

THE EFFECT OF FARMERS NETWORK AND FARM SIZE ON COMMUNITIES OF PRACTICES OF FARMERS

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ABSTRACT:

The objective of the paper is to find the relationship between farmers network and farm size on communities of practice. The demographic characteristics plays a significant role in designing a policy for agriculture in India, it is very challenging because of the diversity in agricultural practices and among farmers. This study examines the networking pattern of farmers and their association with specific groups and communities to enhance knowledge about agricultural related matters. To address the objective, data was collected from agricultural farmers from five states of southern India. A structured questionnaire was developed and used to collect data from the respondents. Specific data analytical tools were used to analyze the data, the results show a positive relationship between the study variables.

Keywords: *Agricultural Farmers, Agricultural Innovations, Communities of Practice, Farmers Networks, Farm Size*

INTRODUCTION:

Approximately 70% of Indian population are dependent on agriculture as their primary livelihood, making a significant contribution of 19% to the country's GDP. Despite the substantial number of families dependent on agriculture, income and financial development among them remain limited. This can be attributed to the highly intricate and unorganized nature of the Indian agricultural sector, which can be considered the largest unorganized sector in the country. (handbook of statistics on Indian states)

The size of land holdings significantly influences a farmer's income, with the average land holding size in India being approximately 1.15 hectares. This poses a challenge for small-scale or micro farmers, hindering their ability to engage in mass production and diversify into multiple crops. As a consequence, the overall growth of farmers is adversely affected. Agriculture-dependent households experience an average monthly income as low as 10,218. The escalating capital requirements for farmers further compounds their financial challenges. Over the past decade (2013-2023), the cost of pesticides has surged by 44%, adding to the economic burden on farmers.

Challenges of Agriculture Sector

Privatizing agriculture sector, which includes farming practices, due to several reasons. However, there has been notable progress and improvement in certain areas like seed and pesticide production. While the overall farming landscape remains largely traditional and small-scale, the seed and pesticide industries have seen advancements through the involvement of private companies like Monsanto (now part of Bayer) and Mahyco (Maharashtra Hybrid Seeds Company) have played significant roles in introducing genetically modified (GM) seeds and high-yielding varieties. These companies have developed seeds that are resistant to pests and diseases, contributing to increased crop yields and better farm productivity in the pesticide sector, companies like Syngenta

and UPL have been instrumental in developing and manufacturing improved pesticides. These companies have introduced innovative solutions that are more effective in pest control, reducing crop losses and promoting sustainable farming practices. Challenges related to land fragmentation, traditional farming practices, and concerns about the impact of privatization on small farmers have contributed to the cautious approach towards complete privatization of the entire agricultural sector in India. Despite this, advancements in specific areas demonstrate the potential benefits of collaboration between the private sector and agriculture for sustainable development.

The lack of effective consultation with farmers and stakeholders during the policy formulation process has also been a contributing factor. Farmers' involvement in policy discussions can ensure that their concerns and requirements are adequately addressed. For instance, during the recent protests, farmers expressed dissatisfaction with the perceived lack of consultation and engagement in the decision-making process.

Farmers Networks:

Farmers networks have gained increasing attention as important platforms for knowledge sharing, collaboration, and innovation among innovative farmers. This literature review aims to explore the concept of farmers networks and their role in supporting knowledge transfer, fostering agricultural innovation, and driving sustainable farming practices. By examining relevant studies, this review aims to provide insights into the characteristics, benefits, challenges, and outcomes associated with farmers networks among innovative farmers.

Farmers networks are informal or formal associations of innovative farmers who voluntarily come together to share knowledge, experiences, and innovative practices. These networks are characterized by shared interests, common goals, and a collective commitment to improving agricultural practices and outcomes. Farmers networks provide a platform

for knowledge sharing and collaboration among innovative farmers. Through regular meetings, workshops, field visits, and online platforms, farmers can exchange information, practical insights, and successful strategies. This knowledge exchange leads to enhanced problem-solving abilities, improved decision-making, and the adoption of innovative practices.

Farmers networks play a vital role in driving agricultural innovation by facilitating the diffusion and adoption of new technologies, practices, and sustainable farming methods. Through network interactions, farmers can learn from each other's successes and failures, experiment with new approaches, and collectively address challenges, resulting in increased productivity, profitability, and sustainability. Participation in farmers networks can lead to increased empowerment and social capital among innovative farmers. Networks provide a sense of belonging, trust, and mutual support, allowing farmers to access resources, expertise, and opportunities that may otherwise be limited. Enhanced social capital strengthens the ability of farmers to adapt to change, influence policy, and collectively advocate for their interests.

The establishment and sustainability of farmers networks face challenges such as limited resources, geographic dispersion, and varying levels of participation. Successful farmers networks often demonstrate effective leadership, facilitation, and coordination. Additionally, supportive policies, funding mechanisms, and institutional support contribute to the longevity and effectiveness of farmers networks. Farmers networks among innovative farmers offer a valuable avenue for knowledge sharing, collaboration, and agricultural innovation. By fostering the exchange of knowledge and experiences, farmers networks contribute to improved farming practices, increased productivity, and the adoption of sustainable agricultural approaches. Recognizing the significance of farmers networks and providing support for their establishment and growth can enhance the capacity of innovative

farmers to address challenges and contribute to the overall development of the agricultural sector.

REVIEW OF LITERATURE:

Communities of Practice (CoPs):

Communities of Practice (CoP) have gained significant attention in recent years as a promising approach to fostering knowledge sharing and innovation within various domains. In the agricultural sector, CoPs have emerged as valuable platforms for facilitating collaboration, learning, and the exchange of innovative practices among farmers. The role of CoPs in supporting innovative farmers and their impact on knowledge transfer, agricultural practices, and sustainable development are significant and diverse. Aleksandra Dolinska, Patrick d'Aquino (2015) state that Informal and spontaneous character of communities of practice makes it difficult to both work with existing CoPs (Layadi et al., 2011).

Klerkx and Proctor (2013), Communities of Practice are characterized as social structures where individuals with shared interests, goals, and expertise come together to actively engage in knowledge sharing, problem-solving, and learning. They are driven by mutual interactions and develop a collective identity through their shared practices

Spielman et al, (2009), CoPs provide a conducive environment for farmers to exchange tacit and explicit knowledge, experiences, and practical insights. Through informal interactions, discussions, and collaborative activities, innovative farmers can share and co-create knowledge, leading to the generation of new ideas and the adoption of novel practices

Hall and Clark, (2009), CoPs have demonstrated their potential to foster innovation among farmers by promoting experimentation, learning from failures, and disseminating successful practices. They serve as platforms for farmers to explore new techniques, technologies, and sustainable farming methods, contributing to improved agricultural productivity, environmental stewardship, and resilience.

Hounkonou et al, (2012), CoPs rely on social interactions and collective learning processes to facilitate knowledge exchange. Trust, mutual respect, and a sense of belonging are crucial for the success of CoPs. Active participation, engagement in discussions, and collaborative problem-solving enable farmers to acquire new knowledge, refine their skills, and develop innovative practices.

John (2005), Implementing and sustaining CoPs for innovative farmers faces certain challenges, such as geographic dispersion, limited resources, and time constraints. However, the availability of digital platforms, funding support, effective leadership, and facilitation can enhance the functioning and impact of CoPs in agricultural contexts.

Communities of Practice play a vital role in fostering knowledge sharing, innovation, and the adoption of sustainable practices among farmers. By creating spaces for collaboration, learning, and the exchange of experiences, CoPs enable innovative farmers to enhance their agricultural practices, address challenges, and contribute to the overall development of the farming community. Recognizing the importance of CoPs and providing support for their establishment and maintenance can lead to improved outcomes in agricultural innovation and sustainable farming. Generation of new knowledge through these groups is possible only when people are constantly interacting with one another to share experience and understanding to produce new understandings of new knowledge.

Barston and Tusting (2005), mentioned that participation in the groups is an essential aspect of practice-based learning. Brown and Duguid (2001) pointed that these CoPs acts a repository of explicit knowledge (formal in nature) as well as tacit knowledge (intangible and informal in nature) and holds the key to any change process. These groups encourage members to generate a common history or culture by sharing their practices, cases, methods, and repeated interactions (Wenger et al., 2002).

Aleksandra Dolinska et al (2016), examines the farmers role in the innovation process through

communities of practice (CoPs). In the multiple stakeholders' settings CoPs create a scope for the farmers through their interactions and learning. Sewell et al. (2014) described it as "sharing power with farmers" which means gaining negotiating capacity. Leeuwis and Aarts (2011) identified that constructing narratives have a direct effect on innovation process within the CoPs and it gives a sense and space for change.

OBJECTIVE

The objective of the research paper is to find the relationship between farmers network and communities of practice among farmers.

H1: There is a relationship between farmers networks and communities of farmers.

RESEARCH METHODOLOGY:

SAMPLING

Sample is a small representative segment of the target universe of the research drawn systematically to collect the needed data for any scientific study. The sampling frame was South India and the data about population was retrieved from the Ministry of Agriculture. There were 5 states of south India during 2021. The population for the present study is agricultural farmers from five states in South India.

SAMPLE SIZE AND TECHNIQUE

In research, the term "sample size" refers to the minimum number of individuals needed to draw valid conclusions. The sample size was calculated scientifically using Israel's formula (Israel, G. D., 1992). Determining sample size is very much essential to determine the research's reliability. The final sample size was 552 based at 5% error in mean estimates.

DATA ANALYSIS AND RESULTS:

Farmers Network

The below table.1 shows that 41.3 percent of the farmers associated networks is academic, followed by 37.9 percent of the farmers have their network in

farmer organization and 20.8 percent of the farmers have their network is both.

Table.1: Farmers Network

Farmers Network	No. of Respondents	Percentage
Academic	217	41.3
Farmer Organization	199	37.9
Both	109	20.8
Total	525	100.0

Source: Field Survey

Preference of Social Media Network

The below table.2 shows that 33.9 percent of the responded farmers prefer social media network YouTube, followed by 31.4 percent of the farmers prefer Instagram as their social media network, 29 percent of the farmers preference is Facebook as their social media network and 5.7 percent of the farmers preferred social media network is WhatsApp.

Table.2: Preference of Social Media Network

Social Media Network	No. of Respondents	Percentage
WhatsApp	30	5.7
Facebook	152	29.0
Instagram	165	31.4
YouTube	178	33.9
Total	525	100.0

Source: Field Survey

Usage of Social Media Network

The below table.3 shows that 62.3 percent of the farmer’s usage of social media network very often and 37.7 percent of the farmer’s usage of social media network rarely.

Table-3: Usage of Social Media Network

Social Media Network Use	No. of Respondents	Percentage
Rarely	198	37.7
Very often	327	62.3
Total	525	100.0

Rarely	198	37.7
Very often	327	62.3
Total	525	100.0

Source: Field Survey

Contacts in Your Network for Knowledge/Information

The below table.4 shows that 41.3 percent of the responded farmers contact academician in their networks, followed by 37.9 percent of the farmers contact researchers in their networks and 20.8 percent of the Farmers contact advisors in their network.

Table 4: Contact in Your Network

Contact in Your Network	No. of Respondents	Percentage
Academician	217	41.3
Researcher	199	37.9
Advisor	109	20.8
Total	525	100.0

Source: Field Survey

Communities of Practices across Farm Size

Null hypothesis – There are no significant difference in mean scores of Communities of practices among Farmers with different farm size.

Table-5 Community of Practices across Farm Size (N= 525)

Less than 5 Acre	N	Mean	SD	SE
5-10 Acre	403	23.78	3.721	.185
11-15 Acre	79	23.56	3.859	.434
Above 15 Acre	20	23.75	3.401	.760
Less than 5 Acre	23	23.78	3.425	.802

Table.5 shows the mean scores, standard deviation (SD) and standard Error of mean (SE) of community of practices across farm size. The mean scores varied in the range of community of practices 23.58 to 23.78.

Table.6 Community of Practices across Farm Size –ANOVA – (N=525)

		ANOVA				
	Sum of Squares	Df	Mean Square	F	Sig.	
NEWSD I	Between Groups	41.143	2	20.571	1.630	.197
	Within Groups	6298.833	499	12.623		
	Total	6339.976	501			
MP	Between Groups	8.299	2	4.149	.238	.788
	Within Groups	8684.865	499	17.405		
	Total	8693.163	501			
SI	Between Groups	17.775	2	8.887	.819	.441
	Within Groups	5413.789	499	10.849		
	Total	5431.564	501			
KSL	Between Groups	2.846	2	1.423	.067	.935
	Within Groups	10613.608	499	21.270		
	Total	10616.454	501			
DI	Between Groups	8.368	2	4.184	.462	.630
	Within Groups	4517.945	499	9.054		
	Total	4526.313	501			

A one-way ANOVA was conducted to understand the effect of farm size on communities of practices. Table. 6. shows the results. The results suggest that the farm size has no effect on community of practices of the respondents.

- The analysis also discovered 76.8 percent of the farmers their having less than 5 Acre their farm size, followed by 15 percent of the farmers their having 5-10 Acre their farm size, 4.4 percent of the farmers their having 11-15 Acre farm size and 3.8 percent of the formers their having Above 15 Acre farm size. From the analysis 41.3 percent of the farmers their network is academic, followed by 37.9 percent of the farmers their network is former organization and 20.8 percent of the farmers their network is both. The study shows that 33.9 percent of the farmers preference of social media network is YouTube, followed by 31.4 percent of the farmers preference of social media network is Instagram, 29 percent of the farmers preference of social media network

is Facebook and 5.7 percent of the farmers preference of social media network is whatsapp. The study found that 62.3 percent of the farmer’s usage of social media network very often and 37.7 percent of the farmer’s usage of social media network rarely. The study concluded 41.3 percent of the farmer’s contact their network is academican, followed by 37.9 percent of the farmers contact their network is researcher and 20.8 percent of the formers contact their network is advisor. The study reveals that role of community practices dimensions, Shared Domain of Interest, Membership and participation, Social Interaction, Knowledge sharing and learning and Diffusion of innovation.

CONCLUSION:

This empirical research finds a positive relationship between firm size, farmers networks and communities of practice. The size indicates the risk they take and amount they invest on farming; these external

factors influence their knowledge seeking behavior and enthusiasm to learn best practices related to the agriculture. This study helps to design customized policies related to their networking styles and preference and according to the firm sizes. Shared it can be crated among farmers, if they can be divided based on the land holdings and preferred network styles.

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