

International Journal of Agriculture Extension and Social Development

Volume 7; Issue 10; October 2024; Page No. 79-82

Received: 25-07-2024
Accepted: 30-08-2024

Indexed Journal
Peer Reviewed Journal

Relationship between profile of FMS (farm mechanization scheme) beneficiaries and impact of FMS

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DOI: <https://doi.org/10.33545/26180723.2024.v7.i10b.1196>

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Abstract

The present study entitled "Impact of Farm Mechanization Scheme on Beneficiaries" was conducted in Marathwada region of Maharashtra state to find out constraints faced by the farm mechanization scheme beneficiaries and suggestions from beneficiaries to overcome the constraints. Sampling was done at three stages viz., the selection of districts, selection of talukas, and selection of respondents. The present study was conducted in one randomly selected Marathwada region district, i.e., Parbhani district. The selection of talukas from the Parbhani district is based on the maximum number of FMS beneficiary farmers. Among nine tehsils, Jintur and Selu were selected. From each selected tehsil 60 FMS beneficiaries were selected randomly. In this way, a total of 120 respondents were selected for the present study. Data was collected using a well-structured interview schedule created with the study's objectives in mind. The collected data was analyzed, classified, and tabulated. Statistical tools such as frequency, percentage, mean, standard deviation, and Z-test and coefficient of correlation were used to interpret findings and draw conclusions. It was observed that the independent variables namely, education and annual income were positively and significantly related with impact of Farm Mechanization Scheme, while land holding, extension contact, social participation, risk orientation, economic motivation and sources of information were positively and highly significant in relation with impact of Farm Mechanization Scheme. The variables family size and caste were non-significantly related with impact of Farm Mechanization Scheme.

Keywords: Farm mechanization scheme, impact, before, after, mechanization

Introduction

The Farm Mechanization Scheme (FMS) was introduced to address the need for improved mechanization in agriculture, a sector where manual labor and outdated tools often limit productivity. Farm mechanization is crucial as it directly enhances crop production efficiency by reducing human and animal labor, improving input utilization, and decreasing losses during crop production. The term encompasses a wide range of tools, machinery, and power sources applied to farming, enabling precision in operations and timely execution, which are vital for optimizing yields. In India, farm mechanization has played a key role in boosting agricultural output, especially in conjunction with other modern inputs such as irrigation, high-yielding seed varieties, fertilizers, and pesticides. It has been a significant driver behind the success of the Green Revolution, which dramatically increased the productivity of Indian agriculture. However, despite these gains, the mechanization level in Indian agriculture remains lower compared to industrialized nations, with significant regional variations.

The northern states, such as Punjab and Haryana, lead in farm mechanization, while the eastern and southern regions lag due to fragmented land holdings and socio-economic constraints. The FMS, launched by the government of Maharashtra in 2018-19, aims to encourage the use of modern machinery in farming to improve power availability and increase productivity. This scheme provides subsidies to farmers for purchasing various agricultural machines, including tractors, power tillers, and other implements. By reducing the costs of mechanization, the FMS seeks to make modern equipment accessible to small, marginal, and SC/ST farmers, thus promoting inclusive growth in the agricultural sector. This study aims to explore the relationship between the socio-economic profile of FMS beneficiaries and the impact of the scheme. Specifically, it seeks to determine how beneficiaries' characteristics influence their ability to leverage mechanization for increased productivity and farm income. The study's findings are expected to provide valuable insights for improving the scheme and enhancing its effectiveness in regions like Parbhani district, Maharashtra.

Materials and Methods

The present study was conducted in Marathwada region of Maharashtra state to find out constraints faced by the farm mechanization scheme beneficiaries and suggestions from beneficiaries to overcome the constraints. Sampling was done at three stages viz., the selection of districts, selection of talukas, and selection of respondents. The present study was conducted in one randomly selected Marathwada region district, i.e., Parbhani district. The selection of tehsils from the Parbhani district is based on the maximum number of FMS beneficiary farmers. Among nine tehsils, Jintur and Selu were selected. From each selected tehsil 60 FMS beneficiaries were selected randomly. In this way, a total of 120 respondents were selected for the present study.

Results and Discussion

Correlation analysis between profile of FMS beneficiary farmers and impact

It was observed that the independent variables namely, education and annual income were positively and significantly related with impact of Farm Mechanization Scheme, while land holding, extension contact, social

participation, risk orientation, economic motivation and sources of information were positively and highly significant in relation with impact of Farm Mechanization Scheme. The variables family size and caste were non-significantly related with impact of Farm Mechanization Scheme.

Table 1: Relationship between profile of FMS beneficiaries and overall impact of FMS

Sr. No.	Independent variable	Coefficient of Correlation(r)
1.	Education	0.233*
2.	Land holding	0.345**
3.	Annual income	0.247*
4.	Extension contact	0.286**
5.	Social participation	0.275**
6.	Size of family	0.100 ^{NS}
7.	Caste	-0.093 ^{NS}
8.	Risk orientation	0.323**
9.	Economic motivation	0.415**
10.	Sources of information	0.326**

*-Significant at 0.05% level, ** - Significant at 0.01% level, NS-Non-significant

Table 2: Distribution of FMS beneficiaries according to their Profile

Sr. No.	Personal profile	Category	Frequency	Percent
1.	Education	Illiterate	12	10.00
		Primary School (1 st to 7 th)	12	10.00
		Secondary School (8 th to 10 th)	41	34.17
		Higher Secondary School (11 th to 12 th)	30	25.00
		Graduation and above	25	20.83
2.	Land Holding	Marginal (Upto 1.0 ha.)	20	16.67
		Small (1.01 to 2.0 ha.)	47	39.17
		Semi-medium (2.01 to 4.0 ha.)	12	10.00
		Medium (4.01 to 10.0 ha.)	34	28.33
		Large (Above 10.01 ha.)	07	05.83
3.	Annual Income	Low (Up to Rs.74,332)	17	14.17
		Medium (Rs.74,333 to Rs.183,501)	75	62.50
		High (Rs.183,502 and above)	28	23.33
4.	Extension Contact	Low (Up to 22)	23	19.17
		Medium (23 to 32)	85	70.83
		High (33 and above)	12	10.00
5.	Social Participation	Low (Up to 4)	26	21.67
		Medium (5 to 7)	75	62.50
		High (8 and above)	19	15.83
6.	Family Size	Small (Up to 3)	22	18.33
		Medium (4 to 9)	84	70.00
		Large (10 and above)	14	11.67
7.	Caste	Upper caste (Non-BC/ Open)	80	66.67
		Middle caste (OBC)	07	05.83
		Lower caste (SC/ST/VJ/NT)	33	27.50
8.	Risk Orientation	Low (Up to 18)	23	19.17
		Medium (19 to 26)	88	73.33
		High (27 and above)	9	07.50
9.	Economic Motivation	Low (Up to 20)	33	27.50
		Medium (21 to 27)	67	55.83
		High (28 and above)	20	16.67
10.	Sources of Information	Low (Up to 17)	21	17.50
		Medium (18 to 21)	74	61.67
		High (22 and above)	25	20.83

1. Education with Impact of FMS

It was revealed from Table 1 that, there was positive and significant (0.233) relationship between education of FMS beneficiaries and impact of FMS.

Education has profound impact on every aspect of life of beneficiaries. It increases the knowledge and awareness about the FMS. It was assumed that educated beneficiaries might have more impact.

The findings are similar with Kshama *et al.* (2018) ^[5] and Bhosale (2019) ^[1].

2. Land holding with Impact of FMS

It was revealed from Table 1 that, there was positive and highly significant (0.345) relationship between land holding of FMS beneficiaries and impact of FMS.

Many of the beneficiaries had small and semi-medium land holding. Farm machinery is very important factor in farming. FMS provides the subsidy for farm machinery which helps to increase the crop production and resulted in increased annual income. Hence there was highly significant relationship between land holding of the beneficiaries and impact of FMS.

The findings are similar with Kharatmal (2021) ^[4] and Sakhare (2022) ^[7].

3. Annual Income with Impact of FMS

It was revealed from Table 1 that, there was positive and significant (0.247) relationship between annual income of FMS beneficiaries and impact of FMS.

It means that increase in annual income of FMS beneficiaries there was increase in impact of FMS. Annual income provides economic stability for FMS beneficiaries and make them aware about purchasing essential inputs at time required for different farming operations. It helps to increase risk orientation and standard of living of the beneficiaries.

The findings are similar with Bhosale (2019) ^[1].

4. Extension Contact with Impact of FMS

It was revealed from Table 1 that, there was positive and highly significant (0.286) relationship between extension contact of FMS beneficiaries and impact of FMS.

More extension contact with the different extension personnel helps for increasing their knowledge and awareness about FMS. Due to this there was highly significant relationship between extension contact and impact of FMS.

The findings are similar with Nigade (2022) ^[6].

5. Social Participation with Impact of FMS

It was revealed from Table 1 that, there was positive and highly significant (0.275) relationship between social participation of FMS beneficiaries and impact of FMS.

FMS beneficiaries participate more in different organizations due to their personal interest. Therefore, due to this there might be positive and highly significant relationship between social participation and impact of FMS.

The findings are similar with Sakhare (2022) ^[7].

6. Size of Family with Impact of FMS

It was revealed from Table 1 that, there was positive and

non-significant (0.100) relationship between size of family of FMS beneficiaries and impact of FMS.

More the members in the family may create the conflicts about the various decision making and creates the confusion which causes the less impact. It means that size of family doesn't affect on the impact of FMS on its beneficiaries.

The findings are similar with Jadhav (2023) ^[3].

7. Caste with Impact of FMS

It was revealed from Table 1 that, there was negative and non-significant relationship (-0.931) between caste and of FMS beneficiaries and impact of FMS.

Caste is no more important to provide benefits from the FMS. Therefore, caste doesn't affect on the impact of FMS on its beneficiaries.

The findings are similar with Dhulgand (2020) ^[2].

8. Risk Orientation with Impact of FMS

It was revealed from Table 1 that, there was positive and highly significant (0.323) relationship between risk orientation of FMS beneficiaries and impact of FMS.

FMS beneficiaries had more risk orientation and always ready to face the challenges to get maximum returns due to which there was significant relationship with the impact of FMS.

The findings are similar with Nigade (2022) ^[6].

9. Economic Motivation with Impact of FMS

It was revealed from Table 1 that, there was positive and highly significant (0.415) relationship between economic motivation of FMS beneficiaries and impact of FMS.

Beneficiaries economic drive encourages them to utilize more innovation to boost their income. It means that increasing economic motivation of the FMS beneficiaries will helps to increase in impact of FMS.

The findings are similar with Nigade (2022) ^[6].

10. Sources of Information with Impact of FMS

It was revealed from Table 1 that, there was positive and highly significant (0.326) relationship between sources of information of FMS beneficiaries and impact of FMS.

FMS beneficiaries had more exposed to different sources of information to get more amount of information and knowledge. They use more sources of information which establish significant relationship with the impact of FMS.

The findings are similar with Sakhare (2022) ^[7].

Conclusion

In relational analysis, it was observed that, the independents variables namely, education and annual income were positively and significantly related with impact of Farm Mechanization Scheme. While land holding, extension contact, social participation, risk orientation, economic motivation and sources of information were positively and highly significant in relation with impact of Farm Mechanization Scheme. The variables family size and caste were non-significantly related with impact of Farm Mechanization Scheme.

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