Mysore J. Agric. Sci., 59 (2) : 37-47 (2025)

From Palms to Profits: Exploring Entrepreneurial Behaviour of Coconut Growers in Tumakuru District of Karnataka

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Received : December 2024
Accepted : January 2025

Abstract

Entrepreneur is an innovator who invariably links up the innovation with the market to earn a profit. Behavior associated with entrepreneurship makes the major contribution to surviving external changes. The research design adopted in the present study was Ex-post-facto technique to measure the entrepreneurial behaviour among coconut growers in Tumakuru district of Karnataka. Three taluks in Tumakuru district viz; Gubbi, Turuvekere and Tiptur were purposively selected for their leading coconut cultivation area and production, with three villages per taluk and totally 90 growers (5 small and 5 large per village) were randomly chosen for the study. The results pertaining to the entrepreneurial behaviour of coconut growers showed that 31.11 per cent of the respondents exhibited low entrepreneurial behavior, while more than one third (34.44 %) each fell into the medium and high categories with Mean = 158.86 and SD = 7.99. The results in comparative analysis of entrepreneurial behaviour dimensions among small and large coconut growers showed that, dimensions such as decision-making ability, management orientation and entrepreneurial orientation are significant at the 5 per cent level whereas, risk orientation, market perception and entrepreneurial skill show significance at the 1 per cent level and innovativeness, achievement motivation, leadership ability, economic motivation and scientific orientation show no significant differences.

Keywords : Coconut growers, Dimensions, Entrepreneurial behaviour

Entrepreneurs in the agricultural sector play a crucial role in creating opportunities in farming, processing and marketing. They drive social change by introducing new products, processes and markets, while exhibiting qualities like risk-taking, perseverance, adaptability and decision-making. In the context of coconut farming, entrepreneurial behavior is essential for turning traditional practices into profitable, sustainable ventures. By adopting scientific methods and engaging in social participation, the farmers can enhance productivity, explore business opportunities in processing and export and contribute to rural development. The development of entrepreneurial behavior among coconut farmers is vital to meet the challenges posed by technological changes and growing societal demands. Dimensions of entrepreneurial behavior encompass various traits and actions that define an entrepreneur's approach to business and innovation. These dimensions include: risk-taking, proactiveness, decision-making,

leadership, goal orientation, adaptability, opportunity recognition, self-confidence, networking. These dimensions shape the overall entrepreneurial mindset and influence the success of ventures.

Coconut is also referred as 'Tropical Treasure' because it is primarily grown in tropical and sub-tropical regions of Africa, parts of central and south America. The term highlights its economic importance, nutritional importance, its versatility and cultural importance *etc.* India ranks third on the global coconut map and has recently emerged as the largest producer, with an impressive production of 22.96 billion nuts from 2.15 million hectares of plantation area, despite being a leading producer and having the highest productivity of 10,668 nuts per hectare (Anonymous, 2022). The per capita annual availability of coconuts in India remains surprisingly low, estimated to be just 10 nuts per person, which is significantly lower than the 222 nuts per person in the Philippines, 145 in Sri Lanka and 55 in Indonesia. (Anonymous, 2023).

The global coconut products market was valued at $11.5 billion in 2018 and is projected to reach $31.1 billion by 2026, growing at a CAGR (Compound Annual Growth Rate) of 13.6 per cent from 2019 to 2026. (Anonymous, 2024). During the year 2022-23, India's coconut products exports are valued at Rs.3,555 crore (US$ 427.3 million) which shows a growth of 9.8 per cent from the year 2021-22. Trade in coconut oil represents 0.031 per cent of total world trade. The exports of coconut oil grew between 2019 and 2020 by 7.16 per cent, from US$ 4.78 billion to US$ 5.12 billion. (Anonymous, 2024). The present study was conducted to measure an entrepreneurial behaviour among coconut growers.

METHODOLOGY

Research Design

The study employed an ex-post-facto research design, a systematic empirical approach for analyzing phenomena that have already taken place and are ongoing. In this design, the researcher lacks control over independent variables, as they are either pre-existing or inherently non-manipulable. Consequently, relationships among variables were inferred without direct intervention, relying on the natural variation between independent and dependent variables. This design is particularly useful for developing theories, identifying behavioral patterns and investigating the conditions under which these phenomena occur.

TABLE 1

Sampling procedure used for selection of respondents

District	Taluks	Villages	Sample size (n = 90)	
			Small farmers (n_1 = 45)	Large farmers (n_2 = 45)
Tumakuru	Gubbi	K. Rampura	5	5
		Kadaba	5	5
		D. Rampura	5	5
	Turuvekere	Devihalli	5	5
		Haralikere	5	5
		Kardigere	5	5
	Tiptur	Ramanahalli	5	5
		Chikkabidire	5	5
		Mattihalli	5	5
Total	**3 taluks**	**9 villages**	**45**	**45**

Tumakuru district, renowned as 'Kalpataru Nadu,' was purposively chosen for the study due to its leading position in coconut cultivation, both in terms of area and production, among all districts in Karnataka. This prominence makes it an ideal region for examining agricultural practices and trends specific to coconut farming. Within the district, three taluks *viz*., Gubbi, Turuvekere and Tiptur were purposively selected for their leading contributions to coconut cultivation in terms of area and production. From each taluk, three villages were randomly chosen for the study. A total of 90 coconut growers were included as the sample farmers, comprising five small and five large coconut growers from each village, selected through a simple random sampling method.

Measurement of Entrepreneurial Behaviour

A standardized scale to measure entrepreneurial behaviour among coconut growers was developed and the final scale consists of 43 statements. The respondents were asked to indicate the degree of their agreement to these statements on five-point continuum of 'Strongly agree', 'Agree', 'Undecided', 'Disagree' and 'Strongly disagree' with a weightage of 5, 4, 3, 2 and 1 respectively. The scoring pattern was reversed for negative statements. The sum of the scores obtained by the respondent was taken as his or her score of Entrepreneurial behaviour of coconut growers. The possible score ranged from 43 to 215.

Based on the total cumulated score obtained, the coconut growers were classified in to three categories *viz*., high, medium and low entrepreneurial behaviour level based on the mean and standard deviation as a measure of check. (Likert, 1932).

Results and Discussion

The results in Table 2 indicated the analysis of the responses from small and large coconut farmers across various dimensions provides insight into their preferences, motivations and orientations**.** In Innovativeness, the statement 'I prefer to adopt any new technology in coconut production before others in the society' achieved the highest rank with a mean score of 3.89 which signifies farmer's willingness to adopt new technologies, followed by 'I am cautious about trying a new practice in coconut production' ranked second with a mean score of 3.51. For Achievement Motivation, 'I always prefer to be actively focused in coconut cultivation for achieving optimal yields and quality in the coconut farming industry rather than taking rest' ranked first with a mean score of 4.19 which shows they prioritized active focus on optimal yields, followed by 'I always strive to be the best coconut producer/entrepreneur' ranked

Table 2

Statement wise distribution of coconut growers with respect to entrepreneurial behaviour

Sl. No.	Statements	Small (n_1=45)		Large (n_2=45)		Overall (n=90)	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
A	**Innovativeness**						
1	I prefer to adopt any new technology in coconut production before others in the society	3.78	I	4.00	I	3.78	I
2	I am cautious about trying a new practice in coconut production	3.38	III	3.64	II	3.51	II
3	I like to keep up to date information about new farming practices of coconut production	3.42	II	3.24	IV	3.33	III
4	I prefer adhering to traditional approaches in coconut production rather than embracing newer methods	2.87	V	3.44	III	3.16	IV
5	I try to adopt mechanization in coconut cultivation that enhances efficiency and reduce labour costs	3.11	IV	2.76	V	2.93	V
B	**Achievement motivation**						
1	I always prefer to be actively focused in coconut cultivation for achieving optimal yields and quality in the coconut farming industry rather than taking rest	4.16	I	4.22	I	4.19	I
2	I always strive to be the best coconut producer/ entrepreneur	3.78	III	3.82	II	3.80	II

Continued....

TABLE 2 Continued....

Sl. No.	Statements	Small (n_1=45)		Large (n_2=45)		Overall (n=90)	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
3	I would like to give up at something that prove to be excessively challenging or unattainable	3.51	IV	3.60	III	3.56	IV
4	Current circumstances are discouraging me to work hard for achieving potentiality in coconut production	3.49	V	3.58	V	3.53	V
5	Awards, government policies and recognition motivates me to get better yield in coconut farming	3.84	II	3.60	III	3.72	III
C	**Decision making ability**						
1	I myself decide the suitable technologies for coconut cultivation in my farm land for getting higher returns	4.87	I	4.78	I	4.82	I
2	I collect information from various sources about innovative methods and carefully evaluate the pros and cons before making decision	4.09	II	4.38	II	4.23	II
3	I abide by the decisions taken by my fellow farmers / family members / parents / development department / research stations / KVKs	3.96	III	4.38	II	4.17	III
D	**Risk orientation**						
1	I financially invest in advanced coconut cultivation technologies, that can bring me advantages in the future	3.96	I	4.11	I	4.03	I
2	It is necessary to take some risk, if a farmer wants to become successful	3.31	II	3.89	II	3.6	II
3	I am ready to take risk in coconut cultivation even though the rate of success is unknown	2.56	III	3.44	III	3.00	III
E	**Management orientation**						
1	Increasing the yield in coconut cultivation will be easier with the implementation of a farm production plan	4.22	I	4.27	I	4.24	I
2	Hiring skilled labour who undergone FoCT (Friends of Coconut Tree) programme is beneficial for me during coconut harvesting	3.64	III	3.78	III	3.71	III
3	I plant and get income from other farm enterprises such as cultivating crops like banana and pulse crops during the juvenile phase of coconut cultivation	3.87	II	4.16	II	4.01	II
4	Consulting a horticulture expert is essential for effective coconut cultivation	3.18	IV	3.51	IV	3.34	IV
F	**Leadership ability**						
1	I always try to participate and take lead in discussion on new technologies of coconut cultivation in group meetings, trainings, demonstrations etc.	4.09	I	4.33	I	4.21	I
2	I assign the work to my labour and family members by recognizing their diverse skills in coconut cultivation and its value addition	3.56	III	3.56	III	3.56	III

Continued....

TABLE 2 Continued....

Sl. No.	Statements	Small (n_1=45)		Large (n_2=45)		Overall (n=90)	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
3	I share the ideas of new technologies to my village people who consult me for the information regarding coconut cultivation	4.09	I	4.02	II	4.06	II
G	**Economic motivation**						
1	I work towards maximizing yield and net profit with minimal/optimal inputs	4.42	II	4.42	II	4.42	II
2	I take up value addition in coconut to maximize monetary profits, instead of focusing solely on selling of coconut nuts	4.22	III	4.18	III	4.20	III
3	I will consider adopting new methods of coconut cultivation and processing only when I am convinced that they result in higher profit/returns	4.44	I	4.64	I	4.54	I
4	It is essential to me, to earn a living out of coconut farming but the most significant aspects of life cannot be solely defined in economic terms	4.18	IV	4.09	IV	4.13	IV
H	**Scientific orientation**						
1	I believe that application of science in coconut cultivation means saving of financial and natural resources	3.36	I	3.40	I	3.38	I
2	I believe that staying informed about emerging scientific technologies is not beneficial in the context of coconut cultivation	2.73	III	3.02	III	2.88	III
3	Having good rapport with scientists and officers helps me to acquire scientific knowledge on coconut cultivation	3.18	II	3.16	II	3.17	II
I	**Market perception**						
1	I believe that market news is not so useful to a coconut farmer	3.87	I	3.98	I	3.92	I
2	I can secure a favorable price for my coconut products in the market by incorporating value addition	3.36	IV	3.53	IV	3.44	IV
3	I always sell my coconut products to the nearest market irrespective of price	2.80	VI	3.13	VI	2.97	VI
4	I always purchase the inputs for coconut farming from the shop where my neighbors/relatives purchase	3.22	V	3.47	VI	3.34	V
5	I sell the coconut produce directly in the market without involving middle man to get better price	3.71	II	3.84	II	3.78	II
6	I always keep track of what my competitors are doing in the market and accordingly I decide my marketing strategy for selling coconut products	3.44	III	3.64	III	3.54	III
J	**Entrepreneurial orientation**						
1	I possess all the capabilities required to become a successful entrepreneur in coconut farming	3.42	III	3.11	IV	3.27	IV

Continued....

TABLE 2 Continued....

Sl. No.	Statements	Small (n_1=45)		Large (n_2=45)		Overall (n=90)	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
2	I always try to read/listen literature/programmes related to coconut cultivation, processing and value addition	3.13	IV	3.69	III	3.41	III
4	I never estimate the financial requirements for coconut production, value addition and marketing	3.64	II	3.84	II	3.74	II
5	I always recognize the consumer preference for coconut-based products in a market and try to produce, add value and sell that type of products accordingly	3.84	I	4.07	I	3.96	I
K	**Entrepreneurial skill**						
1	I possess the skills to prepare value added products in coconut	3.58	I	3.96	I	3.77	I
2	It is enough to know cultivation practices of coconut, rather than knowing processing, value addition and marketing aspects	3.38	II	3.93	II	3.66	II
3	I always undergone FoCT (Friends of Coconut Tree) programme which help me during harvesting and plant protection activities.	2.18	III	3.27	III	2.72	III

second (mean score=3.80). In Decision-Making Ability, 'I myself decide the suitable technologies for coconut cultivation in my farm land for getting higher returns" ranked the highest (mean score 4.82), this reflects the farmer's confidence in making autonomous decisions about technology adoption to enhance profitability. Whereas, In Risk Orientation, the highest-ranked statement was 'I financially invest in advanced coconut cultivation technologies, that can bring me advantages in the future' (mean score = 4.03) shows positive attitude of farmers toward taking calculated financial risks for future benefits. Management Orientation emphasized the importance of a production plan as the statement 'Increasing the yield in coconut cultivation will be easier with the implementation of a farm production plan' achieved the highest rank (mean score = 4.24). For Leadership Ability, 'I always try to participate and take lead in discussion on new technologies of coconut cultivation in group meetings, trainings, demonstrations *etc*., ranked the highest (mean score = 4.21) which indicates that farmer's regardless of scale, value active participation and leadership roles in knowledge-sharing activities.

In Economic Motivation, the statement 'I will consider adopting new methods of coconut cultivation and processing only when I am convinced that they result in higher profit/returns' was the top-ranked (mean score = 4.54) which reveals that economic benefits strongly influence the adoption of new practices among coconut farmers. In Scientific Orientation, 'I believe that application of science in coconut cultivation means saving of financial and natural resources' ranked the highest (mean score = .38) which signifies the shared belief in the utility of scientific approaches for resource optimization. For Market Perception, 'I believe that market news is not so useful to a coconut farmer' ranked highest (mean score = 3.92). In Entrepreneurial Orientation, 'I always recognize the consumer preference for coconut-based products in a market and try to produce, add value and sell that type of products accordingly' ranked first (mean score=3.96) where farmers emphasize on

TABLE 3

Overall Entrepreneurial behaviour of coconut growers

District	Entrepreneurial behaviour	Small (n_1=45)		Large (n_2=45)		Overall (n=90)	
		f	%	f	%	f	%
Tumakuru	Low < (154.86)	23	51.11	5	11.11	28	31.12
Mean = 158.86	Medium (154.86 - 162.85)	14	31.11	17	37.78	31	34.44
SD = 7.99	High > (162.85)	8	17.78	23	51.11	31	34.44

market-driven production strategies. Entrepreneurial Skills highlighted the capability and interest in enhancing their income through value addition as the statement 'I possess the skills to prepare value added products in coconut' was top ranked with a mean score of 3.77. The results are in line with (Bushetti and Krishnamurthy, 2023)

The results in Table 3 showed the entrepreneurial behavior of coconut growers in Tumakuru district and was categorized into three levels *viz*., low, medium and high, based on mean and standard deviation values (Mean = 158.86, SD = 7.99). A comparison of small and large coconut farmers reveals distinct differences across these categories. A significantly higher proportion of small farmers (51.11%) fell into the low entrepreneurial behavior category compared to large farmers (11.11%). This indicated that smaller farmers are less likely to exhibit entrepreneurial traits, possibly due to limited resources, lower access to knowledge, or risk aversion. Whereas, in the medium category, 37.78 per cent of large farmers were represented, slightly higher than (31.11%) small farmers. This suggested moderate engagement with entrepreneurial activities among both groups, with large farmers slightly ahead due to better access to inputs or support systems. In contrast, large farmers showed a significant lead in the high category with 51.11 per cent classified as highly entrepreneurial compared to only 17.78 per cent of small farmers. This highlights that large farmers are better positioned to adopt innovative practices, take risks and capitalize on opportunities, likely due to greater financial stability, landholding size and market access.

In case of overall distribution among the 90 farmers surveyed, 31.12 per cent exhibited low entrepreneurial behavior, while 34.44 per cent each fell into the medium and high categories. The results indicate a balanced distribution between medium and high entrepreneurial behavior, reflecting a substantial portion of farmers actively engaging in entrepreneurial activities, such as adopting innovative practices and value addition. However, the presence of a significant low entrepreneurial group (31.12%) suggests that barriers such as resource limitations, lack of access to knowledge or risk aversion may hinder some farmers from optimizing their potential. The results are in line with (Atram *et al.*, 2024 & Bushetti and Krishnamurthy, 2022)

The Table 4 indicated the entrepreneurial behavior of coconut growers which was analyzed across 11 dimensions. The findings reveal that more than two-fifth (43.34%) of coconut growers exhibited medium level of innovativeness, indicating their willingness to adopt new practices but with room for improvement however, one third (33.33%) fall into the high category, reflecting a considerable segment ready to embrace innovations and a slightly more than two-fifth (41.11%) of the respondents shows medium level of achievement motivation across all growers, reflecting moderate aspirations to achieve goals followed by notable (35.56%) displayed high achievement motivation, suggesting that many farmers are goal-oriented and focused on improving outcomes. High level of decision-making ability was observed among exactly two-fifth (40.00%) of the respondents followed by more than one-third (37.78%) of the respondents demonstrated medium competence, indicating their capacity to make effective farm-related decisions. In risk orientation nearly half (48.89%) of the respondents belong to medium level category

TABLE 4

Entrepreneurial behaviour dimension wise distribution of coconut growers

Entrepreneurial behaviour dimensions	Categories	Small (n_1=45)		Large (n_2=45)		Overall (n=90)	
		f	%	f	%	f	%
Innovativeness	Low < (15.76)	12	26.67	9	20.00	21	23.33
Mean = 16.82	Medium (15.76 - 17.88)	19	42.22	20	44.44	39	43.34
SD = 2.12	High > (17.88)	14	31.11	16	35.56	30	33.33
Achievement motivation	Low < (17.72)	12	26.67	9	20.00	21	23.33
Mean = 18.80	Medium (17.72 - 19.87)	18	40.00	19	42.22	37	41.11
SD = 2.14	High > (19.87)	15	33.33	17	37.78	32	35.56
Decision making ability	Low < (12.69)	14	31.11	6	13.33	20	22.22
Mean = 13.22	Medium (12.69 - 13.75)	21	46.67	13	28.89	34	37.78
SD = 1.06	High > (13.75)	10	22.22	26	57.78	36	40.00
Risk orientation	Low < (9.62)	16	35.56	4	8.89	20	22.22
Mean = 10.63	Medium (9.62 - 11.24)	25	55.56	19	42.22	44	48.89
SD = 2.02	High > (11.24)	4	8.88	22	48.89	26	28.89
Management orientation	Low < (14.50)	15	33.33	8	17.78	23	25.56
Mean = 15.31	Medium (14.50 - 16.11)	25	55.56	26	57.78	51	56.67
SD = 1.61	High > (16.11)	5	11.11	11	24.44	16	17.78
Leadership ability	Low < (11.23)	16	35.56	16	35.56	32	35.56
Mean = 11.82	Medium (11.23 - 12.41)	21	46.67	13	28.88	34	37.77
SD =1.18	High > (12.41)	8	17.77	16	35.56	24	26.67
Economic motivation	Low < (16.61)	12	26.67	10	22.23	22	24.44
Mean = 17.30	Medium (16.61 - 17.99)	14	31.11	15	33.33	29	32.22
SD = 1.38	High > (17.99)	19	42.22	20	44.44	39	43.34
Scientific orientation	Low < (8.23)	16	35.56	15	33.33	31	34.44
Mean = 9.42	Medium (8.23 - 10.62)	13	28.88	7	15.56	20	22.23
SD = 2.39	High > (10.62)	16	35.56	23	51.11	39	43.33
Market perception	Low < (19.98)	9	20.00	5	11.11	14	15.56
Mean = 21.00	Medium (19.98 - 22.01)	31	68.89	26	57.78	57	63.33
SD = 2.03	High > (22.01)	5	11.11	14	31.11	19	21.11
Entrepreneurial orientation	Low < (13.28)	11	24.44	9	20.00	20	22.22
Mean = 14.38	Medium (13.28 - 15.48)	27	60.00	20	44.44	47	52.22
SD = 2.20	High > (15.48)	7	15.56	16	35.56	23	25.56
Entrepreneurial skill	Low < (9.29)	21	46.67	2	4.44	23	25.56
Mean = 10.14	Medium (9.29 - 10.99)	16	35.56	15	33.33	31	34.44
SD = 1.71	High > (10.99)	8	17.77	28	62.23	36	40.00

reflecting grower's cautious approach toward uncertain scenarios. Whereas, in management orientation more than half (56.67%) of the growers falls under medium level with only 17.78 per cent categorized as high. This suggests that most farmers possess moderate managerial skills. More than one-third (37.77%) of growers fell into the medium leadership ability category followed by 35.56 per cent exhibiting low leadership qualities. This indicates a general need for leadership development, as stronger leadership can influence better adoption of practices and collaborative efforts among growers. More than two-fifth (43.34%) of growers displayed high economic motivation, reflecting their focus on improving income and profitability. In scientific orientation more than two-fifth (43.33%) of the respondents fell under high category which signifies a strong inclination among some farmers to adopt scientific methods. Under the market perception, majority (63.33%) of the growers belongs to medium category indicating that growers have a reasonable understanding of market trends and demands. In entrepreneurial orientation, more than half (52.22%) of the growers fell under medium category which highlights moderate entrepreneurial traits among growers. Exactly two fifth (40.00%) of the respondents belongs to high category in entrepreneurial skill dimension indicating their competence in navigating farming challenges effectively.

These findings in the Table 4 collectively indicate that, while medium levels dominate across most dimensions, large farmers generally outperform small farmers in high categories, suggesting that farm size plays a pivotal role in entrepreneurial behavior. Tailored interventions for small farmers in decision-making, risk-taking and scientific orientation are essential to bridge the gap and efforts like skill development programs, exposure to advanced market dynamics and leadership training could further enhance entrepreneurial behavior, ensuring sustainable growth in the coconut farming sector.

The Table 5 revealed the comparative analysis of entrepreneurial behavior dimensions among coconut growers which reveals significant differences between small and large growers in several areas, highlighting

TABLE 5

Comparative analysis of entrepreneurial behaviour dimensions among coconut growers

Dimension	Small (n_1=45)	Large (n_2=45)	Mann Whitney U Test	P - Value
	Mean rank	Mean rank	Z Value	
Innovativeness	43.13	47.87	0.878	0.380 NS
Achievement motivation	44.23	46.77	0.467	0.640 NS
Decision making ability	37.64	53.36	2.981	0.032 *
Risk orientation	35.63	55.37	3.644	0.000 **
Management orientation	39.16	51.84	2.364	0.018 *
Leadership ability	43.10	47.90	0.906	0.365 NS
Economic motivation	44.88	46.12	0.232	0.816 NS
Scientific orientation	38.23	45.64	2.238	0.023 NS
Market perception	38.29	52.71	2.700	0.027 *
Entrepreneurial orientation	40.19	50.81	1.976	0.048 *
Entrepreneurial skill	30.71	60.29	5.527	0.000 **
Overall	32.18	58.82	4.844	0.000 **

Note: ** and * denote significance at 1 per cent and 5 per cent levels, respectively and NS- Non significant

the influence of farm size on entrepreneurial traits. Dimensions such as Risk Orientation and Entrepreneurial Skill show significance at the 1 per cent level. This indicates a very strong statistical difference between small and large coconut growers in these aspects. The lower p-value signifies that the observed differences are highly unlikely to have occurred by chance, suggesting that these dimensions are deeply influenced by the scale of farming operations. For instance, large growers might exhibit higher risk orientation and entrepreneurial skills due to their ability to leverage resources, adopt innovative practices and manage market uncertainties effectively.

Dimensions such as Decision-Making Ability, Management Orientation, Market Perception and Entrepreneurial Orientation are significant at the 5 per cent level. These findings indicate a moderate level of confidence in the statistical difference between the two groups. The 5 per cent significance suggests that the variations in these dimensions are likely influenced by the growers' scale of operation, though the evidence is less robust compared to the 1 per cent level. As the difference in management orientation might stem from the operational challenges of handling larger farms, which demand enhanced managerial skills. The results are supported by (Parganiha *et al*., 2023)

Dimensions such as Innovativeness, Achievement Motivation, Leadership Ability, Economic Motivation and Scientific Orientation show no significant differences between small and large growers. This indicates that the scale of farming does not strongly affect these traits. Non-significance could imply that these dimensions are equally present in both groups or are influenced by factors unrelated to farm size, such as personal traits, education, or local agricultural practices. For instance, achievement motivation and innovativeness might reflect individual aspirations or community-driven adoption of innovations, rather than being dictated by the scale of operations. The results are supported by (Sunidhi *et al.,* 2023)

Overall, large growers exhibit significantly higher entrepreneurial behavior compared to small growers. This suggests that the scale of farming operations provides a conducive environment for developing and leveraging entrepreneurial traits. However, the findings also highlight the need for targeted interventions to empower small growers. Providing them with improved access to resources, training in scientific and management practices and better market exposure could help bridge the gap and enhance their entrepreneurial potential. The results are in line with (Chithra and Meti, 2018)

The Table 6 compared the mean scores of entrepreneurial behaviour between small farmers and large farmers using a t-test of significance. Large farmers have a higher mean score (162.89) compared to small farmers (154.82). This indicates that large farmers exhibit stronger entrepreneurial behavior overall. The difference suggests that larger-scale farming operations may provide opportunities or require skills that enhance entrepreneurial traits. The t-value is 0.0002, which is highly significant at the 1 per cent level ($p \leq 0.01$). This implies that the difference in entrepreneurial behavior between small and large farmers is statistically significant and not due to random chance. The significance indicates a strong relationship between the scale of farming and entrepreneurial behavior. Larger farm sizes might necessitate greater decision-making skills, risk-taking and management capabilities, leading to a higher overall entrepreneurial behavior score.

The analysis highlights that both small and large farmers show a proactive and innovative approach across dimensions, particularly in adopting technologies, decision-making and striving for economic and entrepreneurial success. These trends emphasize the evolving mindset of coconut farmers towards modern, efficient and market-oriented farming practices. The findings highlight the need for

TABLE 6

Test of significance of coconut growers towards entrepreneurial behaviour

Coconut growers	Mean score	t-value
Small farmers (n1=45)	154.82	0.0002 **
Large farmers (n2=45)	162.89	

Note: ** denote significance at 1 per cent

capacity-building initiatives to further enhance entrepreneurial behavior among farmers, particularly focusing on those in the low category, to ensure equitable growth and sustainable development within the coconut farming sector.

In summary, while medium levels dominate across most dimensions, there is a significant proportion of growers excelling in high categories, particularly in economic motivation, entrepreneurial skill and decision-making ability. Targeted interventions to uplift low-performing dimensions, such as leadership ability and scientific orientation, can help unlock the full entrepreneurial potential of coconut growers.

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