

RELATIONSHIP BETWEEN EXTENT OF ADOPTION OF JUTE HYV AND SOCIO-PSYCHOLOGICAL CHARACTERISTICS OF FARMERS

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ABSTRACT

The Assam Agricultural University, in collaboration with RARS, Shillongani, has introduced high yielding varieties (HYV) of jute to farmers to double their incomes. So, this study was carried out to ascertain the relationship between extent of adoption of High Yielding jute Varieties and their associated practices with Social Economic and Psychological characteristics of the farmers of Nagaon District. Thus, Nagaon sub-division was purposively selected for the study with a dependent variable 'Extent of Adoption' and 16 independent variables categorized in different factors viz socio-economic, personal, communication, and socio-psychological etc. 120 farmers were selected for the study. Interviews were conducted using a pretested schedule, and data was analysed by Chi-Square test, Karl Pearson's Co-efficient of Correlation and Multiple Regression Analysis. The study revealed that operational land holding, area under jute crop, annual income, extension contact, economic motivation and knowledge level on HYV jute cultivation were found positive and significant relationship with the extent of adoption and accordingly educational level, family type, farming experience, farm machinery and equipment's, training exposure of the farmers had significant association with extent of adoption of HYV jute varieties. Together, the 16 variables contributed 54.20 % to variation in extent of adoption of high yielding jute varieties.

Keywords : adoption, high yielding varieties, psychological, package of practices, socio-economic

INTRODUCTION

Jute is identified as the golden fibre of India. It is the commercially available natural fibre which is utilized mostly as packaging material, carpets, curtains, garments, agricultural textiles, handicrafts, soft luggage, jute bags, purses, furnishing material such as lamp shades, rope making etc. Jute has been used in both textile and non-textile sector in large and small industries. Apart from the industry sector small and marginal farmers are also dominating the Indian jute markets with their extremely limited resources (Biswas, 2012). Jute is mostly cultivated in the south Gangetic basin of north-eastern part of Uttar Pradesh, North Bihar, West Bengal and in the Brahmaputra basin of Assam extending up to Tripura and coastal districts of Odisha, so in the scenario of major jute cultivating states in Indian includes West Bengal, Bihar, Assam, Orissa, Meghalaya, Nagaland, Tripura, Jharkhand and Uttar Pradesh. India exports almost two lakh tons of jute goods valued at around Rs 2000 crore and over 40 lakh farmers and nearby four lakh mill workers depend on the jute industry for their livelihood in India. Presently, the normal area under jute in the country is around 7.96 lakh ha with a production of about 102.85 lakh bales (Biswas, 2012). India accounts for an estimated 70 per cent of the world's total production of jute products, over 90 mills are

currently functional-67 in west Bengal alone, the rest are in Bihar, Assam, Tripura, Uttar Pradesh and Andhra Pradesh. West Bengal contributes the maximum area to the tune of about 74.7 per cent and 81.6 per cent of total national area and production, respectively (Biswas, 2012). In the case of jute area Bihar shared about 16.1 per cent followed by Assam 7.7 per cent. As regards Jute production, the share of Bihar was 11.4 per cent and that of Assam was 6.2 per cent. The other states contributed less in area and production fields. (Biswas, 2012)

In case of Assam the economy is predominantly agrarian. More than 70 per cent of the population of the state derives their means of livelihood mainly from Agriculture. In Assam, farming is mainly traditional and cropping pattern is dominated by paddy covering 80 per cent of the total cropped area. Jute is an important cash crop occupying 2.8 percent of total cropped area. In Assam jute is grown in 23 districts, however in most of the districts the areas are very low. In 2009, area under jute was more than 10,000 ha in only one district viz. Dhubri (12,752 ha) while the area varied from 5,000 to 10,000 ha in other 3 districts viz. Nagaon (9,955 ha), Barpeta (7,182 ha) and Udalguri (5,705 ha) (Anonymous, 2009). This shows that the area under jute in Assam is concerned in the lower and central region of the

Brahmaputra valley. The actual share of jute area in Assam is only 7.6 per cent as compared to all India jute area. Because of lower productivity, the share of production is only 6.1 per cent of the all India production. Though the share of jute area is only 1.54 per cent to the gross cropped area of the state (Anonymous, 2009), it plays a prominent role in the state's economy by generating employment, earning foreign exchange, solving many of the socio-economic problem, etc. So, this study aims to reveal the situation of jute growing farmers in a selected major jute growing district of Assam, Nagaon in terms of relationship between extent of adoption of HYV of jute with their profile characteristics.

OBJECTIVE

To study the relationship between extent of adoption of high yielding jute varieties and their associated practices with socio-economic, personal, psychological and communication characteristics of the farmers.

METHODOLOGY

Among all the major jute growing districts of Assam, Nagaon district has been selected as per the high productivity rate of jute in the district. In this regard efforts have been made by RARS Shillongoni, Nagaon and Assam Agricultural University to popularize AAU evolved varieties besides other University/Research Centre recommended varieties of jute developed elsewhere. So, Nagaon Sub-division was selected purposively for the study and two ADO circles were selected randomly from the five most jute growing circles of Nagaon district and accordingly four AEA elekas were selected randomly. From each randomly selected A.E.A elekas, a list of eight HYV jute growing villages were selected and accordingly from eight randomly selected villages, a list of jute growers in the last season was prepared. From each village, 15 farmers were selected randomly and thus, the total numbers of respondents from 8 villages were 120.

The extent of adoption was considered as the dependent variable and other variables were considered as independent variable under socio-economic, personal, psychological and communication characteristics of the farmers like age, family size, size of operational land holding, area under jute cultivation, annual income, extension contact, mass media exposure, social participation, risk preference, economic motivation, knowledge on jute, educational level, farming experience, type of family, farm power and training exposure etc.

Information's were collected by interviewing the respondents personally with the help of a well-structured pre-tested interview schedule. Three statistical tests namely Chi-square test, correlation coefficient analysis, and multiple

regression analysis was done to see the association between extent of adoption of high yielding varieties jute with the above-mentioned independent variables.

RESULTS AND DISCUSSIONS

From the analysis of Correlation coefficient done in the Table 1 reveals that out of personal, socio-economic, psychological and communication characteristics of the farmers, operational land holding, area under jute cultivation, annual income, extension contact, economic motivation and knowledge level on HYV were positively and significantly correlated with the extent of adoption of HYV's of Jute, which reflects the respondents having higher degree of these variables have positive attitude towards adoption of HYV jute varieties. On the other hand, age, family type, family size, mass media exposure, risk preference and social participation had non-significant correlation with extent of adoption of high yielding varieties of jute.

Table 1: Correlation coefficient between independent variables and overall extent of adoption of high yielding varieties of jute and cultivation practices (n=120)

Sr. No.	Independent variables	'r' value	't' value
X ₁	Age	-0.056 ^{NS}	0.61
X ₂	Family size	0.053 ^{NS}	0.577
X ₃	Size of operational land holding	0.323**	3.70
X ₄	Area under jute cultivation	0.1902*	2.10
X ₅	Annual income	0.24**	2.68
X ₆	Extension contact	0.2013*	2.23
X ₇	Mass media exposure	-0.094 ^{NS}	1.02
X ₈	Risk preference	-0.0215 ^{NS}	0.23
X ₉	Social participation	-0.0652 ^{NS}	0.710
X ₁₀	Economic motivation	0.1976*	2.18
X ₁₁	Knowledge level on HYV jute	0.1808*	1.996

** denotes significant at 0.01 level of probability

* denotes significant at 0.05 level of probability

NS= Non-significant

From the Chi Square test, it was found that educational level ($\chi^2 = 24.68$), farming experience ($\chi^2 = 64.21$), family type ($\chi^2 = 13.05$), farm power ($\chi^2 = 12.89$) and training exposure ($\chi^2 = 6.18$) of the farmers had significant association with extent of adoption of high yielding varieties (Table 2). This means the respondents having higher degree of these variables are positive while adopting HYV jute varieties. The findings of this study were supported by Yasmin (1996), Acharya (2005), Hussain (2017) and Saikia (2017).

Table 2 : Association of selected socio-personal characteristics of the respondents with overall extent of adoption of high yielding varieties of jute and their cultivation practices (n=120)

Sr. No.	Independent variable	Chi test
1	Education level	24.68*
2	Farming experience	64.21**
3	Family type	13.05*
4	Farm power	12.89*
5	Training exposure	6.18*

* denotes significant at 0.05 level of probability

** denotes significant at 0.01 level of probability

NS= Non-significant

Further multiple regression analysis was done to determine the contribution of sixteen (16) variables in predicting extent of adoption of high yielding varieties of jute. Since educational level, family type, farming experience, farm machinery and equipment's and social participation are

dummy variables so it takes the value 0 or 1 to indicate the absence or presence of some categorical effect. Here, for educational level illiterate is valued 0 and for other categories viz. (literate without formal schooling, primary school, middle school, high school, higher secondary, diploma/certificate course, graduate and above) was valued 1 likewise for type of family nuclear is valued 1 and joint is valued 0 and for rest of the variables farming experience, farm machinery and equipment, social participation similar procedure were followed by Hussain (2017), Saikia (2017), Patrick et al., (2022), Bariya et al., (2022), Gajera et al., (2022).

The data presented in the Table 3 reveals that out of sixteen (16) variables, the regression coefficient of size of land holding ($b = 0.2993$), area under jute ($b = 0.2332$), annual income ($b = 1.1351$), Extension contact ($b = 0.3580$), economic motivation ($b = 0.1933$) and knowledge level on HYV jute cultivation ($b = 0.1940$) were found to be significant. These six variables could, therefore, be termed as good predictors of extent of adoption of high-yielding varieties of jute and their associated practices.

Table 3: Influence of the independent variables to the dependent variable

(n=120)

Sr. No.	Variables	b value	't' value	R ²
X ₁	Age	-0.00162	-0.0888	
X ₂	Educational level	0.1062	0.2091	
X ₃	Farming experience	-0.011	0.2064	
X ₄	Family size	0.0037	0.0558	
X ₅	Type of family	-0.0680	-0.1403	
X ₆	Size of operational land holding	0.2993*	2.4077	
X ₇	Area under jute	0.2332*	2.0607	
X ₈	Farm power	0.2422	0.2096	.542
X ₉	Training exposure	-0.1161	-0.2957	
X ₁₀	Annual income	1.1351**	2.9125	
X ₁₁	Extension contact	0.3580**	3.1899	
X ₁₂	Mass media exposure	-0.1490	-2.064	
X ₁₃	Risk preference	-0.05229	-0.7171	
X ₁₄	Social participation	-0.0661	-0.3736	
X ₁₅	Economic motivation	0.1933*	2.194	
X ₁₆	Knowledge level on HYV jute	0.1940*	2.198	

*Significant at 0.05 level probability (b= estimated regression co-efficient)

**Significant at 0.01 level probability

The co-efficient of multiple determinations (R^2) with sixteen independent variables was found to be 0.542. which indicated that the variables jointly contributed 54.20 per cent towards variation in extent of adoption of high-yielding varieties of jute.

CONCLUSION

The relationship of Socio-Economic and Psychological Characteristics of the Farmers with the extent of adoption of HYV Jute varieties and their associated

practices of Nagaon district revealed that the land holding of farmers, area under jute, annual income, extension contact, economic motivation and knowledge level on HYV jute cultivation were positively significant and highly correlated with the Extent of Adoption of HYV jute varieties. However, educational level, farming experience, family type, farm power and training exposure had significant association with extent of adoption of high-yielding varieties. The co-efficient of multiple determinations ($R^2 = 0.542$) explain together 54.2 per cent to the total variation on the extent of adoption of high

yielding varieties of jute. So, there is a need for the extension agencies and other concerned departments to positively manipulate these crucial factors in order to bring about desirable changes in the adoption of high yielding varieties of jute. Moreover, the research results will not only induce confidence to jute farmers to solve the field problems but also be useful to the planners, administrators, and executors of agricultural production programmes.

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CONFLICT OF INTEREST

This is to declare that there is “No conflict of interest” among researcher.

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