***Short Research Article***

**SOCIO-ECONOMIC PROFILE OF INNOVATIVE FARMERS IN TELANGANA**

**ABSTRACT**

The present study was conducted to understand the socio-economic profile of innovative farmers in Telangana, India, using an ex-post-facto research design. A total of 180 innovative farmers were purposively selected from three agro-climatic zones, with data collected through structured interviews and analyzed using the cumulative square root frequency method. Majority of innovative farmers (61.11%) belonged to the middle-aged group (36 to 50 years), most farmers (25.00%) had completed secondary school, 43.33% of farmers owning medium-sized holdings, 45.00% of farmers fell into the low possession category and income-wise, more than half (52.22%) belonged to the upper-middle-income category, low area under irrigation (42.78%) and small family size (72.78%).

***Keywords:*** *Innovative farmers, socio-economic variables, profile*

**INTRODUCTION**

 Farmers have evolved beyond simply adopting innovations introduced by external stakeholders. In marginal agro-ecosystems, they actively seek technologies that align with their biophysical, economic, and socio-cultural conditions. Over time, farmers have developed numerous grassroots innovations that have enhanced their profits and transformed farming into a viable industry. Farmer-led innovation, where farmers spearhead the creation of new knowledge, technologies, and practices is increasingly recognized as essential for ensuring the agricultural sector’s social, economic, and environmental sustainability.

 A farmer’s capacity to innovate is influenced by various factors, including their socio-economic profile, psychological attributes, and situational conditions. Innovative farmers, as key agents of change, continuously explore new methods, adopt modern technologies, and address agricultural challenges through creative solutions. Examining their socio-economic background such as age, education, landholding size, income, and material possession offers valuable insights into how these factors shape their ability to innovate, adapt, and drive agricultural progress. There are limited researches on profile of the innovative farmers in Telangana and hence, the present study was formulated to understand the socio-economic profile of the innovative farmers.

**MATERIALS AND METHODS**

 In this study, *Ex-post-facto* research design was adopted. The study was conducted in the state of Telangana, which was selected purposively. From each agro climatic zone of Telangana, one Krishi Vigyan Kendra (KVK) under the administrative control of the university was randomly selected. From each KVK, list of innovative farmers was obtained and sixty innovative farmers were purposively selected, leading to a total of 180 farmers. The variables were operationalized by assigning scores to the innovative farmers' responses. Data collected was analysed using cumulative square root frequency method.

**RESULTS AND DISCUSSION**

The following table is the depiction of analytical view of socio-economic characteristics of innovative farmers.

**Table 1: Socio-economic characteristics of Innovative Farmers**

 **(n=180)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Characteristics** | **Categories** | **Frequency**  | **Per cent** |
| 1 | Age | Young age group (up to 35 years) | 16 | 08.89 |
| Middle age group (above 35 to 50 years | 110 | 61.11 |
| Old age group ( above 50 years) | 54 | 30.00 |
| 2 | Level of education | Illiterate | 2 | 1.11 |
| Can read and write | 8 | 4.44 |
| Primary education | 25 | 13.89 |
| Secondary school | 45 | 25 |
| High school | 23 | 12.78 |
| Intermediate | 40 | 22.22 |
| Graduate  | 29 | 16.11 |
| Post graduate and above | 8 | 4.44 |
| 3 | Landholding  | Marginal (Up to 1.00 ha.)  | 4 | 02.22 |
| Small (1.01 to 2.00 ha.)  | 14 | 07.78 |
| Semi-medium (2.01 to 4.00 ha.)  | 25 | 13.89 |
| Medium (4.01 to 10.00 ha.)  | 78 | 43.33 |
| Large (10.01 ha & above)  | 60 | 32.78 |
| 4 | Material Possession | 07.00-09.15 | 81 | 45.00 |
| 09.15-12.41 | 54 | 30.00 |
| 12.41-17.00 | 45 | 25.00 |
| 5 | Annual income | Low income (Upto ₹ 70,769) | 03 | 01.67 |
| Lower Middle income (₹70,070-₹2,73,099) | 36 | 20.00 |
| Upper Middle income (₹2,73,100-₹8,45,955) | 94 | 52.22 |
| High income (₹8,45,956 and above) | 48 | 26.11 |
| 6 | Family size  | Small (02-04) | 131 | 72.78 |
| Medium (04-06) | 42 | 23.33 |
| High (06-08) | 07 | 03.89 |
| 7 | Area under irrigation | Low (02.00-06.72) | 77 | 42.78 |
| Medium (06.72-12.14) | 65 | 36.11 |
| High (12.14-25.00) | 38 | 21.11 |

 The results from the above table depicts that about 61.11 per cent of the innovative farmers were middle aged, followed by old (30.00%) and young age (08.89%) categories. This implies that majority of the innovative farmers were middle aged. Similar results were reported by Pradhan *et al*. (2022) An analysis of the innovative farmers' educational levels revealed that the majority (25.00%) had studied up to secondary school, followed by intermediate (22.22), graduates (16.11%) and primary education (13.89%). This indicates the role of basic education in fostering innovation. Kumar *et al.* (2020) in their study found that majority of the innovators were middle aged. Similar results were also reported by Sarada (2015), Devarakonda and Vijayalakshmi (2015), Meshram *et al*. (2020) and Rizzo *et al*. (2024).

 Majority of innovative farmers (43.33%) had medium size land holding followed by large size (32.78%), semi-medium size (13.89), small size (07.78%) and marginal size land holdings (02.22%). Farmers with larger landholdings have an advantage, as it provides them with more opportunities to experiment with and adopt new technologies in their fields. Llewellyn and Brown (2020) reported that nonlandowner farmers may be less able to capture the benefits resulting from an innovation.

 Exactly one fourth (45.00%) of the innovative farmers had low material possession, followed by medium (30.00%) and high (25.00%) material possession, respectively. This was due to the fact that farm implements such as tractors, bore wells, and engines serve as indicators of a farmer's economic status and play a crucial role in determining their capacity to take risks.

 More than half of the innovative farmers (52.22%) belonged to upper middle income followed by high income (26.11%), lower middle (20.00%) and low income (01.67%). The study shows that innovative farmers predominantly belonged to the upper-middle-income category. The key factor contributing to this phenomenon is the innovative farmers' ability to adopt efficient and productive farming practices, leading to increased income and improved livelihoods. The results were in line with the findings of Kumar *et al.* (2020), Meshram *et al*. (2020) and Pradhan *et al*. (2021).

 Majority (72.78%) of the innovative farmers had low family size, followed by medium (23.33%) and high (03.89%). This indicates that most farmers have a small family size, reflecting the growing trend of nuclear families in the current generation. The results were inline with the findings of Khuvung *et al*. (2022) and in contrast with the findings of Yagnesh (2017) and Gangalakshmamma (2019).

 About 42.78 per cent of the innovative farmers had low area under irrigation, followed by medium (36.11%) and high (21.11%) area under irrigation. Thus, it was evident that most of the innovative farmers (57.22%) had medium to high area under irrigation. Results were similar to the findings of Mehta *et al* (2012).

**Table 2. Distribution of innovative farmers according to material possession**

 **(n=180)**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Category** | **Yes** | **No** |
|  | **Electronic, home and** l**uxurious appliances** | **f** | **%** | **f** | **%** |
| 1 | Radio  | 09 | 05.00 | 171 | 95.00 |
| 2 | TV  | 180 | 100.00 | 0 | 00.00 |
| 3 | Mobile  | 180 | 100.00 | 0 | 00.00 |
| 4 | Mixer  | 175 | 97.23 | 05 | 02.78 |
| 5 | Air cooler  | 99 | 55.00 | 81 | 45.00 |
| 6 | Refrigerator  | 176 | 97.78 | 04 | 02.22 |
| 7 | LPG  | 178 | 98.89 | 02 | 01.11 |
| 8 | Vacuum cleaner  | 07 | 03.89 | 173 | 96.11 |
| 9 | Two wheeler  | 180 | 100.00 | 0 | 00.00 |
| 10 | Four wheeler  | 83 | 46.11 | 97 | 53.89 |
|  | **Total** | **180** | **100.00** | **180** | **100.00** |
|  | **Agricultural implements/equipment** |  |  |  |  |
| 1 | MB plough  | 13 | 07.22 | 167 | 92.73 |
| 2 | Wooden plough  | 11 | 06.11 | 169 | 93.89 |
| 3 | Cultivator  | 61 | 33.89 | 119 | 66.11 |
| 4 | Rotovator  | 58 | 32.22 | 122 | 67.78 |
| 5 | Harrow  | 30 | 16.67 | 150 | 83.33 |
| 6 | Tractor  | 81 | 45.00 | 99 | 55.00 |
| 7 | Pump set  | 146 | 81.11 | 34 | 18.89 |
| 8 | Oil engine  | 36 | 20.00 | 144 | 80.00 |
| 9 | Sprayer  | 176 | 97.78 | 04 | 02.22 |
| 10 | Power tiller  | 07 | 03.89 | 173 | 96.11 |
|  | **Total** | **180** | **100.00** | **180** | **100.00** |
| **f- Frequency, %- Percentage** |

 From the above table, it can be seen that 95.00 per cent of the innovative farmers do not have radio, followed by 100.00 per cent of the innovative farmers possessed television, two wheeler and mobile, mixer (97.23%), refrigerator (97.78%), LPG (98.89%). Whereas 55.00 per cent and 46.11 per cent of the innovative farmers had air cooler and four wheeler, respectively.

 Majority (97.78%) of the innovative farmers possessed sprayer, followed by pumpset (81.11%), tractor (45.00%), cultivator (33.89%), rotovator (32.22%), oil engine (20.00%), harrow (16.67%), MB plough (07.22%), wooden plough (06.11%) and power tiller (03.89%). The results were contrast with the findings of Dwivedi *et al*. (2014), Meshram *et al*. (2020).

**Table 3. Distribution of innovative farmers according to irrigation source**

 **(n=180)**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No.** | **Irrigation source** | **Frequency** | **Percentage** |
| 1. | Only canal  | 9 | 5.00 |
| 2. | Only tanks  | 0 | 0 |
| 3. | Only bore well  | 56 | 31.11 |
| 4. | Canal+ tanks  | 4 | 2.22 |
| 5. | Canal+ bore well  | **71** | **39.44** |
| 6. | Tanks+ bore well  | 3 | 1.67 |
| 7. | Canal+ tanks+ bore well  | 14 | 7.78 |
| 8. | Other (Pond+ motor /Borewell+ Vagu /Drip irrigation/ Open well/Tanks +ponds) | 23 | 12.78 |
|  | **Total** | **180** | **100.00** |

 From the above table, it can be seen that 39.44 per cent of the innovative farmers had canal+ bore well as their main source of irrigation, followed by only bore well (31.11%), others (12.78%), canals+tanks+bore well (07.78%), only canal (5.00%) and canals +tanks (02.22%). The results were partly similar with the findings of Arun (2024).

**CONCLUSION**

 The analysis reveals that the majority of innovative farmers were middle-aged, highlighting their active involvement in adopting and developing new agricultural practices. Most had an educational background up to the secondary level. Landholding size emerged as a significant factor, with 43.33% of innovative farmers having medium-sized holdings, which provided them with more opportunities to experiment with new technologies. More than half (52.22%) belonged to the upper-middle-income category, suggesting that innovation in farming practices contributes to increased income and better livelihoods. Overall, the study emphasizes that age, education, landholding size, material possession, and income are key determinants influencing farmers' ability to innovate and adapt to changing agricultural needs.

**CONFLICT OF INTEREST**

 No conflict of interest.

**ACKNOWLEDGEMENT**

 We extend our sincere gratitude to University Grants Commission for awarding UGC-NET JRF for the main author which aided in the successful completion of this research

**AUTHOR’S CONTRIBUTION**

 Boppana Jagadeeswari has conceived the research idea, designed the study, collected data, performed data analysis, and drafted the manuscript, Jagan Mohan Reddy M has provided guidance in research design, supervised data collection, and contributed to data interpretation and manuscript revision, Ravinder Naik V had assisted in data analysis, interpretation of results, and critical review of the manuscript for intellectual content, Malla Reddy M has supported fieldwork, coordinated with Krishi Vigyan Kendras (KVKs), and contributed to data validation and documentation and Srinivasa Chary has provided overall supervision, offered valuable suggestions during the research process, and contributed to final manuscript editing.

Disclaimer (Artificial intelligence)

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**REFERENCES**

1. Arun, L. 2024. Adoption of scientific recommended farm technologies by farmers in Haryana. *Ph.D. Thesis*. Dr. Yashwant Singh Parmar University of Horticulture and Forestry Solan (Nauni), Himachal Pradesh.
2. Devarakonda, S and Vijaya Laxmi, P. 2022. Profile characteristics of farmer innovators in generation of innovations and re-inventions. International Journal of Recent Advances in Multidisciplinary Research. 9(12): 8273-8279.
3. Dwivedi, K. P., Kumar, A and Singh, P. 2014. Profile of peri-urban and rural dairy farmers: A Comparative Analysis. *Indian Journal of Extension Education*. 50(3&4):53-57.
4. Gangalakshmamma. 2022. Innovative and Decision-Making Behaviour of Krishi Awardee Farmers. *Ph. D. Thesis*. University of Agricultural and Horticultural Sciences, Shivamogga.
5. Khuvung, Z., Mishra, P., Saikia, P and Naik, B. J. 2022. A Study on Profile Characteristics of Rice and Maize Farmers in the State of Nagaland, India. *Current Journal of Applied Science and Technology*. 41(48): 162-171.
6. Kumar, S., Singh, S. R., Kumari, C and Christopher, K. 2020. Socio-economic profile determining the adoption of innovations among the farmers of Bhagalpur district of Bihar. *Journal of Pharmacognosy and Phytochemistry*. 9(1): 1274-1276.
7. Llewellyn, R. S., & Brown, B. (2020). Predicting adoption of innovations by farmers: what is different in smallholder agriculture?. *Applied Economic Perspectives and Policy*. 42(1): 100-112.
8. Mehta, B. M., & Sonawane, M. 2012. Entrepreneurial behaviour of mango growers of Valsad district of Gujarat state. *Indian Research Journal of Extension Education*. *12*(1): 78-82.
9. Meshram, M., Khare, N. K., & Singh, S. R. K. 2020. Socio-economic profile of integrated farming system practicing farmers in Madhya Pradesh state. *The Pharma Innovation Journal*. *9*(4):155-159.
10. Patel, P. K and HM, V. K. 2021. Farmers socio-economic status and constraints using social media for sustainable agriculture development. *Guj. J. Ext. Edu.* 32 (2): 11-66.
11. Rizzo, G., Migliore, G., Schifani, G., & Vecchio, R. 2024. Key factors influencing farmers’ adoption of sustainable innovations: a systematic literature review and research agenda. *Organic Agriculture*. 14(1): 57-84.
12. Sarada, K., Sreenivasulu, M., Rao, I. S. and Devi, K. S. 2016. A Study on innovative farmers’ network (IFN) for transfer of Cotton (Gossypium spp) Production technologies in Telangana State. *Journal of Research PJTSAU*. 44(1/2):90-94.
13. Yagnesh, S, M. 2017. A Study on Innovative Behaviour of Banana Growers in Anand District of Gujarat. *M.Sc. (Ag.) Thesis.* Anand Agricultural University, Anand.