PLANT SCIENCE TODAY
Vol 12(sp4): 1-9
https://doi.org/10.14719/pst.11136

eISSN 2348-1900

RESEARCH ARTICLE

Engagement of youth in coconut farming and its entrepreneurial behaviour assessment in FPO

Arunkumar R[1], Murugan P P[2*], Senthilkumar M[2], Chandrakumar M[3], Senguttuvan K[4] & Gangai Selvi R[5]

[1]Department of Agricultural Extension and Rural Sociology, Tamil Nadu Agricultural University, Coimbatore 641 003, Tamil Nadu, India
[2]Directorate of Extension Education, Tamil Nadu Agricultural University, Coimbatore 641 003, Tamil Nadu, India
[3]Office of the Dean (Agriculture), Tamil Nadu Agricultural University, Coimbatore 641 003, Tamil Nadu, India
[4]Department of Agricultural Entomology, Tamil Nadu Agricultural University, Coimbatore 641 003, Tamil Nadu, India
[5]Department of Physical Sciences and Information Technology, Tamil Nadu Agricultural University, Coimbatore 641 003, Tamil Nadu, India

*Correspondence email - ppmurugan2008@gmail.com

Received: 05 August 2025; Accepted: 01 October 2025; Available online: Version 1.0: 22 October 2025

Cite this article: Arunkumar R, Murugan PP, Senthilkumar M, Chandrakumar M, Senguttuvan K, Gangai SR. Engagement of youth in coconut farming and its entrepreneurial behaviour assessment in FPO. Plant Science Today. 2025; 12(sp4): 1-9. https://doi.org/10.14719/pst.11136

Abstract

Coconut-based Farmer Producer Organisations (FPOs) have emerged as vital platforms for promoting youth entrepreneurship in India's agricultural sector. Given the crop's economic significance and value chain potential, particularly in Tamil Nadu, this study examines the entrepreneurial behaviour of rural youth engaged in coconut-focused FPOs. An Entrepreneurial Behaviour Index (EBI) was developed, comprising ten dimensions: innovativeness, achievement motivation, decision-making ability, risk-taking, leadership, market perception, entrepreneurial orientation, information -seeking behaviour, knowledgeability and feedback usage. Each dimension was represented by statements rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Content validity was ensured through expert judgment and items with a relevancy weightage ≥ 0.75 were retained. Weighted scores were normalised and aggregated to derive the overall EBI. The study surveyed 200 rural youth affiliated with coconut FPOs across Coimbatore, Tiruppur, Erode and Dindigul districts using a structured questionnaire. Reliability testing with Cronbach's alpha yielded coefficients above 0.70, confirming internal consistency, while construct validity was established through expert review and theoretical alignment. Findings revealed that 62 % of respondents exhibited medium levels of entrepreneurial behaviour, 27 % high and 11 % low. Stronger competencies were observed in feedback usage, achievement motivation and decision-making, while innovativeness and risk-taking showed scope for improvement. This study differs from earlier work by focusing on coconut-based FPOs, an underexplored crop-specific context and by adopting a youth-centric lens. Moreover, it introduces a validated EBI offering a rigorous tool to assess entrepreneurial competencies in rural agripreneurship.

Keywords: coconut farming; entrepreneurial behaviour; FPOs; rural youth;Tamil Nadu

Introduction

Coconut (*Cocos nucifera* L.) is a vital tropical crop cultivated in over 80 countries, with an annual global production of approximately 61 mT. It is available in various forms, including coconut milk, juice, flour, oil and dried coconut. Dried coconut, when processed to a moisture content below 3 % on a dry weight basis, can be utilised in the production of a wide range of food items such as ice cream, cakes, doughnuts, chocolate bars, pastries and biscuits to enhance flavour and texture (1). Beyond its versatile uses, coconut holds immense nutritional significance (Table 1). The coconut sector holds immense potential for fostering innovation, largely due to its wealth of traditional and indigenous knowledge. Over the years, research institutions have developed and refined numerous innovations, including advanced technologies, improved machinery and implements, new coconut varieties, enhanced crop management practices, as well as solutions for pest and disease control and agricultural labour challenges (2). The four southern states of Kerala, Karnataka, Tamil Nadu and Andhra Pradesh account for 88 % of the coconut area and 90 % of the coconut production in the country (3).

Tamil Nadu produced about 5421.76 million nuts of coconut, from approximately 472.71 thousand ha, with a productivity of 11469 nuts/ha (4). More than 75 % is contributed by only four major countries, viz. India, Indonesia, the Philippines and Sri Lanka. Among these, India ranks third on the world coconut map. Coconut is cultivated in 16 states and 4 Union Territories in India and provides food and livelihood security to more than 12 million people. There are five million coconut holdings in India, with an average size of less than one hectare. India is the largest coconut-producing country in the world, contributing 31 % of global production (5). Given the predominance of smallholder farmers and the sector's livelihood significance, coconut cultivation offers considerable potential for engaging rural youth in entrepreneurial activities, particularly through FPOs that facilitate collective action, value addition and market integration.

India is home to the world's largest youth population, comprising over 365 million individuals aged between 15 and 29 years, representing approximately 27 % of the nation's total population (6). A substantial portion of this demographic resides

Table 1. Nutritional composition of coconut (per 100 g edible portion)

Nutrient	Amount
Energy	354 kcal
Carbohydrates	15.2 g
Protein	3.3 g
Total fat	33.5 g
Saturated fat	29.7 g
Dietary fiber	9.0 g
Calcium	14 mg
Magnesium	32 mg
Potassium	356 mg
Phosphorus	113 mg
Iron	2.4 mg
Copper	0.44 mg
Manganese	1.5 mg
Vitamin C	3.3 mg
Folate (Vitamin B_9)	26 µg

in rural regions, where persistent issues such as underemployment, limited livelihood opportunities and migration to urban areas continue to pose significant challenges (7, 8). Despite improvements in educational attainment, many rural youth remain disinterested in agriculture due to factors like low profitability, restricted access to resources and the prevalence of outdated farming practices (9, 10).

Engaging youth in agriculture is therefore crucial to achieving the Sustainable Development Goals (SDGs), particularly Goal 1 (No Poverty) and Goal 8 (Decent Work and Economic Growth), while also supporting Goal 10 (Reduced Inequalities). Studies indicate that the majority of firms are initiated and managed by men aged 25–34, reflecting the need for entrepreneurship programs that prepare rural youth for early entry into agribusiness ventures such as coconut-based enterprises (11, 12). The success of several youth-led ventures highlights the potential of such programs in fostering entrepreneurial talent and enhancing agricultural performance.

Youth participation in economic development is critically important. Cultivating entrepreneurial spirit and motivation among young people not only prepares them to become productive and successful individuals but also contributes to building an entrepreneurial society. In contrast, traditional development efforts that primarily target adults, particularly retirees, as a means of livelihood do not necessarily foster a truly entrepreneurial culture within the broader community (13). Despite the significant role of FPOs in coconut farming, little is known about how effectively these Organisations foster entrepreneurial behaviour among rural youth. Addressing this gap is essential to understand the extent to which coconut-based FPOs promote youth engagement, entrepreneurial competencies and participation in agribusiness ventures.

The coconut sector, predominantly comprising small and marginal farmers with fragmented landholdings, faces challenges in exerting collective bargaining power to secure fair and profitable prices. In this context, FPOs are recognised as an effective mechanism for improving farmers' competitiveness and enhancing their socio-economic well-being (14). The concept of the agricultural value chain encompasses the entire spectrum of activities and stakeholders involved in moving agricultural products from input suppliers to farmers' fields and ultimately to end consumers (15).

In this context, FPOs emerge as vital institutions for youth engagement. Beyond facilitating collective input procurement and enhanced market access, FPOs provide structured avenues for rural youth to participate in agribusiness ventures, value addition and leadership roles. Their involvement is particularly significant given that rural youth are generally more receptive to adopting new technologies, initiating value-added enterprises and exploring diversified income avenues (16). Harnessing their dynamism, innovation and adaptability presents a unique opportunity to transform traditional agriculture into a more modern, entrepreneurial and technology-oriented sector (17). Based on the above consideration, the research study was conducted among the youth farmers engaged in coconut-based FPOs.

Materials and Methods

Study area

The present study was carried out in the western zone of Tamil Nadu, viz. Coimbatore, Erode, Tiruppur and Dindigul. These districts were purposively selected due to the strong presence of active FPOs, particularly those operating within the coconut cultivation and value chain ecosystem. Coconut is a major crop in these areas, offering significant potential for aggregation, processing and marketing activities, thereby positioning FPOs as critical drivers of rural entrepreneurship. With increasing institutional support for commodity-focused FPOs through initiatives by SFAC, NABARD and various state agricultural departments, these districts provided a conducive environment to explore youth participation in agripreneurial ventures. Accordingly, the study concentrated on rural youth affiliated with coconut-based FPOs to gain insights into their behavioural attributes, aspirations and entrepreneurial intent within the context of the coconut value chain.

Sampling procedure

A purposive multistage sampling technique was adopted to select respondents for the study. In the first stage, four districts, namely Coimbatore, Tiruppur, Erode and Dindigul, were purposively chosen due to their significant role in coconut cultivation and the active engagement of rural youth in FPOs. In the subsequent stage, rural youth who were members of various coconut-based FPOs within these districts were identified based on specific criteria, including active FPO membership, involvement in group-based activities and willingness to participate in the study. A total of 200 rural youth were purposively selected, ensuring proportional representation from each district. To ensure the reliability and validity of the data collection instrument, a structured questionnaire was pre-tested on a pilot sample and reliability was assessed using Cronbach's Alpha, which yielded coefficients above the recommended threshold of 0.70, indicating high internal consistency. This approach strengthened the methodological rigour of the study and facilitated a comprehensive and statistically meaningful analysis of entrepreneurial behaviour within the context of coconut-based FPOs.

Data collection and analysis

Primary data were gathered from rural youth affiliated with coconut-based Farmer Producer Organisations (FPOs) in four

districts using a structured questionnaire. The instrument was designed with ten dimensions of youth entrepreneurial behaviour. A five-point Likert scale was employed to record responses. Before the main survey, the questionnaire was pre-tested with a small group of respondents (excluded from the final sample) to assess its clarity, relevance and reliability. Data collection was conducted through face-to-face interviews to ensure accuracy and consistency, particularly in rural areas where digital literacy may be limited. Informed consent was obtained from all participants and confidentiality of their responses was strictly maintained.

Development of an index to measure the entrepreneurial behaviour

An index is a technique of totalling or reducing a single composite series of data on several distinct but related variables expressed in different units and measurements (18).

Identification of indicators

In order to construct the EBI, relevant and possible statements that measure the EBI were identified. The identified indicators were Innovativeness, Achievement motivation, Decision making ability, Risk taking ability, Leadership ability, Market perception, Entrepreneurial orientation, Information seeking behaviour, Knowledgeability, Feedback usage and several other dimensions were identified through previous literature, extension experts and researchers. The identified and developed statements under each dimension were edited according to the nature of the study, based on the informal criteria given by Edwards and finally, 100 statements were identified for the ten dimensions. While the study adopted a purposive sampling approach to ensure that respondents were contextually relevant and actively engaged in coconut-based FPOs, it is acknowledged that this method may limit the generalizability of the findings beyond the selected districts. Nevertheless, purposive sampling provided in-depth, context-specific insights into the entrepreneurial behaviour of rural youth within these FPOs, which is critical for understanding the nuances of youth engagement in coconut agribusiness.

Relevancy rating of indicators

The edited statements were brought under ten different dimensions to measure the Entrepreneurial Behaviour and sent to 30 judges to obtain their opinion in a three-point continuum from 3 to 1 based on their relative degree of importance as most relevant to not relevant for favourable statements and scoring is reversed for negative statements. Among the 30 judges, 15 judges provided their response.

Under each dimension, the relevancy weightage score was assessed based on the following formula,

$$\text{Relevancy Weightage} = \frac{(n_3 x3)+(n_2 x2)+(n_1 x1)}{N x3} \qquad \text{(Eqn. 1)}$$

Where,

- n_3 = Number of judges who marked the statement as “Most Relevant”
- n_2 = Number of judges who marked it as “Relevant”
- n_1 = Number of judges who marked it as “Not Relevant”
- N = Total number of judges

After identifying and refining the indicators for the EBI, the next step involved evaluating the relevance of each statement. A panel of experts and judges rated the statements and a relevance weightage score was calculated for each item. Statements with a relevancy weightage of 0.75 or higher were retained for the study. Out of the initial 100 statements, 57 statements were finally selected across the ten dimensions. These finalised statements were then used for data collection and subsequent analysis, ensuring that the EBI reflected both expert validation and context-specific relevance.

Results and Discussion

The dimensions of entrepreneurial behaviour were studied and the results are presented in Table 2. Dimension-wise results are presented as follows.

Innovativeness

The analysis of the Innovativeness from Table 2 shows that rural youth in FPOs demonstrate a generally positive attitude toward adopting new agricultural practices. Over 52 % agreed to experimenting with FPO-recommended practices, while 62.50 % showed openness to value-added activities and 58 % reported actively exploring new solutions to farming problems. Conversely, only 29 % preferred sticking to conventional methods, while 55.50 % rejected this view, indicating a shift from traditionalism. However, with about one-fourth still undecided, tailored interventions such as peer learning, local demonstrations and capacity-building are essential to strengthen innovativeness among all youth in FPOs (19). These patterns align with the Theory of Planned Behaviour, which links attitude and perceived control to entrepreneurial intention and the presence of hesitant respondents signals the need for localised training and peer-led demonstrations to further enhance innovativeness (20, 21).

Achievement motivation

A majority (69 %) of respondents reported striving to enhance productivity and income through their enterprises, while 56.50 % affirmed setting performance targets for FPO-related activities. Additionally, 48.50 % felt a sense of pride in accomplishing challenging agricultural tasks, 50.5 % reported persistence in the face of difficulties and 57 % expressed motivation to be among the top performers within their FPO. Meanwhile, 21 %-30 % remained neutral and 10 %-15 % expressed disagreement, suggesting some variation in motivational levels. These findings are consistent with previous studies that report moderate to high levels of achievement motivation among rural and farm youth, particularly in relation to agricultural productivity, innovation and entrepreneurial engagement (22). The results indicate that achievement motivation is a strong psychological driver among youth in FPOs, contributing to their active participation and entrepreneurial behaviour. However, while achievement motivation appears robust, subsequent dimensions such as risk-taking ability show more moderate levels, suggesting the need for complementary interventions that balance ambition with strategic risk management and decision-making skills.

Decision-making ability

A considerable proportion of rural youth in FPOs demonstrate confidence in managing agricultural and marketing decisions. Specifically, 55 % reported making well-informed decisions

Table 2. Dimension-wise entrepreneurial behaviour of rural youth in FPOs

Sl.No.	Statements	SA	A	UD	DA	SDA
I	**Innovativeness**					
1.	I regularly experiment with new agricultural practices introduced through my FPO	58 (29.00)	46 (23.00)	56 (28.00)	21 (10.00)	19 (9.50)
2.	I adopt modern tools and technologies shared by the FPO for enhancing efficiency	41 (20.50)	39 (19.50)	60 (30.00)	45 (22.50)	15 (7.50)
3.	I am open to trying novel value-added activities promoted by the FPO	65 (32.50)	60 (30.00)	43 (21.50)	20 (10.00)	12 (6.00)
4.	I often explore new approaches to solve common farming problems in my region	54 (27.00)	62 (31.00)	36 (18.00)	26 (13.00)	22 (11.00)
5.*	I prefer sticking to conventional agricultural methods, even when new ones are available	35 (17.50)	23 (11.50)	31 (15.50)	48 (24.00)	63 (31.50)
II	**Achievement motivation**					
1.	I consistently strive to achieve higher levels of productivity and income through my enterprise	74 (37.00)	64 (32.00)	31 (15.00)	22 (11.00)	09 (4.50)
2.	I set performance targets for myself related to FPO-based activities	61 (30.50)	52 (26.00)	34 (17.00)	30 (15.00)	23 (11.50)
3.	I feel a sense of pride when I accomplish challenging agricultural tasks	35 (17.50)	62 (31.00)	42 (21.00)	31 (15.50)	30 (15.00)
4.	I persistently work towards my goals despite encountering difficulties	57 (28.50)	44 (22.00)	58 (29.00)	25 (12.50)	16 (8.00)
5.	I actively evaluate my achievements in comparison to other youth in the FPO	42 (21.00)	45 (22.50)	60 (30.00)	33 (16.50)	20 (10.00)
6.	I am motivated to be among the top-performing members of my FPO	43 (21.50)	71 (35.50)	43 (21.50)	23 (11.50)	20 (10.00)
III	**Decision-making ability**					
1.	I make well-informed decisions regarding crop selection and input use	56 (28.00)	54 (27.00)	30 (15.00)	43 (21.50)	17 (8.50)
2.	I independently decide on matters related to the marketing of my produce	61 (30.50)	53 (26.50)	48 (24.00)	32 (16.00)	37 (18.50)
3.	I evaluate various options before finalising important business choices	41 (20.50)	69 (34.50)	32 (16.00)	38 (19.00)	20 (10.00)
4.	I am confident in making strategic decisions in uncertain situations	72 (36.00)	64 (32.00)	21 (10.50)	23 (11.50)	20 (10.00)
5.	I take responsibility for both the successes and failures of my decisions	69 (34.50)	61 (30.50)	45 (22.50)	15 (7.00)	10 (5.00)
6.	I make timely decisions that align with market dynamics	54 (27.00)	29 (14.50)	53 (26.50)	31 (15.50)	33 (16.50)
7.*	I tend to delay important decisions due to fear of failure	28 (14.00)	19 (9.50)	46 (23.00)	47 (23.50)	60 (30.00)
IV	**Risk-taking ability**					
1.	I am willing to invest in new agricultural activities introduced by the FPO despite potential risks	55 (27.50)	30 (15.00)	60 (30.00)	34 (17.00)	21 (10.50)
2.	I view entrepreneurial risk as a necessary component of growth	64 (32.00)	56 (28.00)	39 (19.50)	24 (12.00)	17 (8.50)
3.	I am comfortable making financial commitments to expand my agribusiness	40 (20.00)	42 (21.00)	22 (11.00)	32 (16.00)	64 (32.00)
4.	I do not hesitate to enter into new markets based on emerging opportunities	61 (30.50)	55 (27.50)	41 (20.50)	26 (13.00)	17 (8.50)
5.	I accept the possibility of failure as part of taking entrepreneurial risks	67 (33.50)	59 (29.50)	32 (16.00)	28 (14.00)	14 (7.00)
6.	I take calculated risks after consulting FPO members or advisors	63 (31.50)	51 (25.50)	45 (22.50)	21 (10.50)	20 (10.00)
V	**Leadership ability**					
1.	I actively lead group initiatives and discussions within my FPO	61 (30.50)	58 (29.00)	33 (16.50)	30 (15.00)	18 (9.00)
2.	I motivate fellow members to participate in collective activities	56 (28.00)	46 (23.00)	39 (19.50)	41 (20.50)	18 (9.00)
3.	I was trusted by others in my FPO to take responsibility for important tasks	58 (29.00)	51 (25.50)	31 (15.50)	38 (19.00)	22 (11.00)
4.	I play a key role in resolving conflicts among group members	60 (30.00)	42 (21.00)	19 (9.50)	53 (26.50)	26 (13.00)
5.	I help mobilise youth members for capacity-building and training events	52 (26.00)	65 (32.50)	26 (13.00)	36 (13.00)	31 (15.50)
VI	**Market perception**					
1.	I regularly monitor market prices before selling my produce	53 (26.50)	55 (27.50)	49 (24.50)	27 (13.50)	16 (8.00)
2.	I understand the demand pattern of different agricultural products in my region	63 (31.50)	52 (26.00)	28 (14.00)	37 (18.50)	20 (10.00)
3.	I adjust my production practices based on consumer preferences	64 (32.00)	37 (18.50)	45 (22.50)	29 (14.50)	25 (12.50)
4.	I consult market information sources facilitated by the FPO	53 (26.50)	45 (22.50)	32 (16.00)	34 (17.00)	36 (18.00)
5.	I identify the right time to sell based on seasonal price fluctuations	72 (36.00)	65 (32.50)	26 (13.00)	23 (11.50)	14 (7.00)
6.	I participate in FPO-led efforts to identify and access new markets	58 (29.00)	55 (27.50)	48 (24.00)	19 (9.50)	20 (10.00)
7.	I use customer feedback to enhance the marketability of my produce	55 (27.50)	51 (25.50)	40 (20.00)	37 (18.50)	17 (8.50)

VII	**Entrepreneurial orientation**					
1.	I actively seek new agribusiness opportunities within my FPO	57 (28.50)	48 (24.00)	29 (14.50)	51 (25.50)	15 (7.50)
2.	I am willing to take calculated risks to improve our FPO's performance	52 (26.00)	51 (25.50)	32 (16.00)	42 (21.00)	23 (11.50)
3.	I regularly suggest innovative ideas to improve products or processes in our FPO	48 (24.00)	27 (13.50)	53 (26.50)	30 (15.00)	42 (21.00)
4.	I prefer to take the initiative rather than wait for instructions in group activities	51 (25.50)	39 (19.50)	45 (22.50)	26 (13.00)	39 (19.50)
5.	I believe proactive decision-making leads to long-term success for the FPO	59 (29.50)	51 (25.50)	39 (19.50)	35 (17.50)	16 (8.00)
6.	I set clear goals and work persistently to achieve them through FPO initiatives	53 (26.50)	52 (26.00)	39 (19.50)	38 (19.00)	18 (9.00)
VIII	**Information seeking behaviour**					
1.	I actively seek information about new agricultural technologies relevant to my FPO	68 (34.00)	44 (22.00)	20 (10.00)	43 (21.50)	25 (12.50)
2.	I regularly consult experts or extension officers to improve my farming practices	61 (30.50)	57 (28.50)	25 (12.50)	23 (11.50)	34 (17.00)
3.	I refer to newspapers, magazines or TV/radio programs for farming-related updates	112 (56.00)	56 (28.00)	0 (0.00)	21 (10.50)	11 (5.50)
4.	I maintain contact with input dealers, buyers and service providers for better decision-making	88 (44.00)	76 (38.00)	0 (0.00)	19 (9.50)	17 (8.50)
IX	**Knowledgeability**					
1.	I am well-informed about the objectives and functions of my FPO	73 (36.50)	59 (29.50)	33 (16.50)	21 (10.50)	14 (7.00)
2.	I understand the process of collective input procurement and output marketing in FPOs	60 (30.00)	39 (19.50)	52 (26.00)	22 (11.00)	27 (13.50)
3.	I have a clear knowledge of the latest agricultural practices and technologies	69 (19.50)	47 (23.50)	25 (12.50)	31 (15.50)	28 (14.00)
4.	I can explain the benefits of value addition and processing to fellow members	107 (53.50)	73 (36.50)	0 (0.00)	11 (5.50)	9 (4.50)
5.	I am familiar with different market channels and pricing mechanisms relevant to our produce	52 (26.00)	60 (30.00)	31 (15.50)	38 (19.00)	19 (9.50)
X	**Feedback usage**					
1.	I reflect on feedback received during training or meetings to make improvements	87 (43.50)	68 (34.00)	0 (0.00)	32 (16.00)	13 (6.50)
2.	I encourage others to give me honest feedback on my work	78 (39.00)	89 (44.50)	0 (0.00)	21 (10.50)	12 (6.00)
3.	I seek advice from experienced members to correct my mistakes	93 (46.50)	77 (38.50)	0 (0.00)	14 (7.00)	16 (8.00)
4.	I modify my farming or marketing practices based on expert feedback	83 (41.50)	65 (32.50)	5 (2.50)	23 (11.50)	24 (12.00)
5.	I regularly follow up after receiving feedback to ensure progress	66 (33.00)	20 (10.00)	21 (10.50)	42 (21.00)	51 (25.50)
6.	I treat feedback as an essential tool for improving both individual and group performance	60 (30.00)	82 (41.00)	0 (0.00)	38 (19.00)	20 (10.00)

* - Negative Statement; Figures in parentheses are percentages of total.

regarding crop and input selection and 57 % independently handled produce marketing. Notably, 68 % evaluated alternatives before finalising business choices and 68 % expressed confidence in making strategic decisions even in uncertain scenarios. Additionally, 65 % accepted responsibility for the outcomes of their decisions, signifying maturity in enterprise management. However, only 41.5 % aligned decisions with market dynamics, while 32 % admitted to delays caused by fear of failure, though 53.50 % actively disagreed. These findings are in line with previous studies where youth in organised agricultural collectives demonstrated moderate to high levels of analytical and independent decision-making. Decision-making ability was significantly enhanced among youth exposed to market-led extension interventions (23, 24).

Risk-taking ability

A moderate to positive orientation among rural youth in FPOs toward embracing entrepreneurial risks. Notably, 57.50 % of respondents agreed that risk is essential for growth and 63 % expressed readiness to enter new markets driven by an opportunity (25, 26). Additionally, 59 % acknowledged that failure is a natural part of risk-taking, suggesting psychological preparedness for setbacks in entrepreneurship (27). About 57 % reported taking calculated risks in consultation with FPO peers, reflecting a balanced approach combining risk appetite with collective wisdom (28). However, only 41 % felt comfortable making financial commitments to scale up, while 48 % expressed hesitation. Similarly, only 42.50 % were willing to invest in new FPO-led ventures despite uncertainties, indicating cautious optimism. These findings observed that rural youth exhibited moderate risk orientation, influenced by institutional support and peer networks (25).

Leadership ability

A considerable proportion of rural youth demonstrate leadership involvement within their FPOs. Approximately 59.50 % of respondents agreed that they actively lead group initiatives and discussions and 51 % stated they often motivate fellow members to engage in collective activities. Moreover, 54.5 % felt trusted to handle key responsibilities, which underscores their perceived credibility among peers. Additionally, 51 % reported involvement in resolving intra-group conflicts, although 39.5 % disagreed or remained neutral, suggesting variability in conflict mediation roles. Youth engagement in mobilising others for training was more encouraging, with 58.5 % affirming their role in capacity-building efforts (29).

While these findings highlight that youth exhibit participatory leadership when empowered with clear roles and recognition, certain leadership traits remain moderate. One possible explanation is that many rural youth have limited access

to formal leadership training or structured mentorship, which restricts their ability to handle complex tasks such as conflict management. Furthermore, inadequate decision-making authority within FPO governance structures may reduce opportunities for them to exercise leadership beyond routine activities. Resource constraints, such as a lack of financial autonomy or exposure to advanced agribusiness practices, could also hinder the growth of stronger leadership skills. These factors suggest that while youth are willing to assume leadership, their effectiveness depends on the institutional support and opportunities available to them. This aligns with earlier studies, which found that rural youth associated with farmer groups tend to demonstrate participatory leadership when supported with recognition, training and resource access (30, 31).

Market perception

It highlights that a significant proportion of rural youth in FPOs demonstrate awareness and responsiveness to market dynamics. Approximately 54 % of respondents reported actively monitoring prices before selling their produce and 57.50 % indicated an understanding of local demand patterns. Moreover, 50.50 % adjusted their production practices based on consumer preferences, while 68.50 % stated they identify the right time to sell based on seasonal price fluctuations. This reflects a growing capacity for market-aligned decision-making. In addition, 56.50 % participated in efforts to identify and access new markets and 53 % reported using customer feedback to enhance product marketability (32). However, the use of FPO-facilitated market information services was moderate, with only 49 % affirming regular consultation and 35 % either undecided or disagreeing.

Entrepreneurial orientation

Entrepreneurial orientation reveals a moderate to strong presence of proactive and opportunity-driven behaviour among rural youth involved in FPOs. About 52.50 % of the respondents reported actively seeking new agribusiness opportunities within their FPOs and 51.50 % were willing to take calculated risks to enhance group performance. Additionally, 37.50 % indicated they regularly suggest innovative ideas, although 36 % disagreed, suggesting mixed levels of creative contribution. Proactivity is evident, with 45 % preferring to take initiative in group activities and 55 % affirming their belief in proactive decision-making for long-term success. Moreover, 52.50 % set clear goals and work persistently to achieve them. These findings are congruent with the results of an empirical study among Kerala FPO shareholders, which reported an average entrepreneurial orientation correlating positively with perceived marketing gains and income improvements (33).

Information Seeking Behaviour

It highlights a highly proactive attitude among rural youth in FPOs when it comes to acquiring agricultural knowledge and market-related information. Approximately 56 % of the respondents regularly referred to newspapers, magazines or audiovisual media for farming-related updates, with another 28 % affirming the same, indicating that over four-fifths engaged with media sources for agricultural awareness. Further, 66 % of youth maintained regular contact with input dealers, buyers and service providers to enhance decision-making in their agribusiness operations. Additionally, 56 % reported seeking expert advice from extension officers or technical specialists, while 34 % actively pursued information on new technologies relevant to their FPOs' activities. These results align with the observations that found that information access significantly influenced adoption behaviour among rural entrepreneurs. Similar findings concluded that frequent contact with input service providers and media sources played a key role in enhancing the entrepreneurial decisions of rural youth. The findings confirm that structured participation in FPOs facilitates timely access to relevant agricultural information, a critical aspect for entrepreneurial growth and adaptive behaviour in dynamic market environments.

Knowledgeability

The results reflect a relatively strong awareness among rural youth regarding key operational and market aspects of FPOs. A substantial 66 % of respondents indicated they were well-informed about the objectives and functions of their FPOs, while 53.50 % reported confidently explaining the benefits of value addition and processing to fellow members, suggesting widespread understanding of collective enterprise benefits. Additionally, 49.50 % of youth acknowledged familiarity with input procurement and output marketing procedures, reinforcing the notion that FPO participation enhances business literacy. However, only 43 % indicated having clear knowledge of the latest agricultural technologies, pointing toward a potential knowledge gap in technical innovation. Overall, the data shows that structured training and exposure through FPOs contribute to the knowledgeability of rural youth, though continuous technical education remains necessary for comprehensive entrepreneurial development (34).

Feedback usage

The results reveal a generally positive orientation of rural youth towards utilizing feedback mechanisms within their FPOs. A notable 77.50 % of respondents reported that they reflect on feedback received during training or meetings to make improvements, while 83.50 % encouraged others to give them honest feedback. Furthermore, 85 % acknowledged seeking advice from experienced members to correct mistakes, underlining a strong openness to learning and adaptation. Similarly, 74 % indicated they modify their practices based on expert feedback, reinforcing the utility of participatory learning environments. However, only 43 % consistently follow up after receiving feedback to ensure progress, suggesting a gap between reflection and action. Thus, the youth in FPOs value feedback and structured follow-up mechanisms may further enhance their effectiveness in fostering entrepreneurial improvement (35).

Overall entrepreneurial behaviour

The overall entrepreneurial behaviour of rural youth in FPOs is presented in Table 3 and illustrated in Fig. 1. A majority of the respondents (62 %) fall under the medium entrepreneurial behaviour category, indicating that most rural youth involved in FPOs exhibit a moderate level of entrepreneurial traits such as risk-taking, innovation, market awareness and leadership. This suggests that while they are actively engaged in entrepreneurial activities, there is substantial scope for enhancement through targeted training, skill-development workshops and capacity-building interventions. The high entrepreneurial behaviour category, observed in 54 respondents (27 %), reflects the presence of proactive, innovative and goal-oriented individuals within the FPO ecosystem. The youth can serve as role models and peer mentors, promoting knowledge sharing, motivation and

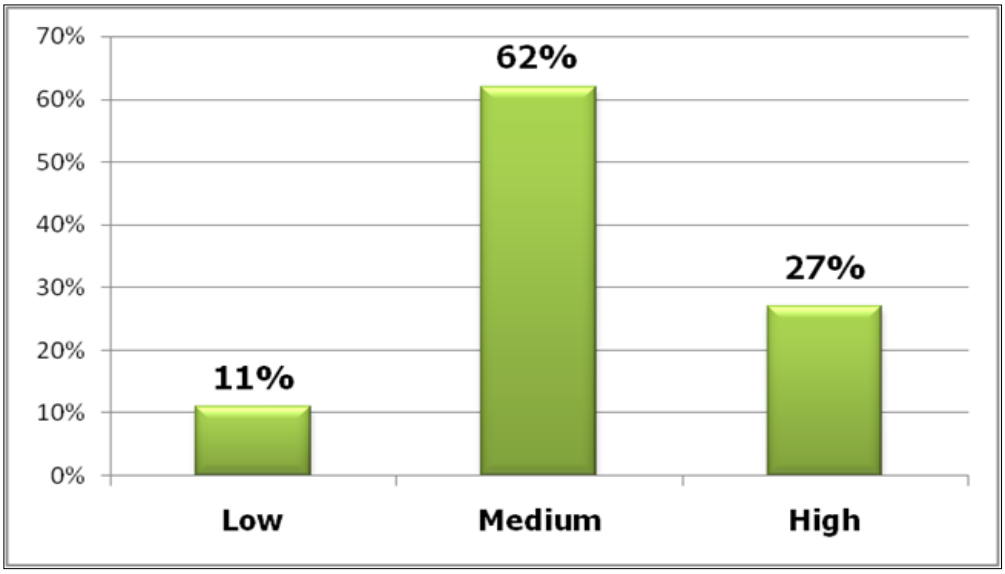

Fig. 1. Entrepreneurial behaviour of rural youth in FPOs.

Table 3. Overall entrepreneurial behaviour of rural youth in FPOs

S. No	Category	Frequency	%
1.	Low	22	11.00
2.	Medium	124	62.00
3.	High	54	27.00
	Total	200	100.00

leadership among other members. The low entrepreneurial behaviour group (11 %) indicates limited involvement or capability in entrepreneurial activities. This segment may benefit from foundational skill-building programs, motivational initiatives and structured mentorship to foster engagement and confidence in agribusiness ventures.

Linking these findings to policy, the distribution highlights the need for differentiated interventions. Medium-level youth require upskilling and greater exposure to advanced market and technological practices, while high-level youth can be strategically positioned as change agents to scale best practices across FPOs. In contrast, low-level youth need intensive mentoring, motivational support and foundational capacity-building to bring them up to a functional entrepreneurial baseline. Collectively, the results underscore a promising landscape for rural youth entrepreneurship, which can be further strengthened through targeted FPO-led training initiatives, youth-centric development policies and supportive institutional frameworks designed to shift more participants from medium to high levels of entrepreneurial engagement.

Strategies to enhance youth engagement in coconut farming in India

Enhancing youth participation in coconut farming requires an integrated approach that combines skill development, resource access and institutional support. Training in modern practices, value addition and agribusiness management can help youth perceive coconut farming as a profitable enterprise. Access to affordable credit, crop insurance and digital platforms for market linkages can reduce risks and enhance returns. Strengthening FPOs as centres for innovation, training and collective marketing will foster leadership and collaboration. Further, promoting start -up incubation, technology transfer through public–private partnerships and ICT-based precision farming can attract younger generations. Finally, youth-focused policies and mentorship from successful agripreneurs can transform coconut farming into a sustainable and rewarding livelihood option.

Conclusion

The study assessed the entrepreneurial behaviour of rural youth engaged in coconut-based FPOs across ten key dimensions. The findings reveal that a majority of respondents fall under the medium entrepreneurial behaviour category, indicating a moderate level of engagement in entrepreneurial traits such as innovation, risk-taking, decision-making and market awareness. A significant portion demonstrated high entrepreneurial behaviour, reflecting strong leadership, proactive initiative and a readiness to embrace agribusiness opportunities. This variation points to the importance of context-specific interventions to foster a more entrepreneurial mindset within rural collectives. The findings affirm the crucial role of FPOs in not only facilitating collective marketing and input services but also in serving as platforms for capacity building and behavioural transformation. Beyond the FPO framework, these insights hold value for policymakers, rural development agencies and youth skill development programs, as they highlight the need for tailored strategies that can nurture entrepreneurial capacities at scale. Enhancing access to training, mentoring and institutional support both within local FPOs and through broader national-level initiatives can help bridge the gap between potential and performance, thereby contributing meaningfully to rural development and youth empowerment in agriculture. Prospects include leveraging digital technologies, fostering youth-led innovation hubs and creating sustainable agripreneurship ecosystems that integrate market intelligence, climate-smart practices and value addition to ensure long-term rural development and youth empowerment in agriculture.

Acknowledgements

The authors would like to express their deepest gratitude to the Department of Agricultural Extension and Rural Sociology for their invaluable guidance and support and thanks to the Directorate of Extension Education for funding throughout this study. Special thanks are extended to the Chairman and advisory members for their valuable feedback and constructive suggestions on the manuscript.

Authors' contributions

AR conceptualised, formulated the manuscript and analysed the data. MPP guided the research by formulating the research concept and approving the final manuscript. SM contributed to developing the ideas, reviewed the manuscript and helped in procuring research grants. CM helped in summarising and revising the manuscript. SK helped in collecting the data. GSR helped in summarising and statistical analysis of data. All authors read and approved the final manuscript.

Compliance with ethical standards

Conflict of interest: The Authors do not have any conflict of interest to declare.

Ethical issues: None

References

1. Akrong R, Mbogoh SG, Irungu P. Youth agripreneurship in the horticultural value-chain: The case of small-scale mango farmers in Southern Ghana. Afr Dev Rev. 2020;32. https://doi.org/10.1111/1467-8268.12483
2. Anitha S. Agricultural innovations to scale up productivity and income from coconut farming. Indian Farming. 2021;71(11). https://epubs.icar.org.in/index.php/IndFarm/article/view/118185.
3. Coconut Development Board. New Delhi: Ministry of Agriculture & Farmers Welfare, Government of India. 2016. www.coconutboard.nic.in
4. Coconut Development Board. All India final estimates of area and production of coconut.2023 - 24. New Delhi: Ministry of Agriculture & Farmers Welfare, Government of India. 2024. https://coconutboard.gov.in/Statistics.
5. Deepthi V, Karunasree E, Venkata Subbaiah K, Reddy RVSK, Shali Raju G, Devivaraprasad Reddy A, et al. Impact of FoCT training on adoption of coconut tree climbing device for harvesting coconuts. J Pharmacogn Phytochem. 2017;6(6S):530–2.
6. Ministry of Youth Affairs & Sports. National Youth Policy 2021. Press Information Bureau. Government of India. 2021. https://static.pib.gov.in/WriteReadData/specificdocs/documents/2022/may/doc20225553401.pdf?utm_source=chatgpt.com.
7. Choithani C, van Duijne RJ, Nijman J. Changing livelihoods at India's rural–urban transition. World Dev. 2021;146:105617. https://doi.org/10.1016/j.worlddev.2021.105617
8. Ezeudu TS, Tukur B. Examining the effects of high poverty and unemployment on rural-urban migration in Nigeria and its consequences on urban resources and rural decline. J Child Adult Vacc Immunol. 2024;8:1–13. https://doi.org/10.29328/journal.jcavi.1001012
9. White B. Agriculture and the generation problem: rural youth, employment and the future of farming. IDS Bull. 2012;43(6):9–19. https://doi.org/10.1111/j.1759-5436.2012.00375.x
10. Lindsjö K, Mulwafu W, Andersson Djurfeldt A, Joshua MK. Generational dynamics of agricultural intensification in Malawi: Challenges for the youth and elderly smallholder farmers. Int J Agric Sustain. 2021;19(5–6):423–36. https://doi.org/10.1080/14735903.2020.1721237
11. Apriyanto M, Marlina, Susanto BF, Rifa A, Riono Y. A SWOT analysis to improve the marketing of young coconut chips. Ann Rom Soc Cell Biol. 2021;13232–40.
12. Reynolds P, Hay M, Bygrave W, Camp S, Autio E. Global entrepreneurship monitor: Executive report. USA: Ewing Marion Kauffman Foundation. 2000.
13. Dioneo-Adetayo EA. Factors influencing attitude of youth towards entrepreneurship. Int J Adolescence Youth. 2006;13(1-2):127–45. https://doi.org/10.1080/02673843.2006.9747970
14. Vijayakumar AN. Coconut farmer producer organisation in socio-economic transformation of rural economy in Karnataka. Int J Agric Resour Governance Ecol. 2020;16(3–4):301–19. https://doi.org/10.1504/ijarge.2020.115344
15. Arifin ZA. The analysis of coconut market value chain. Int J Law Policy Governance. 2022;1(1):33–9. https://doi.org/10.54099/ijlpg.v1i1.255
16. Patil S, Mehta M, Pancholi G, Saxena A. Unveiling the dynamics of farmer producer Organisations in India: a systematic review of status, challenges and future directions. Hum Soc Sci Commun. 2025;12(1):1–17. https://doi.org/10.1057/s41599-025-05063-9
17. Henning JI, Jammer BD, Jordaan H. Youth participation in agriculture, accounting for entrepreneurial dimensions. S Afr J Entrep Small Bus Manag. 2022;14(1):461. https://doi.org/10.4102/sajesbm.v14i1.461
18. Kothari CR. Research methodology: Methods and techniques. 2nd ed. New Delhi: New Age International Publishers. 2004.
19. Trebbin A, Hassler M. Farmers' producer companies in India: a new concept for collective action?. Environ Plann A. 2012;44(2):411–27. https://doi.org/10.1068/a44143
20. Ajzen I. The theory of planned behavior. Organ Behav Hum Decis Process. 1991;50(2):179–211. https://doi.org/10.1016/0749-5978(91)90020-T
21. Feder G, Umali DL. The adoption of agricultural innovations: A review. Technol Forecast Soc Change. 1993;43(3–4):215–39. https://doi.org/10.1016/0040-1625(93)90053-A
22. Bhattacharjee U, Saha A, Tiwari PK, Dhakre DS, Gupta RK. Achievement motivation of organic farmers of Birbhum district of West Bengal. Indian J Ext Educ. 2021;57(1):38–42.
23. Lago A, dos Santos Amorim G, Boscardin M, Zucatto LC, Spanevello RM. Analyzing decision-making factors in the generational succession of rural youth. J Coop Organ Manag. 2022;10(2):100187. https://doi.org/10.1016/j.jcom.2022.100187
24. Zulu LC, Djenontin IN, Grabowski P. From diagnosis to action: Understanding youth strengths and hurdles and using decision-making tools to foster youth-inclusive sustainable agriculture intensification. J Rural Stud. 2021;82:196–209. https://doi.org/10.1016/j.jrurstud.2021.01.023
25. Priya KS. Impact of FPOs on empowerment of rural women entrepreneurs in Andhra Pradesh: A quantitative analysis. IUP J Entrep Dev. 2024;21(2):5–27.
26. MacDonald R, Coffield F. Risky business?: Youth and the enterprise culture. Abingdon (UK): Routledge. 2015. https://doi.org/10.4324/9780203973219
27. Macko A, Tyszka T. Entrepreneurship and risk taking. Appl Psychol. 2009;58(3):469–87. https://doi.org/10.1111/j.1464-0597.2009.00402.x
28. Prasad CS, Dutta D. Fields of change: Managerial insights on FPOs in India. 2023. https://www.academia.edu/68232302/Fields_of_Change_Managerial_Insights_on_FPOs_in_India.
29. Hastings LJ, Barrett LA, Barbuto Jr JE, Bell LC. Developing a paradigm model of youth leadership development and community engagement: A grounded theory. J Agric Educ. 2011;52(1):19–29. https://doi.org/10.5032/jae.2011.01019
30. Puxley TS, Chapin LA. Building youth leadership skills and community awareness: Engagement of rural youth with a community-based leadership program. J Community Psychol. 2021;49(5):1063–78. https://doi.org/10.1002/jcop.22501
31. Lee CS. Influence of community participation of rural students on leadership skill. J Agric Ext Community Dev. 2012;19(2):355–80. https://doi.org/10.12653/jecd.2012.19.2.355

32. Chowdhury SR, Ghosh D, Rao TJ. Sentiment and success potential of farmers' producer organisations: A systematic literature review. Local Econ. 2024;39(1-2):92–104. https://doi.org/10.1177/02690942241292724

33. Ajith A, Binoo BP. Comparative analysis of entrepreneurial orientation and perceived gains in marketing of farmer producer company shareholders of Kerala, India. Asian J Agric Ext Econ Sociol. 2022;40(9):176-82. https://doi.org/10.9734/ajaees/2022/v40i930991

34. NABARD. State of Sector Report – Farmer Producer Organisations in India 2022. Mumbai: National Bank for Agriculture and Rural Development & NAFPO. 2022. https://www.researchgate.net/publication/362468691.

35. Venkatesan P, Sontakki B, Shenoy NS, Sivaramane N, Sivakumar PS. Impact of farmer producer organisations in fostering community entrepreneurship. Indian J Ext Educ. 2020;56(2):111–7. https://doi.org/10.13140/RG.2.2.32520.75525

Additional information

Peer review: Publisher thanks Sectional Editor and the other anonymous reviewers for their contribution to the peer review of this work.

Reprints & permissions information is available at https://horizonepublishing.com/journals/index.php/PST/open_access_policy

Publisher's Note: Horizon e-Publishing Group remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Indexing: Plant Science Today, published by Horizon e-Publishing Group, is covered by Scopus, Web of Science, BIOSIS Previews, Clarivate Analytics, NAAS, UGC Care, etc
See https://horizonepublishing.com/journals/index.php/PST/indexing_abstracting

Publisher information: Plant Science Today is published by HORIZON e-Publishing Group with support from Empirion Publishers Private Limited, Thiruvananthapuram, India.