Adoption of Homestead Technologies of Rajendra Agricultural University by Rural Women of Bihar

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ABSTRACT

Adoption is a decision making process which is influenced by many socio-personal, economic, communicational, psychological and situational variables. Adoption of technologies in rural areas is affected by many factors like farming situation, resource availability, needs and aspirations of the rural women having different socio-economic and cultural backgrounds, etc. Hence an attempt was made in this study to find out the factors which affect adoption behaviour of rural women about homestead technologies of RAU. The study was conducted on 225 rural women who were exposed to the nine selected homestead technologies from three districts of Bihar viz. Samastipur, Muzaffarpur and Vaishali. The independent variables occupation, family income, information source utilization, economic motivation, innovativeness, rural customs, market intelligence, input availability and institutional support of the respondents were positively and significantly associated whereas age was negatively associated with the extent of adoption of homestead technologies. The variables occupation, information source utilization and rural customs were positively and significantly contributing to the extent of adoption of homestead technologies by the respondents.

***Key words:** Adoption; Socio-personal; Homestead technologies;*

The agricultural extension strategy in developing countries such as India is being made consistent with the fast changing socio-economic conditions doing away with gender disparities and reducing the gap between information haves and have-nots. Historically, however, the Indian woman's access to new farm and home research and innovation and to improved technological inputs has been very limited, despite the fact that women constitute about 80% of the agricultural workforce in the country. The research-extension system should therefore include finding out the right communication tool that may help the rural women in the adoption of agricultural technologies. Adoption here refers to the 'use' i.e. not only acceptance for improved technology or practices in principle but its actual application in farm and household life.

It is a common observation that rural women do not adopt all the recommended technology. Adoption of technology at individual rural woman's level is believed to be the consequence of extent to which various factors responsible for adoption are gainfully exploited because when individual gets exposed to the existence of a technology, a number of factors directly or indirectly impinge upon the pace as well as the level and extent of adoption. With this in mind, the present study was conducted with the following specific objectives- relationship between independent variables and adoption behaviour of rural women and relative contribution of independent variables towards adoption of homestead technologies by the respondents.

METHODOLOGY

The study was conducted on a sample of 225 rural women from three randomly selected districts of Bihar viz. Samastipur, Muzaffarpur and Vaishali. One block was randomly selected from each of the districts and three villages were randomly selected from each of the block. Thus 25 respondents who were exposed to all the nine selected homestead technologies of RAU viz. fruit & vegetable preservation, stitching & embroidery, value addition to garments, arts & craft making, value added products from cereals & pulses, mushroom

production, value added mushroom products, vermicompost technology and apiculture constituted the sample for study. In order to assess the extent of relationship between the selected dependent variable and the independent variables, the data was put to correlation analysis. The values of correlation coefficient (r) were computed and tested for their statistical significance. Multiple linear regressions were carried out to find out the contribution of independent variables in predicting the adoption behaviour of the respondents. The eighteen independent variables were fitted in the regression equation to predict their potency towards the selected dependent variable along with coefficient of determination (R^2) and F-value.

RESULTS AND DISCUSSION

The data of Table 1 revealed that age of the respondents was negatively and significantly associated with the extent of adoption of homestead technologies at 5 per cent level of significance. The variables family income, economic motivation, rural customs and market intelligence were positively related to the extent of adoption at 5 per cent level of significance. The variables occupation, information source utilization, innovativeness, input availability and institutional support were positively and highly significant at 1 per cent level of significance. Rest of the eight independent variables did not had significant association with extent of adoption of homestead technologies

From the data of Table 1 it is inferred that respondents who were young had higher extent of adoption of homestead technologies than their older counterparts. Young rural women were more encouraged to adopt them since they were full of energy and enthusiasm as compared to middle and old aged respondents who might be skeptical. Respondents whose family income was more had higher level of economic motivation and where rural customs were flexible and had gender unbiasness, they had higher level of adoption of homestead technologies than it's contrary.

The variables occupation, information source utilization, innovativeness, input availability and institutional support were positively and highly correlated with the extent of adoption of homestead technologies as is evident from their correlation coefficient values (r). It signifies that respondents who practised more no. of occupations, had more information source utilization, were innovativeness prone, had better and

Table 1. Coefficient of correlation (r) of independents variables with the dependent variable

Independents Variables	(r)
Age (X_1)	-0.15923*
Education (X_2)	-0.00264[NS]
Family size (X_3)	0.09359[NS]
Occupation (X_4)	0.18068**
Family income (X_5)	0.14038*
Family support (X_6)	0.01461[NS]
Information source utilization (X_7)	0.28388**
Economic motivation(X_8)	0.15003*
Scientific orientation (X_9)	0.02813[NS]
Innovativeness (X_{10})	0.31543**
Perceived attributes of Homestead technologies (X_{11})	0.04555[NS]
Value orientation (X_{12})	0.08005[NS]
Risk orientation (X_{13})	0.03980[NS]
Input availability (X_{14})	0.17458**
Rural customs (X_{15})	0.14251*
Market intelligence (X_{16})	0.13102*
Institutional support (X_{17})	0.25118**
Socio-capital aspects (X_{18})	0.01307[NS]

Table 2. Relative contribution of independent variables towards extent of adoption of Homestead technologies by the respondents

Independent variables	b values	SE	t-value
Age	0.0833	0.9162	1.058[NS]
Education	0.0056	0.3055	0.060[NS]
Family size	0.0928	0.6006	1.350[NS]
Occupation	0.2017	0.4348	2.626**
Family income	-0.1178	0.9331	1.495[NS]
Family support	-0.0363	0.1168	0.443[NS]
Info. source utilization	0.2839	0.0391	2.530**
Economic motivation	-0.0331	0.3184	0.456[NS]
Scientific orientation	0.0925	0.2839	0.878[NS]
Innovativeness	-0.1032	0.2029	0.973[NS]
Perceived attributes of Homestead technologies	-0.1358	0.1222	1.576[NS]
Value orientation	0.0592	0.2729	0.641[NS]
Risk orientation	0.0305	0.1410	0.315[NS]
Input availability	0.1338	0.1357	1.765[NS]
Rural customs	0.2041	0.1249	2.527*
Market intelligence	-0.0126	0.2045	0.146[NS]
Institutional support	-0.0756	0.2570	1.107[NS]
Socio-capital aspects	-0.0323	0.1641	0.426[NS]

R^2= 0.3725; F Value= 5.421; * = Significant at 5% level of significance; ** = Significant at 1% level of significance
NS – Non-significant

easy accessibility to inputs and resources and had more institutional support, they had higher extent of adoption of homestead technologies and vice-versa.

The study of *Sreenivasulu. (2011)* also reported that age there was negative but significant relation while innovativeness was positively correlated with adoption. However, he reported that there was negative but non-significant relationship between market intelligence and adoption of cotton ICM practices. *Jondhale et al. (2000)* reported a positive and significant relation between economic motivation and adoption of technologies by the respondents. *Saxena and Singh (2000)* observed that age and mass media exposure had positive relationship with the adoption of organic farming practices. *Gattu (2001)* revealed that annual income of the respondents was positively and significantly associated with the adoption of technologies. *Veerendranath (2000)* found that occupation of the respondents had positive and significant relationship with adoption.

Extent of adoption of homestead technologies by the respondents: To predict adoption behaviour of the respondents, eighteen variables were fitted into regression equation to explain variability in adoption of homestead technologies. The data was presented in Table 2. This analysis explained 37.25 per cent variability of the dependent variable. It is clear from the table that rural customs was positively significant at 5 per cent level of significance, while occupation and information source utilization were positively and highly significant at 1 per cent level of significance. The remaining fifteen variables could not emerge as significant contributors

to explain the adoption behaviour of the respondents. The F- calculated value (5.421) also stood out to be significant which supports that R^2 is significant. It can be inferred from this result that out of the eighteen selected independent variables, only three of them were significantly contributing towards extent of adoption of homestead technologies of RAU by rural women. It was similar to the studies of *Saxena and Singh (2000)* who observed that mass media exposure had positive relationship with the adoption of organic farming practices and *Veerendranath (2000)* who found that occupation of the respondents had positive and significant relationship with adoption.

CONCLUSION

This study was intended to draw the attention of the Research- Extension system to the need to be more gender sensitive in designing research agenda and extension programmes that would meet the needs of rural women in adopting technologies. Policy-makers and government are also to be more sensitive in the formulation of policies that would favour women farmers. However, the research-extension system should be made to address the problems of inappropriateness and unavailability of messages and technologies for rural women. This could be achieved by identifying the information and technology needs of women farmers, their constraints and objectives through baseline socio-economic and agricultural surveys desegregated by gender and feed-back from extension. This assumedly would go a long way in ensuring for adoption of farm technologies among women farmers.

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