

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 8; August 2026; Page No. 1013-1019

Received: 11-05-2026
Accepted: 15-06-2026

Indexed Journal
Peer Reviewed Journal

Socio-economic and psychological profile characteristics of silkworm rearers and seed cocoon rearers in southern Karnataka, India

¹Bharath K, ²Naresh NT, ³HK Pankaja, ⁴Chandrashekar S Kallimani and ⁵CM Rajesh

^{1,3}Department of Agriculture Extension, College of Agriculture, UAS, GKVK, Bengaluru, Karnataka, India

²Department of Agriculture Extension, ICAR, KVK, Chamarajanagara, Karnataka, India

⁴Department of Sericulture, ICAR, KVK, Chamarajanagar, Karnataka, India

⁵College of Sericulture, Chintamani, UAS, GKVK, Bengaluru, Karnataka, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i8n.4128>

Corresponding Author: Bharath K

Abstract

Sericulture contributes to rural livelihoods in Karnataka, but comparative evidence on the socio-economic and psychological profiles of silkworm rearers and seed cocoon rearers remains limited. This study assessed and compared the profile characteristics of 120 respondents, comprising 60 silkworm rearers and 60 seed cocoon rearers, selected from Chikkaballapur, Tumakuru, Ramanagara, and Chamarajanagara districts of Southern Karnataka. An ex post facto research design was adopted, and data were collected through personal interviews using a structured interview schedule during May and June 2025. Descriptive statistics and correlation analysis were used to examine the selected characteristics and their relationship with performance. Most respondents in both groups were middle-aged, educated up to high-school level, and members of medium-sized families. Silkworm rearers were predominantly in the medium-income category, whereas the largest proportion of seed cocoon rearers belonged to the low-income category. Medium levels were generally observed for occupation, social participation, extension contact, marketing orientation, management orientation, cosmopolitaness, mass-media exposure, economic motivation, extension participation, and deferred gratification. Deferred gratification had the strongest positive correlation with performance ($r = 0.691$), followed by extension contact ($r = 0.547$), economic motivation ($r = 0.467$), and annual income ($r = 0.460$). Education and social participation were not significantly related to performance. The findings provide a basis for tailoring extension and capacity-building interventions to the differing profiles of the two groups.

Keywords: Sericulture, silkworm rearers, seed cocoon rearers, socio-economic profile, psychological characteristics, extension contact, management orientation, marketing orientation, deferred gratification

1. Introduction

Sericulture is one of the oldest agro-based enterprises in rural India, generating employment and supplementary income through both on-farm and off-farm activities (Chanotra *et al.*, 2019) [3]. Among the four major silk varieties produced in India—mulberry, tasar, eri, and muga—mulberry silk accounts for the largest share of production, with Karnataka, Andhra Pradesh, Tamil Nadu, and West Bengal being the major producing states. India is the second-largest producer of silk after China and the largest consumer of raw silk and silk fabrics (Central Silk Board, 2023) [2].

Karnataka is India's leading silk-producing state (Central Silk Board, 2023) [2]. Traditionally concentrated in Southern Karnataka, the sector is increasingly shaped by the promotion of improved and bivoltine technologies, making farmer training and adoption support essential (Ahammed *et al.*, 2026; Hatibaruah *et al.*, 2022) [1, 6].

Recent studies of sericulture communities have indicated that socio-economic status, information access, training exposure, and management-related factors are relevant to farmers' adoption decisions and enterprise income (Manohar *et al.*, 2025; Sengupta *et al.*, 2024; Ahammed *et al.*, 2026) [9, 13, 1].

At the same time, continuing technological and sustainability-oriented developments in sericulture increase the need to understand farmers' capacity to access, evaluate, and apply improved practices (Kiruba *et al.*, 2024; Suárez-Sánchez *et al.*, 2025) [7, 16].

Farmers' socio-economic and psychological characteristics influence technology adoption, access to extension services, and enterprise performance. However, comparative information on these characteristics among silkworm rearers and seed cocoon rearers remains limited. Therefore, the present study was undertaken to analyse and compare the socio-economic and psychological profile characteristics of silkworm rearers and seed cocoon rearers in Southern Karnataka.

2. Materials and Methods

2.1 Research Design

In the present investigation, an ex post facto research design was followed. This design was considered appropriate because it enables the systematic investigation of a phenomenon that has already occurred and is continuing. The researcher had no control over the independent variables

because their manifestations had already occurred or were inherent and non-manipulable.

2.2 Selection of the Villages and Respondents

The study was conducted in four districts of Karnataka, namely Chikkaballapur, Tumakuru, Ramanagara, and Chamarajanagara. Four taluks—Shidlaghatta, Magadi, Kunigal, and Chamarajanagara—were selected because they had larger areas under mulberry cultivation and cocoon

production. The selected villages were Hunasenahalli and Kannamangala in Chikkaballapur, Chowdanakuppe in Tumakuru, Solur in Ramanagara, and Byadamudlu in Chamarajanagara. Silkworm rearers and seed cocoon rearers were selected randomly from these villages. The sample comprised 60 multivoltine silkworm rearers from one taluk and 60 seed cocoon rearers from the remaining three taluks (Tumakuru, Ramanagara, and Chamarajanagara), resulting in a total sample of 120 respondents.

Chart 1: Distribution of selected respondents in the study area

Districts	Taluks	Villages	No. of Respondents	
			Multivoltine	Bi-voltine
Chikkaballapura	Shidlaghatta	Hunasenahalli	30	-
		Kannamangala	30	-
Tumakuru	Kunigal	Chowdanakuppe	-	20
Ramanagara	Magadi	Solur	-	20
Chamarajanagara	Chamarajanagara	Byadmudlu	-	20
Total			120	

2.3 Instruments Used for Data Collection

Keeping the objectives of the study in view, a pre-structured interview schedule was prepared with the assistance of experts in Agricultural Extension, Agricultural Economics, Sericulture, and Agricultural Marketing. The schedule included all the variables considered in the study. Minor ambiguous items were reconstructed according to the experts' suggestions, and the final interview schedule was prepared. Data were collected through personal interviews using the structured interview schedule during May and June 2025.

2.4 Statistical Methods Used for Data Analysis

Appropriate statistical tools were used to analyse the data. The data collected from the respondents were scored, tabulated, and analysed using the following statistical tools and techniques: percentage, mean, standard deviation, Z-test, and chi-square test.

2.5 Percentage

Percentage was used to make simple comparisons between different groups wherever required.

2.6 Mean

The mean is the sum of the observed values in a set divided by the number of observations in that set. The calculated mean was used to group the respondents.

Mean formula: $\bar{x} = \sum x / n$

$\bar{x}$ = Sample mean

all of the x-values

n = number of items in sample

2.7 Standard Deviation

The positive square root of the variance is called the standard deviation. It explains the average amount of variation on either side of the mean.

Standard Deviation formula: $S = \sqrt{(\sum (x - \bar{x})^2 / (n - 1))}$

where,

x = Each value

$\bar{x}$ = Sample mean

S = Sample standard deviation

n = number of values in sample

The mean and standard deviation were used to classify the farmers into low, medium, and high categories.

2.8 Frequencies

A frequency distribution was used to quantify the different personal, social, psychological, and economic characteristics of the farmers. It was also used to analyse responses to the constraint and suggestion statements.

2.9 'Z' test

It was used to test the significant difference in performance between small and large farmers.

2.10 Chi-square test

It is a non-parametric test used to determine the association between dependent and independent variables.

Chi-square formula: $\chi^2 = \sum (O_i - E_i)^2 / E_i$

Where

χ^2 = Chi square

O_i = Observed value

E_i = Expected value

3. Results and Discussion

3.1 Age

The data presented in Table 1 reveal that the majority of silkworm rearers (65.00%) belonged to the middle-age group (36–55 years), followed by the young (20.00%) and old-age (15.00%) categories. Similarly, among seed cocoon rearers, most respondents (61.67%) were middle-aged, followed by the young (26.67%) and old-age (11.66%) groups. Overall, 63.33 per cent of the respondents belonged to the middle-age group, while 23.33 per cent were young and 13.34 per cent were old.

The predominance of middle-aged farmers indicates that this age group plays a major role in sericulture activities. Middle-

aged rearers generally possess greater farming experience, greater responsibility for family livelihoods, and better decision-making ability than younger farmers. At the same time, they are physically more active than older farmers, which is important for labour-intensive sericulture operations. These findings are consistent with Girish *et al.* (2020) ^[5] and Saikia *et al.* (2024) ^[12], who also found that middle-aged respondents predominated among sericulture-based farming households and silkworm rearers.

3.2 Education

The data show that a large proportion of silkworm rearers (43.33%) were educated up to high-school level, followed by PUC (21.67%) and graduation and above (20.00%). Among seed cocoon rearers, 35.00 per cent had a high-school education, while 28.33 per cent were educated up to graduation and above. Overall, 39.17 per cent of the respondents were educated up to high-school level, followed by graduation and above (24.17%) and PUC level (22.50%). Only a small proportion (3.33%) of the respondents were illiterate.

Education plays a crucial role in enhancing farmers' ability to understand scientific rearing practices, pest and disease management, and market dynamics. Educated farmers are more receptive to extension advice and training programmes, which may lead to improved adoption of recommended technologies. The findings corroborate Ahammed *et al.* (2026) ^[1] and Hatibaruah *et al.* (2022) ^[6], who demonstrated the importance of knowledge, training, and socio-economic characteristics in the adoption of improved sericulture practices.

3.3 Family Size

The results indicate that 48.33 per cent of silkworm rearers belonged to medium-sized families (4–8 members), followed by small (38.33%) and large (13.34%) families. Similarly, the majority of seed cocoon rearers (51.67%) belonged to medium-sized families, followed by small (31.67%) and large (16.66%) families. Overall, half of the respondents (50.00%) had medium-sized families, followed by small (35.00%) and large (15.00%) families.

A medium family size is considered advantageous in sericulture because it ensures adequate availability of family labour for routine operations such as mulberry-leaf harvesting, feeding, and maintenance of rearing houses. At the same time, it does not exert excessive financial pressure on farm resources. These findings agree with Girish *et al.* (2020) ^[5] and Saikia *et al.* (2024) ^[12], who reported that medium-sized families were common among sericulture-based farming households and silkworm rearers.

3.4 Annual Income

The data reveal that the majority of silkworm rearers (76.67%) belonged to the medium-income category, whereas the highest proportion of seed cocoon rearers (43.33%) fell within the low-income category. Overall, 56.67 per cent of the respondents belonged to the medium-income group, followed by the low- (30.00%) and high-income (13.33%)

categories.

The medium-income status of silkworm rearers indicates that sericulture provides a stable supplementary source of income rather than functioning as a highly remunerative enterprise. The lower income among seed cocoon rearers may be attributed to higher production risks and fluctuations in market prices. Similar findings were reported by Sharma *et al.* (2019) ^[14] and Sengupta *et al.* (2024) ^[13], who linked sericulture income to production conditions, marketing support, and farmers' resource capacity.

3.5 Occupation

It is evident from Table 1 that 43.33 per cent of silkworm rearers and 48.33 per cent of seed cocoon rearers belonged to the medium-occupation category. Overall, 45.83 per cent of the respondents fell within the medium category, followed by the low (28.33%) and high (25.84%) occupation categories. The predominance of medium occupational status suggests that sericulture was practised alongside other agricultural or allied enterprises, such as integrated farming systems. Such occupational diversification helps farmers reduce risk and stabilise household income throughout the year. These findings are consistent with Kori *et al.* (2022) ^[8] and Manohar *et al.* (2025) ^[9], whose studies documented sericulture as a principal or complementary livelihood among rural households.

3.6 Mass Media Exposure

The data presented in Table 1 reveal that nearly half of the silkworm rearers (48.33%) belonged to the medium mass-media-exposure category, followed by the high (41.67%) and low (10.00%) categories. Similarly, among seed cocoon rearers, 48.33 per cent had medium mass-media exposure, followed by the high (40.00%) and low (11.67%) categories. Overall, 48.34 per cent of the respondents fell within the medium mass-media-exposure category, while 40.83 per cent and 10.83 per cent belonged to the high and low categories, respectively.

The predominance of medium mass-media exposure among both categories of rearers indicates moderate utilisation of information sources such as television, newspapers, mobile phones, and social-media platforms. Mass media play a vital role in disseminating information on improved sericulture practices, pest and disease management, and market prices. However, limited access to specialised sericulture programmes and a lack of regular exposure may restrict greater utilisation. Comparable patterns were reported by Girish *et al.* (2020) ^[5] and Kori *et al.* (2022) ^[8], who documented substantial use of mass-media and communication sources among sericulture farmers.

3.7 Social Participation

Table 1 reveals that 46.67 per cent of silkworm rearers and 38.33 per cent of seed cocoon rearers belonged to the medium social-participation category. Overall, 42.50 per cent of the respondents had medium social participation, followed by the high (39.17%) and low (18.33%) categories.

Table 1: Profile characteristics of silkworm rearers and seed cocoon rearers

Sl. No.	Characteristics	Category	Silkworm rearers (n ₁ =60)		Seed cocoon rearers (n ₂ = 60)		Overall (n=120)	
			No	per cent	No	per cent	No	per cent
1.	Age	Young (35 years and below)	12	20.00	16	26.67	28	23.33
		Middle (36 to 55 years)	39	65.00	37	61.67	76	63.33
		Old (Above 55 Years)	09	15.00	07	11.66	16	13.34
2.	Education	Illiterate	02	3.33	02	3.33	4	3.33
		Primary school	07	11.67	06	10.00	13	10.83
		High school	26	43.33	21	35.00	47	39.17
		PUC	13	21.67	14	23.33	27	22.50
		Graduation and above	12	20.00	17	28.33	29	24.17
3.	Family size	Small (<4)	23	38.33	19	31.67	42	35.00
		Medium (4-8)	29	48.33	31	51.67	60	50.00
		Large (>8)	08	13.34	10	16.66	18	15.00
4.	Annual income Mean: 955000 SD: 106340	Low (< 901830)	10	16.66	26	43.33	36	30.00
		Medium (901830 – 1008170)	46	76.67	22	36.67	68	56.67
		High (>1008170)	04	6.67	12	20.00	16	13.33
5.	Occupation Mean:4.15 SD:1.64	Low (3.33)	18	30.00	16	26.67	34	28.33
		Medium (3.33-4.97)	26	43.33	29	48.33	55	45.83
		High (>4.97)	16	26.67	15	25.00	31	25.84
6.	Social participation Mean = 12.03 S.D = 1.97	Low (< 11.05)	10	16.66	12	20.00	22	18.33
		Medium (11.05- 13.02)	28	46.67	23	38.33	51	42.50
		High (>13.02)	22	36.67	25	41.67	47	39.17
7.	Extension contact Mean:8.35 SD:0.74	Low (<7.98)	18	30.00	19	31.67	37	30.83
		Medium (7.98-8.72)	28	46.67	26	43.33	54	45.00
		High (>8.72)	14	23.33	15	25.00	29	24.17
8.	Marketing orientation Mean:13.32 SD:1.97	Low (<12.33)	12	20.00	14	23.33	26	21.67
		Medium (12.33-14.30)	37	61.67	34	56.67	71	59.17
		High (>14.30)	11	18.33	12	20.00	23	19.16
9.	Management orientation Mean:12.59 SD:1.50	Low (<11.84)	11	18.33	13	21.67	24	20.00
		Medium (11.84-13.34)	43	71.67	39	65.00	82	68.33
		High (>13.34)	06	10.00	08	13.33	14	11.67
10.	Cosmopoliteness Mean: 28.40 SD: 4.13	Low (<26.33)	16	26.67	19	31.67	35	29.17
		Medium (26.33-30.47)	29	48.33	27	45.00	56	46.66
		High (>30.47)	15	25.00	14	23.33	29	24.17
11.	Mass media Exposure Mean:7.41 SD:0.56	Low (<7.13)	06	10.00	07	11.67	13	10.83
		Medium (7.13-7.69)	29	48.33	29	48.33	58	48.34
		High (>7.69)	25	41.67	24	40.00	49	40.83
12.	Economic motivation Mean:14.01 SD:3.22	Low (<12.40)	17	28.33	21	35.00	38	31.67
		Medium (12.40-15.65)	22	36.67	20	33.33	42	35.00
		High (>15.65)	21	35.00	19	31.67	40	33.33
13.	Extension Participation Mean:8.93 SD:0.58	Low (<8.64)	13	21.67	12	20.00	25	20.83
		Medium (8.64-9.22)	37	61.67	40	66.67	77	64.17
		High (>9.22)	10	16.66	08	13.33	18	15.00
14.	Deferred gratification Mean:16.35 SD:3.32	Low (<14.69)	20	33.33	20	33.33	40	33.33
		Medium (14.69-18.01)	22	36.67	21	35.00	43	35.84
		High (>18.01)	18	30.00	19	31.67	37	30.83

Social participation enhances farmers' exposure to new ideas, peer interaction, confidence, and institutional support. Farmers who are actively involved in social organisations are more likely to access information on improved practices and government schemes. The present findings are supported by Girish *et al.* (2020) ^[5] and Nandhini *et al.* (2020) ^[10], whose studies showed that social participation and association involvement form important elements of farmers' information and entrepreneurial environments.

3.8 Extension Contact

The results indicate that 46.67 per cent of silkworm rearers and 43.33 per cent of seed cocoon rearers had medium extension contact. Overall, 45.00 per cent of the respondents fell within the medium category, while 30.83 per cent and 24.17 per cent had low and high extension contact,

respectively.

Moderate extension contact reflects frequent interaction with extension personnel, such as Sericulture Extension Officers (SEOs) and scientists. Such interactions facilitate timely access to technical guidance and problem-solving support. These findings are consistent with Kori *et al.* (2022) ^[8] and Saikia *et al.* (2024) ^[12], who reported regular or medium extension contact among silkworm rearers.

3.8.1 Marketing Orientation

It is evident from Table 1 that 61.67 per cent of silkworm rearers and 56.67 per cent of seed cocoon rearers belonged to the medium marketing-orientation category. Overall, 59.17 per cent of the respondents had medium marketing orientation.

Medium marketing orientation indicates awareness of market

prices, demand trends, and marketing channels. Dependence on intermediaries and limited access to market information may restrict marketing efficiency. Similar observations were made by Saikia *et al.* (2024) ^[12] and Parameswaranaik *et al.* (2020) ^[11], who identified medium marketing orientation and a significant role of market orientation in entrepreneurial behaviour, respectively.

3.8.2 Management Orientation

The data show that the majority of silkworm rearers (71.67%) and seed cocoon rearers (65.00%) belonged to the medium management-orientation category. Overall, 68.33 per cent of the respondents fell within this category.

Medium management orientation suggests that farmers possessed a reasonable orientation towards planning, production, and marketing but still required further capacity building to improve their efficiency. Capacity-building programmes and other extension interventions could help strengthen management skills. These findings are supported by Sengupta *et al.* (2024) ^[13] and Shwetha and Shivalingaih (2018) ^[15], who identified management-related factors as relevant to income and farming-system performance.

3.8.3 Cosmopolitaness

It is evident from Table 1 that 48.33 per cent of silkworm rearers and 45.00 per cent of seed cocoon rearers belonged to the medium cosmopolitaness category. Overall, 46.66 per cent of the respondents had medium cosmopolitaness.

Moderate cosmopolitaness indicates exposure to urban centres, markets, and institutions outside the village. Such exposure enhances access to new information and innovations. The findings agree with Parameswaranaik *et al.* (2020) ^[11], who treated cosmopolitaness as an important component of entrepreneurial behaviour among ericulture farmers.

3.8.4 Economic Motivation

Table 1 shows that 36.67 per cent of silkworm rearers belonged to the medium economic-motivation category, while 35.00 per cent and 28.33 per cent belonged to the high and low categories, respectively. Among seed cocoon rearers, 33.33 per cent had medium economic motivation, 31.67 per cent had high economic motivation, and 35.00 per cent had low economic motivation. Overall, 35.00 per cent of the respondents belonged to the medium economic-motivation category, followed by the high (33.33%) and low (31.67%) categories.

Medium economic motivation among the respondents suggests a balanced aspiration for income generation without taking excessive financial risks. Sericulture, being sensitive to climatic conditions and disease incidence, often encourages cautious investment behaviour. Farmers with moderate economic motivation tend to adopt proven technologies rather than experiment with high-risk innovations. These findings are consistent with Parameswaranaik *et al.* (2020) ^[11] and Sengupta *et al.* (2024) ^[13], who identified economic motivation as relevant to entrepreneurial behaviour and income generation in sericulture.

3.8.5 Extension Participation

The results presented in Table 1 indicate that the majority of

silkworm rearers (61.67%) belonged to the medium extension-participation category, followed by the low (21.67%) and high (16.66%) categories. Similarly, among seed cocoon rearers, 66.67 per cent had medium extension participation, followed by the low (20.00%) and high (13.33%) categories. Overall, 64.17 per cent of the respondents fell within the medium extension-participation category.

Medium extension participation reflects farmers' involvement in extension activities such as training programmes, demonstrations, field visits, and meetings organised by the Department of Sericulture and other agencies or organisations. Although farmers recognise the importance of extension programmes, factors such as time constraints, distance, and lack of awareness may limit frequent participation. The findings agree with Kori *et al.* (2022) ^[8] and Shwetha and Shivalingaih (2018) ^[15], whose studies highlighted farmers' participation in extension activities and its association with performance.

3.8.6 Deferred Gratification

The data in Table 1 reveal that 36.67 per cent of silkworm rearers belonged to the medium deferred-gratification category, followed by the low (33.33%) and high (30.00%) categories. Among seed cocoon rearers, 35.00 per cent had medium deferred gratification, followed by the low (33.33%) and high (31.67%) categories. Overall, 35.84 per cent of the respondents belonged to the medium deferred-gratification category.

Medium deferred gratification indicates that farmers were moderately willing to postpone immediate returns in anticipation of long-term benefits. In sericulture, investments in quality planting material, improved rearing infrastructure, and disease management often yield delayed returns. Farmers with moderate deferred gratification tend to balance short-term household needs with the long-term sustainability of the enterprise. Comparable sericulture studies have not always measured deferred gratification directly; however, findings on planning ability, economic motivation, and entrepreneurial behaviour provide a related basis for interpreting this future-oriented trait (Nandhini *et al.*, 2020; Parameswaranaik *et al.*, 2020) ^[10, 11].

Table 2: Relationship between profile characteristics of silkworm rearers and seed cocoon rearers with their performance level

Sl. No.	Independent variables	Correlation co-efficient (r)
1.	Age	0.400**
2.	Education	0.234 ^{NS}
3.	Family size	0.207*
4.	Annual income	0.460**
5.	Occupation	0.256**
6.	Social participation	0.069 ^{NS}
7.	Extension contact	0.547**
8.	Market orientation	0.300 **
9.	Management orientation	0.262**
10.	Cosmopolitaness	0.321**
11.	Mass media exposure	0.338**
12.	Economic motivation	0.467**
13.	Extension participation	0.268*
14.	Deferred gratification	0.691**

** Correlation is significant at the 0.01 level (2-tailed), * Correlation is significant at the 0.05 level (2-tailed), NS -Not Significant

The relationship analysis revealed significant positive correlations between several profile characteristics of silkworm rearers and seed cocoon rearers and their performance levels.

Deferred gratification exhibited the strongest correlation with performance, followed by extension contact and economic motivation, indicating associations with long-term planning, access to technology, and profit orientation. Annual income showed a substantial relationship with performance, reflecting the association between financial capacity and performance across both groups. Age and cosmopolitaness demonstrated moderate associations through experience and external connectivity. Marketing orientation, mass-media exposure, management orientation, occupation, and extension participation were also positively associated with performance. Family size showed a weak positive relationship, whereas education and social participation were not significantly associated with performance.

The strong correlation of deferred gratification with performance reflects the importance of future-oriented investment among rearers across both commercial and seed-cocoon production. The non-significant association of education with performance suggests that formal education was not directly related to performance in this sample. Social participation also showed little direct association with performance. The overall pattern is broadly consistent with the findings of Shwetha and Shivalingaih (2018)^[15] and Dash *et al.* (2022)^[4].

4. Conclusion

The results revealed that most silkworm rearers (65.00%) and seed cocoon rearers (61.67%) belonged to the middle-age category. High-school education was reported by 43.33 per cent of silkworm rearers and 35.00 per cent of seed cocoon rearers. Medium-sized families accounted for 48.33 per cent and 51.67 per cent of the two groups, respectively. Most silkworm rearers (76.67%) belonged to the medium-income category, whereas the largest proportion of seed cocoon rearers (43.33%) belonged to the low-income category. Medium levels were also predominant for occupation, mass-media exposure, social participation, extension contact, marketing orientation, management orientation, cosmopolitaness, economic motivation, extension participation, and deferred gratification. In the relationship analysis, deferred gratification showed the strongest positive correlation with performance, followed by extension contact and economic motivation. Annual income, age, cosmopolitaness, marketing orientation, mass-media exposure, management orientation, occupation, extension participation, and family size were also positively associated with performance, while education and social participation were not significantly associated. Overall, the findings indicate that the two groups had broadly moderate socio-economic and psychological profiles, although differences were evident in income distribution and selected characteristics. These results may assist extension agencies in tailoring capacity-building and advisory interventions to the specific profiles of silkworm rearers and seed cocoon rearers.

5. Limitation

The study was confined to 120 respondents from selected villages in four districts of Southern Karnataka and used an

ex post facto design. Data were collected through personal interviews during May and June 2025; therefore, the findings reflect the respondents and conditions covered during that period. The design identifies associations between profile characteristics and performance but does not establish causal relationships. Wider studies across additional locations and seasons would be required before applying the findings beyond the study area.

Consent

As per international standards or university standards, respondents' written consent has been collected and preserved by the author(s).

Declaration of AI Use

This manuscript was prepared through the combined contributions of all author(s), including contributions to the study design, data, content development, results, interpretation, and related scholarly work. The author(s) acknowledge the use of Grammarly and ChatGPT to assist with grammar checking, language refinement, reference formatting. These AI-assisted tools were not used as authors and did not replace the intellectual contributions or scholarly judgment of the author(s). All AI-assisted outputs, including content, references, and interpretations, were carefully reviewed, revised, verified, and approved by the author(s). The author(s) accept full responsibility for the accuracy, integrity, and final content of the manuscript.

Competing Interests

Authors have declared that no competing interests exist.

References

1. Ahammed I, Chatterjee P, Nesa J, Sadat A. Impact of sericultural training on knowledge and adoption of sustainable mulberry cultivation practices among seric-farmers in eastern India. *Discover Agriculture*. 2026;4:Article 136. doi:10.1007/s44279-026-00577-5.
2. Central Silk Board. Annual report 2022-23. Ministry of Textiles, Government of India; 2023.
3. Chanotra S, Bali K, Bali RK. Sericulture: an opportunity for the upliftment of rural livelihood. *Journal of Entomology and Zoology Studies*. 2019;7(6):1100-1103.
4. Dash SR, Mukhopadhyay SD, Mishra PJ, Swain SK. Identifying and understanding factors influencing the knowledge level of farmers in watershed development programme using principal components analysis. *Asian Journal of Agricultural Extension, Economics & Sociology*. 2022;40(10):893-908. doi:10.9734/ajaees/2022/v40i1031157.
5. Girish CE, Kadian KS, Meena BS, Mandi K. Socio-economic profile of farmers in sericulture based dairy farming system in Karnataka State. *International Journal of Current Microbiology and Applied Sciences*. 2020;9(4):2071-2078. doi:10.20546/ijcmas.2020.904.248.
6. Hatibaruah D, Dutta LC, Borua S, Saikia H. Adoption behaviour of sericulture farmers regarding improved technologies of Jorhat District of Assam. *Indian Journal of Extension Education*. 2022;58(1):26-30. doi:10.48165/IJEE.2022.58106.

7. Kiruba M, Mangammal P, Anand G, Sakila M, Kumar P, Senthilkumar T. Innovations in sericulture: advancements in silk production and quality improvement. *Uttar Pradesh Journal of Zoology*. 2024;45(18):553-562.
doi:10.56557/upjz/2024/v45i184472.
8. Kori R, Dubey MK, Raut A. Socio-economic and communicational status of Tasar silkworm rearers in Bastar District of Chhattisgarh in India. *Asian Journal of Agricultural Extension, Economics & Sociology*. 2022;40(10):1168-1174.
doi:10.9734/ajaees/2022/v40i101674.
9. Manohar KN, Belli RB, Bindu S, Pooja VS, Bhoomika Raj GS. Understanding sericulture through a socio-economic lens: evidence from Northern Karnataka, India. *Archives of Current Research International*. 2025;25(6):583-588. doi:10.9734/acri/2025/v25i61303.
10. Nandhini S, Rohini A, Muruganathi D, Anandhi V. Entrepreneurial behavior of sericulture farmers in Tamil Nadu. *Current Journal of Applied Science and Technology*. 2020;39(28):12-20.
doi:10.9734/cjast/2020/v39i2830934.
11. Parameswaranaik J, Teron S, Manjunatha GR, Radha MB, Sivaprasad V. Entrepreneurial behaviour of ericulture farmers in Assam (BTC), North-East India. *Journal of Global Communication*. 2020;13(2):117-122.
doi:10.5958/0976-2442.2020.00017.8.
12. Saikia D, Saikia D, Saikia M, Borah D. The profile characteristics of muga silkworm rearers of the Sonitpur District of Assam, India. *Archives of Current Research International*. 2024;24(5):460-468.
doi:10.9734/acri/2024/v24i5723.
13. Sengupta M, Biswas S, Saha S. Assessment of socio-personal and management factors affecting farmer's income from sericulture in West Bengal, India. *International Journal of Advancement in Life Sciences Research*. 2024;7(1):38-44.
doi:10.31632/ijalsr.2024.v07i01.004.
14. Sharma V, Rattan M, Chauhan SK. Economic analysis of silkworm rearing and cocoon production in Bilaspur District of Himachal Pradesh. *Economic Affairs*. 2019;64(3):589-597.
doi:10.30954/0424-2513.3.2019.15.
15. Shwetha NV, Shivalingaih YN. Personal and socio-psychological characteristics of farmers in association with performance of different farming systems adopted by farmers in Chickaballapura District of Karnataka, India. *International Journal of Current Microbiology and Applied Sciences*. 2018;7(3):787-793.
doi:10.20546/ijcmas.2018.703.092.
16. Suárez-Sánchez MF, Merritt H, Muñoz-Ruiz CV, Suárez-Sánchez M, Oregel-Zamudio E, Arias-Martínez S. Frugal innovation and patent analysis in sericulture: lessons for sustainable rural bioeconomy systems. *Sustainability*. 2025;17(22):Article 10026.
doi:10.3390/su172210026.