

Adoption of Organic Farming Practices in Haryana

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ABSTRACT:

Indian economy is basically rural in nature. In our country majority of people involves in agricultural activities. Organic farming is the burning topic in all over the world. Organic practices are another type of cultivation which prohibits the use of chemical fertilizers, synthetic pesticides and growth regulator for plants. The objective of the study was to evaluate socio-economic characteristics to identify basic issues that led farmers to adopt organic farming system. The study based on primary as well as secondary data. Information regarding organic farming got from HAFED, APEDA and review of literature. Primary data was collected with the help of pre-tested questionnaire by personal visits made to selected 50 farmers (25 O.F. and 25 Non-O.F.) from each district on the basis of availability. The study found that age and size of family has negative but significant impact on adoption which showed that the lower age group and small family size farmers were more interested and adopts the organic farming. So, age, education and income have played an important role to adopt organic farming practices.

Key words: Organic Farming, Non-Organic, Socio-Economic, Fertilizer.

INTRODUCTION:

Indian economy is agriculture dominated economy. The main occupation in rural India is agriculture from ancient time. Approximately 48.9 percent persons were involved in agriculture directly and indirectly in India.¹ Organic farming is done from ancient time in our country. In our country it is known by many names and done with different methods also like as – Rishi Krishi, Natural Farming, Natueco Farming, Homa Farming, Panchagavya Krishi ect. According to Food and Agriculture Organisation (FAO, 2008), “organic agriculture promotes ecological resilience, improved biodiversity, healthy management, off-farm and the surrounding environment, and

¹ Census of India, 2011.

building on community knowledge and strength”. The literature concluded that young age male with large size of landholding was willing towards non-organic practice. On the other hand labor supply and livestock holding had positive impact on adoption of organic system because both were important component for this farming system. The study recommended that cluster formation of organic farmers and training play an important role to motivate farmers to bring up organic farming². Organic farming adoption system was low. Farmer appreciate that adoption of organic farming system improve organic content in soil, decrease input cost and environmental friendly³. Mukherjee, B. (2017) aimed of the study was to make an overview on the Indian Organic Produce in global level. The paper revealed that India has the potential to exploit the rapidly increase demand of organic products at international as well as national level and achieved its export goal if the large part of not certified domestic market change in certified market and follow a definite production and marketing strategy. India should focal point is increase organic product developed market to meet the demand of quantity. Patidar S., and Patidar H. (2015) examined the “demographic characteristics, knowledge required for organic farming, sources of information on organic farming, attitude and perception of the farmers about the organic farming. The study revealed that there was a positive perception of organic farming with significant relationships between age, educational background, farm size, benefits of organic farming, and social factors”.

OBJECTIVE: To evaluate socio-economic characteristics to identify basic issues that led farmers to adopt organic and non-organic farming system.

MEHTODOLOGY:

Study area and sampling:

In the present study, purposive sampling has been used. On the basis of secondary data I have select six district of Haryana state where highest no. of organic farmer doing cultivation. Name of selected districts are - Jind, Kaithal, Kurukshetra, Jhajjar, Gurugram and Palwal. Information regarding O.F got from HAFED, APEDA and review of literature. I have selected 50 farmers (25 O.F. and 25 Non-O.F.) from each district on the basis of availability. I have collected primary

² Singh M., etal, (2014). Socioeconomic Analysis of Organic and Inorganic Farmers in Chitwan District of Nepal. *Journal of International Development and Cooperation*, vol. 20, No. 3, pp. 45-55.

³ Adesope, O., etal. (2011). Effect of socio-economic characteristics of farmers on their adoption of organic farming practices , In P. Sharma and V. Abrol (Eds.), *Crop Production Technologies* pp.211-220.

data with the help of questionnaire by personal visits made to each sampled organic and non-organic farm in the study area. To meet out the objectives I have used the binary logistic model (BLM) in SPSS 20.

$$P(Y = i/x) = \frac{\exp(x\beta_i)}{1 + \sum_{n=1}^i \exp(x\beta_n)}$$

Table 1
Measurement and Summary of Explanatory Variables

Sr. No.	Explanatory Variables	Definition and Measurement
1.	Age (X ₁)	Age of farmers; Years (continuous)
2.	Edu1(X ₂)	Education of farmers; higher=1, otherwise=0 (dummy)
3.	Edu2(X ₃)	Education of farmers; senior secondary=1, otherwise=0 (dummy)
4.	Family Size (X ₄)	Family size of farmers; no. of family member (continuous)
5.	Occupation (X ₅)	Occupation history of farmer's family; agriculture=1, otherwise=0 (dummy)
6.	Income1 (X ₆)	Annual income of farmer's family; 5-10 lakh annually-1, otherwise=0 (dummy)
7.	Income2 (X ₇)	Annual income of farmer's family; above 10 lakh annually-1, otherwise=0 (dummy)
8.	Land (X ₉)	Size of Landholdings of farmers; Acres (continuous)

RESULTS AND DISCUSSION:

Table 2
Explanatory Socio-Economic variables related to Organic Farming system

Variables	Farming System		
	Organic	Non-organic	Total
Age of Farmers			
Below 50 Years	104 (69.40)	66 (44)	170 (56.67)
Above 50 Years	46 (30.6)	84 (56)	130 (43.33)
Education of farmers			
Primary	28 (18.7)	59 (39.3)	87 (29)
Secondary	56 (37.3)	44 (29.3)	100 (33.33)
Senior Sec.	27 (18)	27 (18)	54 (18)
Graduate	27 (18)	12 (8)	39 (13)
Post Graduate	12 (8)	8 (5.4)	20 (6.67)
Family size of farmers			
Up to 4	38 (25.3)	29 (19.3)	67 (22.33)
5-8	91 (60.7)	89 (59.3)	180 (60)
9-12	20 (13.3)	30 (20.3)	50 (16.67)
Above 12	01 (0.7)	2 (1.4)	3 (1)
Primary Occupation			
Agriculture	100 (66.7)	101 (67.3)	201 (67)
Private Job	15 (10)	14 (9.3)	29 (9.67)
Business	3 (2)	10 (6.7)	13 (4.33)
Govt. Job	32 (21.3)	25 (16.7)	57 (19)
Annual income of farmer			
Up-to 5 Lakh	67 (44.7)	76 (50.6)	143 (47.67)

5-7 Lakh	46 (30.7)	48 (32)	94 (31.33)
7-10 Lakh	22 (14.6)	20 (13.4)	42 (14)
Above 10 Lakh	15 (10)	6 (4)	21 (7)
Ownership of land of farmers			
Up-to 3 Acre	37 (24.7)	30 (20)	67 (22.33)
3-7 Acre	70 (46.6)	72 (48)	142 (47.34)
7-10 Acre	22 (14.7)	29 (19.3)	51 (17)
Above 10 acre	21 (14)	19 (12.7)	40 (13.33)

Source: Field survey

Note: Figure in parenthesis indicating percentage

Table 2 is the descriptive analysis of socio-economic variables of organic and non-organic farmers. It was found that there were 104 (69.40) organic farmer and 66 (44) non-organic farmer belongs to the age group below 50 years respectively. Majority of total 170 (56.67) farmer belongs to below 50 age group. On the other hand maximum 56 (37.3) organic farmer got secondary level education while under non-organic maximum 59 (39.3) farmer got primary level education. In total there were maximum 100 (33.33) farmer got secondary level education. Minimum 12 (8) organic farmer, 8 (5.4) non-organic farmer and 20 (6.67) total farmer got post graduate degree respectively. In case of family size there were maximum 91 (60.7) organic farmer, 89 (59.3) non-organic farmer and 18 (60) total farmer belongs to the family having 5 to 8 members. While there were minimum 01 (0.7) organic farmer, 2 (1.4) non-organic farmer and 3 (1) total farmer belongs to the family having above 12 members.

On the other hand there were minimum 3 (2) organic farmer, 10 (6.7) non-organic farmer and 13 (4.33) total farmers' main occupation was business. While maximum 100 (66.7) organic farmer, 101 (67.3) non-organic farmer and 201 (67) total farmers still recognize agriculture as their primary occupation. In case of annual income, there were maximum 67 (44.7) organic farmer, 76 (50.6) non-organic farmer and near about half of total farmers' annual income was up to 5 lakh. While minimum 15 (10) organic farmer, 6 (4) non-organic farmer and 21 (7)

total farmers' annual income was above 10 lakh. On the other hand there were maximum 70 (46.6) organic farmer, 72 (48) non-organic farmer and near about half of total farmer having 3 acre to 7 acre landholdings. While there were minimum 21 (14) organic farmer, 19 (12.7) non-organic farmer and 40 (13.33) total farmers' having above 10 acre landholdings.

Table 3
Logistic Regression Model for the prediction of Adoption of Organic Farming on the basis of Socio-Economic Variables

Variables	Coefficients (β)	Std. Error	Wald	Significance	Exp (β)
Constant	1.422	0.781	3.312	0.069	4.144
Age	-0.037	0.012	9.168	0.002**	0.964
Education _higher	2.074	0.487	18.122	0.000**	7.960
Education _Sen. Sec.	1.158	0.357	10.509	0.001**	3.183
Family size	-0.197	0.068	8.351	0.004**	0.821
Occupation _agriculture	0.604	0.360	2.821	0.093	1.830
Income _5-10 lakh	0.019	0.346	0.003	0.956	1.019
Income _above 10 Lakh	1.792	0.860	4.339	0.037*	6.002
Size of Landholdings	-0.074	0.042	2.564	0.109	0.934

** Significant at 1percent level

* Significant at 5 percent level.

NS- Not significant

LR chi-square= 99.69**

Hosmer and Lemeshow test = 12.756(NS)

Log likelihood= 316.19

Pseudo R²= 0.377

To predict the contribution of the socio-economic variables on the adoption of organic farming, the data were subjected to binary logistic regression analysis. The results were presented in the table 1.40. Age, size of family and landholdings were taken as quantitative variables; whereas, rest all other variables namely, education (middle / sen.sec. / higher), occupation (agriculture / non agriculture), income (5-10lakh/ above 10 lakh) and experience (up-to 5 years / above 5 years) are taken as categorical (qualitative / dummy) variables. Results (given in box above) revealed that the probability of model chi-square was 99.69 which were highly significant at 1

percent. This showed that the model was good fit. The coefficient of determination (R^2) suggested that 37.7 percent variation in dependent variable was due to independent variables. The Hosmer and Lemeshow test was 12.756, which was not significant (p value=0.121) suggested that the model was good of fit. The data revealed that the age was statistical significant at 0.01 percent level and negative coefficient of regression was -0.037, which showed that the lower age group farmers were more interested and adopt the organic farming. Exponential of the coefficient of age was 0.964, which showed that adoption of organic farming rate was less among the aged farmers. The study revealed that higher education was statistical significant at 0.01 percent level and coefficient of regression was 2.074 and exponential of the coefficient of higher education was 7.960, which elaborated that higher educated farmers were more interested to adopt organic farming than non-organic farming. Similarly results were from senior secondary level education variables. This showed that education is a most important variable to accept the changes in agriculture sector. Educated farmers easily understand the new techniques and adopt it. The findings also revealed that family size was statistical significant at 0.01 percent level and coefficient of regression was -0.197, which showed that the small family size farmers ratio was in adoption of organic farming. Exponential of the coefficient of family size was 0.821, which showed that adoption of organic farming rate decreasing as family size of the farmers were increased. The study concluded that primary occupation has positive but statistical insignificant influence of adoption of organic practices. We can say that farmers understand the problems and issues related to soil, fertility, production, environment etc. Income is a most important factor for adoption any new techniques among the peoples. The study also revealed that the income group of 5-10 lakh has positive and but statistical insignificant impact and higher income group (above 10 lakh) was statistical significant at 0.05 percent level and coefficient of regression was 1.792 and exponential of the coefficient of higher education was 6.002, which elaborated that higher income group farmers were more interested to adopt organic farming than non-organic farming. It concluded that higher income provided a financial security for farmers, if they are faced production losses in organic farming's starting period.

In this study, size of landholdings showed lesser chance of adopting organic farming practices. It was negative and insignificant coefficient of regression -0.074 and exponentiation of

coefficient has also low 0.934, which showed that large size of landholdings decrease the probability of adaptation rate among the farmers. Because organic farming is labor-intensive technology and there were scarcity of labor, it is evident that owner of large size of landholdings would prefer practicing non-organic farming.

CONCLUSION AND RECOMMENDATIONS:

The study concluded that age and size of family has negative but significant impact on adoption which showed that the lower age group and small family size farmers were more interested and adopts the organic farming. Education and higher income group farmers has positive and statistical significant coefficient, which showed that educated and higher income group farmers were most interested in adoption of organic farming system then other farmers. So age, education and income have played an important role to adopt organic farming practices. The study concluded that majority of both types of farmer were young age, educated up to secondary level, having annual income up to 7 lakh and ownership of up to 7 acre landholdings. On the other hand mostly farmer were belong to the family having 5 to 8 member and recognize agriculture as their primary occupation. The study recommended that the farmers should be encouraged for adopting organic farming practices by govt.

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