P-ISSN: 2618-0723 E-ISSN: 2618-0731



NAAS Rating: 5.04 www.extensionjournal.com

International Journal of Agriculture Extension and Social Development

Volume 7; Issue 4; April 2024; Page No. 286-291

Received: 01-02-2024 Indexed Journal
Accepted: 10-03-2024 Peer Reviewed Journal

Profile characteristics of areca growers of Tota Utpannagala Marata Sahakara Sangha Niyamit (TUMCOS) in Davanagere district of Karnataka state

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DOI: https://doi.org/10.33545/26180723.2024.v7.i4d.540

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Abstract

The study was conducted in Davanagere district of Karnataka state to analyse the profile characteristics of member and non-member arecanut growers of TUMCOS. A total of 120 (60 members and 60 non-members) areca growers were selected using simple random sampling technique from five branch areas of TUMCOS in Davanagere district. Personal interview method was used to collect data and appropriate statistical tools were applied to analyse the data. In terms of overall arecanut growers, 65.00 percent and 35.00 percent belonged to the middle age group and were educated up to the high school level, respectively. 53.33 percent of growers belonged to a medium-sized family. 70.83 percent of growers were classified as having medium farming experience. Small land holdings accounted for 47.50 per. cent of growers. Arecanut cultivation covered a medium area for 50.83 percent of growers. 44.17 percent of growers were in the middle-income bracket

Keywords: TUMCOS, farm material possession, scientific orientation, innovative proneness

1. Introduction

Arecanut (Areca catechu) also called as betel nut, supari, adike etc. It is a palm tree species belongs to family Arecaceae. Polyphenols, fat polysaccharides, fibre, and protein are the main components of arecanut. Aside from these, nuts contain arecoline (0.1 0.7%) and other alkaloids in trace amounts such as arecadine, guvacoline, and guvacine. Tannins, a byproduct of the processing of immature nuts, were discovered to be useful in dyeing clothes, tanning leather, as a food colour, as a mordant in producing a variety of shades with metallic salts, and so on. The nuts have 8-12% fat content, which can be extracted and used in confectionery. The refined fat is tougher than cocoa butter and can be blended. Vagbhata (in the fourth century AD) described the medicinal properties as effective against leucoderma, leprosy, cough, fits, worms, anacmia, and obesity. Arecanut is a commercial crop that provides enormous health and economic benefits to both farmers and consumers, and it is the primary source of income for many farmers in India.

India ranks first in arecanut production with total production of 8.53 lakh tonnes, which account for 52.30 percent of world arecanut production. Karnataka stands first in arecanut production with a total area of 2.79 lakh hectares, which accounts for 57.85 percent of total arecanut areas in

India. Among the districts of Karnataka, Shivamogga stands first both in area (92241 ha) and production (169305 tonnes) of arecanut (2018-2019), followed by Dakshina Kannada and Davanagere. In Davanagere, Malnad area and the traditional zones of the district comprising of Channagiri, Honnali, Davanagere and Harihar are well suited for growing arecanut commercially.

Farmers and policymakers are concerned about the recent large fluctuations in the annual average prices of arecanut. In all of the major markets, there has been a strong seasonality in the supply (or market arrival). There are imperfections in the market, a disparity between supply and demand, and a low consumer share of arecanut value-added products. i.e., Compared to other crops like cereals, pulses, oilseeds, vegetable, fruit, and flower crops, where farmers receive at least 30.00 percent of the consumer rupee, the farmer's share in the rupee for value-added products like Panbeeda and Scented Supari is barely 9.00 to 26.00 percent. (fifth report of special scheme on cost of cultivation on arecant in Karnataka). On the other hand, one of the greatest methods for getting a decent price realization is cooperative marketing. Consequently, the present study juxtaposes the profile attributes of TUMCOS members and non-members, a marketing cooperative situated in the Davanagere district of the state of Karnataka.

2. Materials and Methods

The study was conducted in Davanagere district of Karnataka state during 2020-2021. The study areas was purposively selected due to high Production and Productivity of areca nut crop and headquarter of TUMCOS lies in that area. In the present investigation, Ex-post facto research design was used. Totally TUMCOS has eight branches functioning at Channagiri, Santebennur, Tavarekere, Sagarapete, Holalkere, Tarikere, Arahatolalu-Kaimara and Honnali and extended in the four districts of

Karnataka state, out of which five branches *viz.*, Tavarekere, Santebennur, Honnali, Sagarpete and Channagiri lies in Davanagere district were selected for the study. 12 TUMCOS and 12 non TUMCOS farmers from each branch were selected, making the sample size of 24 farmers from each branch. Thus, the total sample from the five branches will be 120 farmers. A structured interview schedule was used and data was collected through personal interview method.

3. Results and Discussion

Table 1: Personal, socio-economic and psychological characteristics of Member and Non-member Arecanut growers of TUMCOS, (n=120)

SI. No.	Characteristics	Category	Members (n ₁ =60)		Non-members (n ₂ =60)		Overall Arecanut growers (n=120)	
			f	%	f	%	f	%
		Young(< 35 years)	13	21.66	8	13.33	21	17.50
1	Age	Middle(35-50 years)	38	63.34	40	66.67	78	65.00
		Old (>50 years)	09	15.00	12	20.00	21	17.50
2	Education	Illiterate	00	00.00	00	00.00	00	00.00
		Primary school	07	11.67	10	16.68	17	14.17
		Middle school	08	13.33	11	18.34	19	15.83
		High school	22	36.66	20	33.32	42	35.00
		PUC	14	23.34	13	21.66	27	22.50
		Graduation	07	11.67	06	10.00	13	10.83
		Post-Graduation and above	02	3.33	00	00.00	02	01.67
3	Family size	Small (<4)	15	25.00	09	15.00	24	20.00
		Medium(4-8)	31	51.66	33	55.00	64	53.33
		Large (>8)	14	23.34	18	30.00	32	26.67
4	Farming Experience	Low(<10.10)	06	10.00	12	20.00	18	15.00
	Mean= 22.13	Medium(10.10-34.15)	45	75.00	40	66.67	85	70.83
	S.D = 24.04	High(>34.15)	09	15.00	08	13.33	17	14.17
5	Land holding	Marginal (< 2.50 acres)	09	15.00	22	36.66	31	25.83
		Small (2.5-5.0 acres)	30	50.00	27	45.00	57	47.50
		Big (> 5.0 acres)	21	35.00	11	18.34	32	26.67
6	Area under Arecanut cultivation	Low(< 1.53 acres)	12	20.00	15	25.00	27	22.50
	Mean=3.30	Medium (1.53-5.07 acres)	26	43.34	35	58.32	61	50.83
	S.D.=3.54	High (> 5.07 acres)	22	36.66	10	16.68	32	26.67
7	Annual Income	Low(< 6,54,992)	14	23.34	22	36.66	36	30.00
	Mean=10,08,546.22	Medium (6,54,992-13,62,099)	24	40.00	29	48.34	53	44.17
	S.D.= 7,07,106.78	High(> 13,62,099)	22	36.66	09	15.00	31	25.83
8	Farm material possession	Low(< 23.15)	14	23.34	23	38.32	37	30.83
	Mean=31.63	Medium(23.15 - 40.12)	21	35.00	27	45.00	48	40.00
	S.D.= 16.97	High(>40.12)	25	41.66	10	16.68	35	29.17
9	Mass media participation	Low (< 14.08)	17	28.34	18	30.00	35	29.17
	Mean= 16.91	Medium(14.08 -19.74)	18	30.00	34	56.67	52	43.33
	S.D.=5.66	High(> 19.74)	25	41.66	08	13.33	33	27.50
10	Social participation	Low (< 16.55)	14	23.34	25	41.66	39	32.50
	Mean = 21.14	Medium(16.55-25.74)	20	33.32	24	40.00	44	36.67
	S.D. = 9.19	High(> 25.74)	26	43.34	11	18.34	37	30.83
11	Extension contact	Low(< 7.43)	16	26.68	20	33.32	36	30.00
	Mean= 8.49	Medium (7.53-9.55)	20	33.32	30	50.00	50	41.66
	S.D.=2.12	High(>9.55)	24	40.00	10	16.68	34	28.34
12	Risk bearing ability	Low (< 15.73)	10	16.68	19	31.66	29	24.17
	Mean= 16.44	Medium(15.73-17.15)	23	38.32	25	41.66	48	40.00
	S.D.=1.41	High (> 17.15)	27	45.00	16	26.68	43	35.83
13	Scientific orientation	Low(<9.59)	14	23.34	20	33.32	36	30.00
	Mean= 13.48	Medium (9.59-17.36)	22	36.66	24	40.00	52	43.33
	S.D.=7.78	High(> 17.36)	24	40.00	16	26.68	32	26.67
14	Innovative Proneness	Low(<4.40)	17	28.34	26	43.34	43	35.83
	Mean= 6.17	Medium(4.40-7.93)	19	31.66	22	36.66	41	34.17
	S.D.=3.54	High(> 7.93)	24	40.00	12	20.00	36	30.00
15	Economic motivation	Low (< 4.61)	13	21.66	21	35.00	34	28.34
	Mean= 6.38	Medium(4.61-8.14)	21	35.00	28	46.66	49	40.83
	S.D.=3.54	High(> 8.14)	26	43.34	11	18.34	37	30.83

f - Frequency, % - percent

The findings regarding to personal, socio-economic, psychological, communication and situational characteristics of the respondents were studied and data is presented in Table 1

3.1 Age

Age is the important factor as it revels the maturity of an individual to take decisions for achieving his needs. In regard to member Arecanut growers, 63.34 percent of arecanut belonged to middle age group, followed by 21.66 percent and 15.00 percent of arecanut growers belonged to young and old age groups, respectively. Among nonmember arecanut growers, 66.67 percent of arecanut growers belonged to middle age group, followed by 20.00 percent and 13.33 percent belonged to old and young age groups. More than three-fifth (65.00%) of overall arecanut growers belonged to middle age group and equally 17.50 percent of overall arecanut growers belonged to young and old age group, respectively. Most of the growers fall under middle age groups. Middle aged farmers are possess more energy and have more work efficiency than older and younger arecanut growers. The possible reasons for the above trend might be the middle-aged arecanut growers were optimistic and ready to take up any new technology to earn profits. Further, the middle-aged growers are enthusiastic, possess more physical vigour and have more work efficiency than older and younger arecanut growers. The results are assisted with findings of Kalsariya (2011) [7].

3.2 Education

The data in Table 1 indicates that, 36.66 percent of member arecanut growers were completed education upto high school level, followed by 23.34, 13.33, 11.67, 11.67 and 3.33 percent of member arecanut growers studied upto preuniversity, middle school, primary school, graduation and post-graduation level. With regard to non-member arecanut growers, 33.32 percent of arecanut growers studied upto high school level, followed by 21.66, 18.34, 16.68 and 10.00 percent of arecanut growers completed education upto pre-university, middle school, primary school and graduation level. Among overall arecanut growers, 35.00 percent of the arecanut growers were educated upto high school level, followed by 22.50, 15.83, 14.17, 10.83 and 1.67 percent of arecanut growers were completed education upto pre-university, middle school, primary school, graduation and post-graduation level. The most predicted reason for majority of arecanut growers educated upto high school and pre university education might be due to lack of facilities for college education within reach of the farmers, which forces them to travel to cities if at all they want to pursue college and graduation education. The reasons for termination of education at primary and middle school level may be due to need of family labour at farm, lack of interest in pursuing further education, lack of awareness about need and benefit of higher education and lack of encouragement from family members to go for higher education. These findings are encouraged by findings of study conducted by Vedamurthy (2002) [2].

3.3 Family size

The facts in Table 1 revealed that, slightly more than half (51.66%) of member arecanut growers categorized under medium family size, followed by one-fourth (25.00%) and

23.34 percent of arecanut growers categorised under small and large family size. Among the non-member arecanut growers, more than half (55.00%) arecanut growers belonged to medium family size, sequenced by 30.00 percent and 15.00 percent of the arecanut growers belonged to large and small size family. More than half (53.33%) of overall arecanut growers belonged to medium size family, followed by more than one-fourth (26.67%) and one fifth (20.00%) of overall arecanut growers belonged to large and small size family. Most of the arecanut growers had medium size family. The anticipated reasons for the above trend might be due to social structure of the society where nuclear families are gaining importance directly affecting the fragmentation of land holding. Further, the social values attached to the joint family system is slowly disintegrating may be because of influence of urbanisation and cosmopolitness. The results are in accordance with research elicitation of Vinayak (2014) [10].

3.4 Farming Experience

The data in the Table 1 depicted that, three-fourth (75.00%) of the member arecanut growers belonged to medium farming experience, subsequently 15.00 percent and 10.00 percent of the member arecanut growers belonged to high and low farming experience. With reference to non-member arecanut growers, 66.67 percent of the growers categorised belonged to medium farming experience, sequenced by 20.00 percent and 13.33 percent of growers were categorised under low and high farming experience. Nearly three-fourth (70.83%) of the overall arecanut growers grouped under medium farming experience, followed by 14.17 percent and 15.00 percent of overall arecanut growers grouped under high and low farming experience. Most of the arecanut growers fall under medium farming experience. The reason for above trend might be due to majority of the arecanut growers belonged to middle age group of 35-50 years and are practicing farming after discounting their education. The findings are in line with Aaysha Kamar $(2019)^{[14]}$.

3.5 Land holding

The data presented in Table I indicates that 50.00 percent of the member arecanut growers had small land holdings, while 35.00 percent and 15.00 percent of the member arecanut growers belonged to the big and marginal land holding categories. Less than half (45.00%) of the nonmember arecanut growers were classified as having small land, followed by 36.66 percent and 18.34 percent of growers who were classified as having marginal and large land holdings, respectively. The category of small land holding comprised nearly half (47.50%) of all arecanut growers, followed by 26.67 percent and one-fourth (25.83%) of all areca growers who belonged to the big and marginal land holding category. The majority of growers of arecanuts belong to the small land holding category (2.5-5.00 acres). The most likely explanations are that the majority of the land was passed down to them by their ancestors, and their current financial situation may have prevented them from buying more land. Growers kept using the existing land for agricultural purposes. Chengappa (2017) [13] offers support for the study's findings.

3.6 Area under arecanut

Table I makes clear that 20.00 percent of member growers had high and low area under arecanut cultivation, while over two-fifths (43.34%) of member growers processed medium area under arecanut cultivation. These growers were arranged in a sequential manner by 36.66 percent of member growers. Regarding non-member growers of arecanuts, the majority (58.32%) of growers had a medium area planted with arecanut. On the other hand, the percentage of non-member growers with low and high area under arecanut was 14.50 percent and 16.68 percent, respectively. While 26.67 percent and 22.50 percent of all arecanut growers had high and low areas under arecanut cultivation, slightly over half (50.83%) of all arecanut growers had medium areas under arecanut cultivation. It is evident from the aforementioned data that the majority of arecanut growers farmed medium-sized areas. The high crop value, climate suitability for plantation growth, and high net income relative to other food crops are likely the causes of the above trend, which encourage farmers to cultivate and increase the amount of area under arecanut in their fields. The outcomes concur with Vinayak's (2014) [10] findings.

3.7 Annual income

Table 1 suggests that two-fifths (40.00%) of the member arecanut growers were classified as having a medium income, followed by 36.66% and 23.34% of the member arecanut growers as having a high and low income, respectively. Of the non-member growers of arecamut, roughly half (48.34%), followed by 36.66 and 1.00 percent, were classified as medium low and high income growers. More than two-fifths (44.17%) of all arecanut growers had an income in the medium range. However, among all arecanut growers, thirty percent and twenty-five percent belonged to the low and high income categories, respectively. It is evident from the aforementioned statistics that the majority of arecanut growers fall into the category of medium annual income earners. Their land ownership may be one of the likely causes of the aforementioned trend. The division of farm land between commercial and food crops, as well as the practice of arecanut growers engaging in a secondary occupation. Vinayak (2014) [10] and Naveen (2012) [9] produced identical outcomes.

3.8 Farm material possession

Table I shows that among the member arecanut growers, over two-fifths (41.66%), 35.00, and 23.34 percent had high, medium, and low farm materials. Regarding nonmember arecanut growers, medium, low, and high farm materials were owned by less than half (45.00%), 38.32, and 16.68 percent of arecanut growers, respectively. The majority of arecanut growers, or two-fifths (40.00%), possessed medium farm materials. Whereas, 30.83 percent and 29.17 percent of overall arecanut growers possessed low and high farm material. It is clear from the aforementioned data that the majority of arecanut growers used medium farm materials in their operations. The aforementioned tendency's likely causes include their income levels, which have an impact on their purchasing power and, consequently, the material status of the farmer's farm. In line with Netravati's research findings, the outcomes are encouraging (2007).

3.9 Mass media participation

Table 1 reveals that a significant proportion of member arecanut growers-more than two-fifths (41.66%) participated in the mass media. Conversely, medium and low mass medium participation rates were found in 30 percent and 28.14 percent of arecanut growers, respectively. Regarding growers of arecanuts who are not members, the percentage of farmers who participated in the mass media was 56.67 percent, 30.00 percent, and 13.33 percent, respectively. The percentage of arecanut growers who participated in the mass media at a medium level was less than half (43.33%), with the remaining percentages being at low and high levels 29.57 percent and 27.50 percent, respectively. The aforementioned explanations make it clear that most arecanut growers participated in the mass media at a moderate level. The aforementioned trend may be caused, among other things, by the regular use of mass media channels like television, mobile phones, and WhatsApp and YouTube to learn about market prices, weather, and new developments in cultivation techniques, among other things. The outcomes agree with those of Abhilash (2017) [12].

3.10 Social participation

Table 1 shows that a significant proportion of member arecanut growers more than two-fifths, or 43.34 percent had high levels of social participation. On the other hand, medium and low social participation rates were observed in 33.32 and 23.34 percent of the member arecanut growers. Regarding non-member growers of arecamut, precisely onehalf (40.00%), 41.66 percent, and 18.34 percent of farmers, respectively, reported medium, low, and high levels of social participation. Less than half (43.33%) of all arecanut growers participated in the media at a medium level, while less than one-fourth (32.50%) and thirty.83%, respectively, of all arecanut growers participated in social media at low and high levels. The majority of arecanut farmers participated in society to a moderate extent. Their membership in and active participation in organizations like could be the probable causes of the aforementioned trend. In turn, these organizations assist arecanut growers in obtaining timely and sufficient inputs, advisory services, finance and marketing for produce, etc. through TUMCOS, primary cooperative societies, and self-help groups. Growers must therefore have been drawn to these organizations. Pawar (2008) [6] produced comparable outcomes.

3.11 Extension contact

Two-fifths (40.00%) of the member arecanut growers had high extension contact, according to Table I. However, among growers of arecanuts, 33.32 percent and 16.68 percent, respectively, had medium and low extension contact. Regarding growers of arecanuts who are not members, the percentage of farmers who had medium, low, or high extension contact was less than half (50.00%), 33.32, and 16.68 percent, respectively. Out of all arecanut growers, less than half (41.66%) had a medium level of extension contact, while 30% and 2834%, respectively, had low and high extension Contact. It is evident from the above results that, majority of the arecanut growers had medium level of extension contact. The above trend may have its roots in the fact that most farmers in villages regularly turn

to input dealers for information on managing pests and diseases, managing nutrients, and learning about new technologies related to arecanut farming. Horticulture offices at the block level and KVK scientists at regional research stations are next in line for information. These results bear a strong correlation with Sajit Kumar (2004) [4].

3.12 Risk bearing ability

Table 1 suggests that over two-fifths (45.00%) of member arecanut growers were classified as high risk bearers, with 38.32 percent and 16.68 percent of member arecanut growers having medium and low risk bearing ability, respectively. Approximately two-fifths (41.66%), 31.66 percent, and 26.68 percent of non-member arecanut growers possessed medium, low, and high risk-bearing abilities. In all, two-fifths (40.00%) of arecanut growers could tolerate moderate levels of risk. However, among all arecanut growers, 35.83 percent and 24.17 percent, respectively, belonged to the high and low risk bearing categories. From the above statistics, it is cleared that most of the arecanut growers had medium risk bearing ability. Probable reasons for the shift of results from medium to high level risk bearing ability of arecanut growers may be due to high investment is needed to establish arecanut plantation followed by hold back of 5 years to realize stable yield from the field, apart from bearing the expenses during lean period without any additional income from the field involves some financial risk. The results are in line with Babanna (2002)

3.13 Scientific orientation

Table I shows that of the member arecanut growers, exactly two-fifths (40.00%), 36.66 and 23.34 percent had high, medium, and low scientific orientation. Regarding nonmember arecanut growers, medium, low, and high scientific orientation was possessed by two-fifths (40.00%), 33.32, and 26.68 percent of arecanut growers. The majority of arecanut growers, or over two-fifths (43.33%), had a medium level of scientific orientation. On the other hand, low scientific orientation was exhibited by 30% and high scientific orientation by 26.67% of growers as a whole. It is clear from the aforementioned data that a medium scientific orientation was possessed by the majority of arecanut growers. This suggests that because of their higher education, ability to take risks, farming experience, social engagement, involvement in the media, and extension contact, the majority of respondents view the world scientifically with interest and good knowledge. All of these elements may have played a part in their developing a strong interest in the scientific side of farming. These results are consistent with those of Shivasubrahmaniya (2003) [3].

3.14 Innovative proneness

Table 1 makes it evident that high innovative proneness was exhibited by two-fifths (40.00%) of the member arecanut growers. Whereas the proportion of member arecanul growers with medium and low innovative proneness was 31.66% and 28.14%, respectively. Regarding non-member growers of arecanuts, over two-fifths (43.34%), 36.66 and 20.00 percent of farmers, respectively, exhibited low, medium, and high levels of innovative proneness. Out of all

arecanut growers, less than two-fifths (35.83%) had low innovativeness, whereas the remaining thirty percent and 34.17 percent had medium and high innovative proneness, respectively. Most farmers were not creative people. The primary factors influencing knowledge and adoption of innovative technologies are farmers' needs, the severity of issues in their fields (e.g., labor shortages necessitating mechanical arecanut dehusking), and their individual characteristics (e.g., high levels of education, moderate risk tolerance, proactive information-seeking). These outcomes are consistent with what Abhilash (2017) [12] found.

3.15 Economic motivation

Table 1 makes clear that a significant portion of the member arecanut growers-more than two-fifths, or 43.34%-had strong economic motivations. However, among the member arecanut growers, 35.0% and 21.66%, respectively, had medium and low economic motivation. Less than half (46.66%), 35%, and 18.34% of farmers who grew arecanuts but were not members of the association, respectively, reported having medium, low, and high economic motivation. Out of all arecanut growers, slightly over half (40.83%) had medium economic motivation, while more than one-fourth (30.83%) and 28.34%, respectively, had high and low economic motivation. The farmers' motivation was primarily of a moderate economic nature. Therefore, farmers, or any other human being for that matter, wants to make more money from the business they run. Although arecanut is a cash crop, there is still much room for farmers to increase their income by intercropping, which makes use of the unused space between plants. Therefore, it is essential that growers of arecanuts who anticipated greater returns demonstrated a moderate level of economic motivation. The outcomes agree with those of Karthikeyan and Balarubini $(2015)^{[11]}$.

4. Conclusion

Regarding the total number of arecanut growers, 65.00 percent and 35.00 percent, respectively, belonged to the middle age group and had attained a high school diploma. 53.33 percent of growers were from families of medium size. Growers with experience in medium farming made up 70.83 percent of the group. Of the growers, 47.50 percent were small land holders. Arecanut cultivation occupied a medium area for 50.83 percent of growers. The category of growers with medium income comprised 44.17 percent of them. Medium farm materials were held by 40.00 percent of growers. The medium level of mass media participation, social participation, extension contact, risk-taking ability, and scientific orientation was exhibited by 43.33, 36.67, 41.66, 40.00, and 43.33 percent of growers, respectively. 35.83 percent of growers were not very creative. Of growers, 40.83 percent had a medium level of economic motivation. When arecanut growers join TUMCOS, they get access to price information, competitive prices based on product quality, storage options, scientific weighing, timely and reasonably priced quality inputs, and credit facilities with lower interest rates, and timely payment for their produce. As a result, members are better equipped to take on risk, own farm equipment, are financially motivated, and can manage their finances.

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