



P-ISSN: 2349-8528

E-ISSN: 2321-4902

IJCS 2018; 6(6): 1026-1030

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Received: 19-09-2018

Accepted: 23-10-2018

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Entrepreneurial behaviour of rural youth practicing integrated farming system: dimensions and measurement

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Abstract

The comprehensive scale consisting of fourteen components and relevant statements serve as a tool to assess the entrepreneurial behaviour of rural youth practicing IFS. The social research methodology using Guilford was followed to develop the scale. The fourteen components of entrepreneurial behaviour assumed values ranging from 0.07 to 11.38 with innovativeness getting the highest scale value. The scale helps in identifying the factors leading to successful and unsuccessful rural youth entrepreneurs practicing IFS which will further support in framing policies by the Government to design educational activities and extension strategies by research institutions, training agencies and Krishi Vigyan Kendras. The financial institutions can adopt the scale in deciding criteria for extending loan to rural youth entrepreneurs. The rural youth entrepreneurs can use the scale to assess their entrepreneurial skills.

Keywords: entrepreneurial behaviour, rural youth, dimensions, measurement

Introduction

The entrepreneurs are key persons of any country for promoting economic growth and technological change. The appearance of their activities, i.e., the development of entrepreneurship is directly related to the socio-economic development of the society in India, after independence and onwards, the government decided to pursue the path of state sponsored and planned economic development. This does not mean that individual or group enterprise and initiative did not have any role to play, but that these will be assisted, guided and regulated by the state in various ways, so that their activities can come to some results in the form of economic transformation along the lines considered appropriate and desirable by the state. The idea behind this was that the persons who have no financial resources or managerial background could be effective tools for widening the entrepreneurial base in the country. The term entrepreneur is in existence since human beings started commerce and business. Entrepreneur is considered as one who buys certain factors / services at certain price, combine them to produce a product and sell it at uncertain price to make profits.

Methodology

The methodology in developing a scale to measure the entrepreneurial behavior of rural youth practicing IFS is based on the interval scale, using normalized ranking method as recommended by Guilford (1954) was used to develop the scale in different steps as discussed below.

Step1: Item Pooling: Twenty four appropriate components for entrepreneurial behaviour were identified and finalized after consulting experts and the review of literature.

Step 2: Judges Rating of components: The final list of all 24 components were mailed to 115 experts in concerned area. The judges were of the cadre of Assistant Professors and above in the area of Agricultural Extension, Agricultural Economics, Agricultural Marketing in the University of Agricultural Sciences, KVKs and ICAR institutes. The experts were requested to indicate whether each of the components identified were Most Relevant (MR), Relevant (R) and Not Relevant (NR) on a three point continuum with 3, 2 and 1 scores respectively They were also requested to add new components, which tends to measure the entrepreneurial behaviour, if any they consider relevant.

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A total of 51 judges returned the questionnaires duly completed were considered for further processing. The responses had from the judges were scored, the Relevancy Co-efficient of components (RC) and Mean Relevancy Score (MRS) was worked out using the following formula:

$$RC = \frac{\text{Total score of all the judges on 'i'th indicator (MRX 3 + RX 2 + NRX 1)}}{\text{Maximum score on the continuum X Total number of judges}}$$

$$MRS = \frac{MRX 3 + RX 2 + NRX 1}{\text{Number of judges responded}}$$

All those components with the Relevancy Co-efficient of 0.80 and Mean Relevancy Score of 2.30 and above were selected for the development of scale on entrepreneurial behavior. Fourteen components have passed the above criteria, are listed below with their Relevancy Co-efficient (RC), Mean relevancy Score (MRS) and t test value.

Table 1: Component wise Relevancy coefficient, Mean relevancy score and t test values

Sl. No.	Components	Relevancy percentage	Relevancy coefficient	Mean relevancy score	t test value
1	Innovativeness	97	0.97	2.93	2.92
2	Decision making ability	94	0.94	2.82	3.83
3	Achievement motivation	94	0.94	2.82	2.92
4	Information seeking ability	94	0.94	2.82	2.92
5	Coordinating ability	84	0.84	2.53	3.85
6	Leadership ability	81	0.81	2.44	4.61
7	Risk taking ability	91	0.91	2.73	4.66
8	Knowledge of IFS	85	0.85	2.55	3.75
9	Economic motivation	87	0.87	2.62	1.93
10	Management orientation	86	0.86	2.60	3.85
11	Planning ability	91	0.91	2.75	2.87
12	Self confidence	92	0.92	2.77	4.84
13	Credit orientation	84	0.84	2.33	2.81
14	Scientific orientation	90	0.90	2.71	3.88

Step 3: Calculating scale values for components of entrepreneurial behavior of rural youth based on judges rating

It is apparent that, all the fourteen components may not contribute equally towards the entrepreneurial behavior of rural youth. Hence, the variation in contribution of each component for the entrepreneurial behavior must be represented by assigning different weightage to each of the components. Hence, the judges' rating was sought to calculate the scale values for each components of the entrepreneurial behavior of rural youth. The experts were requested to rank the components of entrepreneurial behavior of rural youth in the order of importance as perceived by them. The ranks given by 51 judges were converted into rank values by using the formula,

$$R_i = (n - r_i + 1)$$

Where, R_i is the rank value, n is number of items ranked and r_i is the rank given by the expert for each dimension. The

centile position values (P) were arrived for each rank by the normalization of ranks approach using the formula,

$$P = \frac{(R_i - 0.5)100}{n}$$

$$R_c = 2.357 \times R_j - 7.01$$

Where, R_i is the rank value and n is number of things ranked. The deduction of 0.5 from the rank value is simply to get the middle of the area for the dimension so ranked. P is essentially a centile value and represents the area under the normal distribution below the median of the interval assigned to the object. From the normal curve tables we find corresponding z values to represent linear distances from the mean on the base line. Since z values are awkward numbers to use, we make a linear transformation to values of a convenient type (Guilford, 1954) [4]. For this purpose, Hull (1928) [5] proposed a 'C' scale of 10 units covering a range of 5 standard deviations (Table 2.).

Table 2: Calculation of scale values of all the dimensions of entrepreneurial behaviour based on the Judges' ranking

ri	Ri	C 1	C 2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	Total	P	C
1	14	21	5	5	2	0	0	5	2	3	0	0	8	0	0	51	96.42	9
2	13	10	5	1	0	2	2	9	6	7	2	0	5	2	0	51	89.28	8
3	12	2	8	6	5	0	0	4	9	2	1	3	5	4	2	51	82.14	8
4	11	7	8	14	0	1	2	0	1	2	3	9	4	0	0	51	75.00	7
5	10	7	11	5	3	0	6	2	3	2	2	5	0	1	4	51	67.85	6
6	9	3	2	2	7	4	7	6	1	3	3	2	5	4	2	51	60.71	6
7	8	0	0	2	4	4	6	8	8	0	4	3	10	2	0	51	53.57	5
8	7	1	0	0	9	13	0	5	2	3	7	2	2	4	3	51	46.42	4
9	6	0	4	4	2	2	10	3	2	7	10	3	2	0	2	51	39.28	3
10	5	0	3	0	2	9	3	7	3	3	1	2	4	12	2	51	32.14	3
11	4	0	4	0	10	7	1	1	4	0	6	4	2	10	2	51	25.00	3
12	3	0	1	2	2	3	6	0	2	12	5	8	2	1	7	51	17.85	2
13	2	0	0	7	3	2	2	0	7	1	4	10	2	11	2	51	10.71	2
14	1	0	0	3	2	4	6	1	1	6	3	0	0	0	25	51	3.57	2
Σf_j		51	51	51	51	51	51	51	51	51	51	51	51	51	51			
$R_j = \Sigma f_j C$		398	318	287	230	191	208	292	264	223	198	215	300	194	150			
$R = R_j / \Sigma f_j$		7.80	6.23	5.62	4.50	3.74	4.07	5.72	5.17	4.37	3.88	4.21	5.88	3.80	2.94			
$R_c *$		11.3	7.68	6.25	3.61	1.81	2.60	6.48	5.19	3.29	2.14	2.92	6.85	1.95	0.07			

The procedure followed in arriving at the scale values for all the fourteen components of entrepreneurial behavior of rural youth is presented in Table 3. The fourteen components of

entrepreneurial behavior of rural youth, their respective scale values and the ranks are presented below.

Table 3: Components of Entrepreneurial behavior of rural youth and respective scale values

Sl. No.	Components of Entrepreneurial behavior	Final scale values	Rank
1	Innovativeness	11.38	I
2	Decision making ability	7.68	II
3	Achievement motivation	6.25	V
4	Information seeking ability	3.61	VII
5	Coordinating ability	1.81	XIII
6	Leadership ability	2.60	X
7	Risk taking ability	6.48	IV
8	Knowledge of IFS	5.19	VI
9	Economic motivation	3.29	VIII
10	Management orientation	2.14	XI
11	Planning ability	2.92	IX
12	Self confidence	6.85	III
13	Credit orientation	1.95	XII
14	Scientific orientation	0.07	XIV

Step 4: Relevancy weightage

All the statements under 14 components were subjected to experts rating on relevancy of each of the statement, regarding its utility to measure particular component of entrepreneurial behaviour. The experts were asked to indicate the relevancy on a Likert's scale of three point continuum. The continuum was from most relevant (MR), Relevant (R) and Not Relevant (NR) with 3, 2 and 1 score respectively. Fifty one out of 110 experts responded to the relevancy analysis. Relevancy weightage was worked out by using the formula

$$RW = \frac{\text{Total score of all the judges on 'i'th indicator (MR X 3 + R X 2 + NR X 1)}}{\text{Maximum score on the continuum X Total number of judges}}$$

Statements rated as relevant with a relevancy weightage (RW) of 0.75 or more (worked out on the basis of summated scores of all the judges for all the statements) were considered for the next step.

Step 5: Schedule development and scoring

For all the relevant statements, the questionnaire was prepared to elicit appropriate variability for entrepreneurial behaviour. The responses on three point scale varied from Strongly Agree (SA), Agree (A) and Dis Agree (DA) for every statement under all the components of entrepreneurial behaviour. Scoring was done by giving values of 3, 2 and 1 respectively for positive statements. The order of scoring was reversed for negative statements. The data was collected from thirty rural youth from Mysore district for pre-testing the questionnaire and to ascertain whether, the questionnaire is measuring the intended behaviour and whether the variability present in the behaviour is properly elicited.

Step 6: Testing for reliability and validity

Pilot test was conducted for a sample of thirty respondents randomly drawn from non-sample area, to test the reliability and validity.

Testing for reliability

The coefficient of stability (test-retest method) and the coefficient of equivalence (split-half method) were employed to measure the reliability of the scale. The coefficient of stability is the correlation between scores on two administrations (A1 and A2) of the same form of the test, separated by a time period. In the pilot analysis, the responses

were obtained twice at an interval of 12-15 days from the respondents with the same questionnaire. The coefficient of correlation (r) was calculated between scores from two administrations.

$$r_{(A1)(A2)} = \frac{(N * \sum A1A2) - (\sum A1)(\sum A2)}{\sqrt{[N * \sum A1^2 - (\sum A1)^2] - [N * \sum A2^2 - (\sum A2)^2]}}$$

Where, A1 and A2 are two different administrations of the scale,

The reliability coefficient (r) between two administrations with time gap was found to be significantly higher (0.9213).

The coefficient of equivalence is the correlation between scores on parallel forms (X and Y) of the test, administered with a minimal time lag between testing. The responses for the odd (X) and even numbered items (Y) were obtained and the scores of both sets were used to calculate coefficient of correlation (r).

$$r_{\frac{1}{2}} = \frac{(N * \sum XY) - (\sum X)(\sum Y)}{\sqrt{[N * \sum X^2 - (\sum X)^2] - [N * \sum Y^2 - (\sum Y)^2]}}$$

Where, X and Y are two different forms of the scale.

The correlation value for split-half method was 0.974, suggesting high reliability of the scale. Further, Spearman-Brown Prophecy formula was employed to know the reliability of the test of the original length from the values of split-half reliability.

$$r_{11} = \frac{2 * r_{1/2}}{1 + r_{1/2}}$$

Where, r11 is the split-half reliability coefficient and r_{1/2} is the estimate of the reliability of a test of the full length. The r11 value of 0.9598 suggested high reliability of the scale.

Testing for validity

Validity of the scale was ensured by analysing content validity, construct validity and criterion validity. Since the items were based on extensive review of literature and relevancy analysis by the judges, the content validity was ascertained.

Looking at the extensive literature and the nature of entrepreneurial behaviour, 14 dimensions with suitable statements were finalized and were sent for relevancy analysis. Then the ranking for each of the dimension were obtained from fifty one judges to calculate scale values. Hence, the content validity was ascertained.

The internal consistency was tested through construct validity by using correlation matrix technique with individual dimensions of the scale. All the correlation coefficients were above 0.70 suggesting high construct validity.

The association of scores between Entrepreneurial behaviour and the criterion score was 0.9598, indicating very high criterion validity.

Results and Discussion

The entrepreneurial behaviour was measured with the inclusion of 14 key dimensions influencing the entrepreneurial behaviour. The distribution of respondents was analysed with respect to all the 14 dimensions measured on a Likert scale of 3 point continuum. The scale developed for the purpose of measuring entrepreneurial behaviour yields different weights for the dimensions under study. The results indicates that, innovativeness with a maximum scale value of 11.38 is the most important factor contributing to successful entrepreneurship among the rural youth practicing IFS. Entrepreneurs with innovative action are more likely to have a commercial rather than subsistence economic orientation. They have more favorable attitude towards risk, high level of achievement motivation and greater knowledge about innovations (Rogers and Shoemaker, 1971) ^[11].

Decision making ability (scale value 7.68) emerged as the second important dimension. Joshi and Kapoor (1973) ^[6] emphasized the managing a farm as a continuous process of decision making. Not just the decisions but correct decisions will lead to successful management of the entrepreneurship. Higher need for achievement shows positive relation with entrepreneurial ability.

Risk bearing ability, achievement motivation and knowledge of IFS are the next three important dimensions with a scale value of 6.48, 6.25 and 5.19 respectively. All entrepreneurial activities involve risks, may be in varying degrees. According to Bhattacharjee and Akhouri (1975) ^[1] and Rao (1985) ^[10], risk taking ability was found to be significantly associated with entrepreneurs. The risks of uncertainty of economic profitability are to be handled by good decision making ability.

The entrepreneurs need to have knowledge about several areas of activity relevant to his domain of enterprise. Such knowledge helps him to plan strategy and use skills effectively. Knowledge about environment, industry and technology is considered important (Pareek and Nadakarni, 1978) ^[9]. Understandably, knowledge on the entrepreneurship forms an important basis for making the correct decisions in the farm. The knowledge of rural youth practicing IFS entrepreneurship is still more critical considering the technical skills involved in different activities.

Information seeking ability and economic motivation are at 7th and 8th place with a scale values of 3.61 and 3.29 respectively. Entrepreneur's success is measured by the financial stability of his enterprise. Hence, the economic motivation of rural youth is important behavioural character in ensuring success in his enterprise. His economic motivation must be matched by his acumen in designing marketing strategy after the production activities. Managerial role was exhibited by entrepreneur in their capacity as head of the enterprise. They

also played leadership role when they were driven by their own vision to innovate or bring in a change in the manager events took place (Kanungo and Mendonca, 1994) ^[7]. Planning ability and leadership ability are at 9th and 10th places with a scale value of 2.92 and 2.60 respectively.

The management orientation and credit orientation have assumed the 11th and 12th places with a scale value of 2.14 and 1.95 respectively. Entrepreneur has to play the role of manager. Vijaya and Kamalanabhan (1998) ^[13], Fraser (1961) ^[3], and Manjula (1995) ^[8] reported that, management orientation was positively and significantly related to entrepreneurial behaviour of participant and nonparticipant women under DWCRA (Development of Women and Child Welfare in Rural Areas) programme.

Coordinating ability and scientific orientation are in the last two places in the order of importance with the scale values of 1.81 and 0.07 respectively. In the present analysis, the Judges might have felt that, scientific orientation of entrepreneur has little to do with the success of rural youth practicing IFS, though, it is an important character of successful entrepreneurs. The reason could be that experts' perceived ease of scoring high on the components. Similar finding of leadership ability attaining low scale values compared to other dimensions was reported by Savitha (2007). In the present study it was found that, scientific orientation was last in the order of scale values. However, Chaudhari (2006) reported that, information seeking behaviour was fifth highest important dimension among the nine dimensions of entrepreneurial behaviour.

Conclusion

The scale developed for measuring the entrepreneurial behaviour of rural youth practicing IFS was found reliable, valid and internally consistent. Hence, the scale could be used to measure the entrepreneurial behaviour of rural youth practicing IFS. The scale consisting of 14 dimensions with relevant statements will serve as a tool to assess the entrepreneurial behaviour of rural youth practicing IFS. It will enable researchers to take up studies on entrepreneurial behaviour of rural youth practicing IFS in different district of the state and across the country. The scale helps in identifying successful and unsuccessful rural youth entrepreneur practicing IFS, which will further support in framing policies by the Government and designing extension strategies by research institutions, training agencies and Krishi Vigyan Kendras.

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