Entrepreneurial Behaviour of Sericulture Farm Women in Eastern Dry Zone of Karnataka

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Abstract

In the present study, an attempt was made to construct a scale to measure the entrepreneurial behaviour of sericulture farm women. The entrepreneurial behaviour scale developed was administered to 180 sericulture farm women of Kolar and Chikkaballapura districts of Eastern Dry Zone of Karnataka state during 2017-18. The results revealed that majority (42.22%) of sericulture farm women had medium level of entrepreneurial behaviour whereas, 29.44 per cent of farm women had high level and 28.33 per cent had low level of entrepreneurial behaviour. In case of relationship of independent variables with entrepreneurial behaviour, the variables such as education, land holding, yield of cocoon per year, annual income, mass media participation, extension participation, extension contact, level of aspiration showed positive and highly significant relationship with entrepreneurial behaviour at one per cent level and variables such as area under mulberry cultivation, silkworm rearing intensity, experience in sericulture and self-reliance showed significant relationship at five per cent level. The scale developed was found to be reliable and valid, hence it can be used by the researchers to measure the entrepreneurial behaviour of sericulture farm women.

Keywords: Farm women, Entrepreneurial behaviour, Scale development

The role and significance of agriculture in Indian economy hardly need any emphasis. Agriculture is a major source of livelihood and provides employment for nearly 50 per cent of the country's labour force, besides providing raw materials for half of its industrial output. In the absence of adequate land to be brought under cultivation and increased pressure on land for maximizing output, employment and income, "Integrated Agriculture" with animal husbandry, sericulture, poultry and forestry is nationwide importance.

Sericulture has been known for a long time by the farmers and recently it has been identified as a highly remunerative enterprise with minimum investments and rich dividends. Sericulture activities proved to have a significant role in creating job opportunities in farming, silk industry and trade due to labour intensive nature and simplicity of techniques. The development of sericulture is of great economic importance in providing agricultural production, meeting the needs of the people and ideally suited to rural India for creating gainful employment to the ever increasing labour force particularly women.

Karnataka has been the leading producer of mulberry silk accounting for more than 50 per cent of its production in the country. The state is now regarded as the "Silk Bowl of India". Role of women in the process of value chain in the silk sector has increased as more women are engaged in leaf to cloth activities. Increasing migration of men in agriculture families in search of jobs to nearby cities have made increased participation of women in the farm and non-farm activities in sericulture sector. Sericulture is not just one occupation, but includes several activities, from planting and growing mulberry plants, rearing of silkworms to reeling of silk yarn from cocoons. In much of these activities, the labour contribution of women is significant.

Additional 20-40 per cent revenue generated through processing of silk waste like Mulberry twigs for dairy development, silkworm litter as compost, pupa for extraction of oil and silk reeling waste for production of raw silk and other activities can be availed by women self help groups for their socio-economic development of families.

Sunitha (2003) in her research study revealed that Entrepreneurial behaviour is influenced by personal, socio-economic and psychological factors either individually or in combination while supporting the system, social environment and also determine to some extent the success of entrepreneurship. The present study was formulated with the following specific objectives:

1. To develop and standardize a scale to measure the entrepreneurial behaviour of sericulture farm women.

2. To know the entrepreneurial behaviour of sericulture farm women.

3. To find out the relationship between personal, socio-economic, and psychological characteristics sericulture farm women with entrepreneurial behaviour.

METHODOLOGY

The present study was carried out during the year 2017-18 in Kolar and Chikkaballapura districts of eastern dry zone of Karnataka.

Entrepreneurial behaviour is operationalised as the combination of various socio psychological, cognitive, affective and skill attributes to operate her enterprises successfully. The method suggested by Likert (1932) and Edwards (1969) in developing summated rating scale was followed in the construction of entrepreneurial behavior scale.

Selection of dimensions for measuring entrepreneurial behavior

In order the measure the entrepreneurial behavior of farm women, 26 dimensions were identified with extensive review of literature and consultation with experts in the relavant field. These 26 dimension were mailed to experts seeking their relevancy to measure the entrepreneurial behavior of farm women. The opinion of 33 judges was received and those dimension which has relevancy percentage of 80.00 or more were selected for the propose of scale development. After the relevancy of dimensions was sought, 12

dimension were finalized which includes Innovativeness, Decision making, Economic motivation, Achievement motivation, Risk bearing ability, Scientific orientation, Information seeking behavior, Management orientation, Marketing strategy, Resource utilization, Opportunity recognition and Problem solving.

Collection of items

The first step in the construction of scale was to collect exhaustive statements/items pertaining measurement of entrepreneurial behavior. The items for measuring the entrepreneurial behavior of farm women have been carefully collected and edited in accordance with set criteria as the items in any psychological test. A large number of items were collected from literature review, informal discussions with agriculture extension scientists and the other experts from selected areas. Tentative list of 145 statements pertaining to the entrepreneurial behavior of farm women was prepared.

Editing of the items

The statements for measuring the entrepreneurial behavior of farm women were edited as per the 14 criteria enunciated by Edwards (1969) and Thurstone and Chave (1929). As a consequence, 17 statements were eliminated and the remaining 123 statements were included for further analysis and scale development.

Relevancy analysis

The selected items were then subjected to scrutiny by an expert panel of judges to determine their relevancy and subsequent screening of items for their inclusion in the final scale. In this context, 123 statements were mailed to experts in the agricultural extension and other related fields. The judges were requested to evaluate the relevancy of each statement critically and rate them on five-point continuum viz., Most Relevant (MR), Relevant (R), Somewhat Relevant (SWR), Less Relevant (LR) and Not Relevant (NR) with the score of 5, 4, 3, 2 and 1, respectively. The judges were requested to make necessary modifications and additions or deletion of statements, if they desire so. A total of 53 judges returned the questionnaires duly

completed were considered for further processing. From the data gathered, relevancy percentage and mean relevancy score were worked out for all the 123 statements.

$$\text{Relevancy weightage} = \frac{MR+R+SWR+LR+NR}{\text{No. of judges responded x Max. possible score}}$$

$$\text{Mean Relevancy score} = \frac{MR+R+SWR+LR+NR}{\text{No. of judges responded}}$$

Where,
MR= Most Relevant, R= Relevant, SWR= Some What Relevant, LR=Less Relevant NR=Not Relevant

Using these criteria the statements were screened having relevancy percentage of more than 75 per cent and Mean Relevancy Score of more than 3.0 for further processing. A total of 99 statements were retained after relevancy test and suitably modified as per the comments of experts wherever applicable.

Item analysis

Item analysis was carried out on the items selected in the first stage. The 99 statements under 12 dimensions were subjected for 't' test to know the difference in highest and lowest responses for the relevancy. The responses of the judges for different statements under each dimension were subjected for difference in highest and lowest responses for the relevancy was done. Based on the total scores, the judges were arranged in descending order. The top 25 per cent of the respondents with their total scores were considered as high group and the bottom 25 per cent as the low group so that these two groups provided the criterion groups in terms of evaluating the individual statements. The 't' values were worked out in order to discriminate the responses of high and low groups for the individual statements by using the below mentioned formula (*Edward, 1969*):

$$t = \frac{X_H - X_L}{\sqrt{\dfrac{\sum X^2_H - \dfrac{(\sum X_H)^2}{n} \ x \ \sum X^2_L - \dfrac{(\sum X_L)^2}{n}}{n(n-1)}}}$$

Where,

X_H = The mean score on given statement of the high group

X_L = The mean score on given statement of the low group

$\sum x^2 H$ = Sum of squares of the individual score on a given statement for high group

$\sum x^2 L$ = Sum of squares of the individual score on a given statement for low group

n = Number of respondents in each group

$\sum$ = Summation

t = The extent to which a given statement differentiates between the high and low group.

Based on the item analysis ('t' value of 2.74), seventy-nine statements which were found statistically significant were retained in the scale to measure the entrepreneurial behaviour of sericulture farm women (Table 1).

Standardization of the scale

The split half method developed by Brown Prophecy was employed to measure the reliability of the tools. The reliability co-efficient of half test was calculated using Karl Pearson co-efficient ($r_{1/2}$) formula.

Further, the data was subjected for statistical validity. The validity co-efficient was calculated and found to be most appropriate and suitable for the tool developed. The reliability and validity of the entrepreneurial behaviour scale construction is presented in Table 3.

The elimination of statements at various steps of entrepreneurial behaviour scale construction is presented in Table 2. In the first step of collection of items, the number of statements considered were 140 and number of statements retained were 140. In the second step *viz.,* editing of items, number of statements considered were 140 and the number of statements retained were 123. In the third step of relevancy analysis, 99 statements were retained out of 123 statements considered. The fourth step in entrepreneurial behaviour scale construction is item analysis, where in the number of statements considered were 99, while only 79 statements were retained. In

TABLE 1

Scale statements with their relevancy percentage and mean relevancy scores to measure
the entrepreneurial behaviour of sericulture farm women

Dimensions and statements	Relevancy Percentage	Mean relevancy score
1	3	3
D$_1$　Innovativeness		
1　I try to keep myself update with information on new sericulture practices.	88.30	4.41
2　I feel restless till I try out a new practice that I heard about in sericulture	88.30	4.47
3　From time to time I have heard of several new farm practices related to sericulture and I have tried out most of them in the last few years.	88.30	4.09
4　Usually I wait to see that what results my neighbours get, before I try out the new farm practices.	84.15	4.20
6　I am cautious about trying new practices in sericulture farming	84.15	3.77
7　Often new farm practices are not successful; however, if they are promising I would surely like to adopt them.	74.71	3.73
8　I adopt the new pest and disease control measures after careful consideration of its effect from different sources	75.84	3.79
9　I teach the fellow sericulture farmers on adopting the new practices in sericulture farming	81.13	3.18
10　Our fellow sericulture farmers do not consult me about new developments in sericulture industry	86.41	4.05
D$_2$　Decision making		
11　Timely and appropriate decisions I make on harvesting, grading, transportation *etc*.pay high rewards to me.	85.28	4.32
12　My decisions on sericulture management practices yield desirable results.	70.94	4.26
13　Since I take sound decisions in the production unit, emerging entrepreneurs frequently seek my advice or opinion.	73.20	3.54
14　I can anticipate the negative consequences of the decisions I make.	85.28	3.66
15　I decide about the time of rearing the silk worms considering the mulberry crop growth	87.92	4.26
16　I decide about the variety of silk worms considering the market price for cocoons.	94.33	4.39
17　I decide about the plant protection in mulberry considering the severity of pest/disease infestation.	86.03	4.71
D$_3$　Economic Motivation		
18　A sericulture entrepreneur should work towards more yield and economic profit.	81.13	4.30
19　A sericulture entrepreneur should try any new idea related to sericulture which may earn him more money.	86.41	4.056
20　A sericulture entrepreneur should look for improved varieties and advanced technologies to increase monetary profits.	84.90	4.32

	1	3	3
21	A sericulture entrepreneur should rear pure bivoltine variety to increase monetary profits in comparison to cross breeds	91.69	4.24
22	It is difficult for the sericulturists children to make good start unless he profits them with economic assistance.	87.54	4.58
23	Sericulture entrepreneur should have the self belief to make the sericulture entrepreneurship profitable	90.18	4.37
D_4	**Achievement motivation**		
24	I take pleasure on responding to challenges, so competition makes me work harder.	85.28	4.50
25	I don't want to earn more than required for comfortable life.	86.79	4.26
26	Success brings relief for further determination and not just pleasant feeling	83.01	4.33
27	I do not hesitate to undertake something that might lead to failing	75.47	4.15
28	I wish to be a role model for those to wish to enter the sericulture enterprise	80.00	3.77
D_5	**Risk bearing ability**		
29	I will consider a risk worth taking only if the probability for success is more than 60 per cent.	79.24	3.96
30	I don't mind working under conditions of uncertainty as long as there is a reasonable probability of gains from it for me.	89.05	4.45
31	I will consider a risk worth taking even if the probability for success is less than 40 per cent.	94.33	4.71
32	I don't care if the profit is small so long as it is assured and constant.	84.52	4.22
33	I feel Sericulture enterprise is not a complementary enterprise to other agriculture enterprises	81.50	4.07
34	I don't mind working without rest to achieve my goals	79.62	3.98
D_6	**Scientific orientation**		
35	The way a sericulturist's forefathers practiced sericulture is still the best way even today	87.92	4.39
36	Though it takes time for an entrepreneur to learn new methods in sericulture enterprise it is worth the efforts.	83.01	4.15
37	A good entrepreneur experiments with new ideas in sericulture enterprise.	83.77	4.18
38	A commercial sericulture entrepreneur need not worry much about the biological life cycle of silkworm.	79.62	3.98
D_7	**Information seeking behaviour**		
	A) Mass Media sources		
39	1. Through watching television	76.98	3.84
40	2. By listening to radio	74.71	3.73
41	3. By reading news papers	76.22	3.81

	1	3	3
42	4. By reading agriculture/sericulture literature	81.88	4.09
43	5. Information received through SMS on mobile phone	78.49	3.92
	B) Formal sources		
44	1. Consulting Scientists from universities.	86.79	4.33
45	2. Consulting Sericulture Inspectors (SI)	80.75	4.037
	C) Informal sources		
46	1. Discussing with family members	85.28	4.26
47	2. Discussing with friends	80.00	4.00
D_8	**Management orientation**		
48	The quantity of eggs and other raw materials needed for rearing silkworm should be assessed before cultivation	86.79	4.33
49	It is necessary to think ahead of the cost involved in raising mulberry crop	83.01	4.15
50	I purchase my inputs from the shops, keeping in view the cost and quality of the inputs.	83.77	3.60
51	I sell cocoons where I get maximum profit.	88.30	4.18
D_9	**Marketing strategy**		
52	I have the ability to search new markets for cocoons	87.17	4.415094
53	It's better to sell at regular places rather than exploring new markets.	78.49	3.35
54	It's easy to say but difficult to overcome the competition to sell the cocoons in the market	82.64	4.35
55	I can sustain the market by maintaining quality and competitive pricing	86.42	3.92
56	Grading and proper packing of cocoons to avoid transportation losses.	87.55	4.13
57	I enquire the price of cocoon in different markets before deciding the place of market	92.45	4.32
58	The transportation of cocoon to the markets is the crucial aspect in deciding the price	81.89	4.37
59	I grade the cocoons before taking it of the markets	84.91	4.62
60	Selection of Quality DFL plays important role in determining the quality of cocoon	88.30	4.0
D10	**Resource utilization**		
61	The effective utilization of the available resource in sericulture enterprise results in increased income	90.94	4.24
62	Efficient utilization of the resources available with sericulture farmers leads entrepreneur development	84.90	4.41
63	I feel effective resource utilization helps in sustainability of the inputs available	83.77	4.54
64	Harvesting mulberry leaves during cool hours of the day	88.30	4.24
65	Making rearing house reasonably air tight after spraying the disinfection chemical for about 36 hours	87.16	4.18

	1	3	3
66	Feeding silk worms with tender leaves when they are young and more matured leaves at later stages	78.49	4.41
67	Feeding silkworms with mulberry leaves as per their consumption capacity	82.64	4.35
D11	**Opportunity recognition**		
68	An entrepreneur in sericulture is the one who is best in recognizing the opportunity	86.41	3.92
69	I do not miss any extension activities which focus mainly on the intimidate problem in sericulture	87.54	4.13
70	I constantly observe the fellow successful farmers in sericulture for opportunity for learning	92.45	4.32
71	I always tend my activities towards potentials of the sericulture for higher income	81.88	4.37
72	I Collect information on the cocoon realer and about the quality of the cocoon as a good sign of an entrepreneur	84.90	4.62
73	I search for different sources for opportunities in sericulture enterprises	89.81	4.09
74	I seize every moment of opportunity in order to be successful in sericulture	91.69	4.24
D12	**Problem solving**		
75	The best entrepreneur in sericulture is the one who is best in solving the problem	90.18	4.49
76	I feel problems are bound to be appear in sericulture and I am ready to find the solution for each of the problem arose	88.67	4.58
77	I think differently to find solutions for problems in sericulture	83.39	4.50
78	I seek the advice of the sericulture experts when the problem is out of my hand	85.28	4.43
79	I handle problems in sericulture with right attitude, time and resources	82.26	4.16

TABLE 2

Elimination of statements at various steps of entrepreneurial behaviour scale construction

Steps in Perception scale Construction	No. of Statements	
	Statements Considered	Statements retained
Collection of items	140	140
Editing of items	140	123
Relevancy Analysis	123	99
Item Analysis	99	79
Reliability and Validity	79	79

the fifth step of finding reliability and validity, the numbers of statements considered were 79 and the number of statements retained were 79.

Administering the scale

The final scale consists of 79 statements for determining the entrepreneurial behaviour of farm women. The responses were collected on a five-point continuum, namely, strongly agree, agree, undecided, disagree and strongly disagree with assigned score of 5, 4, 3, 2, and 1, respectively for positive statements and vice versa for negative statements. Thus the minimum and maximum score one could get is 79 and 395, respectively. The total entrepreneurial behavior score for each respondent was obtained by adding the weights of individual responses made to the total scale items.

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V. SUSHMA AND K. C. LALITHA

RESULTS AND DISCUSSION

Reliability and validity of the entrepreneurial behaviour scale construction

Split half method developed by Brown prophecy was employed to measure the reliability of the tools. The reliability co-efficient of half test using Karl Pearson's coefficient (r1/2) was found to be 0.7914. The reliability co-efficient of the tool was found to be 0.8847 which is higher than the standard of 0.70, indicating reliability of the scale. Further, the data were subjected for statistical validity, which was found to be 0.9402, which is greater than the standard requirement of 0.70. Hence, the validity coefficient was also found to be most appropriate and suitable for the tool developed (Table 3).

TABLE 3
Reliability and validity of the perception scale construction

Particulars		Values
Reliability	Split-half (r 1/2)	0.7914
	Whole-test (r II)	0.8847
Validity	Statistical Validity	0.9402

Statement wise relevancy per cent and mean relevancy scores of the scale to measure the entrepreneurial behaviour of sericulture farm women

Statements having 'relevancy percentage' of above 75 per cent and 'mean relevancy score' of above 3.0 were considered for final selection. Accordingly, 99 statements under 12 dimensions such as Innovativeness, Decision making, Economic motivation, Achievement motivation, Risk bearing ability, Scientific orientation, Information seeking behaviour, Management orientation, Marketing strategy, Resource utilization, Opportunity recognition and Problem solving were retained after relevancy test.

Entrepreneurial behaviour of sericulture farm women

It is evident from the Table 4 that, 42.22 per cent of farm women had medium level of entrepreneurial behaviour, whereas, 29.44 per cent of farm women had high level and 28.33 per cent had low level of entrepreneurial behaviour. The reasons for the observed trend might be that they have taken the combination of enterprises like agriculture and dairy instead of opting for single enterprise. The results are in line with the findings of Sunitha (2003), Mahanthesh Shirur (2015), Rajendra Prasad (2016) and Reeja George (2018).

TABLE 4
Overall Level of Entrepreneurial Behavior of Sericulture Farm Women

n=180

Category	Score	Frequency	Percentage
Low	265.56	51	28.33
Medium	266 - 294	76	42.22
High	294.18	53	29.44

Relationship of personal, socio-economic, psychological and communication characteristics of farmers with Entrepreneurship Behavior

The data in Table 5 reveals that area under mulberry, silkworm rearing intensity, experience in sericulture and self-reliance of sericulture farm women were positively and significantly related to entrepreneurial behaviour at one per cent level of significance. Education, land holding, yield of cocoon per year, mass media participation, extension participation, extension contact and level of aspiration was found to be having positive and significant at five per cent level of significance. Other variables such as age, marital status, family size, family type, type of rearing house, cosmopoliteness, social participation, deferred gratification and value orientation were not significantly related to entrepreneurial behaviour of sericulture farm women. For every unit of increase in area under mulberry, silkworm rearing intensity, experience in sericulture and self-reliance, education, land holding, yield of cocoon per year, mass media participation,

TABLE 5

Relationship of personal, socio-economic, psychological and communication characteristics of farmers with Entrepreneurship Behavior

Independent variables	Correlation coefficient (r value)
Age	0.096 NS
Education	0.268 **
Marital Status	0.081 NS
Type of Family	0.110 NS
Family Size	0.770 NS
Land Holdings	0.328 **
Area under Mulberry	0.219 *
Type of Rearing House	0.124 NS
Silkworm Rearing Intensity	0.276 *
Yield of coccon/year	0.301 **
Annual income	0.299 **
Experience	0.212 *
Cosmopoliteness	0.091 NS
Mass media participation	0.221 **
Extension participation	0.416 **
Social participation	0.132 NS
Extension contact	0.304 **
Level of aspiration	0.297 **
Deferred gratification	0.023 NS
Value orientation	0.138 NS
Self reliance	0.215 *

NS = Non-significant
* = Significant at 5 per cent level
** = Significant at 1 per cent level

extension participation, extension contact and level of aspiration of sericulture farm women there will be an increase in the entrepreneurial behaviour towards sericulture farming. The findings are in line with the finding of Sunitha (2003), Mahanthesh Shirur (2015).

The entrepreneurial behavior scale developed is found to be reliable and valid; hence, it can be used by the researcher to measure the entrepreneurial behavior of sericulture farm women. The study revealed that 42.22 percent of sericulture farm women had medium level of entrepreneurial behaviour. It can be concluded that the scale developed is useful in explicitly measuring the entrepreneurial behaviour.

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