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EXAMINING THE RELATIONSHIP BETWEEN SELECTED PROFILES OF BENEFICIARIES OF FARMER PRODUCER COMPANY WITH ITS CONSEQUENCES

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ABSTRACT

The present study was conducted from 2020 to 2023 in the Aurangabad and Latur districts of the Marathwada region in the state of Maharashtra. These districts were purposefully selected for the research study due to the presence of the highest number of Farmer Producer Companies (FPCs). Four FPCs were purposively chosen from each district, each of which had been established either five or three years ago. In total, eight FPCs were selected for the present study. The primary aim of this study was to examine the relationship between selected profiles of beneficiaries of Farmer Producer Companies (FPCs) and its consequences in the Marathwada region. By examining the characteristics and outcomes of beneficiaries within FPCs, we aimed to shed light on the impact of FPC membership on farmers' livelihoods and agricultural practices in the region. From each of these selected FPCs, two villages were purposively chosen for the study based on the highest number of beneficiaries actively engaged with the FPC. Fifteen beneficiaries were randomly selected from each Farmer Producer Company, resulting in a total sample of 120 beneficiaries. Additionally, 120 non-beneficiaries were selected, bringing the total sample size to 240. Correlation analysis revealed several factors positively and highly significantly related to the consequences of FPC membership, including annual income, social participation, information seeking behavior, mass media utilization, training received, economic motivation, risk preference, innovativeness, scientific orientation, market orientation, and knowledge. Additionally, education, land holding, and occupation were found to have a positive and significant relationship with FPC consequences, while age did not establish any significant relationship. Multiple regressions showed that 77 per cent of the total variation in the overall consequences of FPCs on beneficiaries was explained by the 15 independent variables examined in the study. Furthermore, path analysis indicated that education, social participation, economic motivation, innovativeness, market orientation, and knowledge were crucial variables influencing the overall consequences of FPC membership.

Keywords: *farmer producer companies (FPCs), marathwada region, beneficiaries, socio-economic factors, agricultural practices*

INTRODUCTION

Agriculture, serving as the backbone of the Indian economy, plays a pivotal role in ensuring livelihood security, especially in rural areas where farm-related sources dominate. Livelihoods in these regions encompass a mix of on-farm and off-farm activities, providing diverse strategies for acquiring both food and cash (Frankenberger, 1998). This crucial sector contributes a substantial 18.3 per cent to the GDP and offers employment to 58.3 per cent of the country's population (PIB, 2023). In the present context of rapid changes, the agriculture sector in India faces severe challenges such as declining per capita agricultural land availability (due to increased fragmentation of land holdings), a decline in the natural resources base, increased demand for land for non-agricultural purposes due to urbanization and industrialization, and the disinterest of the youth towards agriculture. More than 40.00 per cent of rural youth wish to quit farming. In Indian farming, the majority of farmers are small and marginal. Specifically, 86 per cent of farmers fall into the categories of small farmers (with land between 1.01 ha and 2.00 ha) or marginal farmers (with less than 1.00 ha of land). On average, each of these farmers takes care of about 1.16 ha of land. This smallholding pattern is more noticeable now than ever before in Indian agriculture (PIB, 2023).Top of Form

In 2002, an expert committee led by the distinguished economist Y. K. Alagh recommended the establishment of producer companies through the introduction of a new Part IXA into the Companies Act of 1956. The committee's primary aim was to create legislation that would streamline the incorporation of agricultural cooperatives as producer companies. These producer companies engage in a range of

activities across the agricultural process, from production and harvesting to processing, procurement, grading, pooling, handling, marketing, selling, and exporting primary produce for the benefit of their members. It's noteworthy that, Section 465(1) of the Companies Act, 2013, emphasizes the relevance of the provisions of Part IX A of the Companies Act, 1956 (Paty, 2018). This legislative framework establishes a structured and legal pathway for the development and operation of producer companies in the agricultural sector, providing a robust platform for cooperation and growth.

Presently, the Companies Act of 2013 is identified as the most suitable institutional framework for bringing together farmers. These companies are strategically designed to incorporate positive elements from both cooperative and corporate sectors, with a focus on benefiting primary producers, particularly small and marginal farmers (SMFs) (Alagh, 2019). The primary goal envisioned for Farmer Producer Companies (FPCs) is to unite small farmers for both backward and forward linkages. Backward linkages involve providing access to essential inputs like seeds, fertilizers, credit, insurance, knowledge, and extension services. On the other hand, forward linkages encompass collaborative efforts in areas such as collective marketing, processing, and market-led agricultural production (Mondal, 2010). This integrated approach aims to empower small farmers by improving their access to resources and optimizing their involvement in the agricultural value chain.

Farmers' Producer Company is a powerful tool for small farmers to enhance their participation in the market, leading to improved agricultural production, productivity, and profitability (Vadivelu, 2013). This collaborative approach addresses key challenges in agriculture by providing small farmers with better access to investments, technology, inputs, and markets. The primary goal of FPC is to ensure that individual farmers can achieve better income by organizing themselves, particularly crucial for those with limited resources to benefit from economies of scale. In the agricultural marketing landscape, FPC mitigates issues arising from a complex chain of non-transparent middlemen, enabling primary producers to receive a more significant share of the value that consumers pay. Through this collective effort, farmers gain the advantages of economies of scale, enhancing their bargaining power with bulk buyers and suppliers. Recognizing that the success of small-scale, resource-poor farmers is closely tied to increased productivity, specialization, and higher income, FPC emerges as a vital catalyst for positive transformation in the agricultural sector (Jose, 2023).

In 2020, the Government of India launched the Central Sector Scheme for the Formation and Promotion of 10,000 Farmer Producer Companies (FPCs) with a substantial budget of Rs.6,865 crore. The scheme aims to empower farmers by enhancing their bargaining power, leveraging economies of scale, and increasing incomes through the aggregation of agricultural produce. The National Cooperative Development Corporation (NCDC) under the Ministry of Cooperation has been assigned the task of establishing 1,100 new FPCs by strengthening Primary Agricultural Cooperative Credit Societies. The scheme's total budget includes Rs.4,496 crore for the initial five years (2019-20 to 2023-24) and an additional committed liability of Rs.2,369 crore for subsequent years (2024-25 to 2027-28). As of now, 7,597 FPCs have been registered across 34 States/Union Territories, demonstrating substantial progress toward the overarching goal of establishing 10,000 FPCs and promoting sustainable incomes for farmers (PIB, 2023).Top of Form

OBJECTIVE

To study the relationship between selected profiles of beneficiaries of Farmer Producer Company with its consequences

METHODOLOGY

The study employed an ex-post facto research design, a systematic empirical inquiry in which the independent variables are not directly manipulated because they have already occurred or are inherently non-manipulable (Karlinger, 1976). The selection of this research design was based on the type of variables under consideration, the size of respondents, and the phenomenon to be studied. The present study employed the purposive random sampling method.

Aurangabad and Latur districts were purposively selected because these two districts were found to represent the maximum number of farmer producer companies (SFAC, 2018).

Table: 1: Districts wise distribution of FPCs in Marathwada Region

Sr. No.	Districts in Marathwada Region	Number of FPCs in district
1	Aurangabad	80**
2	Beed	62
3	Hingoli	26
4	Jalna	45
5	Latur	102*
6	Nanded	30
7	Osmanabad	78
8	Parbhani	21
	Total	**444**

Selection of Farmer Producer Company

There were a total of four hundred forty-four registered FPCs in eight districts of the Marathwada Region. From these 444 FPCs, four were purposively selected from Aurangabad and Latur districts, which were established either five or three years ago. In total, eight FPCs were chosen for the present study, the data shown in the Table 2.

Table: 2: Selection of Farmer Producer Company

Sr. No.	Name of FPCs and Address	Establishment Year	Board of Directors	Activity	Members	Authorizes and Paid-up Capital	Annual turnover
1	Krushi Kranti Hightech Agro Producer Company Limitted, At. Sonwadi, Post Nagad, Tq. Kannad, Dist. Aurangabad mrgosewa@gmail.com	22 April, 2015	1. Vinod V. Rathod 2. Yogita D. Pawar 3. Bhushan P. Jain 4. Krushna I. Pawar 5.Altap Y. Sheikh	Farm inputs, Farm produce procurement, Seed production Dal Mill, Marketing, Animal feed	1503	Rs 30 Lakh Rs.7.58 Lakh	Rs. 2 Crore
2	Akash Agro Farmer Producer Company Limitted, Main Market Sillod, Tq. Sillod, Dist Aurangabad aakashagn@gmail.com	02 July, 2010	1.Vaishali A. Gaurthakur 2. Sanjay S. Mote 3. Dilip R. Patel 4. Vikrantsing A. Gaurthakur 5.Vikash A. Kulkarni 6.Chandrahas L. Patel	Farm inputs, Farm produce procurement, Dall Mill, Incubation Centre, Seed production, Marketing	2000	Rs. 2 Cror Rs. 27.40 Lakh	Rs. 3 Crore
3	Ghruneshwar Shetkari Agro Producer Company Limitted, At. Palaswadi, Tq. Khultabad, Dist. Aurangabad casatishrathod@gmail.com	02 July, 2015	1. Ashvini S. Chavan 2. Yadav D. Jagtap 3. Anil D. Harde 4. Balkrushna A. Thengade 5. Sagar S. Lagad	Farm produce procurement, Dall Mill, Farm inputs, Milk collection, Marketing	1500	Rs. 35 Lakh Rs.30 Lakh	Rs. 1.82 Crore

Sr. No.	Name of FPCs and Address	Establishment Year	Board of Directors	Activity	Members	Authorizes and Paid-up Capital	Annual turnover
4	Krishi Pratishthan Producer Company Limitted, At. Malkapur, Post. Kasabkheda, Tq. Khultabad, Dist. Aurangabad kpcl385@yahoo.com	26 March, 2015	1. Krishna N. Pandav 2. Mahendra P. Rathod 3. Ramrao Narayen Pandav 4. Arjun S. Gire 5.Kisan M. Maher	Farm produce procurement, Dal Mill, Farm inputs, Marketing	250	Rs.5 Lakh Rs. 2.50 Lakh	Rs.30 Lakh
5	Agrotech Agro Producer Company Limitted, Near Gangapur, Tq. Dist Latur agrotechagro2016@gmail.com	8 September, 2016	1. Anita A. Gaikwad 2. Devendra B. Jadhav 3. Shailesh D. Jadhav 4. Ananta Gaikwad 5. Mangal Jadhav	Farm produce procurement, Farm inputs, Seed production, Marketing	502	Rs.10 Lakh Rs. 6 Lakh	Rs. 4 Crore
6	Daneshwari Farmer Producer Company Limitted, At.Post. Kate Jawalga, Tq. Nilanga, Dist. Latur daneshwarifpc@gmail.com	18 September, 2017	1.Vishvjit R. Somvanshi 2. Kedar R. Somvanshi 3. Amol U. Somvanshi 4. Dattatray V. Somvanshi 5. Kedar R. Somvanshi	Farm produce procurement, Seed production, Marketing	1200	Rs. 10 Lakh Rs. 6.98 Lakh	Rs. 4 Crore
7	Vikas Agro Producer Company Limitted, At. Takali, Tq.Dist. Latur vikasagro takali@gmail.com	10 August, 2015	1. Vikash M. Uphade 2. Nandkumar G. khunse 3. Ramchandra S. Ghadge 4. Alim A. Sheikh 5.Ujwala V. Uphade	Farm inputs, Farm produce procurement, Cleaning, Grading, Marketing,	1500	Rs.30 Lakh Rs. 30 Lakh	Rs.2 Crore
8	Katpur Agro Producer Company Limitted At. Katapur, Tq. Latur, Dist Latur katpurfpc@gmail.com	8 Octobers, 2015	1. Lalashaheb B. Deshmukh 2. Anil M Deshmukh 3. Vishnudash V. Shinde 4. Satish J. Deshmukh 5. Surekha B. Deshmukh	Farm inputs , Farm produce procurement, Cleaning, Grading, Marketing	1648	Rs.30 Lakh Rs.26 Lakh	Rs.6 Crore

Selection of villages and respondents

From each chosen Farmer Producer Company (FPC), two villages were purposefully selected for the study based on the maximum number of beneficiaries working under the FPC, the data shown in the Table 3.

From each selected district, four Farmer Producer Companies were chosen, and 15 beneficiaries were randomly selected from each company. This made up a total sample of 120 beneficiaries and 120 non-beneficiaries, totaling 240 respondents, the data shown in the Table 3.

Table 3: Selected of villages and respondents (n=240)

Sr. No	Name of FPCs and their Address	District Aurangabad		Beneficiaries	Non-Beneficiaries
		Taluka	Villages		
1	Krushi Kranti Hightech Agro Producer Company Limitted, At. Sonwadi, Post Nagad, Tq. Kannad, Dist. Aurangabad	Kannad	Belkheda	15	15
			Bormandi		
2	Akash Agro Farmer Producer Company Limitted, Main Market Sillod, Tq. Sillod, Dist Aurangabad	Sillod	Avani	15	15
			Palod		
3	Ghruneshwar Shetkari Agro Producer Company Limitted, At. Palaswadi, Tq. Khultabad, Dist. Aurangabad	Khultabad	Palaswadi	15	15
			Borgaon		
4	Krishi Pratishthan Producer Company Limitted, At. Malkapur, Post. Kasabkheda, Tq. Khultabad, Dist. Aurangabad	Khultabad	Kasabkheda	15	15
			Malkapur		
5	Agrotech Agro Producer Company Limitted, Near Gangapur, Tq. Dist Latur	Shirur Anantpal	Kalmgaon	15	15
			Halki		
6	Daneshwari Farmer Producer Company Limitted, At.Post. Kate Jawalga, Tq. Nilanga, Dist. Latur	Nilanga	Zari	15	15
			Lambota		
7	Vikash Agro Producer Company Limitted, At. Takli , Tq.Dist. Latur	Latur	Takali	15	15
			Jewali		
8	Katpur Agro Producer Company Limitted At. Katapur, Tq. Latur, Dist Latur	Latur	Katpur	15	15
			Shirsa		
			Total	**120**	**120**

Variables

Independent variable

We selected a list of 15 variables related to the profiles of beneficiaries of Farmer Producer Companies based on a review of literature and informal discussions with subject experts. This list, along with their operational definitions, was sent to 30 judges for rating. The rating scale ranged from 'most relevant', 'relevant' and 'not relevant' with scores of 3, 2, and 1, respectively. Variables were chosen based on the mean relevancy score. Scores for each variable from the 30 judges were added and divided by the total number of judges. The average total score for all variables was calculated. Variables scoring above the mean relevancy score were selected for the study. Thus, the profiles of beneficiaries of Farmer Producer Companies were determined through judges' ratings, including age, education, landholding, occupation, annual income, social participation, information-seeking behavior, mass media utilization, training received, economic motivation, risk preference, innovativeness, scientific orientation, market orientation, and knowledge about FPC.

Dependent variable

Farmer Producer Company is the dimension related to the consequences of farmer producer company on its beneficiaries in this investigation, which is identified based on a review of literature and discussion with a research guide and expert in the field of extension education. We selected 7 dimensions and wrote 95 statements related to all dimension. We covered all the points related to FPC, and step-wise we reduced statement number by applying the statistical scale method. First, check that experts respond to statements with a rating scale. The reliability of the scale was determined by the test-retest method. Person's product movement coefficient of correlation was worked out for correcting the two sets of scores for the test-retest method. The value of the correlation

coefficient between two scores of test-retest reliability was 0.839. Validity of scale was established by content validity methods. The content validity was determined by a review of the literature and the opinions of 100 judges who were experts in the field of extension education. The final scale was made of 48 statements administered on a five-point continuum, in which for positive statements, scores were assigned as 'Strongly Agree', 'Agree', 'Undecided', 'Disagree', and 'Strongly Disagree', i.e., 5 to 1, and for negative statements, the scoring was reversed.

Statistical method used

The collected data was coded, classified, tabulated, and analyzed to derive meaningful findings. The study employed a range of descriptive and inferential statistical methods for data analysis, as outlined below:

Pearson's correlation coefficient (r)

Pearson's correlation coefficient (r) was used to find out zero order correlation between dependent and independent variables to see the nature of relationship existed.

$$r = \frac{N\Sigma XY - \Sigma X\Sigma Y}{\sqrt{[N\Sigma X^2 - (\Sigma X)^2][N\Sigma Y^2 - (\Sigma Y)^2]}}$$

Where,

N = Number of observations

ΣXY = Sum of products of dependent and independent variables

ΣX = Sum of independent variables

ΣX^2 = Sum of square of independent variables

ΣY = Sum of dependent variables

ΣY^2 = Sum of square of dependent variables

$(\Sigma X)^2$ = Square of sum of independent variables

$(\Sigma Y)^2$ = Square of sum of dependent variables

r = Correlation coefficient

Multiple regressions Analysis

It was defined as the average expected change in the dependent variable to a unit change in each independent variable put together. Multiple regressions analysis was used to study the combined effect of selected independent variables over dependent variables. MLR provides amount of relation among two or more predicted variables and the single criterion variable. The regression co-efficient b_1x_1 may be interpreted as the change in Y corresponding to a unit increase in X_1 when all the other variables are held constant. The Multiple Linear Coefficient "R" is the highest possible constant between least squares of the independent variables and the squares of the independent variables and the observed dependent variable and R^2 is the portion of the variation on the criterion variable for the present study, linear model of regression equation was used as follows.

$$Y = a + b1x1 + b2\ x2 + b3x3\ldots\ldots\ldots bkxk$$

Where,

a = intercept

b1 = the partial regression coefficient represents the amount of change in Y that can be associated with a unit change in x1 the remaining independent variables held constant.

Xk = k^{th} independent variable for k = 1, 2, 3…k

Path analysis

This was used to identify the total, direct, total indirect and substantial indirect effect of independent variables on dependent variables. Path analysis adopting multivariate path model suggested by the Land (1969) was used to isolate total, direct, indirect and substantial effect of independent variables of the respondents.

The formula used was as follows.

$$Z12 = P_{12}.1Z_1 + P_{12}.2Z_2 + \ldots\ldots\ldots\ldots\ldots + P_{12}.nzn + P_{12}.Za$$

Where,

Z12 = Dependent variables

Z1 to Zn = Independents variables

Za = Residual factor

RESULTS AND DISCUSSION

Correlation analysis profile of beneficiaries of Farmer Producer Company with its consequences.

Pearson's correlation coefficient (r) was used to find out zero order correlation between dependent and independent variables to see the nature of relationship existed.

Age with consequences

Table 4 indicated that, there was negative and non-significant (-0.167^{NS}) relationship between age of beneficiaries and their consequences of farmer producer

company was found to be non significant at 0.05 per cent level of probability.

It means that increase age of FPCs beneficiaries will not help in increase in the consequences of FPCs on its beneficiaries. There was no any relationship of age with consequences of FPCs.

This finding was supported by finding of Ahire and Kapse (2015) and Bhoi (2016).

Table 4: Relationship between profile of beneficiaries of farmer producer company with its consequences

(n=240)

Sr. No	Independent variable	Beneficiaries
X_1	**Age**	-0.1677^{NS}
X_2	**Education**	0.2104*
X_3	**Land holding**	0.2338*
X_4	**Occupation**	0.2320*
X_5	**Annual income**	0.6199**
X_6	**Social participation**	0.6089**
X_7	**Information seeking behavior**	0.6720**
X_8	**Mass media utilization**	0.6121**
X_9	**Training received**	0.2643**
X_{10}	**Economic motivation**	0.5884**
X_{11}	**Risk preference**	0.6231**
X_{12}	**Innovativeness**	0.6764**
X_{13}	**Scientific orientation**	0.7064**
X_{14}	**Market orientation**	0.7636**
X_{15}	**Knowledge**	0.7771**

(*Significant at 0.05 level of probability NS=Non-significant **Significant at 0.01 level of probability)

Education with consequences

Table 4 reveled that, there was positive and significant (0.210*) relationship between education of beneficiaries and their consequences of farmer producer company was found to be significant at 0.05 per cent level of probability.

From the result it shown that majority of the FPCs beneficiaries were educated, but some beneficiaries were illiterate. Illiterate beneficiaries gets the information through social media, friends and relatives regarding the crop cultivation practice, farm inputs, marketing farm produce. They actively participating in the meeting, training and helps them to get more benefit in generating more income. This active participation leads to get more ideas and information related to their farm business by information seeking behavior. This finding was supported by finding of Chopade (2019), Kharatmal (2021) and Nigade (2022).

Land holding with consequences

Table 4 observed that, there was positive and significant (0.233*) relationship between land holding of beneficiaries and their consequences of farmer producer company was found to be significant at 0.05 per cent level of probability.

Size of land holding is a symbol of economic prosperity of a person in social system. Study shows that majority of the beneficiaries were small to medium land holders. In this category the farmers are more eager to know about the innovation and adopt the technologies on the farm with high level of participation in various transfers of technology programmes. Hence land holding is positively significant with consequences. This finding was supported by finding of Chopade (2019), Dhulgand (2020) and Nigade (2022).

Occupation with consequences

Table 4 noted that, there was positive and significant (0.232*) relationship between occupation of beneficiaries and their consequences of farmer producer company was found to be significant at 0.05 per cent level of probability.

It indicated that majority of beneficiaries belong to farming as occupation. They directly and indirectly depend on farming as main occupation because most of the income was generated from farming as an occupation. Beneficiaries also earn money from other additional occupation like labour, allied agriculture business such as poultry, dairy and sericulture. These additional occupations help the beneficiaries to improve land and change the cropping pattern. FPCs had made aware the beneficiaries about the various allied occupations. Hence occupation was found significant with overall consequences. This finding was supported by finding of Chopade (2019), Kale (2020), Kharatmal (2021) and Nigade (2022).

Annual income with consequences

Table 4 observed that, there was positive and highly significant (0.619**) relationship between annual income of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

It indicated that majority of beneficiaries belongs to medium annual income level. FPCs had helped the beneficiaries to adopt new technologies on their farm and also helped them to start the various allied occupations like poultry, dairy, seed production and sericulture. These had helped them to generate additional and more income as compared to non-beneficiaries. Hence the annual income was significant with overall consequences of FPCs.

This finding was supported by finding of Adsul (2016), Bhoi (2016), Pise (2017), Chopade (2019), Dhulgand (2020), Kharatmal (2021) and Nair (2021).

Social Participation with consequences

Table 4 stated that, there was positive and highly significant (0.608**) relationship between social participation of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

It indicated that majority of beneficiaries were belonging to medium social participation. FPCs had brought together all the small and marginal farmers these farmers were inculcated with the various technologies developed through various extension programmes organised by the FPCs. The eagerness was developed among the beneficiaries to participate in various activity carried out by the FPCs .This had lead to more participation among the beneficiaries. Hence the social participation was significant with overall consequences of FPCs. This finding was supported by finding of Adsul (2016), Pise (2017) and Dhulgand (2020)

Information seeking behavior with consequences

Table 4 reveled that, there was positive and highly significant (0.672**) relationship between information seeking behavior of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

It observed that majority of beneficiaries were belonging to medium Information seeking behavior. The FPCs had developed the characteristics such as innovativeness, social awareness, knowledge retention, change in attitude, which had made the beneficiaries more aware and they tries to gain more knowledge and information about various technologies. Hence the information seeking behaviour was significant with overall consequences of FPCs.

This finding was supported by finding of Adsul (2016), Pise (2017), Dhulgand (2020), Nair (2021) and Nigade (2022).

Mass media utilization with consequences

Table 4 reported that, there was positive and highly significant (0.612**) relationship between mass media utilization of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

FPCs beneficiaries were exposed through various mass media such as T.V, Radio, whatsapp, fecebook, youtube, farm publication etc which had helped them to acquire more technological information related to agriculture and allied occupations, which had helped them in increasing the farm income. Hence the mass media utilization was significant with overall consequences of FPCs. This finding was supported by finding of Bhoi (2016).

Training received with consequences

Table 4 reveled that, there was positive and highly significant (0.264**) relationship between training received of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

Training helps an individual in acquiring knowledge, skill and change in the attitude this had helped in transformation of the beneficiaries from traditional to advanced farming. Training had helped the beneficiaries to acquire more knowledge about the crop production technologies resulted into high income. Hence the training received was significant with overall consequences of FPCs. This finding was supported by finding of Kharatmal (2021) and Nair (2021).

Economic motivation with consequences

Table 4 observed that, there was positive and highly significant (0.588**) relationship between economic motivation of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

FPCs had helped the beneficiaries in developing various enterprises such as farm, poultry, dairy and sericulture and also had increased the participation in various awareness programmes. This had helped the beneficiaries to raise their aspiration and resulted in economic motivation. Hence the economic motivation was significant with overall consequences of FPCs. This finding was supported by finding of Bhoi (2016), Pise (2017), Dhulgand (2020), Kale (2020), Nigade (2022) and Shelake (2022).

Risk preference with consequences

Table 4 noted that, there was positive and highly significant (0.623**) relationship between of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

FPCs beneficiaries were exposed to various extension programmes and visits, which had helped them to increase the risk bearing ability. This ability had helped them to practice new crops and enterprises such as sericulture, seed production and poultry as a result of which more income generation activities were undertaken due to increase in risk bearing ability. Hence the risk preference was significant with overall consequences of FPCs.

This finding was supported by finding of Bhoi (2016), Pise (2017), Kale (2020), Nigade (2022), Shelke (2022), Akbari et al. (2023), Kemekar et al. (2023).

Innovativeness with consequences

Table 4 stated that, there was positive and highly significant (0.676**) relationship between innovativeness of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

FPCs had organized various programmes for the upliftment of the beneficiaries and made them aware about various innovations. The FPCs had transformed the beneficiaries from tradition farmer to innovative and as a result of which the beneficiaries were adopting new technologies and innovations. Hence the innovativeness was significant with overall consequences of FPCs. This finding was supported by finding of Kale (2020) and Shelake (2022).

Scientific orientation with consequences

Table 4 reveled that, there was positive and highly significant (0.706**) relationship between training received of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

FPCs had made the beneficiaries exposed to outside society through various capacity building programmes as result of which the beneficiaries were more interested towards scientific orientation. Hence the scientific orientation was significant with overall consequences of FPCs.

This finding was supported by finding of Bhoi (2016).

Market orientation with consequences

Table 4 noted that, there was positive and highly significant (0.763**) relationship between market orientation of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

FPCs had helped the beneficiaries to exposed to various institutions, which resulted gain in knowledge and adoption of new crops and their technologies and helped them increased the productivity according to market demand. Here the FPCs made them aware about the crops to be grown according to the demand of market, which had helped them to know the demands of various markets. Hence the market orientation was significant with overall consequences of FPCs. This finding was supported by finding of Kale (2020).

Knowledge with consequences

Table 4 reported that, there was positive and highly significant (0.777**) relationship between knowledge of beneficiaries and their consequences of farmer producer company was found to be significant at 0.01 per cent level of probability.

Main theme of FPCs is to make the farmers aware about the importance of FPCs its working, functioning and benefits of cooperation and coordination. All these together had helped the beneficiaries to gain the knowledge about various technologies and enterprises for maximum profit earning from agriculture as an enterprise. Hence the knowledge was significant with overall consequences of FPCs. This finding was supported by finding of Pise (2017) and Nigade (2022).

Multiple regression analysis

It was defined as the average expected change in the dependent variable to a unit change in each independent variable put together. Multiple regressions analysis was used to study the combined effect of selected independent variables over dependent variables.

It was reveled from the Table 5 that, co-efficient of determination (R^2) of the independent variable was 0.77. It means that 77.00 per cent of total variation in the overall consequences farmer producer company on its beneficiaries was explained by the 15 independent variables.

The value of 't' showed that consequences of farmer producer company was significantly related with annual income, occupation, information seeking behavior, training received, market orientation and knowledge.

Table 5: Multiple regression analysis of profile of FPCs beneficiaries with overall consequences (n=240)

Sr. No.	Independent Variable	Regression Coefficients (Bi)	Standard Error (S.E)	't' Value
X_1	**Age**	-0.0579	0.0450	1.287^{NS}
X_2	**Education**	-0.3102	0.3382	0.917^{NS}
X_3	**Land Holding**	-1.5053	0.5007	3.005**
X_4	**Occupation**	0.9120	0.4475	2.037*
X_5	**Annual Income**	0.00006	2.0066	3.756**
X_6	**Social Participation**	0.1534	0.3358	0.456^{NS}
X_7	**Information Seeking Behavior**	0.2379	0.1800	1.987*
X_8	**Mass Media Utilization**	0.1954	0.3160	0.618^{NS}
X_9	**Training Received**	1.0942	0.5133	2.131*
X_{10}	**Economic Motivation**	0.4437	0.3551	1.249^{NS}
X_{11}	**Risk Preference**	0.5359	0.3559	1.505^{NS}
X_{12}	**Innovativeness**	0.4551	0.4433	1.026^{NS}
X_{13}	**Scientific Orientation**	0.6622	0.3483	1.901^{NS}
X_{14}	**Market Orientation**	1.5687	0.3724	4.212**
X_{15}	**Knowledge**	1.0053	0.4986	2.016*

$R^2 = 0.77$ F=1.77 NS=Non-significant *Significant at 0.05 level of probability
**Significant at 0.01 level of probability)

The regression coefficient of these variable were 0.057, 0.310, 1.505, 0.912, 0.00006, 0.153, 0.237, 0.195, 1.094, 0.443, 0.535, 0.455, 0.662, 1.568 and 1.005, respectively which indicate that one unite change in the variable viz. age, education, land holding, occupation, annual income, social participation, information seeking behavior, mass media utilization, training received, economic motivation, risk preference, innovativeness, scientific orientation, market orientation and knowledge would affect 0.057, 0.310, 1.505, 0.912, 0.00006, 0.153, 0.237, 0.195, 1.094, 0.443, 0.535, 0.455, 0.662, 1.568 and 1.005 unit change in consequences farmer producer company.

Path analysis

This was used to identify the total, direct, total indirect and substantial indirect effect of independent variables on dependent variables. Path analysis adopting multivariate path model suggested by the Kenneth C. Land (1969) was used to isolate total, direct, indirect and substantial effect of independent variables of the respondents.

Table 6: Path analysis showing the effect of profile of beneficiaries with their overall consequences (n=240)

Sr. No.	Independent Variables	TE	DE	TIE	SIE	
					1	2
X_1	**Age**	0.1677	- 0.0692	0.2369	0.0317 (X2)	0.0120 (X14)
X_2	**Education**	0.2105	-0.0522	0.2627	0.0239 (X9)	-0.0066 (X3)
X_3	**Land Holding**	0.2339	-0.1960	0.4299	-0.0138 (X1)	-0.0247 (X2)
X_4	**Occupation**	0.2321	-0.1160	0.3481	0.0060 (X5)	-0.0157 (X1)
X_5	**Annual income**	0.6200	0.3446	0.2754	0.2232 (X6)	0.2226 (X3)
X_6	**Social participation**	0.6090	0.0374	0.5716	0.0265 (X8)	0.0258 (X10)
X_7	**Information seeking behavior**	0.6720	0.0565	0.6155	0.0373 (X15)	0.0366 (X10)

Sr. No.	Independent Variables	TE	DE	TIE	SIE	
					1	2
X_8	**Mass media utilization**	0.6122	0.0468	0.5654	0.0331 (X6)	0.0311 (X14)
X_9	**Training received**	0.2644	-0.1195	0.3839	0.0185 (X2)	-0.0216 (X3)
X_{10}	**Economic motivation**	0.5884	-0.1069	0.6953	0.0048 (X6)	0.0244 (X2)
X_{11}	**Risk preference**	0.6232	0.1214	0.5018	0.0928 (X10)	0.0827 (X6)
X_{12}	**Innovativeness**	0.6765	0.0813	0.5952	0.0585 (X13)	0.0559 (X15)
X_{13}	**Scientific orientation**	0.7065	0.1541	0.5524	0.1110 (X12)	0.1029 (X15)
X_{14}	**Market orientation**	0.7636	0.3465	0.4171	0.2292 (X15)	0.2174 (X12)
X_{15}	**Knowledge**	0.7772	0.1789	0.5983	0.1364 (X14)	0.1231 (X12)

Total effect

It was reveled from the Table 6 and Fig. 1 that, the profile of FPCs beneficiaries highest positive total effect on consequences of farmer producer company on its beneficiaries were exerted by knowledge (0.777), market orientation (0.763), scientific orientation (0.706), innovativeness (0.676), information seeking behavior (0.672), risk preference (0.623), mass media utilization (0.612), social participation (0.609), economic motivation (0.588), training received (0.264), land holding (0.233), occupation (0.232) and education (0.210). Whereas age (0.167) exerting low positive total effect on overall consequences farmer producer company on its beneficiaries. It means that total of the direct effect and indirect effect exerted by all independent variable on overall consequences of Farmer Producer Company.

Direct effect

It was reveled from the Table 6 and Fig. 1 that, the highest direct positive influence on overall consequences Farmer Producer Company on its beneficiaries were exerted by market orientation (0.346), annual income (0.344), knowledge (0.178), scientific orientation (0.154) and risk preference (0.121). Other considerable, direct positive effect was also exerted by innovativeness (0.081), information seeking behavior (0.056), mass media utilization (0.046), and social participation (0.037). A considerable direct effect on overall consequences farmer producer company on its beneficiaries was not exerted by economic motivation (-0.1069), training received (-0.1195), land holding (-0.1960), occupation (-0.1160), education (-0.0522) and age (-0.0692). It means that association of independent variable i.e. market orientation with other independent variable of the direct paths specified in the model.

Total indirect effect

It was reveled from the Table 6 and Fig. 1 that, the highest total indirect positive influence on overall consequences farmer producer company on its beneficiaries were exerted by economic motivation (0.6953), information seeking behavior (0.6155), knowledge (0.5983), innovativeness (0.5952), social participation (0.5716), mass media utilization (0.5654), scientific orientation (0.5524), risk preference (0.5018), land holding (0.4299), market orientation (0.4171), training received (0.3839), occupation (0.3481), annual income (0.2754) and education (0.2627). Whereas age (0.2369) exerting low positive total indirect effect on overall consequences farmer producer company on its beneficiaries. Total indirect effect means association of one independent variable i.e. economic motivation, with other mediated through the other variable in the model. It computed as the product of path linking variable.

Substantial indirect effect

It was reveled from the Table 6 and Fig. 1 that, As regards substantial indirect effect, the highest first substantial indirect positive influence on overall consequences farmer producer company on its beneficiaries were exerted by market orientation (0.2292) though knowledge, annual income (0.2232) through social participation, knowledge (0.1364) through market orientation and scientific orientation (0.1110) through innovativeness. Other considerable, substantial indirect positive effects were also exerted by risk preference (0.0928) through economic motivation, innovativeness (0.0585) through scientific orientation, information seeking behavior (0.0373) through knowledge, mass media utilization (0.0331) through social participation, age (0.0317) through education and social participation

(0.0265) through mass media utilization, education (0.0239) through training received, training received (0.0185) through education, occupation (0.0068) through annual income, economic motivation (0.0048) through social participation, respectively.

It was reveled from the Table 6 and Fig. 1 that, highest second substantial indirect positive influence on overall consequences farmer producer company on its beneficiaries were exerted by annual income (0.2226) through land holding, market orientation (0.2174) through innovativeness, knowledge (0.1231) through innovativeness and scientific orientation (0.1029) through knowledge. Other considerable, substantial indirect positive effects were also exerted by risk preference (0.0827) through social participation, innovativeness (0.0559) through knowledge, information seeking behavior (0.0366) through economic motivation, mass media utilization (0.0311) through market orientation, social participation (0.0265) through Economic motivation, economic motivation (0.0244) through education and age (0.0120) through market orientation.

Thus it was observed that education, social participation, economic motivation, innovativeness, market orientation and knowledge were important variable in the absence of which, independent variable are not able to influence the overall consequences of farmer producer company.

CONCLUSION

Correlation analysis revealed several factors positively and highly significantly related to the consequences of FPC membership, including annual income, social participation, information seeking behavior, mass media utilization, training received, economic motivation, risk preference, innovativeness, scientific orientation, market orientation, and knowledge. Additionally, education, land holding, and occupation were found to have a positive and significant relationship with FPC consequences, while age did not establish any significant relationship. Multiple regressions showed that 77 per cent of the total variation in the overall consequences of FPCs on beneficiaries was explained by the 15 independent variables examined in the study. Furthermore, path analysis indicated that education, social participation, economic motivation, innovativeness, market orientation, and knowledge were crucial variables influencing the overall consequences of FPC membership.

In conclusion, the study provides valuable insights into the factors influencing the consequences of FPC membership on beneficiaries in the Marathwada region. It highlights the importance of various socio-economic and psychological factors in determining the impact of FPCs on farmers' livelihoods and agricultural practices. These findings can inform policymakers and agricultural practitioners in designing targeted interventions to maximize the benefits of FPC membership and promote sustainable agricultural development in the region.

RECOMMENDATIONS

Correlation analysis of beneficiaries revealed that annual income, social participation, information-seeking behavior, economic motivation, risk preference, mass media utilization, training received, innovativeness, scientific orientation, market orientation, and knowledge were positively and significantly related to the consequences of Farmer Producer Companies (FPCs). Therefore, FPCs should focus on enhancing these characteristics among beneficiary farmers during various FPC activities.

Based on the findings of this study, it is recommended that various extension agencies take the lead in promoting wider participation of FPC beneficiaries in different programs such as knowledge and skill-oriented training, study tours, exhibitions, farmers' rallies, field demonstrations, and meetings to enhance their cosmopolitanism.

CONFLICT OF INTEREST

All authors declare that they have no conflict of interest.

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