



Entrepreneurial Behavior of Sericulture Farmers in Tamil Nadu

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Sericulture is an important agro based cottage industry and labor intensive sector which combines activity of both sericulture and industry. Farmers engage in sericulture enterprise to gain income with less risk. Mulberry, silk worm and cocoon production are the series of activities which needs entrepreneurial skills to achieve profits. This study attempted to analyze the entrepreneurial behavior of the sericulture farmers of Tamil Nadu and the major factors influencing their behavior. Sericulture has been widely practiced in Dharmapuri district and 80 sample farmers were selected based on proportionate random sampling method from three blocks. The Entrepreneurial behavior components like self-effectiveness, opportunity detector, planning ability, leadership ability, risk bearing ability, social involvement and creativity of farmers were measured using seven point likert scale and reliability of data tested by Cronbach's alpha. The findings suggested that the sample farmers had higher social involvement followed by risk bearing ability, self-effectiveness, opportunity detector and planning ability. Leadership ability and creativity has lowest mean scores indicating that sample farmers are less confident in these dimensions. Based on the overall scores majority of the sample farmers were categorized under medium entrepreneurship behavior. Age and experience in sericulture farming are the major factors significantly influenced the entrepreneurial

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behavior followed by education, participation in associations and source of information in that order. Hence training programmes on technology up gradation, awareness regarding new technologies and latest rearing methods need to be given to the sericulture entrepreneurs to improve their entrepreneurship behavior.

Keywords: Entrepreneur; entrepreneurship; entrepreneurial behavior; linear regression; sericulture.

1. INTRODUCTION

The term Entrepreneur was derived from the French word “Entreprendre” which means “to undertake”. He [1] was the first one to use the term entrepreneur as economical term. He depicted that “any person engaged in economic activity was termed to be an entrepreneur”. Entrepreneurship is seen as a solution to the ever-growing problem of unemployment [2]. Entrepreneurship is a powerful activity for a person or a group of person engaged in production and distribution of economic product and services in order to maintain or increase profit. Entrepreneurship opportunities in agriculture and allied sectors include such activities as dairy farming, sericulture, cattle rearing, rabbits rearing, floriculture, fish farming, shrimp farming, sheep rearing, vegetable growing, pet farms, greenhouse production, forestry, fish production, etc.

Sericulture is an important agro based cottage industry and labor intensive sector which combines activity of both sericulture and industry. Sericulture sector plays a significant role in transformation of rural economy by providing periodical employment opportunity and enhance rural income. The sericulture and silk weaving process was invented by Chinese lady Hsi-Ling-Shih. Sericulture was widely practiced in our country in small and medium sized holdings, where its income has supported many huge enterprises. India is the second largest producer of silk next to China. India contributes nearly about 18 per cent of raw silk production globally. In India, the raw silk production is nearly about 35,468 metric tonnes in the year 2018-2019 [3]. Karnataka, Andhra Pradesh, Tamil Nadu, West Bengal and Maharashtra are the five states that contributes nearly 95 per cent of raw silk production in the country. Out of 100 per cent, 85 per cent of raw silk produced is consumed in our country. Therefore, demand for raw silk is higher than production. Sericulture is widely practiced in Krishnagiri, Dharmapuri, Salem, Erode, Thiruppur, Namakkal, Vellore and Theni districts in Tamil Nadu. Mulberry cultivation and silkworm rearing practices are farm based activities which

is managed by producers of silk cocoon or silkworm rearers. Grainages that produce and supply the farmers with the disease free laying's or silkworms are located in Pennagaram, Dharmapuri, Talavady, Krishnagiri, Hosur, Vaniyambadi and Dindugal. There are nearly about 38 private Chawkie rearing centres and 100 micro cocoon rearing centres functioning in the State. The department of sericulture has developed 20 cocoon regulated markets in different districts of the state for sale of cocoons through open auction. Seed cocoons are also bought and supplied for commercial seed production from seed rearers. Thus, the sericulture sector provides employment opportunity to many people in ways of cultivation of silkworm food plants, silk worm rearing, raw silk production, reeling of cocoons and unwinding the silk filament and other post-cocoon processes like twisting, dyeing, weaving, printing and finishing. Therefore many farmers' takes up the sericulture business as it has low investment and high net income, full and self-employment for family members and higher profit in a short gestation period. Thus sericulture sector provides entrepreneurship opportunity and promote livelihood support to the rural people.

2. LITERATURE REVIEW

‘Entrepreneur’ is an individual person who is willing and able to turn a new concept and invention into a profitable innovations [4]. Farm entrepreneur as one who maintains one or more enterprises like poultry, dairy, sericulture apart from the main occupation of crop husbandry [5]. “Entrepreneur is a person who are specialized in taking decisions about the management of scarce resources [6]. “Entrepreneur is a person who have capacity to convert low productivity to higher productivity and increase yield” [7]. They [8] stated that “an entrepreneur is a person who creates a new business and carries the higher risk and benefits”. According to [9] “entrepreneur is a person who plans for the future and tries to maximize his profit with defined plans”. Findings of [10] suggested that individuals with personality traits related to entrepreneurial prospects and suitable entrepreneurial orientation meet the

necessary conditions to be potential entrepreneurs.

Entrepreneurial behavior is the human behavior study involving the identification and exploitation of opportunities through the creation and development of new ventures as well as exploration and creation of opportunities in the development of organization [11]. "Entrepreneurship is all about movement, never allowing self-doubt and trusting that even the mistaken decision is always better than no decision" [12]. Innovativeness, achievement driven and risk-orientation are the main components of entrepreneurial behavior [13]. Personality characteristics that play a fundamental role in entrepreneurship is the self-efficacy trait [14]. Self-efficacy is "One's belief in the ability to succeed or perform a task in specific situations" [15]. According to [16], "without an opportunity there is no entrepreneurship". Social involvement is widely used to refer to one's involvement or participation in the social group activities [17]. He [18] operationalized that various metrics of entrepreneurial behavior were self-efficacy, opportunity detector, sociable, risk taker, leader, and creative. Entrepreneur must have capacity to bear risks for any enterprise and ability to make the business profitable [1]. Leadership is ability of an individual to organize a group of people in order to achieve a common goal by creating opportunities, taking responsibility for themselves and managing the changes within the organization [19]. Creativity is a person's creative thinking and the capacity of the individual to bring out the things in unique manner [20].

With this background we understand entrepreneurship is considered as engine of the economic growth through creation of business enterprises and innovation and hence the present study on entrepreneurial behavior of farmers engaged in sericulture business and their recitation is attempted. The objective of the study is to analyze the entrepreneurial behavior of farmers and to identify factors influencing them to engage in sericulture business in Dharmapuri district of Tamil Nadu. Since the study is confined to a specific district, limitations exist in generalizing the results of the study for other areas or country.

3. METHODOLOGY - SAMPLING DESIGN

The selected study area is Dharmapuri district of Tamil Nadu as it is one of the leading district in

sericulture business where majority of farmers are involved in mulberry cultivation and cocoon production. Three main blocks namely Pennagaram, Dharmapuri, Pappiredipatti which has the highest area under mulberry cultivation and cocoon production were selected purposively for the study. The list of farmers involved in mulberry cultivation and rearing of silkworms was obtained from the Assistant Director of Sericulture, Department of sericulture, Dharmapuri. Proportionate random sampling technique was used to select 80 sericulture farmers from the three blocks of Dharmapuri district. All the 80 sample respondents were directly contacted to collect data using structured questionnaire.

3.1 Theoretical Framework

The scale developed by [18] was used to analyze the entrepreneurial behavior components viz., self-effectiveness, opportunity detector, planning ability, leadership ability, risk bearing ability, social involvement and creativity of sample respondents (Fig. 1).

These components have a positive influence on the entrepreneurial behavior.

3.2 Sampling Tools

The statistical tools and technique used for the analysis include percentage analysis to study the socio economic characteristics. Descriptive statistics like mean and coefficient of variation is used. The scale developed by [18] is used to analyze the entrepreneurial behavior components viz., self-effectiveness, opportunity detector, planning ability, leadership ability, risk bearing ability, social involvement and creativity of sample respondents. To know the consistency and reliability of the scale instrument, Cronbach's alpha reliability analysis is done. When the questions that return with a stable response, variable is said to be reliable. Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the "underlying construct." Construct is the hypothetical variable that is being measured [21]. The Coefficient of variation used for the measure of dispersion of a probability distribution. Multidimensional Scaling Technique was used to measure the entrepreneurial behavior of farmers those engaged in sericulture using seven point Likert scale. The sample respondents agreeability were categorized into Strongly Agree, Agree,

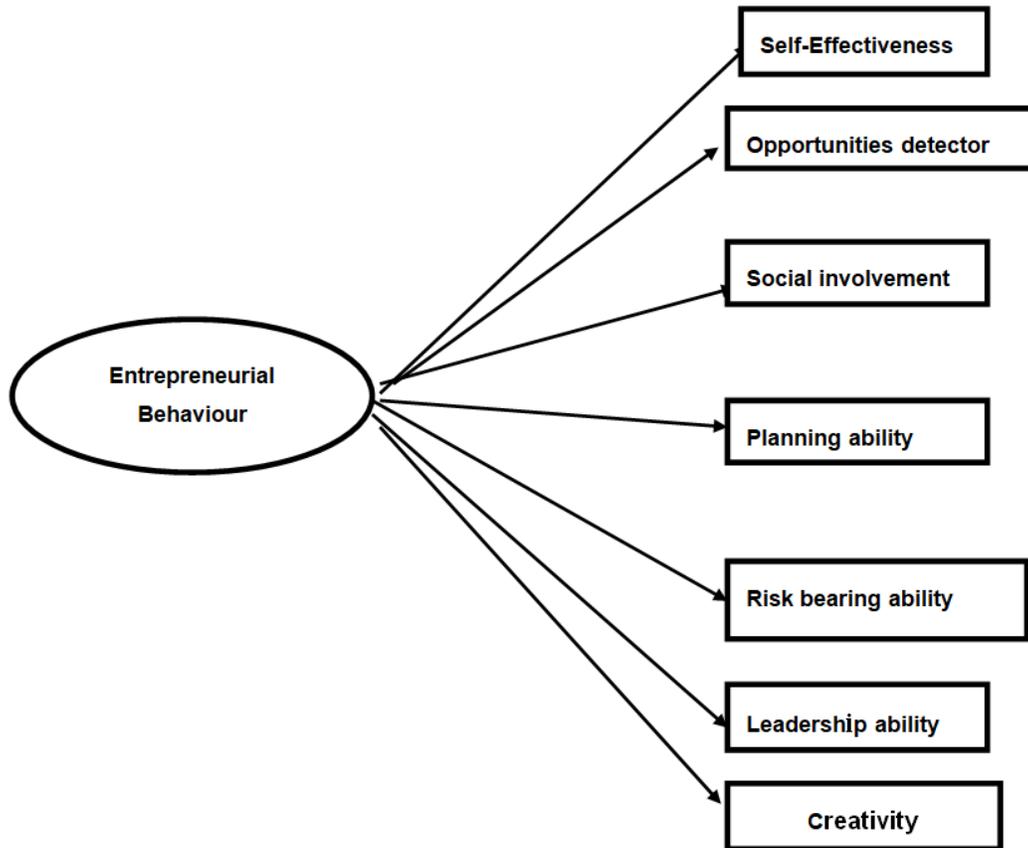


Fig. 1. Influence on the entrepreneurial behavior

Somewhat Agree, Neutral, Somewhat disagree, Disagree, Strongly disagree with maximum score 7 to minimum score 1 in that order. Mean is calculated to assess the behavior level of the entrepreneurs. The highest mean score value is considered as the higher level of entrepreneurial behavior. Multiple linear regression was employed to find the factors influencing the entrepreneurial behavior of sample farmers by keeping it as dependent variable and the variables age, education, annual income, farming experience, extension participation and source of information as independent variables.

4. FINDINGS AND DISCUSSION

The demographic characteristics of sample respondents were analyzed to infer that 38.8 per cent of them were in the age group of 41- 50 years followed by 27 per cent in the age group of above 50 years and 86 per cent were male entrepreneurs. Majority of them had secondary level education and practiced sericulture and dairy as major occupation (37.5 per cent). The

respondents (52.2 per cent) had average annual income less than one lakh and 55 per cent own 1-2 hectares of land. The respondents (35 and 26 percent) obtained major sericulture related information from sericulture officer and from regional magazines respectively. Most of the respondents (40 per cent) were practicing sericulture enterprise for more than 10 years in which they had an experience of both Chandrike rearing method and rack rearing method of silk cocoon.

4.1 Reliability Analysis

The reliability analysis based on Cronbach's Alpha was done to know the consistency and reliability of the scale instrument. The descriptive statistics along with Cronbach's Alpha is presented in Table 1.

Those selected statements or items were hypothesized to have positive relationship with the entrepreneurial behavior of the sericulture farmers.

4.2 Entrepreneurial Behavior

The entrepreneurial behavior components like self-effectiveness, opportunity detector, planning ability, leadership ability, risk bearing ability, social involvement and creativity of farmers engaged in sericulture were studied. Each component comprises of three different

statements which helps in determining farmers' opinion and to measure entrepreneurial behavior level of farmers. The various entrepreneurial behavior components of sericulture farmers were measured using Likert scale (Table 2). Further, from each component overall mean score and co-efficient of variation were found and discussed.

Table 1. Descriptive statistics and Cronbach's alpha

Cronbach's alpha	Mean	Std. deviation
0.721	4.38	27.20

Table 2. Entrepreneurial behavior components of sample respondents

Sl. no	Items	Entrepreneurial behavior	Mean	Coefficient of variation (%)
1	I am capable of trying different practices in sericulture farming	Self-Effectiveness	4.537	25.99
2	I believe that I have the capacity to make sericulture entrepreneurship profitable		4.462	25.94
3	I am sure that I am competent enough to be a successful entrepreneur		4.40	36.27
	Overall score		4.466	29.40
1	I frequently seek for different rearing practices that brings higher profit in short period	Opportunities detector	4.70	26.74
2	I frequently look for improved varieties & technologies to increase the business profit		4.387	24.19
3	I always observe other sericulture farmers search for opportunity to learn things.		4.150	29.22
	Overall score		4.412	26.72
1	I have involved in sericulture self-help group activity.	Social involvement	5.450	20.62
2	I often attend training program & field tour		5.312	28.03
3	I have frequent contact with other sericulture farmers		4.875	28.34
	Overall score		5.212	25.66
1	I plan in advance about the period of chemical disinfection to rearing sheds	Planning ability	5.10	17.38
2	I always plan in advance about the time period to procure worms suiting to the mulberry growth		4.287	22.63
3	I frequently faced issues regarding cultivation and rearing practices that had planned earlier		3.775	28.89
	Overall score		4.387	22.96
1	I have experienced economic loss due to pest & disease attack	Risk bearing ability	5.450	23.88

Sl. no	Items	Entrepreneurial behavior	Mean	Coefficient of variation (%)
2	I frequently faced with profit loss due to price decline / price fluctuation		5.250	19.29
3	I would like to adopt completely new method for silkworm rearing that involves certain kind of risk		3.575	31.40
	Overall score		4.758	24.85
1	I often assign sericulture activities to family members and labours	Leadership ability	4.112	28.16
2	I have been chosen as leader for sericulture Self-help group		3.937	35.07
3	Other sericulture farmers approach me for my guidance on sericulture rearing & mulberry cultivation		3.50	29.81
	Overall score		3.850	31.01
1	I always practice different rearing method than other sericulture farmers	Creativity	3.862	25.31
2	I frequently do experiments with new ideas in sericulture enterprise		3.70	31.13
3	I repeatedly change the way of mulberry cultivation to obtain more yield.		3.337	33.01
	Overall score		3.633	29.81

In the measure of entrepreneurial behavior components of the sample respondents, the overall mean score of social involvement was 5.212 with coefficient of variation was 25.66 percent. Then the risk bearing ability component had 4.758 as overall mean score and coefficient of variation was 24.85 per cent. The overall mean score of self-effectiveness was 4.466 and coefficient of variation was 29.40 percent. For opportunities detector overall mean was 4.412 and coefficient of variation was 26.72 percent. The overall mean score was 4.387 and coefficient of variation was 22.96 percent for the planning ability of sample respondents. Leadership ability acquired overall mean score of 3.850 and coefficient of variation was 31.01 per cent. Creativity component overall mean score was 3.633 and coefficient of variation was 29.81 percent. It could be concluded that among various entrepreneurial components, the sample respondents had more social involvement and risk bearing ability. To the contradictory, their leadership ability and creativity was lower. The components opportunities detector and planning ability stands in the middle and capacity building in technical, managerial and accounting aspects certainly lead to upgrading the entrepreneurship level.

4.3 Entrepreneurial Behavior Level of Sericulture Farmers

The overall entrepreneurial behavior scores of sample respondents were analyzed and presented in Table 3. The scores were split into three categories viz., high, medium and low based on the mean and standard deviation. [Mean was 116.7625 and standard deviation was 17.65008]. Upper limit was obtained by adding the mean and standard deviation, while lower limit was obtained by subtracting them. High level entrepreneurial behavior is indicated by the scores falling between the medium and upper limit; medium level entrepreneurial behavior is indicated by the scores between medium and lower limit whereas the lower level entrepreneurial behavior is indicated by the scores below the lower limit.

Majority of the sample respondents (51.25 per cent) had medium level of entrepreneurial behavior, followed by 26.25 percent of respondent had high level of entrepreneurial behavior and remaining 22.50 percent share of respondents had low behavioral level. As income generation occurs in short span farmers take up this enterprise and majority of them possessed medium and also high level of entrepreneurial behavior. To pull up the segment with low level

Table 3. Entrepreneurial behavior level of sericulture farmers

Sl. no	Entrepreneurial behavior level	Scores	No of respondent	Percent share
1	High level	More than 134.41	21	26.25
2	Medium level	Between 134.41-99.11	41	51.25
3	Low level	Less than 99.11	18	22.50
	Total		80	100

Table 4. Factors influencing the entrepreneurial behavior of sericulture farmers

Factors	Coefficient	Standard error	P value
Age	5.317	1.903	0.006**
Education	2.736	1.416	0.057*
Annual Income	0.893	2.159	0.680 ^{NS}
Farming experience	5.257	1.907	0.007**
Extension participation	2.840	1.368	0.058*
Source of information	4.150	1.905	0.032*
$R^2 = 0.615$			

**Significant at 1 % level and * significant at 5 % level, NS – Non significant

entrepreneurial behavior, training programmes, technology up gradation and awareness regarding new technologies, latest rearing methods need to be demonstrated to the farmers to increase their entrepreneurial behavior level.

4.4 Factors Influencing the Entrepreneurial Behavior of Sericulture Farmers

Multiple linear regression was used to find out the relationship between entrepreneurial behavior and the factors age, education, annual income, farming experience, extension participation and source of information. The results of regression analysis are shown in Table 4.

R^2 value obtained from the regression analysis indicated that 61.5 per cent of variation in entrepreneurial behavior was explained by the selected independent variables. Age and experience in sericulture farming positively influenced the entrepreneurial behavior of sericulture farmers at one per cent level of significance. This indicated that farmers with high experience may have more knowledge about farming and sericulture rearing. Education, extension participation and information positively influenced their entrepreneurial behavior at five per cent level of significance. It implied that educated respondents had more interest of participation in extension activities and they gather information from various sources. Hence, it could be concluded that age, education,

farming experience, extension participation and information sources positively influenced the entrepreneurial behavior of sericulture farmers similar to the results recorded by [22]. Positive and significant influence of education level was reported by previous studies undertaken by [23], experience and social participation was reported by [24].

5. CONCLUSION

It could be concluded that majority of sample sericulture farmers had medium level of entrepreneurial behavior (similar results reported by [24,25 and 26]). Most of them have shown high commitment to social involvement and risk bearing ability followed by self-effectiveness, opportunities detector, planning ability and low commitment in leadership and creativity. In order to improve entrepreneur behavior level, awareness and capacity building on technology up gradation, new rearing methods and processing techniques to sericulture entrepreneurs should be given including good marketing facilities.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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