Original Research Article

An Analysis of Educational and Institutional Security of Farmers: Evidence from Bundelkhand

ABSTRACT

Education plays an important role in the modernized farm environment rather than the traditional one. The ability to deal with the disequilibria caused by the adoption of modern technology is largely a function of farmer's education. An index was constructed to measure the educational and institutional security of dairy farmers based on extensive review of literature and consultation with the extension experts. Data were gathered through personal interview method with the help of the structured interview schedule. After the collection of data, the results were analyzed by using some statistical tools like percentage analysis, correlation and regression. The majority (>75%) of the respondents among medium farmers had a low to medium level of institutional security, whereas among large farmers the majority (53.34%) of the respondents had a high level of institutional security.Education, land holding, annual income and mass media exposure had positive and highly significant relationship with educational security at the 1 percent level of significance. The beta coefficient and their corresponding value indicate varying level of contribution towards dependent variable under the study. When the data was put into a regression analysis for asserting the R^2 value, then it was found that they were cumulatively responsible for accounting 53.90 percent variability towards dependent variable i.e. educational security. The fitted regression model was observed to be significant at 1 percent level of significance. The variables education, social participation and annual income were found to be highly significant ($p<0.01$) while, experience in dairying, land holding and extension contact was found to be significant ($p<0.05$).

Keywords: Livelihood; Educational security; Bundelkhand; Social participation; Dairying

1. INTRODUCTION

The possible reasons for the unconvincing empirical results of the impact of education on agricultural productivity occur mainly due to four issues—(i) how to measure the variables “education”, (ii) whose learning needs to be taken into account, (iii) where it matters, and (iv) whom it matters too. The earlier two issues are related to the construction of the variable “education” used in experiential models. The latter two issues are concerned with the importance of formal education in varying farm environments and also to different farmers in the identical environment. The first two issues are discussed at length and breadth [1,2]. We find different studies taking the education of diverse persons like education of the head of the farming household, average education of the household, maximum education of any member of the household and the lowest level of education of any household member above 14 years of age.

These two issues are well taken up in several studies [3-5] incorporated more than one measure of education in the empirical model that covers both household head’s education as well as the education level of other members. Again, in those studies, education is defined as years of schooling or a dummy variable showing a minimum threshold level. The third important reason is ascribed to the wrong assumption of a homogeneous farming environment that all farmers operate in. Education plays an important role in modernized farm environment rather than the traditional one [6].. The ability to deal with the disequilibria caused by the adoption of modern technology is largely a function of farmer’s education. Thus, more educated farmers adjust better and quicker than the less educated or illiterate farmers [5,7].

Varying demands of the customer with high value produces [8] market competitions, institutional reforms and policies, and commercialization in agriculture measures has not been adequate to cover the problems of the marginal and small farmers. With the course of changing time, marginal and small farmers face new challenges on integration of value chain, competitive market, market unpredictability and inefficiency, risk and vulnerability, adoption of climate change, lack of collective action, poor adoption towards commercializing and enterprising agriculture, post-harvest losses, and inappropriate supply chain network [9-12]. Moreover, the farmer institutions during pre and post-independence have been evolved as institutional innovation for farmers, which have significantly contributed to the farm sector. However, these institutions continue with certain challenges in the emerging new dimensions.

2. METHODOLOGY

The research was conducted to assess the educational and institutional status of farm households. The ex-post facto research design of social research was used for the present study.The study was conducted purposively in Bundelkhand region, which comprises of Uttar Pradesh (7 districts) and Madhya Pradesh (6 districts). Two districts from each state viz. Lalitpur and Banda from Uttar Pradesh, whereas, Datia and Damoh from Madhya Pradesh were selected. Then, two blocks from each district were selected randomly. Two villages from each block were randomly selected.The selection of respondents is a crucial task, hence due care was taken while selecting the respondents. From each selected village a list of dairy farmers based on land holding was prepared and respondents were selected based on proportionate stratified random sampling method. From each village 20 dairy farmers were selected proportionately from the prepared list. Thus, a total of 320 dairy farmers was selected for the study. An index was constructed to measure Educational and Institutional Security of dairy farmers based on extensive review of literature and consultation with the extension experts. Data were gathered through personal interview method with the help of the structured interview schedule. The collected data were quantified and analyzed. Further, correlation test was used to calculate the r - value to know the relationship between Educational and Institutional Security and independent variables. Multiple regression was done to determine the extent of contribution of selected independent variables on Educational and Institutional Security.

3. RESULTS AND DISCUSSION

3.1 Educational security of the farmers

Table 1 shows that among the marginal farmers the majority (46.91%) of the respondents had low educational security, followed by medium and high health security i.e. 34.57 and 18.52 percent respectively. The majority of the respondents among small farmers had a medium level of educational security, i.e. 50 percent, followed by low and high educational security i.e. 33.78 and 16.22 percent respectively. Among semi-medium farmers around 90 percent of the respondents had low to medium level of educational security. The majority (43.86%) of the respondents among medium farmers had a medium level of educational security, whereas among large farmers the majority (56.67%) of the respondents had a high level of educational security.The above results reflect that majority of the households had very poor education status and they had limited access to higher education and educational infrastructure. Some of the private schools and colleges are established in the locality of the respondents, but lack of infrastructure and well trained staff in the schools and colleges are

some of the factors for poor education status and growth. There is a need to have more investments in education sector, mainly in rural areas.

Table 1: Distribution of respondents according to educational security (n=320)

Category of respondents	Category of educational security index	Frequency	Percentage (%)
Marginal (n= 81)	Low (<0.31)	38	46.91
	Medium (0.31 – 0.58)	28	34.57
	High (>0.58)	15	18.52
Small (n= 74)	Low (<0.31)	25	33.78
	Medium (0.31 – 0.58)	37	50.00
	High (>0.58)	12	16.22
Semi-medium (n=78)	Low (<0.31)	29	37.18
	Medium (0.31 – 0.58)	41	52.56
	High (>0.58)	8	10.26
Medium (n=57)	Low (<0.31)	12	21.05
	Medium (0.31 – 0.58)	25	43.86
	High (>0.58)	20	35.09
Large (n=30)	Low (<0.31)	5	16.67
	Medium (0.31 – 0.58)	8	26.66
	High (>0.58)	17	56.67

3.2Relationship between socio-economic characteristics and educational security

The relationship between the independent variables viz., age, education, experience in dairying, social participation, occupation, land holding, livestock holding, annual income, milk production, milk sale, mass media exposure and extension contact with educational security were analyze with coefficient of correlation (r) and results are represented in Table 2. It is clear from the table that education, land holding, annual income and mass media exposure had positive and highly significant relationship with educational security at 1 percent level of significance. It indicates that by increasing the values of the above factors, the value of educational security of the respondent's increases. Another factor like extension contact had positive and significant relationship with educational security at 5 percent level of

significance. This says that, when the extension contact increases the value of educational security associated with it also increases. Occupation had negative and non- significant relationship with educational security. However, variables such as age, experience in dairying, social participation, livestock holding, milk production and milk sale were not found to be correlated with educational security of the respondents.

Table 2: Correlation between independent variables and educational security (n=320)

Variables	Correlation coefficient (r)
Age	0.108^{NS}
Education	0.534**
Experience in dairying	0.078^{NS}
Social participation	0.094^{NS}
Occupation	-0.237^{NS}
Land holding	0.557**
Livestock holding	0.112^{NS}
Annual income	0.482**
Milk production	0.234^{NS}
Milk sale	0.108^{NS}
Mass media exposure	0.526**
Extension contact	0.348*

** Significant at 1% level of significance
* Significant at 5% level of significance
NS: Non significant

3.3 Regression between socio-economic characteristics and educational security

Table 3 depicts the results of regression analysis administrated to isolate the prediction potentialities and the amount of variability to be explained by the independent variables towards educational security. The beta coefficient and their corresponding value indicate varying level of contribution towards dependent variable under the study. When the data was put into a regression analysis for asserting the R^2 value, then it was found that they were cumulatively responsible for accounting 53.90 percent variability towards dependent variable i.e. educational security. The fitted regression model was observed to be significant at 1 percent level of significance. Further, the variables education, land holding, annual income

and mass media exposure were found to be highly significant (p<0.01) while, occupation and extension contact were found to be significant (p<0.05).

Table 3: Multiple regression between independent variables and educational security (n=320)

Variables	Regression coefficients (b) value	"t" value
Age	0.084	1.035^{NS}
Education	0.167	3.418**
Experience in dairying	-0.219	1.107^{NS}
Social participation	0.037	1.107^{NS}
Occupation	0.075	1.971*
Land holding	0.124	3.362**
Livestock holding	-0.096	1.025^{NS}
Annual income	0.149	5.584**
Milk production	-0.058	1.852^{NS}
Milk sale	0.004	0.872^{NS}
Mass media exposure	0.138	3.926**
Extension contact	0.071	2.427*
R^2= 0.539; F stat=26.526**		

** Significant at 1% level of significance
* Significant at 5% level of significance
NS: Non significant

3.4 Institutional security of the farmers

A perusal ofTable 4 revealed that the majority (>90%) of the respondents among marginal farmers had low to medium institutional security, whereas only 9.88 percent of the respondents had a high level of institutional security. Among the small farmers, more than half of the respondents had a medium level of institutional security. The majority (60.25%) of the respondents among semi-medium farmers had a low level of institutional security, followed by medium and high institutional security i.e. 26.93 and 12.82 percent respectively. The majority (>75%) of the respondents among medium farmers had a low to medium level of institutional security, whereas among large farmers the majority (53.34%) of the respondents had a high level of institutional security.The above results show that the majority of the respondents had a low to medium institutional security indicate that there is a

need to develop more institutional infrastructure and to improve the access of respondents to different institutions present in their locality to improve the overall institutional security of the respondents.

Table 4: Distribution of respondents according to institutional security(n=320)

Category of respondents	Category of institutional security index	Frequency	Percentage (%)
Marginal (n= 81)	Low (<0.28)	36	44.45
	Medium (0.28 – 0.43)	37	45.67
	High (>0.43)	8	9.88
Small (n= 74)	Low (<0.28)	29	39.18
	Medium (0.28 – 0.43)	38	51.36
	High (>0.43)	7	9.46
Semi-medium (n=78)	Low (<0.28)	47	60.25
	Medium (0.28 – 0.43)	21	26.93
	High (>0.43)	10	12.82
Medium (n=57)	Low (<0.28)	18	31.58
	Medium (0.28 – 0.43)	26	45.61
	High (>0.43)	13	22.81
Large (n=30)	Low (<0.28)	9	30.00
	Medium (0.28 – 0.43)	5	16.66
	High (>0.43)	16	53.34

3.5 Relationship between socio-economic characteristics and institutional security

A perusal of the Table 5 revealed that education, social participation and extension contact had positive and highly significant relationship with institutional security at 1 percent level of significance. That means, when the value of above variables increases than the value of institutional security associated with it also increases. The other variables like livestock holding and mass media exposure had a positive and significant relationship with institutional security at 5 percent level of significance. The variables such as age, experience in dairying, occupation, land holding, annual income, milk production and milk sale had positive and non- significant relationship with the institutional security.

Table 5: Correlation between independent variables and institutional security (n=320)

Variables	Correlation coefficient (r)
Age	0.118^{NS}
Education	0.492**
Experience in dairying	0.128^{NS}
Social participation	0.524**
Occupation	0.118^{NS}
Land holding	0.216^{NS}
Livestock holding	0.345*
Annual income	0.162^{NS}
Milk production	0.108^{NS}
Milk sale	0.083^{NS}
Mass media exposure	0.351*
Extension contact	0.447**

** Significant at 1% level of significance
* Significant at 5% level of significance
NS: Non significant

3.6 Regression between socio-economic characteristics and institutional security

Table 6 depicts the results of regression analysis administrated to isolate the prediction potentialities and the amount of variability to be explained by the independent variables towards institutional security. The beta coefficient and their corresponding value indicate varying level of contribution towards dependent variable under the study. When the data was put into a regression analysis for asserting the R^2 value, then it was found that they were cumulatively responsible for accounting 62.30 percent variability towards dependent variable i.e. institutional security. The fitted regression model was observed to be significant at 1 percent level of significance. Further, the variables education, social participation and annual income were found to be highly significant ($p<0.01$) while, experience in dairying, land holding and extension contact was found to be significant ($p<0.05$).

Table 6: Multiple regression between independent variables and institutional security (n=320)

Variables	Regression coefficients (b) value	"t" value

Age	-0.015	1.207^{NS}
Education	0.034	4.529**
Experience in dairying	0.128	2.318*
Social participation	0.156	3.237**
Occupation	0.003	0.894^{NS}
Land holding	-0.019	2.491*
Livestock holding	0.027	1.256^{NS}
Annual income	0.106	2.968**
Milk production	-0.029	1.052^{NS}
Milk sale	0.004	1.583^{NS}
Mass media exposure	0.016	0.569^{NS}
Extension contact	-0.84	2.362*
R^2= 0.623; F stat=21.281**		

** Significant at 1% level of significance
* Significant at 5% level of significance
NS: Non significant

4. CONCLUSION

The present study envisaged that awareness regarding educational institutes in their area and the importance of education to their children is found to be very little. It can be concluded that the majority of the respondents had a low to medium institutional security indicate that there is a need to develop more institutional infrastructure and to improve the access of respondents to different institutions present in their locality to improve the overall institutional security of the respondents. The majority of the households had very poor education status and they had limited access to higher education and educational infrastructure. Some of the private schools and colleges are established in the locality of the respondents, but lack of infrastructure and well trained staff in the schools and colleges are some of the factors for poor education status and growth. There is a need to have more investments in education sector, mainly in rural areas.

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