

Association between Profile of the Respondent and Impact of Integrated Farming System in Terms of Change in Employment Generation

ABSTRACT

The present study was undertaken with the main objective impact of integrated farming system on doubling farmers' income. The study was conducted in four district of Konkan region of Maharashtra namely Ratnagiri, Sindhudurg, Raigad and Palghar district. In all 200 respondents were selected by using multi stage sampling techniques. The "Ex-Post-Facto" research design was used for conducting the study. The data were collected through the personal interview. The data collected were processed and statistically analyzed by using statistical technique like frequency, percentage, mean, standard deviation and chi square test. Among the thirteen selected independent variables namely age, farming experience, major occupation, annual income, cropping pattern, livestock possession, information seeking behavior, economic motivation, irrigation status and risk orientation were shown significant association with impact of integrated farming system while education, land holding and productivity level shows highly significant association with impact of integrated farming system in term of change in employment generation.

Key words: -Association, profile of the integrated farming system adopters, impact and integrated farming system

INTRODUCTION

India's economy is heavily dependent on agriculture. For almost seventy percent of rural households, farming is the main source of income. It employs more than 60.00 percent of the workforce and accounts for over 18.80 percent of the GDP of India, making it a key sector of the economy (Economic Survey 2021-22). Based on the country's cultivable land, it seems that the bulk of India's economy is rural and agricultural, with the majority of the country's farmers (86.08 percent) being small-scale and marginal. The population is growing more quickly than the size of the holding but our land resources are limited. The Integrated Farming System (IFS) is the only option for a secure life for resource-poor farmers can sustain their livelihood. Sustainable livelihood through integrated farming modules that are appropriate for farmers to promote scientific farming practices, crop diversification including the introduction of high-

value crops and planned strategies for resolving a number of challenges and the path of profitable marketing. During the last few decades, various authors have given definition of IFS as a combination of at least one component of farming plus one component of livestock (Edward 1997, Jayanthi et al. 2000 and Radhamani et al. 2003). As a result, small and marginal farmers can combine a viable crop with horticulture, livestock, fisheries and other components to reduce risks while generating additional revenue and employment from the same plot of land. By recycling the trash from one component into other integrating diverse components with the crop will boost profitability. A system approach is urgently needed to meet the demands of an everincreasing population while, maintaining ecological balance. Integrated farming systems appear to be a viable solution to the ever-increasing demand for food production, economic stability and nutritional security. Especially for small and marginal farmers with limited resources. It is a concept of ecological soundness that leads to sustainable agriculture as well as a reliable means of attaining pretty high productivity with a significant fertilizer economy.

Keeping above fact in view, the present study was designed to analyze the association between the profile of the respondents and impact of integrated farming system.

OBJECTIVE:

1. To study the association between the profile of the respondents and impact of integrated farming system.

METHODOLOGY:

The present study was conducted in four district of Konkan region of Maharashtra. A multistage sampling procedure was adopted for the selection of integrated farming system adopters. In all 200 respondents were selected for study from the four districts of Konkan region. The “Ex-Post-Facto” research design was used for the proposed study. The literal meaning of ex-post facto is from “what is done afterwards”. It means something done or securing after one event with a respective effect on the event. An ex-post facto research is a systematic empirical enquiry in which the researcher does not have direct control over the variables because their manifestations have already occurred or because they are inherently not manipulable. ‘Impact of integrated farming system on doubling farmer’s income’ was the dependent variable, while the

personal and socio-economic characteristics of the respondents were considered as independent variables. This variable was measured as follows. The impact on employment generation was measured by collecting the data of employment generation of year 2012 and 2022 and then calculated in terms of per cent change as follows,

% Change in employment generation

$$\frac{\text{Employment generation of year 2022} - \text{Employment generation of year 2012}}{\text{Employment generation of year 2012}} \times 100$$

On the basis of per cent change, the respondents were classified into three categories by using the formula mean ± SD. The personal, socio-economic and psychological variables were considered as independent variable. The data were collected through the personal interview. The data collected were processed and statistically analyzed by using statistical technique like frequency, percentage, mean, SD and chi-square test. The independent variable studied were age (chronological age of respondent at the time of interview), education (formal education successfully completed by the respondent at the time of interview), farming experience (number of years spent by the farmer in actual farming), land holding, major occupation, annual income, cropping pattern, productivity level, livestock possession, information seeking behavior, economic motivation, irrigation status and risk orientation. The dependent variable under study was impact of integrated farming system.

RESULTS AND DISCUSSION:

The findings of the present study as well as relevant the discussion has been summarized under the following heads:

1. Association between profile of the respondents and impact in terms of change in employment generation.

Table 1: Association between profile of the respondents and impact in terms of change in employment generation due to IFS

S.I. No.	Independent Variable	Variable Code	X Value	Degree of freedom
1.	Age	X ₁	11.84*	4

2.	Education	X ₂	27.96**	10
3.	Farmingexperience	X ₃	10.72*	4
4.	Landholding	X ₄	24.84**	8
5.	Majoroccupations	X ₅	12.90*	4
6.	Annualincome	X ₆	9.912*	4
7.	Croppingpattern	X ₇	10.50*	4
8.	Productivitylevel	X ₈	13.36**	4
9.	Livestockpossession	X ₉	12.90*	4
10.	Information seekingbehavior	X ₁₀	13.22*	4
11.	Economicmotivation	X ₁₁	11.05*	4
12.	Irrigationstatus	X ₁₂	10.37*	4
13.	Risk orientation	X ₁₃	13.20*	4

* = Significance at 0.05 level

** = Significance at 0.01 level

1.1 Age and change in employment generation

The association between age of the respondents (X₁) and impact in term of change in employment generation was significant. It means that age was influencing to increase employment generation of the integrated farming system adopter.

This indicated that as age of the beneficiaries increased, there was decrease in their employment generation and *vice versa*. It means middle age respondents had taken more advantage of integrated farming system. The middle age might be more eager in creating employment by practicing various farming system.

The finding is similar with the findings of Ali (2001), Sirohiya *et al.* (2012), Soni *et al.* (2012), Singh *et al.* (2011), Dhande (2017) and Korde (2017).

1.2 Education and change in employment generation

The association between education of the respondents (X_2) and impact in term of change in employment generation was significant. It means that education was influencing factor to increase employment generation by integrated farming system adopters.

The probable reason for this trend might be that educated integrated farming system adopters had better access to farm information sources and had ability to grasp things, analyze and interpret them in a proper way in creation of employment through integrated farming system.

The finding is similar with Ghosh *et al.* (2008), Sharma *et al.* (2013), Ugalmugale (2013), Meenakshi (2014), Rathod and Pawar (2014) and Sharma and Badodiya (2016).

1.3 Farming experience and change in employment generation

The association between farming experience of the respondents (X_3) and impact in term of change in employment generation was significant. It means that farming experience of adopters was influencing to increase in employment generation by integrated farming system adopters.

The findings show that with increasing farming experience, the integrated farming system of the respondent improved remarkably. The individuals having small to medium area and satisfactory farming experience look towards agriculture as an economic activity. This might have been help for more utilization of labour.

The finding is similar with findings of Raykar (2010) and Neha Kale (2020).

1.4 Land holding and change in employment generation

It is observed from Table 1 that, the association between land holding of the respondents (X_4) and impact in term of change in employment generation by integrated farming system adopters was highly significant. It means that land holding was influencing to increase in employment generation by integrated farming system adopters.

The finding shows that as the area under integrated farming system increases, the number of labour required to carry out integrated farming system practices increase. A farmer who has brought more area under integrated farming system is obviously interested in adoption of

innovative practices on their farm. Such individuals look towards agriculture as an economic activity. Therefore, they might have been required more labour to increase integrated farming system production.

The findings were supported by findings of Sirohiya *et al.* (2012), Soni *et al.* (2012), Parate (2013) and Rathod and Pawar (2014).

1.5 Major occupation and change in employment generation

It is observed from Table 1 that, the association between major occupation of the respondents (X_5) and impact in term of change in employment generation was significant. It means that major occupation of adopters was influencing to increase employment generation under integrated farming system.

1.6 Annual income and change in employment generation

It is observed from Table 1 that, the association between annual income of the respondents (X_6) and impact in term of change in employment generation was significant. It means that annual income of adopters was influencing to increase employment generation under integrated farming system.

This indicated that annual income was significant aspect in generation of employment in integrated farming system. It can be concluded that as the annual income of the respondent increased, the increased change was noticed in employment generation through adoption of integrated farming system.

This observation is supported by the findings of Chapke *et al.* (2015), Sharma and Badodiya (2016) and Dhenge (2018)

1.7 Cropping pattern and change in employment generation

It is observed from Table 1 that, the association between cropping pattern of the respondents (X_7) and impact in term of change in employment generation was significant. It means that cropping pattern was one of the factors in influencing to increase in employment generation by integrated farming system adopters.

The farmers with fair cropping system instead of mono cropping pattern obviously create employment.

1.8 Productivity level and change in employment generation

It is observed from Table 1 that, the association between productivity level of the respondents (X_8) and impact in term of change in employment generation was highly significant. It means that productivity level was influencing to increase in employment generation by the integrated farming system adopters.

It can be concluded that higher the productivity, higher was the economic motivation and *vice-versa*. Other way round, it can be said that higher yield gained by the respondent under integrated farming system definitely motivate to adopt more practices on their farm which result into creation of employment.

The finding is tune with finding reported by Neha Kale (2016).

1.9 Livestock possession and change in employment generation

It is observed from Table 1 that, the association between livestock possession of the respondents (X_9) and impact in term of change in employment generation was significant. It means that livestock possession was influencing to increase in employment generation by the integrated farming system adopters.

Integration of livestock with agriculture was taken up seriously by more number of farmers under integrated farming system because of this they can afford to utilize more labour on their farm. Livestock is vital for practicing integrated farming system. In fact livestock possession more effective in creating additional income and employment to farmers.

The finding is similar with finding reported by Parihar (2008) and Damor (2013).

1.10 Information seeking behaviour and change in employment generation

It is observed from Table 1 that, the association between information seeking behaviour of the respondents (X_{10}) and impact in term of change in employment generation was significant. It means that information seeking behaviour was influencing to increase in employment generation by the integrated farming system adopters.

The probable reason might be that an individual, who utilizes maximum sources of information frequently, for seeking guidance on new developments and his own field problems, gains better knowledge about the integrated farming system. His frequent interactions with various sources of information lead to development of positive attitude towards new technology, learning of new skills and getting motivation to adopt the new technology fully on his farm. This adoption of new technologies results in increasing employment generation and the same is proven in this result.

The finding is similar with Ali (2001), Jatav *et al.* (2010), Badodiya *et al.* (2011), Hiwarkar (2011), Yadav (2019), Neha Kale (2020) and Tomar (2021).

1.11 Economic motivation and change in employment generation

It is observed from Table 1 that, the association between economic motivation of the respondents (X_{11}) and impact in term of change in employment generation was significant. It means that economic motivation was influencing to increase in employment generation by integrated farming system adopters.

It might be due to the reason that every farmer involved in the integrated farming activity was expected higher yield and returns.

1.12 Irrigation status and change in employment generation

It is observed from Table 1 that, the association between irrigation status of the respondents (X_{12}) and impact in term of change in employment generation was significant. It means that irrigation facility was influencing to increase in employment generation by integrated farming system adopters.

Availability of irrigation facilities and their irrigation potential significantly affect the cropping pattern, and also the integration of livestock, poultry and fishery farming by many folds which result into utilization of more labour as compare to mono cropping. Thus availability of irrigation under integrated farming system affects employment creation.

The finding is in line with finding reported by Jadhav (2001).

1.13 Risk orientation and change in employment generation

It is observed from Table 1 that, the association between risk orientation of the respondents (X_{13}) and impact in term of change in employment generation was significant. It means that risk orientation was influencing to increase in employment generation by the respondents.

Therefore, respondent who take at least a calculated risk would necessarily have more favorable attitude towards integrated farming system and employment generation.

This finding is in tune with the findings of Ali (2001) and Rana (2010).

Conclusion:

The study has identified certain independent variables that have significant impact on integrated farming system. The variables like education, land holding and productivity level were having highly significant association with impact of impact of integrated farming system in terms of change in employment generation. This implies that these factors should be given more importance and be suitably manipulated for increasing extent of adoption of integrated farming system among the farmers.

REFERENCES:

Ali, L. (2001). A study of the changes in cropping pattern income and employment status among beneficiaries of national watershed development project of Panagar block Jabalpur district (M.P.). M.Sc. (Agri.) Thesis, JNKVV, Jabalpur.

Badodiya, S. K., Kushwah, R. S., Garg, S. K. and Shakya, S. K. (2011). Impact of Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) on poverty alleviation. *Rajasthan Journal of Extension Education*, **19** (1): 206-209.

Chapke, R. R., Bhagwat, V. R. and Patil, J. V. (2015). Impact of national training on sorghum cultivation for value addition. *Indian Journal of Extension Education*, **51** (1&2): 78-83.

Dhande, S. J. (2017). Knowledge and attitude of farmers towards crop insurance scheme, M. Sc. (Agri.) Thesis, Department of Extension Education, College of Agriculture, Latur, Vasantrya Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra.

Dhenge, S. A. (2018). Management orientation of commercial mango growers in Konkan region of Maharashtra. Ph.D. (Agri.) Thesis, submitted to, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Maharashtra.

Edwards, P. (1997). Sustainable food production through aquaculture. Aquaculture Asia. Volume 2. School of Environment, Resources and Development, Asian Institute of Technology (AIT), Pathumthani, Thailand.

Ganesan, M., Karthikeyan Kavitha Suma Prashant and Umadikar, Jayalakshmi (2013). Use of mobile multimedia agricultural advisory systems by indian farmers. Journal of Agricultural Extension & Rural Development, 5 (4): 89-99.

Ghosh, R. K., Goswami, A. and Maitra, N. J. (2008). Adoption behavior of the dairy farmers in co-operative farming system. *Indian Res. Journal Extension Education*, 8 (1): 2008.

Hiwarkar, G. R. (2011). Impact of training programme on scaling up of water productivity in agriculture. *M.Sc. (Agri.) Thesis*, Dr. Panjabrao Deshmukh Krishi Vidypeeth, Akola, Maharashtra.

Ingole, S. A. (2014). Impact of farm ponds in saline tract of western vidarbha. *M.Sc. (Agri.) Thesis*, Dr. Panjabrao Deshmukh Krishi Vidypeeth, Akola, Maharashtra.

Jadhav, N. B. (2001). Knowledge, adoption and constraints of onion growers with respect to recommended onion production technology. *M.Sc. (Agri.) Thesis*, Gujarat Agricultural University, Sardar Krushinagar Junagadh.

Jatav, H., Patel, M. M., Kumar, K. S. and Saxena, A. (2010). Impact of front line demonstrations on scientific temperament of wheat growers. *Rajasthan Journal of Extension Education*, 17 (1): 14-16.

Jayanthi, C., Rangasamy, A. and Chinnusamy, C. (2000). Water budgeting for components in lowland integrated farming system. *Agricultural Journal*, 87: 411- 414.

Korde, Vinayak (2017). Attitude of farmers towards organic farming, *M.Sc. (Agri.) Thesis*, Department of Extension Education, College of Agriculture, Latur, Vasantrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra.

Meenakshi, K. (2014). Socio-economic impact of labour migration on the families left behind in Golaghat district of Assam. *M.Sc. (Agri.) Thesis*, Dr. Punjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra.

Neha, Kale (2016). Cropping pattern followed by awardee farmers in konkan region, *M.Sc. (Agri.) Thesis*, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Dist. Ratnagiri, Maharashtra.

Neha, Kale (2020). Impact of national agricultural innovation project on its beneficiaries in Marathwada region. *Ph.D. (Agri.) Thesis*, Vasanrao Naik Marathwada Krishi Vidyapeeth, Parabhani, Maharashtra.

Parate, M. B. (2013). Impact of farm ponds on its beneficiaries in Yawatma district. *M.Sc. (Agri.) Thesis*, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola (Maharashtra).

Radhamani, S., Balasubramanian, A., Ramamoorthy, K. and Geethalakshmi, V. (2003). Sustainable integrated farming systems for dry lands: A review. *Agricultural Reviews*, 24: 204-210.

Rana, K. K. (2010). An analytical study of vocational training programmes conducted by Krishi Vigyan Kendra for rural youth of Sohagpur block in Sahdol district M.P. *M.sc. (Agri.) Thesis*, JNKVV, Jabalpur.

Rathod, M. K. and Pawar, A. S. (2014). Study of socio-economic condition of Deceased farmers and post suicidal consequences over their families. *International Journal of Extension Education*, 10 (1): 93-98.

Raykar, S. S. (2010). Critical crop management practiced followed by cashewnut growers in Ratnagiri district. *M.Sc. (Agri.) Thesis*, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Ratnagiri, Maharashtra.

Sharma, P. and Badodiya, S. K. (2016). Impact of participation of rural women in agricultural activities. *Indian Research Journal of Extension Education*, 16 (2): 12-14.

Sharma, P., G. P. Singh and Jha, S. K. (2013). Impact of training programme on knowledge and adoption of preservation technologies among farm women: A comparative study. *Indian Research Journal of Extension Education*, **13** (1): 96-100.

Singha, A. K., Baruah, M. J., Bordoloi R., Dutta P. and U. S. Saikia (2011). Analysis on influencing factors of technology adoption of different land based enterprises of farmers under diversified farming system. *Journal Agricultural Science*, 4 (2).

Sirohiya, L., D. K. Singh and Agrawal, S. K. (2012). Impact of trainings on adoption of chickpea (*Cicer arietinum* L.) production technology. *Indian Journal of Extension Education*, 48 (3&4): 87- 89.

Soni, R. L., Kothari, G. L. and Ranjeetsingh (2012). Impact of training programmes on adoption of organic farming practices. *Rajasthan Journal of Education*, 20 (2): 148-151.

Tomar, R. S. (2021). Impact of Agricultural Technology Management Agency (ATMA) on production and productivity of paddy and wheat crops among different categories of farmers under Gwalior district in Madhya Pradesh. *M.Sc. (Agri.) Thesis*, Rajmata Vijayaraje Scindia Krishi Vishwavidyalaya, Gwalior (M.P.).

Ugalmugale, V. K. (2013). Impact of Swaranat community radio programme on listener farmers. *M.Sc. (Agri.) Thesis*, Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola, Maharashtra.

Yadav, A. B. (2019). Impact of National Horticulture Mission (NHM) programme on potato growers in Gwalior district of Madhya Pradesh. *M.Sc. (Agri.) Thesis*, Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior (M.P.).