

Sericulture Socio-Economic Status of Trained and Untrained Farmers in Coimbatore District, Tamil Nadu State, India

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Abstract

Sericulture (rearing to *bombyx mori*) in India is proven to be an ideal avocation for the development of the rural population, especially the weaker section of the society, addressing equity distribution from urban rich to poor. It encompasses an eco-friendly production process and creates more employment opportunities for tribes and women. Sericulture has low investment and high returns. This study aims to analyze the socio-economic condition of trained and untrained sericulture farmers in the study region. This study was conducted with 150 trained farmers and 150 untrained farmers. Trained farmers underwent five days of training at the Sericulture Training Institute, Hosur. The parameters analyzed for trained and untrained farmers were age, family size, land holding size, years of experience in sericulture activity, educational status, social participation, extension activities participated, mass media exposure, and income levels. Finally, the study concludes that training the farmers exposes them more to the mass media and increases their ability to generate more income. Thus, periodical training programs are mandatory farmers for to excel in sericulture and its related activities. Culture and its related activities.

Key words: Sericulture, Avocations, Trained, Untrained farmers, Extension participated, Mass media participated

Sericulture, horticulture, and other agriculture sectors are the most important components of the social and economic development of developing countries. Sericulture training to the right people at the right time will remain essential for the development of the agricultural sector. Also, training has a large contribution to silk productivity and employment opportunities [1]. Sericulture training imparts essential skills and knowledge to individuals involved in the silk production process. This includes activities such as silkworm rearing, mulberry cultivation, silk processing, and marketing. By training individuals in these skills, the overall efficiency and productivity of the sericulture sector can be improved. Training can play a vital role in enhancing the knowledge, skill, and confidence level of farmers to create a positive impact on an agricultural economy. Sericulture departments of both state and central governments have been providing various types of training programs to the farmers such as district-level training, state-level training, district and state-level visits, demonstrations, field day and field visits, Agricultural Technology Management Agency (ATMA) training and exhibition.

Proper training ensures that sericulture practitioners are equipped with the latest techniques and best practices in silk production. This can lead to increased silk productivity per unit area of land, ultimately enhancing the overall output of the sector. Higher productivity not only benefits individual farmers

but also contributes to the national economy by increasing the supply of silk for domestic and international markets.

The analyzed social and economic characters previously more researcher investigated, socio-economic analyses of the participation of women farmers in sericulture have been carried out by various researchers in south India [2-3]. Studies analyzing the socio-economic characteristics of trained and untrained sericulturists [4]. Recently, personal and socio-economic status of farmers in sericulture occupation in Krishnarajpet taluk of Mandya district in Karnataka state [5] and socio-economic conditions of farmers exposed to the agricultural training program in Thanjavur district [6].

MATERIALS AND METHODS

The study was taken up in the Coimbatore district of Tamil Nadu, where the majority of farmers rear bivoltine cocoons. The survey was conducted in five blocks, namely, Periyanaickenpalayam, Karamadai, Alandurai, Annur, and Kinathukadavu. The samples were drawn from the trainees who had undergone training at the Tamil Nadu Sericulture Training Institute, Hosur from January 2019 to December 2020.

Since the study is based on primary data sources at the level of farmers, it is proposed to collect data from trained and untrained farmers who adopt new bivoltine sericulture technology. From each group, 150 and 300 samples were

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chosen for the study. Based on the interview schedule accompanied by a well-defined objective, the researcher formulated the primary data. Given this, all relevant information was furnished to collect data from respective respondents in the study area. Analysis of data was carried out by adopting statistical tools like frequency, percentage, and mean.



Fig 1 Silkworm rearing (*Bombyx mori*)

RESULTS AND DISCUSSION

Age: This study considered age as a factor since it reflects an individual's ability to make positive decisions to

satisfy these needs and influences the farmer's choice and adoption of a particular technology. The following (Table 1) age distribution of trained TNSTC farmers and untrained farmers. (Table 1) analysis into consideration, it can be concluded that the majority of respondents Trained farmers (53.3%) were middle-aged, followed by old age (32.00%), and young age (14.33%) and untrained were (55.3%) middle-aged, followed by old age (31.4%), and young age (13.30%). This implies that middle-aged and old-aged (trained and untrained) farmers prefer sericulture farming activities [7-8] who also reported that the majority of the respondents were middle-aged.

Educational status: As the general belief is, education is the process of bringing about desirable changes in human behavior. The educational status of an individual influences knowledge gain and adoption in significant ways. so pertinent data regarding education status are presented in (Table 2). The data in (Table 2) shows that in trained farmers one one-third of the respondents had a high school (41%), followed by primary (34%), college education (20.30%), and Only a few farmers were illiterate (4.70%). Untrained farmers had high school (47.7%), followed by primary (32.7%), college education (19.30%), and Only a few farmers were illiterate (1.30%). Hence, the result revealed that the majority of respondents were educated because there were high schools and colleges at the block levels [9-10] who also reported a majority of respondents had a high school education.

Table 1 Distribution of the respondents according to their age (n=300)

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Age	20 – 35 (Young)	21	14.00	20	13.30
	35 – 50 (Middle)	80	53.30	83	55.30
	50 – 60 (Old)	49	32.70	47	31.40
Total		150	100	150	100

Table 2 Distribution of respondents according to their educational status (T=300)

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Educational status	Literate	7	04.70	2	01.30
	Primary	51	34.00	49	32.70
	High School	62	41.00	70	47.70
	Graduate	30	20.30	29	19.30
	Total	150	100	150	100

Table 3 Family size in trained and untrained farmers

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Family size	1-3 (Small)	56	37.30	41	27.30
	3-5 (Medium)	90	60.00	79	52.70
	6 Above (big)	4	2.66	30	20.00
Total		150	100	150	100

Family size: Family is very important for social development. This variable refers to the total number of men, women, and children in the respondent's family. From the data obtained from the study area, it is evident that farmers (both trained and untrained) with a family size of 3–5 members form the major share (50-60%) of total sericulturists, whereas only very few respondents hail from families of large size, relatively.

This information suggests that family size may play a significant role in determining participation in the sericulture industry, with smaller families being more prevalent among practitioners. The data implies that families of moderate size are more likely to engage in sericulture, possibly due to factors such as resource allocation, labor availability, or traditional practices within certain family structures.

Table 4 Distribution of respondents according to their land holding (n=300)

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Size of land holding	Small (2.5- 5 acre)	70	46.70	67	44.70
	Marginal (2.5 Acre)	53	35.30	53	35.30
	Big (5 acres above)	27	18.00	30	20.00
Total		150	100	150	100

Size of land holding: Farmland holding is a key indicator of socio-economic status. Many farms equipment and machinery can only be economically used on continuous and large fields. The farmers with larger holdings have more access to bivoltine technologies and are also in frequent contact with extension workers to adopt better silkworm-rearing practices as compared to farmers with smaller holdings. Keeping in view, the size of the land holding of the trained and untrained farmers was studied and data was summarized in (Table 4). Regarding farm size, it is concluded that trained farmers 46.7% per cent of the respondents had small land holdings, followed by marginal 35.3% and big land holdings (18.0%). Thus, the result indicates a majority of farmers had marginal landholding which may be due to the fragmentation of landholding among family members [11] who observed a majority of farmers had marginal land holdings.

Sericulture activities (Experience): A farmer's experience in farming may influence his or her knowledge, participation, and decision-making abilities. An experience helps to develop maturity and aptitude to face and adapt to a

variety of situations. The data regarding farming experience were collected and presented in (Table 5). This variable of experience is the most important of economics. The (Table 5) revealed that the trained farmers majority of the farmers had a moderate farming experience (80.66%), followed by an elevate level of farming experience (10.00%) and a minimal of farming experience (9.33%), and untrained farmers majority of the farmers had a moderate of farming experience (80.00%), followed by a elevate level of farming experience (9.30%) and a minimal of farming experience (10.70%). This may be due to the majority of trained and untrained farmers belonging to middle categories and having sericulture as their primary occupation, it was observed from (Table 5) that around 80% of the respondents in both trained and untrained categories are involved in sericulture-related activities for a minimum period of 2 years and a maximum period of 3 years [12]. The data underscores the importance of farming experience in the sericulture industry and suggests that the majority of farmers, both trained and untrained, have acquired a moderate level of experience, likely contributing to their proficiency and adaptability within the field.

Table 5 Distribution of respondents according to their Sericulture activities (n=300)

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Sericulture activities (year)	0-2 (Minimal)	14	09.33	16	10.70
	2-3 (Moderate)	121	80.66	120	80.00
	3-5 (Elevate)	15	10.00	14	09.30
Total		150	100	150	100

Table 6a Social participation in trained and untrained farmers

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Social participation	Agriculture- co-bank	106	70.60	93	62.00
	Milk producer cooperative bank	114	76.00	113	75.30
	Sericulture group	113	75.30	93	62.00
	Youth Group	124	82.70	111	74.00
	Farmer grievance meeting	129	86.00	88	58.70

Table 6b Social participation is low to high

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Sericulture activities (year)	Low (No participation)	12	8.00	50	33.33
	Medium (Member in one organization)	75	50.00	68	45.33
	High (Member in more than one organization)	63	42.00	32	21.33
Total		150	100	150	100

Social participated: Social participation describes one's involvement in a variety of groups, social participation refers to participating in Agricultural cooperative banks, Milk producer co-operative societies, Sericulture groups, Youth groups, Farmer grievance meetings (panchayat meetings), social organizations, and institutions in society, religion, politics, education, and culture. Socially active individuals tend to be resourceful, highly advanced, and empowered. So, the social participation of the farmers has been studied and the results are presented below in the following (Table 6a-b).

Data depicted in (Table 6a) revealed that there is only a marginal difference between the trained and untrained members in attending all social activities listed except farmer grievance meetings, in which the participation of untrained sericulturists is appreciably low (N=88 in the case of untrained farmers against N=129 for the trained category).

Regarding social participation, it is concluded from (Table 6b), that trained farmers had medium social participation (50.00%) and high social participation (42.00%) followed by low social participation (8.00%) and untrained farmers had medium social participation (45.33%) and low social participation (33.33%) followed by high social participation

(21.33%) from the above results, it is concluded that many farmers were enrolled in farmers club, village panchayat, primary agricultural cooperative societies, and FPOs. This might be the training to motivate and participate in medium and high levels of social participation of farmers [13] who reported that farmers had equal percentages of medium and high levels of social participation.

Mass - media participated: Mass media consists of a wide range of media technologies that reach a large audience through mass communication. The term mass media refers to the various types and frequencies of the use of mass media by farmers including TV, radio, newspapers, mobile phones, the internet, and farm literature. Keep in view that mass media exposure of farmers was studied and the data collected and presented below in the following (Table 7). From (Table 7b) it can be cognized that training has a definite impact on the exposure of farmers involved in sericulture to all the mass media such as newspapers, radio and television, internet, leaflets, books, and other social media. Another observation is that among all the mass media, radio and television are the most popular medium that connects the farmers.

Table 7a Mass media exposure of trained and untrained sericulturists

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Mass-media participated	Newspaper	124	82.70	116	77.30
	Radio and television	139	92.70	119	79.30
	Internet	112	74.70	92	61.00
	Leaflet	92	61.30	76	50.70
	Books	87	58.00	69	46.00
	WhatsApp, Facebook, Twitter, Instagram, YouTube	131	87.30	114	76.00

Table 7b Mass media -exposure in low to high

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Mass – media participation	Low (any one participation)	28	18.66	48	32.00
	Medium (more than 3 participation)	96	64.00	61	46.66
	High (above the 3 participation)	26	17.33	41	27.33
	Total	150	100	150	100

Data presented in (Table 7b), reveal that the trained farmer had a majority (64.00%) medium level of mass media exposure, followed by (26.00%) high and (18.66%) low levels, and the untrained majority of farmers had (40.66) medium level mass media exposure followed by (32.00%) low and low (27.33%) high. Thus, the results showed that the majority of farmers had a medium level of exposure to mass media. This may be due to the household watching TV and listening to the radio related to agricultural programs which encouraged the farmers to adopt new crop cultivation practices and the moderate education level of farmers paved the way for a reading of journals, magazines, and newspapers. This might be the reason for the medium level of mass media exposure to farmers [14-15] who also reported that the majority of farmers had a medium level of exposure to mass media.

Extension participation: Extension participation was a connection between the technologies and people. Extension methods used the methodology viz., meeting, field day, field visit, demonstration, and exhibition, etc., Keep in view that mass media exposure of farmers was studied and the data collected and presented below in the following (Table 8a-b). Scrutinizing (Table 8a) reveals that the inclination of farmers

towards extension activities is high in the case of trained people compared to untrained people. In particular, the participation in exhibitions by trained (N=131) and untrained farmers (N=112) is high compared to all other extension activities. Field visits, field days, and demo classes attract the farmers followed by exhibitions. It is further noted that farmers of both categories show only a poor interest in attending meetings [16].

The (Table 8), reveals that the trained farmer had a majority (50.66 %) routine connect with Extension participation, followed by (35.33%) Sporadically and (14.00%) Never connect with extension participation and an untrained majority of farmers had (37.33%) connect with extension participation, followed (28.00%) sporadically and (34.66%) never connect with extension participation. It is further noted that the Trained farmers categories show only a high interest in attending. Extension participation of farmers plays a vital role in improving the knowledge and adoption level of sericulture technologies for enhancing productivity in sericulture [17]. It's noteworthy that trained farmers show a higher interest in attending extension services compared to untrained farmers. This suggests that trained farmers may recognize the value of extension services in enhancing their knowledge and adopting new sericulture technologies to improve productivity.

Table 8a Participation in extension activities of trained and untrained sericulturists

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Extension participated	Meetings	106	70.60	94	62.70
	Field day	116	76.30	99	66.00
	Demo class	113	75.30	93	62.00
	Exhibition	131	87.30	112	74.70
	Field visit	128	85.30	104	69.30

Table 8b Extension participation analysis

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Extension participated	Never	21	14.00	52	34.66
	Sporadically	53	35.33	42	28.00
	Routine	76	50.66	56	37.33
	Total	150	100	150	100

Table 9 Revenue generation in trained and untrained farmers

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Revenue generation	Minimal >1 lakh	28	18.66	54	36.00
	Moderate <1- 2 lakhs	96	60.00	74	49.33
	Elevate < 3 lakhs	26	17.33	22	14.00
	Total	150	100	150	100

Revenue generation: A farmer's annual income includes all of their income sources, including sericulture. Farmers with high incomes are generally believed to invest more in

sericultural inputs and to be able to accept risks associated with adopting new technologies. The revenue generation of the farmers has been studied, and the results are presented in (Table

9). It can be seen from the (Table 9), that slightly less than half of the trained farmers had a moderate level of annual income (60.00%) followed by a minimal level of annual income (17.33%) and an elevated annual income (18.66%), and untrained farmers had a moderate level of annual income

(49.30%) followed by a minimal level of annual income (36.00%) and an elevated level of annual income (14.00%) Thus, the results revealed that most of the farmers had a minimal level of annual income [18]. The above data also prove that training is quintessential for sericulturists to generate high income [19].



Fig 4 Mulberry cultivation



Fig 5 Cocoon production

Table 10 Farm power status in trained and untrained farmers

Variable	Category	Trained (N=150)	Percent	Untrained (N=150)	Percent
Revenue generation	Low (Operated 1-3)	20	13.33	52	34.66
	Medium (Operated 4-6)	73	48.66	42	28.00
	High (above 5 operated)	57	38.00	56	37.33
	Total	150	100	150	100

Table 11 Additional revenue generation

Additional revenue	Trained farmers Nos=150	Percent (%)	Revenue Rs/annum	Untrained farmers Nos=150	Percent (%)	Revenue Rs/annum
Intercrop of mulberry with coconut	20	13.33	1,00,000	3	2	24,000
Intercrop of mulberry with arecanut	2	1.33	50,000			
Intercrop of mulberry with onion	12	8.00	50,000	2	1.33	35,000
Intercrop of mulberry with vegetables (Beetroot)	03	2	24000			

Farm power status: Farmers who use more implements in farm operations are likely to be more progressive and involved in scientific farming. So, data were collected about the farm power status of farmers and presented in (Table 10). It could be observed from (Table 10), that trained farmers machine operated skilled in little less than half percentage of the farmers had a medium farm power status (48.00%), followed by high (38.00%) and low farm power status (13.33%) and untrained farmers machine operated skilled had a high farm power status (37.33%), followed by low (34.66%) and low farm power status (34.66%). It may be due to untrained farmers and a lack of awareness about farm mechanization, so untrained farmers to high expense labor [20] who reported that the majority of farmers had a low farm power status.

It was observed in (Table 11) that trained sericulture farmers were present in the activities of Intercrop of mulberry with coconut, intercrop of mulberry with arecanut, intercrop of mulberry with onion, and intercrop of mulberry with vegetables (Beetroot) compared to the fewer activities untrained farmers. The above data that trained category is to generate the additional income.

CONCLUSION

The study concludes that socio-economic characteristics in both groups of trained and untrained farmers practicing sericulture are more or less at the same level, though a slight improvement is found in the case of the trained category. Though socio-economic factors such as age, education, and family size perturbate sericultural activities, training farmers impart technical knowledge to them, which might help sort out various issues faced in the avocation. Thus, trained farmers are exposed more to mass media, Extension activities, and social participation, and generate more income and Create Additional Revenue Generation compared to untrained farmers. Hence from this study, it is proven that training plays an important role in sericulture. Thus, more training programs should be conducted periodically in the study area, and making the farmers attend these training is of utmost importance. The study highlights the significant role of training in sericulture and emphasizes the importance of ongoing training initiatives to support the development and success of sericulture activities in the study area.

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