

# Economical Communication and Finance for Evolving Farmer Producer Organisations (FPOs) : The Hope & Inevitability for a Prosperous Rural Odisha

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## ABSTRACT

Farmer producer organisations (FPOs) helps reduce risk, improves new corridors for entrepreneurship and a new institutional expanse for redefining the value of agriculture for 21st century. This organization has got the ability to usher a perennial impact on the farm community essential for their evolutionary growth. Economical communication of FPO members has been the driving force for further institutional growth and expansion both by time and space. One hundred (100) respondents were selected from two FPOs, fifty (50) from each FPO of Ranpur block of Nayagarh district of Odisha to conduct the study following the snowball sampling method. The correlation coefficients found that mean family education has been showcasing higher economical communication. Regression results implied that 24 causal variables together have contributed 66.70 percent of the variance in the consequent variable, economical communication (y). The results of path analysis reveal that the variable size of holding has got a highest indirect effect on economical communication. This empirical study has got tremendous policy implications for Odisha and anywhere in India as well.

**Keywords:** *Economical communication, Farmer Producer Organization (FPO), institutional innovation, marketed surplus, size of holding*

## 1. INTRODUCTION

Farmers in India are reeling under the stress of market and livelihood uncertainty and that is why their income and motivation are so fragile and volatile as well. They have been over decades in need of a kinship organization which would be institutional support for providing assured income, secured livelihood, and a friendly enterprise ecosystem. To make this a reality, FPOs are redefining and renewing agriculture's commercial dent through public-private partnerships, entrepreneurial ideas, business tactics, branding, and socialization. Economical communication lays the foundation for entrepreneurship and marketability, branding, and managing customer behavior. This goes truly incredible and inevitable while an FPO is perfectly set for attaining the status of (FPC).

It has been found that the perception of the registration process, company status, and benefits of transformation from FPO to FPC is still not clear, complete, and convincing. To make farmers strong and confident, they need to be properly directed into the process of entrepreneurial and economic communication through exposure visits, training, capacity building, motivation, and performance exercises.

Farmer organizations are inclusive of the poor and are charged to become a market outlet for smallholder farmers (Tolno et al. 2015). FPOs consist of a collaborative network structure which has resulted in various innovative practices that are benefiting the stakeholders (Bikkina et al., 2018). Institutional credit, informed and better decisions, access to better and improved inputs, effectiveness & efficiency in farming operations, and better marketing facilities are provided through the FPOs which leads to an increase in the income of farmers. (Sharma et.al., 2019) Information and awareness initiatives among the farmers are also responsible for farmers' participation and empowerment in FPOs. (Gurung and Choubey, 2022) To be commercially viable and competitive, many producer groups work to increase their members' access to agricultural technologies, extension information, and knowledge of risk-

reduction and productivity-enhancing management techniques such as handling and storing grain after harvest. (Shiferaw et.al., 2011)

For better marketing opportunities, the utility of e-commerce platforms for a variety of agricultural activities such as bulk trading of produce, purchasing inputs, accessing market information, or crop management procedures is significant for FPO members. (Pendyala et.al., 2022) Expenditure and Communication Access have a significant impact on customer buying behavior and seller performance in the ambit of the retail chain in marketing. (Banik & Acharya, 2020) Input and credit delivery mechanisms are significant for the social ecology of entrepreneurial communication (Roy and Acharya, 2021). Trust and communication contributed to promoting paddy farmers' farm performance, especially profit, sales, cash flow growth, and developing long-term business relationships. (Iris et.al., 2021) FPO provided price-related information and the farmers perceived that FPO provides service-related factors to the farmers. (Gokul et.al., 2019) Farmers can benefit from playing an active role in the market economy if farmer organizations are strong and vibrant. (Millie et al. 2006) With this background, the study aimed to estimate the inter and intra-level of interaction between sets of predicted variable, economical communication and predictor variables ( $x_1$ - $x_{24}$ ).

## **2. MATERIALS AND METHODS**

### **2.1 Sampling Design**

The present study was conducted in 2 farmer producer organizations (FPOs) from Ranpur block of Nayagarh district of Odisha. Purposive sampling methods were used to select the State, District, Block, and Villages. Hundred (100) respondents in total were selected from two FPOs, fifty (50) from each FPO to conduct the study following snowball sampling method.

### **2.2 Pilot Study**

With the assistance of the research supervisor, a comprehensive list of responses was created. Before beginning this study, an informal conversation with several farmers, local authorities, livelihood mission officials and extension workers was held. The data were collected through a pilot survey and structured interview schedule.

### **2.3 Selection of variables and statistical tools**

Appropriate operationalization and measurement of the variables have helped the researcher to land upon the accurate conclusions. Therefore, the selected variables for this study had been operationalized and measured in the following manner:

I) Independent variables II) Dependent variables. Independent variables selected for the study were age ( $x_1$ ), education ( $x_2$ ), no. of enterprise ( $x_3$ ), year of enterprise ( $x_4$ ), training exposure ( $x_5$ ), family size ( $x_6$ ), mean family education ( $x_7$ ), material possessed ( $x_8$ ), size of holding ( $x_9$ ), size of homestead land ( $x_{10}$ ), size of cultivated land ( $x_{11}$ ), size of land under irrigation ( $x_{12}$ ), no. of fragments ( $x_{13}$ ), crop yield ( $x_{14}$ ), livestock yield ( $x_{15}$ ), cropping intensity ( $x_{16}$ ), income ( $x_{17}$ ), family expenditure ( $x_{18}$ ), marketable surplus ( $x_{19}$ ), marketed surplus ( $x_{20}$ ), family labour ( $x_{21}$ ), no. of male workers ( $x_{22}$ ) no. of female workers ( $x_{23}$ ) and dependency ratio ( $x_{24}$ ).

Dependent variable selected for the study was Economical Communication ( $y$ ).

Appropriate statistical tools have been used to carry out the study viz, Correlation coefficient, Multiple regression analysis, Step wise regression analysis and Path analysis with the help of IBM SPSS v26.0.

### **2.4 Pre-testing of interview schedule**

In order to correct or remove any irregularities from the interview schedule, the pretesting of the schedule was carried out. Pre-testing is also undertaken to see if the prepared questionnaire is

able to get the respondents to give honest and accurate responses. The respondents who are being questioned following the pre-test are excluded from the final sample.

## 2.5 Method of Data Collection

Personal interview of the respondents was performed. The medium of language was Odia which facilitated the data collection process in the state of Odisha. The ongoing investigation and work schedule were hampered by the COVID-19 outbreak in India. Despite this, the researcher made every effort to have this study a success.

## 3. RESULTS AND DISCUSSION

The subjective information is measured utilizing explicit numerical methodology. Then data analysis i.e. Co-efficient of correlation, multiple regression analysis, stepwise regression analysis and path analysis has been done to evaluate the information.

**Table-1: Coefficient of Correlation (r): Economical Communication (y) Vs. 24 Independent Variables (x<sub>1</sub>-x<sub>24</sub>)**

Sl. No.	Independent Variables	'r' Value	Remarks
1	Age (x <sub>1</sub> )	-0.109	
2	Education (x <sub>2</sub> )	0.004	
3	Number of enterprise (x <sub>3</sub> )	0.219	*
4	Year of enterprise (x <sub>4</sub> )	0.249	*
5	Training exposure (x <sub>5</sub> )	0.143	
6	Family size (x <sub>6</sub> )	0.023	
7	Mean family education (x <sub>7</sub> )	0.329	**
8	Materials possessed (x <sub>8</sub> )	0.288	**
9	Size of holding (x <sub>9</sub> )	0.255	*
10	Size of homestead land (x <sub>10</sub> )	0.051	
11	Size of cultivated land (x <sub>11</sub> )	0.282	**
12	Size of land under irrigation (x <sub>12</sub> )	0.325	**
13	Number of fragments (x <sub>13</sub> )	0.541	**
14	Crop yield (x <sub>14</sub> )	0.336	**
15	Livestock yield (x <sub>15</sub> )	0.198	*
16	Cropping intensity (x <sub>16</sub> )	-0.130	
17	Income (x <sub>17</sub> )	0.235	*
18	Family expenditure (x <sub>18</sub> )	0.097	
19	Marketable surplus (x <sub>19</sub> )	-0.336	**
20	Marketed surplus (x <sub>20</sub> )	-0.272	**
21	Family labour (x <sub>21</sub> )	0.087	

22	No of male workers ( $x_{22}$ )	0.594	**
23	No of female workers ( $x_{23}$ )	0.399	**
24	Dependency ratio ( $x_{24}$ )	0.092	

\*\*Correlation is significant at the 0.01 level

\*Correlation is significant at the 0.05 level

### 3.1 Coefficient of Correlation (r): Economical Communication (y) Vs. 24 Independent Variables ( $x_1$ - $x_{24}$ )

Table-1 presents the coefficient of correlation between Economical Communication (y) and 24 independent variables. It has been found that the following variables viz. marketable surplus ( $x_{19}$ ) and marketed surplus ( $x_{20}$ ) of FPO members are having negative but significant correlation with the dependent variable. The variables number of enterprise ( $x_3$ ), year of enterprise ( $x_4$ ), mean family education ( $x_7$ ), materials possessed ( $x_8$ ), size of holding ( $x_9$ ), size of cultivated land ( $x_{11}$ ), size of land under irrigation ( $x_{12}$ ), number of fragments ( $x_{13}$ ), crop yield ( $x_{14}$ ), livestock yield ( $x_{15}$ ), income ( $x_{17}$ ), no. of male workers ( $x_{22}$ ) and no. of female workers ( $x_{23}$ ) have recorded positive significant correlation with the dependent variable. The correlation coefficients reveal that respondents having more no. of enterprises ( $x_3$ ), more year of enterprises ( $x_4$ ), mean family education ( $x_7$ ), more no. of materials possessed ( $x_8$ ), larger size of holding ( $x_9$ ), higher size of cultivable land ( $x_{11}$ ), more land under irrigation ( $x_{12}$ ) and more number of fragments ( $x_{13}$ ), higher crop yield ( $x_{14}$ ) and livestock yield ( $x_{15}$ ) along with higher income ( $x_{17}$ ) exhibited strong association with the consequent variable economical communication. Also, the independent variables Marketable surplus ( $x_{19}$ ), marketed surplus ( $x_{20}$ ), no. of male workers ( $x_{22}$ ) and no. of female workers ( $x_{23}$ ) have been intrigued with the consequent variable. These have correlated with the access and utilization of various sources of economical information by the FPO members. Similar studies have found that mean family education has significant relationship with economical communication. (Roy & Acharya, 2021)

**Table-2 : Multiple Regression Analysis: Economical Communication (y) vs. 24 Causal Variables ( $x_1$ - $x_{24}$ )**

Sl. No.	Variables	Reg. Coef. B	S.E. B	Beta	t Value
1	Age ( $x_1$ )	0.069	0.121	0.069	0.568
2	Education ( $x_2$ )	-0.164	0.123	-0.164	-1.330
3	Number of enterprise ( $x_3$ )	0.100	0.130	0.100	0.764

4	Year of enterprise ( $x_4$ )	-0.003	0.092	-0.003	-0.035
5	Training exposure ( $x_5$ )	0.097	0.126	0.097	0.772
6	Family size ( $x_6$ )	0.037	0.104	0.037	0.356
7	Mean family education ( $x_7$ )	0.151	0.085	0.151	1.774
8	Materials possessed ( $x_8$ )	0.221	0.097	0.221	2.286
9	Size of holding ( $x_9$ )	-0.839	0.532	-0.839	-1.575
10	Size of homestead land ( $x_{10}$ )	0.082	0.068	0.082	1.204
11	Size of cultivated land ( $x_{11}$ )	0.829	0.553	0.829	1.500
12	Size of land under irrigation ( $x_{12}$ )	0.083	0.112	0.083	0.747
13	Number of fragments ( $x_{13}$ )	0.246	0.095	0.246	2.588
14	Crop yield ( $x_{14}$ )	0.204	0.085	0.204	2.392
15	Livestock yield ( $x_{15}$ )	0.063	0.069	0.063	0.913
16	Cropping intensity ( $x_{16}$ )	0.029	0.077	0.029	0.380
17	Income ( $x_{17}$ )	-0.037	0.075	-0.037	-0.491
18	Family expenditure ( $x_{18}$ )	-0.055	0.076	-0.055	-0.720
19	Marketable surplus ( $x_{19}$ )	-0.113	0.083	-0.113	-1.372
20	Marketed surplus ( $x_{20}$ )	-0.185	0.092	-0.185	-2.009
21	Family labour ( $x_{21}$ )	-0.069	0.089	-0.069	-0.776
22	No of male workers ( $x_{22}$ )	0.410	0.095	0.410	4.328
23	No of female workers ( $x_{23}$ )	0.041	0.083	0.041	0.495
24	Dependency ratio ( $x_{24}$ )	-0.077	0.070	-0.077	-1.090

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**R square: 72.50% ; The standard error of the estimate: 0.603**

### **3.2 Multiple Regression Analysis: Economical Communication (y) vs. 24 Causal Variables ( $x_1$ - $x_{24}$ )**

Table-2 presents the full model of regression analysis between exogenous variable Economical Communication (y) vs. 24 causal variables. It was found that 24 causal variables together contributed 72.50 percent of variance in consequent variable Economical Communication (y). It was found that the size of cultivated land ( $x_{11}$ ) has exerted the highest direct effect on Economical Communication (y). It means that those who were having highest size of land in possessions, they were accessing more economical information. So, big farmers can access fresh and effective economical information from all

the possible sources whereas poor farmers are lagging behind.

**Table-3 : Stepwise Regression Analysis: Economical Communication (y) Vs. 24 Causal Variables (x<sub>1</sub>-x<sub>24</sub>)**

Sl. No	Variables	Reg.coef. B	S.E. B	Beta	t value
1	No of male workers (x <sub>22</sub> )	0.489	0.074	0.489	6.574
2	Materials possessed (x <sub>8</sub> )	0.243	0.068	0.243	3.571
3	Crop yield (x <sub>14</sub> )	0.206	0.064	0.206	3.216
4	Number of fragments (x <sub>13</sub> )	0.237	0.072	0.237	3.307
5	Marketed surplus (x <sub>20</sub> )	-0.200	0.062	-0.200	-3.235
6	Mean family education (x <sub>7</sub> )	0.165	0.063	0.165	2.626

**R square: 66.70% ; The standard error of the estimate: 0.596**

### **3.3 Stepwise Regression Analysis: Economical Communication (y) Vs. 24 Causal Variables (x<sub>1</sub>-x<sub>24</sub>)**

Table-3 represents step-down regression analysis. In stepwise regression analysis, it was discernible that the variables no. of male workers (x<sub>22</sub>), number of fragments (x<sub>13</sub>), materials possessed (x<sub>8</sub>), marketed surplus (x<sub>20</sub>), crop yield (x<sub>14</sub>) and mean family education (x<sub>7</sub>) were retained at the last step. It implies that fragmentation is not just physical disintegration of land masses. The socio-ecological behavior of farmers due to fragmentation of land has had a more psychic effect due to the stress associated with utilization of more labour, resources and time. Fragmentation leads to cost and energy prodigal nature of farmers. This also leads to the need of improvising economical communication of the FPO members. Also, mean family education came up as an important variable which implies that educated farmers are more involved towards economical communication. The r<sup>2</sup> value being 66.70%, these 6 variables have together contributed to 92 % of 72.50 % total variance of explicated variables to vindicate their distinctive contribution in characterising economical Communication. Similar studies have found that marketed surplus has significant relationship with economical communication. (Roy & Acharya, 2021)

**Table-4 : Path Analysis: Decomposition of Total Effect into Direct, Indirect and Residual Effect: Economical Communication (y) Vs. 24 exogenous variables (x<sub>1</sub>-x<sub>24</sub>)**

Sl. No	Variables	Total Effect	Direct Effect	Indirect Effect	Highest Indirect Effect
1	Age ( $x_1$ )	-0.109	0.069	-0.178	0.108 (x2)
2	Education ( $x_2$ )	0.004	-0.161	0.165	-0.108 (x9)
3	Number of enterprise ( $x_3$ )	0.219	0.100	0.119	0.132 (x8)
4	Year of enterprise ( $x_4$ )	0.249	-0.004	0.253	0.357 (x11)
5	Training exposure ( $x_5$ )	0.143	0.095	0.048	-0.228 (x9)
6	Family size ( $x_6$ )	0.023	0.035	-0.012	-0.118 (x2)
7	Mean family education ( $x_7$ )	0.329	0.150	0.179	0.081 (x22)
8	Materials possessed ( $x_8$ )	0.288	0.220	0.068	-0.092 (x9)
9	Size of holding ( $x_9$ )	0.255	<b>-0.818</b>	1.073	0.803 (x11)
10	Size of homestead land ( $x_{10}$ )	0.051	0.082	-0.031	0.058 (x11)
11	Size of cultivated land ( $x_{11}$ )	0.282	0.809	<b>-0.527</b>	<b>-0.812 (x9)</b>
12	Size of land under irrigation ( $x_{12}$ )	0.325	0.083	0.242	0.631 (x11)
13	Number of fragments ( $x_{13}$ )	0.541	0.246	0.295	-0.361 (x9)
14	Crop yield ( $x_{14}$ )	0.336	0.203	0.133	-0.079 (x9)
15	Livestock yield ( $x_{15}$ )	0.198	0.063	0.135	0.147 (x11)
16	Cropping intensity ( $x_{16}$ )	-0.130	0.029	-0.159	-0.169 (x11)
17	Income ( $x_{17}$ )	0.235	-0.036	0.271	0.088 (x14)
18	Family expenditure ( $x_{18}$ )	0.097	-0.054	0.151	-0.171 (x9)
19	Marketable surplus ( $x_{19}$ )	-0.336	-0.114	-0.222	-0.095 (x9)
20	Marketed surplus ( $x_{20}$ )	-0.272	-0.185	-0.087	-0.172 (x9)
21	Family labour ( $x_{21}$ )	0.087	-0.067	0.154	-0.137 (x9)
22	No of male workers ( $x_{22}$ )	<b>0.594</b>	0.411	0.183	0.229 (x11)
23	No of female workers ( $x_{23}$ )	0.399	0.041	0.358	0.3 (x11)
24	Dependency ratio ( $x_{24}$ )	0.092	-0.077	0.169	0.081 (x11)

**Residual effect: 0.277 ; Highest Indirect Individual effect:  $x_9$  (10)**

### **3.4 Path Analysis: Decomposition of Total Effect into Direct, Indirect and Residual Effect:**

## **Economical Communication (y) Vs. 24 exogenous variables ( $x_1$ - $x_{24}$ )**

Table-4 evince that the variable size of holding ( $x_9$ ) have got highest indirect effect of as much as 10 exogenous variables to impact on the consequent variable. It has got cause and effect relationship. When a farmer is having higher size of land holding, with propensity towards surplus generation agriculture could go stronger. No. of fragments ( $x_{13}$ ) has exerted the highest total effect. It reveals that fragmentation of land resources has got significant effect in accessing different sources of economical information and cater to the needs of farmers. The residual effect been 0.277, it is to conclude that even with the combination of 24 exogenous variables, 27.7 per cent variance in dependent variable could not be explained. This suggests the inclusion of more numbers of relevant and consistent variables for this framework of study. Similar studies have found that farm size has significant effect among SHGs in Gujarat (Patil et al., 2020)

## **4. CONCLUSION**

Poverty in rural Odisha, although reduced substantially, still it remains as serious concern towards fostering progress and prosperity of farmers ensuring food security of the state and nation at large. FPOs are rapidly becoming kinship organisation to save the farmers from market, weather and livelihood insecurities. The present study came up with a strong revelation in eliciting the fact that size of cultivated land, no. of male workers, number of enterprises, materials possessed, crop yield, mean family education and marketed surplus are of immense application to make the FPOs a performing business organization to serve the rising needs of the participating farmers and beyond. A series of socio-entrepreneurial research need to be organized at the grassroot level to elicit hard evidences as to evaluate and predict the present contribution of FPOs and the future strategies to make happy returns for millions working in open air ecosystem, a reality and possibility as well.

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