

RESEARCH ARTICLE

A Scale to Measure the Attitude Towards Entrepreneurial Motivation of Agripreneurs

Elakkiya. S¹ and M. Asokhan²

1. Ph D. Scholar,
2. Professor (Agril. Ext.),
Department of Agril. Ext. and
Rural Sociology,
Tamil Nadu Agricultural
University, Coimbatore, India
Corresponding author e-mail:
elakkimohanur@gmail.com

ABSTRACT

A shift from agriculture to agribusiness is an essential pathway to revitalize Indian agriculture and to make more attractive and profitable venture. Agripreneurship has potential to generate growth, diversifying income, providing widespread employment and entrepreneurial opportunities in rural areas. Stabilization and growth of agricultural production results in rapid advancement in output and employment in agro-industries. The study aims to develop a scale to measure the attitude towards entrepreneurial motivation of agripreneurs. Thurstone and Chave's (1929) equal appearing intervals scale method was adopted to develop the scale. The final scale comprised ten statements, which are having universe of content, uniform distribution of scale values along the psychological continuum and high "scale values" and lower "Q" values and more or less equal number of favourable and unfavorable attitude items.

Key words: Agripreneurs; Attitude; Entrepreneurial motivation; Equal appearing interval scale.

Many research studies have identified various types of entrepreneurial motivation. It has often been stated that the single most important causative factor in the rise of entrepreneurship is achievement motivation. It is described as a social-psychological drive among the people that leads to economic development of a country. The proposition that a high need for achievement is positively related to entrepreneurship is premised on assumptions like existence of an open social structure, relative freedom of occupational choice and perception of moderate chance of success where individual efforts can directly affect success or failure. *Kushwah et al., (2020)* stated that entrepreneurial behavior was operationally defined as a process of action an entrepreneur under taken to establish his enterprise. It is a composite skill, the resultant of mix of many qualities and traits. *Goswami and Dhriti (2022)* stated that the growing rate of unemployment and poverty in rural areas and slow growth of agriculture, there is a need of entrepreneurship in agriculture for more productivity and profitability.

Studies on the rise of entrepreneurship also state that the need for prestige, power and self-confidence are used as reassuring weapons to deal with low self-esteem and related feelings of anxiety by the

entrepreneur. Entrepreneurs are concerned mainly with influencing the environment, individuals and institutions to achieve their goals. In other words, they are driven by, what can be called, power motivation. It is emphasized that it is necessary to develop motivational needs complementary to the need for achievement like the need for power and the need for affiliation in a proportionate manner. Another important entrepreneurial motive identified is self-actualization. An Indian study has found that power, self-actualization and achievement motivation are significantly higher in entrepreneurs compared to economic and affiliation motivation. A number of motivational characteristics have been recognized in entrepreneurs by researchers. They include value for innovativeness, independence, outstanding performance and respect for work.'

Sandhu (2020) revealed that KVK trainings have a positive impact on mindset of women to start an entrepreneur. *Spandana et al., (2022)* found that most of the women entrepreneurs felt that they needed technical and managerial information to run their enterprises effectively

Saikia and Chauhan (2021) indicated that Mishing women are not fully empowered economically as well as socially. Therefore, there is an urgent need for the

settlement of infrastructure, awareness, education, competition, willingness, confidence, self-motivation, mindset and encouragement from family and society.

Geeta and Natikar (2021) concluded that, majority of the respondents had medium level of entrepreneurial behaviour. The variables such as education, information source consultancy, extension contact, mass media participation, innovativeness, risk orientation, achievement motivation, economic motivation, decision making ability, coordinating ability, social participation, cosmopolitanism, planning ability and quality of life was found to have positive and significant relationship

METHODOLOGY

In the social sciences, scaling is the process of measuring or ordering entities with respect to quantitative attributes or traits. *Thrustone and Chave (1929)* defined, attitude as the degree of positive or negative affect associated with some psychological object. A predisposition or a tendency to respond positively or negatively towards a certain idea, object, person or situation.

For this study, *Equal Appearing Interval Scale*' used to measure agripreneurs' entrepreneurial motivation. This scaling technique constructed by *Thrustone and Chave (1929)*. By following this scaling procedure, entrepreneurial motivation scale was developed. The steps in constructions of *Equal Appearing Interval Scale* are presented below.

Operationalization of scale : In this study, the scale has been operationalized as mental disposition of agripreneurs about entrepreneurial motivation. Here, the psychological object i.e. entrepreneurial motivation, which measures the motivation of agripreneurs in varying degrees of favourableness or unfavourableness.

Collection of items: Based on literature review, discussion with scientists and extension personnel, the possible statements which measuring the psychological object were collected. Totally 96 statements were framed. The statements were screened by following informal criteria suggested by *Edwards (1969)*. Finally, 73 statements were selected for judge's opinion which measures the entrepreneurial motivation (Table 1).

Item scoring and computation of Scale & Q value: The final statements were subjected to judge's opinion on a five-point continuum ranging from most

Table 1. Entrepreneurial motivation of agripreneurs

SN	Statements
1	Agripreneurs compete with others and prove to be the best
2	Agripreneurs have all the capacity to own and run a business.
3	Agripreneurs are capable of organizing and executing actions successfully
4	Agripreneurs considers herself/ himself very persistent
5	Agripreneurs hires extra effort to overcome the difficulties in enterprise
6	The obstacles agripreneurs faced increase the energy to overpass it
7	Agripreneurs have control upon the critical factors that influence success
8	Agripreneurs faces the difficult situations of daily activities as personal challenges.
9	Agripreneurs continue to inspire other persons
10	Agripreneurs have issues regarding the work planned well in advance
11	Agripreneurs runs financial risks for potential benefits at occasional
12	Agripreneurs are deterministic in managing risk
13	Agripreneurs have high level of economic motivation
14	Agripreneurs try innovative ideas which may lead to success
15	Agripreneurs has vision for his/ her future to achieve
16	Agripreneurs do not give up at the first sign of problem
17	Agripreneurs do not wish to take risk
18	Agripreneurs has their own social status and prestige
19	Agripreneurs who has Self-satisfaction and also others get satisfied
20	Agripreneurs are flexible with their personal life
21	Agripreneurs do their enterprise in their own way
22	Agripreneurs provides employment to others
23	Agripreneurs has will power to manage enterprise
24	Agripreneurs has high self-esteem in running the enterprise
25	Agripreneurs strive hard to achieve greater business development
26	Agripreneurs remains stick with their own approach in venture
27	Agripreneurs who deals with problem, may tend to get struck
28	Agripreneurs has strong desire for social interaction
29	Agripreneurs are one who takes decisions at difficult times
30	Agripreneurs derives satisfaction from challenging tasks
31	Agripreneurs begins the day with list of work to be done
32	Agripreneurs are one who motivate others with positive thoughts and activities
33	Agripreneurs looks for challenging tasks in enterprise
34	Agripreneurs with high achievement motivation incline to take risks and win
35	Agripreneurs tends to be self-directed and exhibit high internal locus of control and achievement
36	Agripreneurs has desire to gain more and achieve financial success
37	Agripreneurs has self-realization to survive in enterprise
38	Agripreneurs has recognition and gain of acceptance and appreciation by other people

- 39 Agripreneurs considers self-employment as a prestige
- 40 Agripreneurs set targets that are able to be achieved
- 41 Agripreneurs are motivated by others success stories
- 42 Agripreneurs desires to be independent than others
- 43 Agripreneurs prefer to do tasks that are completely new everyday
- 44 Agripreneurs exposed to situations that involves some kind of risk
- 45 Agripreneurs enjoy the sense of job security
- 46 Agripreneurs are the one who proves 'I can do'
- 47 Agripreneurs takes responsibility to solve problems
- 48 Agripreneurial experience gives self-confidence to influence others
- 49 Agripreneurs has willingness to act on decisions
- 50 Agripreneurs run an enterprise only for financial benefits
- 51 Agripreneurs drives them towards goal-oriented action
- 52 Agripreneurs are the one who develop themselves technically and professionally
- 53 Agripreneurs knows their staff and look out for their welfare
- 54 Agripreneurs makes sound and timely decisions
- 55 Agripreneurs develops the sense of responsibility to their subordinates
- 56 Agripreneurs makes sure that the task is understood, supervised and accomplished
- 57 Agripreneurs has a higher need of achievement in their entrepreneurial activities
- 58 Agripreneurs desires to have financial freedom in their enterprise
- 59 Agripreneurs wish to lead a better life in the competitive society
- 60 Agripreneurs important motive is to earn more money
- 61 Agripreneurs can afford a higher standard of living by running an enterprise
- 62 Agripreneurs does not like to do routine activities
- 63 Agripreneurs success depends on their own innovation
- 64 Agripreneurs utilizes the past experience and training in their enterprise
- 65 Agripreneurs considers themselves very convincing in their enterprise
- 66 Agripreneurs makes strong effort to achieve high in enterprise because they like rewards
- 67 Agripreneurs are confident that, he /she can perform effectively on different tasks for their enterprise
- 68 Agripreneurs evaluate their performance against some set of standards
- 69 Agripreneurs try different strategies to achieve goals when they face difficulties
- 70 Agripreneurs makes strong demands to achieve something innovative
- 71 Agripreneurs believe that entrepreneurial ventures are more profitable
- 72 Agripreneurs are interested to think about solving problems, with which others have difficulty
- 73 Agripreneurs takes personal responsibility to learn somethings as new

unfavorable to most favourable. This list of 50 judges who consist of scientist from Agricultural Extension, Agri Business Management disciplines and scientists from ICAR are selected. Of 50 judges, 30 judges responded by sending their judgements. The scaling procedure of *Thurstone and Chave (1929)* followed for item scoring and computation of scale values. Scaling procedure of equal appearing interval scale presented below.

i) Frequency, proportions, cumulative proportions are calculated based on obtained data from judges opinion.

ii) Find S value by using formulae,

$$S = l + \left(\frac{0.5 - \sum P_b}{P_w} \right) i$$

Where,

S= the median or scale value of the statement

L= the lower limit of the interval in which the medians falls

$\sum p_b$ = the sum of the proportions below the interval in which median falls

p_w = the proportion within the interval in which the median falls

I= the width of the interval and is assumed to be equal to 1.0

iii) Find Q value. It is measure of the variation of the distribution of judgments or given statements. To determine the value of Q, find two quartiles the 75th centile and 25th centile.

The 25th Centile (C₂₅) obtained from the following formula

$$C_{25} = l + \left(\frac{0.25 - \sum p_b}{p_w} \right) i$$

The 75th Centile (C₇₅) obtained from the following formula

$$C_{75} = l + \left(\frac{0.75 - \sum p_b}{p_w} \right) i$$

iv) Inter quartile range (Q) value = C₇₅-C₂₅

RESULTS AND DISCUSSION

Considering the time limitation from respondents' point of view, it decided to select *ten* statements to constitute the attitude scale. Since the selected scale values should have equal appearing interval and distributed uniformly along the psychological continuum, it was necessary to form *ten compartments* so as to select ten statements at one statement from each compartment. The basis for forming the compartments was that, each compartment should be equally spaced in the continuum. For this purpose, the cumulative total was divided by ten, which worked out to 0.95 and this formed the width of the class intervals. The second interval was worked out by adding the value with the width of the first-class interval. Subsequently all the ten intervals were worked out. Each class interval

represented a compartment for the selection of the attitude items.

Compartment I	0.72
Compartment II	0.72+0.72= 1.44
Compartment III	1.44+0.72= 2.16
Compartment IV	2.16+0.72= 2.88
Compartment IV	2.88+0.72= 3.6
Compartment V	3.6+0.72= 4.32
Compartment VI	4.32+0.72= 5.04
Compartment VII	5.04+0.72= 5.76
Compartment VIII	5.76+0.72= 6.48
Compartment IX	6.48+0.72= 7.2
Compartment X	7.2+0.72= 7.92

Based on the calculation, Individual statements with “S” and “Q” values are presented in Table 2.

To select the attitude items from the ten compartments the “scale values” and the corresponding “Q” values were considered. Based on the criteria already mentioned items having high “scale values” and low “Q” values were selected with one item from each compartment. Care was taken to ensure that the selected items represented the universe of content and covered the different aspects of entrepreneurial motivation. Thereby ten items were selected with equal appearing interval and with a uniform distribution along the psychological continuum. The attitude scale thus constructed is given in Table 3.

Table 2. Individual statements with S and Q value

S. No	Q Value	S Value	Diff.	CD	EA	Co.
10	5.001	1.741	0.489	0.480		
3	0.000	0.000	0.000	-1.749	0.72	I
1	-4.163	2.229	0.468	0.948		
8	-2.160	2.698	0.192	1.140		
55	-3.631	2.889	0.000	1.140	1.44	II
61	-0.740	2.889	0.054	1.194		
7	0	2.943	0.217	1.411		
53	-0.108	3.160	0.118	1.529		
27	2.117	3.278	0.061	1.590		
65	0.328	3.339	0.000	1.590		
66	0.328	3.339	0.015	1.605		
33	-4.511	3.354	0.116	1.721		
31	1.365	3.470	0.026	1.746		
44	0.561	3.496	0.004	1.751		
4	0	3.500	0.142	1.892	2.16	III
19	1.073	3.642	0.004	1.897		
15	0.852	3.646	0.000	1.897		
16	0.852	3.646	0.014	1.911		
20	1.847	3.660	0.000	1.911		
26	0.645	3.660	0.110	2.021		
45	1.391	3.770	0.063	2.084		
37	0.663	3.833	0.002	2.086		
21	-2.189	3.835	0.000	2.086		

32	-2.048	3.835	0.150	2.236		
50	0.282	3.985	0.000	2.236		
64	-1.429	3.985	0.015	2.251		
38	-0.089	4.000	0.000	2.251		
47	-0.936	4.000	0.000	2.251		
72	4.750	4.000	0.155	2.406		
11	0.512	4.155	0.145	2.551		
59	1.250	4.300	0.158	2.709		
60	1.961	4.458	0.000	2.709	2.88	IV
73	-1.159	4.458	0.012	2.721		
43	-0.561	4.470	0.012	2.733		
18	0.318	4.482	0.006	2.739		
23	-0.313	4.488	0.006	2.745		
5	1.497	4.494	0.000	2.745		
30	2.348	4.494	0.000	2.745		
49	0.396	4.494	0.006	2.751		
28	-1.649	4.500	0.000	2.751		
35	-11.674	4.500	0.137	2.888		
12	-4.129	4.637	0.028	2.916		
9	0	4.665	0.167	3.083		
71	-3.889	4.832	0.239	3.321		
58	15.697	5.071	0.022	3.343		
42	-2.863	5.093	0.000	3.343	3.60	V
51	-4.213	5.093	0.152	3.495		
54	-4.129	5.244	0.008	3.503		
68	-11.773	5.252	0.008	3.510		
6	3.550	5.259	0.000	3.510		
67	-8.802	5.259	0.241	3.751		
40	-1.921	5.500	0.008	3.758		
46	-1.751	5.508	0.000	3.758		
57	-1.708	5.508	0.248	4.006	4.32	VI
14	-4.399	5.756	0.000	4.006		
52	-3.629	5.756	0.064	4.071		
70	0.165	5.820	0.191	4.262		
39	-9.660	6.011	0.233	4.495		
41	-3.386	6.244	0.008	4.503		
48	-12.211	6.252	0.008	4.510		
25	0	6.259	0.211	4.721		
56	-4.877	6.470	0.000	4.721		
63	-3.748	6.470	0.010	4.731	5.04	VII
69	-3.898	6.480	0.020	4.751		
2	-3.721	6.500	0.000	4.751		
22	-11.470	6.500	0.320	5.071		
36	-4.133	6.820	0.010	5.081		
24	-4.088	6.830	0.000	5.081		
29	-4.713	6.830	0.300	5.381	5.76	VIII
17	-0.565	7.130	0.010	5.391		
62	0	7.652	7.652	6.020	6.48	IX
13	-3.589	7.140	1.823	7.213	7.20	X

Diff=Difference; CD= Cumulative difference; EA=Equal appearing class interval; Co=Compartments

Scale reliability : The reliability of the scale was determined by ‘Cronbach’s alpha’ method. The reliability coefficient is 0.65. When the purpose of the test is to compare the mean scores of two groups of narrow range a reliability coefficient of 0.50 or 0.60 would suffice. Hence, the constructed scale is reliable

Table 3. Attitude scale

Statement No	Scale value	Q value	Statements	Statement nature
1	2.22	4.16	Agripreneurs compete with others and prove to be the best	Favourable
7	2.94	2.94	Agripreneurs exert control upon the critical factors that influence success	Favourable
21	3.83	2.18	Agripreneurs do their enterprise in their own way	Favourable
35	4.50	1.67	Agripreneurs tend to be self-directive and exhibit high internal locus of control & achievement	Favourable
6	5.25	3.55	The obstacles faced by agripreneurs enhance the energy to overcome it	Favourable
70	5.82	0.16	Agripreneurs possess strong urge to achieve something innovative	Favourable
24	6.83	4.08	Agripreneurs possess high self-esteem in running the enterprise	Favourable
17	7.13	0.56	<i>Agripreneurs do not wish to take risk</i>	Unfavourable
13	7.14	3.58	Agripreneurs cherish high level of economic motivation	Favourable
62	1.25	1.65	<i>Agripreneurs are least interested in routine activities</i>	Unfavourable

as the reliable coefficient (rtt) was >0.60.

Content validity of the scale : Content validation was carried out by subjecting the selected ten items to judge’s opinion. The judges were requested to indicate their presumed relevance to which the attitude items covered the different aspects of entrepreneurial motivation. The responses were obtained on a four-point continuum of ‘most adequately covered’, ‘more adequately covered’, ‘less adequately covered’ and ‘least adequately covered’. Scores of 4, 3, 2 and 1 were given for the points on the continuum respectively.

Totally 30 judges responded by sending their judgments. The mean score 2.5 was fixed as the basis for deciding the content validity of the scale. If the overall mean score of the attitude items as rated by the judges was above 2.5 the scale will be declared as valid and if not otherwise. In the present case, the overall mean score was worked out as 3.51 and therefore the constructed attitude scale is said to be valid. The scoring procedure is as follows,

Nature of the statement	Continuum				
	SA	A	U	D	SD
Favourable statements	5	4	3	2	1
Unfavourable statements	1	2	3	2	1

SA=Strongly Agree; A=Agree; U= Undecided; D=Disagree; SDA= Strongly Disagree

Administration of the scale value : The ten attitude items selected were arranged randomly in order to avoid biased responses. The scale was administered on a five-point continuum as strongly agree, agree, undecided, strongly disagree and disagree. The score obtained for each statement was summed up to arrive at the attitude score for the respondents. The score ranged from 50 (maximum) to 10 (minimum). Maximum score revealed a favourable attitude, while a minimum score indicated unfavourable attitude towards entrepreneurial motivation of agripreneurs.

The responses were grouped as unfavourable, moderately favourable and highly favourable based on the cumulative frequency method.

Confirmatory factor analysis : To determine how well the measured model fits the data, a confirmatory factor analysis (CFA) was used. This model measured by 10 items was tested. The model is shown in Figure 1 and Table 4.

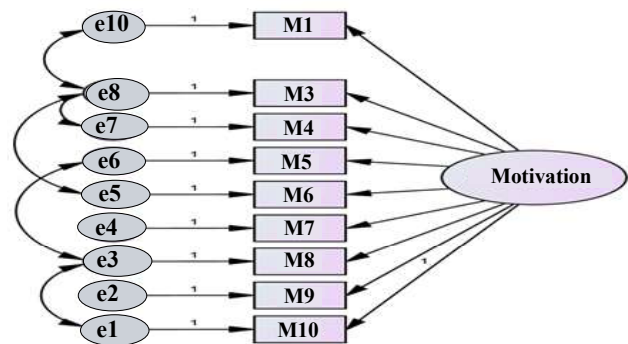


Figure 1. Confirmatory factor analysis (CFA) model.

Table 4. Confirmatory factor analysis

Indices	Motivation	Suggested value
No. of statements before CFA	10	
Chi-square value	16.90	
DF	22	
Chi-square/Df		< 5.00 (Hair et al., 1998)
P value		> 0.05 (Hair et al., 1998)
GFI	0.981	> 0.90 (Hu and Bentler, 1999)
AGFI	0.962	> 0.90 (Hair et al. 2006)
NFI	0.962	> 0.90 (Hu and Bentler, 1999)
CFI	1.000	> 0.90 (Daire et al., 2008)
RMR	0.016	< 0.08 (Hair et al. 2006)
RMSEA	0	< 0.08 (Hair et al. 2006)
No. of statements after CFA	9	
Cronbach Alpha	0.64	>0.6

The fit measures, as proposed by *Hair et al. (2010)* and *Hu and Bentler (1999)*, were used to assess the model. A small chi-square (χ^2), and large p-value, indicates that the model describes the data well. In the current analysis, χ^2 is 16.90 and p-value is significant ($p = 0.000$). Another relevant fit measure is the comparative fit index (CFI) (*Iacobucci, 2010*). CFI is an incremental fit index and it is based on normed fit index (NFI). Whereas NFI “is a ratio of the difference in χ^2 value for the fitted model and a null model divided by the χ^2 value of the null model” (*Tabachnick & Fidell, 2006*), CFI is normed to generate an output value between 0 and 1 (*Bentler, 1990; Bentler & Bonett, 1980*). A value above 0.9 is considered a good fit (*Bentler, 1990; Bentler & Bonett, 1980*). The CFI for the present model is 1.00.

The root means square error of approximation (RMSEA), a third fit measure, is one of the most widely used fit indices. RMSEA indicates how well a model fits a population, correcting for model complexity and sample size. In the model, RMSEA is 0, which according to *Browne and Cudeck (1993)* meets the fit requirements. A modest refinement of the model was reached using modification indices and standardized residual covariance among some items.

CONCLUSION

There are various methods available for construction of an attitude scale, Equal Appearing Interval method scaling technique was used in this study to measure the attitude of agri-entrepreneurs towards agripreneurial motivation for agricultural development. The scale would be highly useful to assess the entrepreneurial motivation of agri-entrepreneurs.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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