surroundings. Mass media plays a key role in modern society in transferring of new ideas and practices to the rural masses, particularly to the farmers.

Table.9: Co-efficient of correlation (r) between independents variables and adoption of rabi vegetable crops

Variables	r-value
Age(X_1)	-0.278*
Educational status(X_2)	0.240*
Annual income(x_3)	0.215*****
Operational land holding(X_4)	-0.375**
Innovation proneness(X_6)	0.227*
Economic motivation(X_7)	0.403**
Risk orientation(X_{10})	-0.218*
Mass-media exposure(X_{12})	0.197*

** indicates 1% level of significance
* indicates 5% level of significance

DISCUSSION:

Table 9 shows that the association of the adoption of the Rabi vegetables by the farmers was studied in relation to 12 independent variables with the help coefficient of correlation. It was found that education; annual income; use of mass media; economic motivation and innovation proneness were positively correlated and significant whereas age; operational land holding and risk orientation were negatively and significantly correlated with adoption of rabi vegetable crops.

Education was found to be positive and significantly correlated with adoption of rabi vegetables by the farmers. Education simmers the process of cognitive changes, motivational changes and motor change in a positive direction and helps people to move for a wider and diverse exposure to farm enterprise and farm operation and consequently build of meticulous observation of yield decline or change. Here education has been recorded to be positively and significantly correlated to adoption of organic farming. The operational link can be like that education provides a pseudo urbanite disposition and utilitarian role in increasing the organic farming experience by adapting modern technology being supported by annual income and availability of irrigation facilities.

Annual income was also found to be positively correlated with adoption of rabi vegetables by the farmers. Annual income refers to total amount of cash received in year by the farmers from various sources like agriculture, animal husbandry, fisheries etc. High annual income serves as a motive to move and undertake something different new such as rabi vegetable crops instead of leaving land barren. Since rabi vegetable crops are short duration, it helps to provide additional income to farmers. Therefore it was found that annual income serve as motivation to farmer to adopt rabi vegetable crop cultivation.

Use of mass media was found to be positively correlated with adoption of rabi vegetables by the farmers. When farmers have more mass media exposure they have more access to information related to various kinds of farming such as input facilities and marketing information and other various information relating to crop production. Mass media exposure also motivate farmer to interact with different innovative ideas and ultimately influence to adopt new venture.

Economic motivation was also found to be positively correlated with adoption of rabi vegetables by the farmers. Farmers who are presently practicing vegetable cultivation were describing various reasons such as additional cash from vegetable crops, short duration in nature, varieties of vegetable crops can be grown in one land and demand of vegetable crops are more as compared to rice. This implies that with increase in income from rabi vegetables, the rate of adoption also increases. This may be due to the fact that rabi vegetables have enabled the farmers to fetch better price than vegetables of other season which therefore made them more motivated in adopting it.

Innovative proneness implies one being relatively more venturesome and ready to adopt new ideas or technologies relatively earlier than others. Thus, it was found that with the increase in innovative proneness of the farmers there was an increase in adoption of rabi vegetables. This may be due to the willingness of the farmers to try and adopt new things and take responsibilities for the success or failure of the new venture. It was found that young aged farmers were more innovative and receptive as compared with old aged farmers because younger farmers had more mass media exposure and various farm literatures.

Age of the respondents were significant but negatively correlated with adoption of rabi vegetable crops. This implies that farmers of younger age were more likely to adopt rabi vegetables where as older age farmers are rather stick with only cultivation of rice and other cereal crops. This may be due to more willingness, innovativeness and quick learning ability of the younger aged farmers than the older farmers who are slow in catching up ideas with the younger farmers. Operational land holding was found to be significant and negatively correlated with the adoption of rabi vegetables by the farmers. This implies that farmers with smaller operational land holding were more likely to adopt rabi vegetables. Vegetables when grown in a smaller scale are less laborious and easier to manage which in turn yield quality produce. Therefore, farmers with smaller operational land holding were more adoptive than farmers with larger operational land holding. Risk orientation was also found to be significant and negatively correlated with the adoption of rabi vegetables by the farmers. Cultivating rabi vegetables involve certain risks such as unavailability of markets, irrigation, and high cost of inputs which act as barriers for its adoption. Therefore it implies that farmers with low risk orientation were more likely to adopt rabi vegetable crops. But Samantaray(2009) has confirmed that lack of proper follow up service, lack of location specific recommendations, lack of community awareness and lack of effective supervision were the factors influencing adoption rabi vegetable crops by the farmers and Oladele (2005) mentioned various parameters that have been influencing the adoption behavior of farmers who adopt the technology were demographic variables, technology characteristics, information source, knowledge, awareness, attitudes and group influence affect adoption behavior of the farmers.

CONCLUSION AND RECOMMENDATIONS

The study was conducted to identify important factors responsible adoption of rabi vegetable crops by the farmers of Bishnupur district, Manipur. In this study it was found that variables like educational status, annual income, use of mass media, economic motivation and innovative proneness were positively correlated and significant whereas age, operational land holding and risk orientation was negatively and significantly correlated with adoption of rabi vegetable crops. It is suggested that the various Government organization and institution should come forward with awareness programme exclusively for vegetable growers. And efforts should be made to diffused information on prospects of adoption behaviour among vegetable growers for better adoption and production of vegetables.

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