**Association between independent variables and farmers’ attitude towards Farmer Producer Organizations (FPOs) in Maharashtra state**

**Abstract**

This research article investigates the attitudes of farmers towards Farmer Producer Organizations (FPOs) based on an empirical study of 180 farmers. The study was conducted at the C. S. Azad University of Agriculture and Technology in the district of Kanpur, Uttar Pradesh. The study primarily employed ex-post facto research design. Latur district was selected because it has 90 FPOs, thus facilitating the ease of obtaining factual information from the farmers. Thus the total 9 FPO and 180 farmers were selected for the study. The multi-stage sampling procedure was adopted to systematically select the study participants. A Likert-type five point continuum scale was employed to capture the degree of agreement or disagreement with various statements. The study examines various socio-economic and communication characteristics of the farmers, including age, education, extension contact, social participation, mass media exposure, landholding, cropping pattern, annual income, occupation, economic motivation, and risk orientation. It revealed that, the majority of the farmers (72.22%) had moderately positive attitude, followed by 11.67% farmers had high positive and 11.11% of farmers had low positive attitude, respectively. The findings reveal a predominantly moderately positive attitude among farmers towards FPOs, influenced by factors such as exposure of mass media and medium levels of extension contact, and active participation in community organizations. The acquired data has been analysed with the help of the Statistical Package for Social Sciences (SPSS). Chi-Square was used with a .05 level of confidence.

**Keywords:** Attitude, Farmer Producer Organizations, Chi-Square.

1. **Introduction**

As an educator who has spent the last ten years working closely with rural communities and agricultural development, I have witnessed first-hand the transformative potential of collective action among farmers. The agricultural sector, particularly in developing economies, faces a myriad of challenges ranging from fragmented landholdings and limited access to markets to inadequate infrastructure and information asymmetry. In this complex landscape, Farmer Producer Organizations (FPOs) have emerged as a beacon of hope, offering a structured platform for farmers to aggregate their produce, access inputs, share knowledge, and collectively bargain for better prices. Producers organizations have been recognized as the most important formal organizations for small and marginal farmers to attain market competitiveness (Venkatesan, 2017). These organizations are not merely economic entities; they are catalysts for social change, empowering farmers and strengthening the fabric of rural communities. The concept of FPOs is rooted in the idea of empowering primary producers by enabling them to leverage economies of scale and enhance their bargaining power in the value chain. Crop planning, technological integration, input supply, and primary marketing were the main concerns that FPOs addressed (Verma, 2017). By bringing farmers together, FPOs facilitate access to better technology, credit, and markets, ultimately leading to improved livelihoods and sustainable agricultural practices. However, the success and sustainability of any such initiative hinge critically on the acceptance and active participation of the farmers themselves. Their attitudes, perceptions, and willingness to engage are paramount. This research endeavours to delve into the attitudes of farmers towards FPOs, recognizing that a deeper understanding of their perspectives is crucial for the effective design and implementation of FPO-centric development programs. Since attitude is a crucial element for improved involvement and the success of any new organizational setup, it has become imperative to investigate farmers' attitudes regarding the Farmer Producer Organization (FPO) (Yeragorla *et al*., 2021).

1. **Research Methodology**

The study was conducted at the Chandra Shekhar Azad University of Agriculture and Technology in the district of Kanpur, Uttar Pradesh. A robust research methodology forms the bedrock of any scientific inquiry, particularly in social and behavioural sciences, ensuring the systematic and objective pursuit of study objectives. The study primarily employed an ex-post facto research design. This design is particularly suitable for investigations where the phenomenon of interest has already occurred, and the researcher has no direct control over the independent variables. Instead, the researcher observes the existing conditions and retrospectively analyzes potential causes or relationships. This approach is invaluable in social science research, allowing for the exploration of complex real-world situations without manipulating variables, thus providing insights into pre-existing relationships and their implications. The investigation was conducted in Maharashtra state having largest number of FPOs combined and significant concentration of the target population. The selection of the study area and participants was meticulously planned to ensure representativeness and relevance to the research objectives. Marathwada division (officially Aurangabad) is a region of Maharashtra state in Indiaconsisting of nine districts. Out of them, the Latur district was selected because the district has 90 FPO therefore, facilitating ease of obtaining factual data from the Farmers. All development blocks of Latur district namely Ahmadpur, Ausa, Udgir, Chakur, Jalkot, Nilanga, Devani, Shirur Anantpal and Renapur were selected for this study. A list of farmer-producer organizations in the block was procured from the block headquarters and one FPO from the each block and twenty farmers from each FPO were selected randomly. Thus the total nine FPO and one hundred eighty farmers were selected for the study. The multi-stage sampling procedure was adopted to systematically select the participants. This systematic approach minimizes bias and enhances the generalizability of the findings to the broader population. A Likert-type five point continuum scale was employed to capture the degree of agreement or disagreement with various statements. A pre-tested interview schedule created especially for this study was used to measure the variable. It included sixteen statements, nine of which were positive and the remaining seven of which were negative. This ensured consistency and accuracy in the data collection process. The responses of the farmers were collected against each statement with regard to level of agreement or disagreement on a five-point continuum ranging from highly agree, agree, uncertain, disagree, and strongly disagree. With the help of the Statistical Package for Social Sciences (SPSS, 16.0 version), the information collected was analyzed. A confidence level of.05 was applied while using chi-square test.

1. **RESULTS AND DISCUSSION**

**3.1 Socio-Demographic and Economic Profile of Respondents**

To give a basic overview of the participant population, the socio-demographic and economic aspects of the study participants were studied. Respondents were distributed according to important independent variables, such as age, occupation, social participation, education, and annual income.

Table 1: **Socio-Demographic and Economic Profile of FPO members**

|  |  |  |  |
| --- | --- | --- | --- |
| **S.No.** | **Independent Variables** | **Categories** | **Per cent** |
|  | Age | Young (Upto 43) | 16.67 |
| Middle (43 to 65) | 70.56 |
| Old (Above 65) | 12.77 |
|  | Education | Illiterate | 6.66 |
| Up to Secondary level | 33.33 |
| Graduation and above | 60.01 |
|  | Social participation | No participation | 16.11 |
| Participation in one organization | 78.33 |
| Participation in more than one organization | 5.56 |
|  | Occupation | Agriculture | 53.33 |
| Agriculture + Live stock | 22.22 |
| Agriculture + Business | 20.56 |
| Agriculture + Service | 3.89 |
|  | Annual Income | Low (Up to 27000) 14 | 7.78 |
| Semi-medium (27001 to 77000) | 35.56 |
| Medium (77001 to 127000) | 37.77 |
| High (127001 and Above) | 18.89 |

The participants were mainly made up of people in their middle years, according to the age distribution of the respondents. The vast majority, 70.56%, fell into the middle-age group (ages 43 to 65). Older people over 65 made up the least percentage of the sample (12.77%), while younger people up to 43 years old made up 16.67%. This age distribution implies that the results are generally indicative of a middle-aged, experienced group. The farmers’ educational backgrounds are noticeably diverse. A significant majority (60.01%) had completed college and earned an undergraduate degree or above. Thirty-three percent (33.33%) of the respondents had finished secondary school while 6.66% of the FPO members were illiterate, which represents a very modest percentage. This distribution suggests that the respondents were well-educated, which could affect how they view and behave in relation to the study's main emphasis. The data showed a strong tendency for restricted but present social participation with regard to involvement in community or social groups. The overwhelming majority of those surveyed (78.33%) said they belonged to just one organization. Conversely, only 5.56% were actively involved in multiple social organizations, while a lesser percentage (16.11%) did not participate in any. These points to participants that are somewhat active but not overly social. For most people, agriculture is their primary occupation. Over half of the respondents (53.33%) identified agriculture as their sole profession. The remaining participants engaged in diversified income-generating activities alongside farming. Specifically, 22.22% supplemented their agricultural work with livestock rearing, and 20.56% were involved in business activities in addition to agriculture. A small minority (3.89%) combined agriculture with service-sector employment. This highlights that while agriculture is the cornerstone of their livelihood, economic diversification is common. The economic standing of the respondents, measured by annual income, is concentrated in the middle-income brackets. The largest group of participants (37.77%) fell into the "Medium" income category (₹77,001 to ₹127,000), closely followed by 35.56% in the "Semi-medium" category (₹27,001 to ₹77,000). The "High" income group (₹127,001 and above) represented 18.89% of the sample. The smallest segment was the "Low" income group (up to ₹27,000), comprising only 7.78% of respondents.Similarly Panchani (2014)studied producer company and concluded that majority of the sample farmers had annual income of Rs.50000/- to Rs.100000/-. This distribution indicates that the sample is primarily composed of individuals with moderate economic resources.

**3.2 Association between personal, socio-economic and psychological characteristics of farmers and their attitude towards FPO:**

The association between selected independent variables and attitude was assessed using a chi-square statistic to test the independence of variables. In this case, the researcher divided the attitude and independent variables into appropriate categories before doing the chi-square test using SPSS. The observed association are discussed with respect to age, education, social participation, extension contact, mass media, land holding, cropping pattern, occupation, economic motivation, annual income and risk orientation with attitude of FPOs farmers.

**Table 2: Association between selected independent variables and the attitude of farmers towards FPOs.**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Independent Variables** | **Pearson Chi-Square** | |
| **Calculated Value** | **P-Value** |
|  | Age | 11.031 | 0.02\* |
|  | Education | 21.359 | **0.012**\* |
|  | Social participation | 10.062 | 0.039\* |
|  | Extension Contact | 0.719 | 0.698 NS |
|  | Mass media exposure | 1.719 | 0.787NS |
|  | Land Holding | 8.719 | 0.069NS |
|  | Cropping pattern | 0.854 | 0.931NS |
|  | Occupation | 11.012 | 0.026\* |
|  | Annual Income | 9.518 | 0.049\* |
|  | Economic Motivation | 4.797 | 0.309NS |
|  | Risk orientation | 6.828 | 0.145NS |

The p-value of 0.02 is less than 0.05, indicating a significant relationship between age and the outcome variable. The age of farmers (p-value = 0.02) had a statistically significant association with their attitude towards FPOs as the p-value of 0.02 is less than 0.05.This suggests that a farmer's age group influences their attitude towards FPOs. withWith the highest Chi-Square value (21.359) and the lowest p-value, Education shows the strongest evidence of an association with the dependent variable. The p-value of 0.012 means there is only a 1.2% chance of observing such a strong association by random chance alone. The studies conducted by Sharnagat (2008), Satyaprakash *et al.* (2010) and Sharma *et al.* (2012) consistently show that the level of education among farmers and beneficiaries has a positive and significant relationship with their attitude towards various agricultural programs. Higher education levels are linked to more favourable views of initiatives. Similarly, with a p-value of 0.026, Occupation is significantly associated with farmers’ attitudes towards FPOs. The annual income (P-value = 0.049) had statistically significant associations, but just barely. A p-value of 0.049 means it is right on the edge of the conventional cut-off. While it meets the criteria for significance, the association might be weaker compared to variables with lower p-values like Education. The social participation (P-value = 0.039) was also significantly associated with farmers' attitudes towards FPOs. This means how much farmers participate in social groups is related to their attitude. Cropping pattern (p=0.931) with the highest p-value, this variable shows the least evidence of any association with the dependent variable. The calculated Chi-Square value of 0.854 is also very small, indicating the observed data is very close to what would be expected if there were no relationship at all. Extension contact (P-value = 0.698), mass media exposure (P-value = 0.787), land holding (P-value = 0.069), economic motivation (P-value = 0.309), and risk orientation (P-value = 0.145) had no significant association with farmers' attitudes towards FPOs. This suggests that they do not significantly influence their attitude towards FPOs. The high p-value suggests that any observed relationship in the sample data is likely due to chance. The findings were in concurrence with the findings of Singh & Bhimavat (2007) and Smitha (2013). A similar study by Hasan et al. (2024) in Bangladesh, though focused on government extension services, also highlighted the significance of factors like mass media contact, extension contact, training experience, education, farm size and annual income in influencing farmers' attitudes. Boufous *et al.* (2023) also revealed that economic outcomes was less significant in adopt sustainable agricultural practices. In summary, the significant findings suggest that age, education, social participation, occupation, and annual income are factors that were statistically associated with how farmers feel about FPOs. However, in this study, there is no statistically significant correlation between their attitude and extension contact, exposure to the media, landholding, cropping pattern, economic incentive, or risk orientation.

**3.3 Attitude of Farmers towards FPOs**

**Table 3 : Distribution of Farmers according to their Attitude**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Categories** | **Frequency** | **Percentage** |
|  | Less positive (Up to 54) | 21 | 11.67 |
|  | Moderately positive (54 to 64) | 139 | 77.22 |
|  | High positive (above 64) | 20 | 11.11 |
|  | **Total** | **180** | **100.00** |

**Mean= 59.08, SD= 5.36**

Table No. 3 revealed that the majority (72.22%) of the farmers had a moderately positive attitude, followed by 11.67% of farmers who had a highly positive attitude and 11.11% of farmers who had a low positive attitude, respectively. Thus, it can be concluded the majority of farmers had a moderately positive attitude towards FPOs. This means that, generally, farmers see FPOs in a good light and have some hope for what they can offer in farming. The feasible reason might be due to the fact that the majority of farmers had a medium level of extension contact and mass media exposure, whereas the majority of farmers had engaged with one organization. The positive attitude of farmers toward FPOs can be attributed to the fact that the majority of the village's households are aware of the concept before starting the FPO construction project. Furthermore, farmer replies acknowledge the crucial role. The FPO offers top-notch facilities and services while promoting the welfare of its members. The results are consistent with those of Smitha (2013), Dound (2014) and Singh and Bhimavat (2007).

**Conclusion**

Interestingly, some factors like extension contact, mass media exposure, land size, farming

methods, economic drive, and how much they are willing to take risks did not show a strong connection to their attitudes in this study. This is surprising for extension contact and mass media, as these are often thought to be big influences. It might mean that while these things help farmers know about FPOs, they don't necessarily make their feelings strongly positive or negative once they have some basic understanding. It could also mean we need to look closer at how information is shared through these channels. The strength of the association is strongest for Education and weakest (though still significant) for Annual Income. In short, this study gives us important information about how farmers view FPOs. The generally positive attitude influenced by things like education, social involvement, job, and income, shows that we need to create specific programs for different groups of farmers, while general information from extension services and media helps; we need to understand more about how these things truly shape deep-seated attitudes. Future studies could explore the personal experiences of farmers with FPOs to find even better ways to support these important organizations.

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