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Development of scale to measure entrepreneurial readiness among the students of farm universities in Karnataka

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Abstract

An effort is made in the present investigation being conducted in 2022–2023, to develop a scale to measure entrepreneurial readiness among the students who were in the final year of their graduation in different farm universities of Karnataka state. The multi-item scale consists of 36 items total from three dimensions: Entrepreneurial Intention, Entrepreneurial Orientation and Entrepreneurial Skill. The developed entrepreneurial behaviour scale was found to be highly reliable and valid. Later, the final scale on a five-point continuum was presented to the respondents.

Keywords: Substituted Li ferrite, magnetostatics and spin waves, microstrip array antenna, X-band frequency range

Introduction

Entrepreneurship is bound to play a critical and pivotal role in the growth and development of the economy in the coming years. It is currently being encouraged and embraced by educational institutions, government, policy makers, society and corporations. It is high on the agenda of policymakers of higher education in order to encourage students in developing entrepreneurial skills in their area of specialization and thereby increasing their employment opportunities. In addition, today's world with its burgeoning population offers limited venues of employment. This makes entrepreneurship all the more necessary for self-employment and creating more employment opportunities. Entrepreneurial readiness among the youth has been a critical global concern due to low business spin-offs. Scholars have noted that self-employment relies on the cognitive strength of an individual. This is due to the fact that cognitive or psychological ability stimulates entrepreneurship activities. There are three aspects to measuring entrepreneurial readiness as a manifestation of behavior variables such as sociological, psychological, business management, and entrepreneurship. It means that an entrepreneurial mindset is not sufficient to capture

entrepreneurial readiness. Meanwhile, behavioral variables are determined by cognitive and environmental variables in social cognitive theory. It is essential to add entrepreneurial skills to the entrepreneurial readiness model to understand management business and entrepreneurship aspects (Ruiz, Soriano, and Coduras, 2016) ^[2].

Student entrepreneurship is the emerging template and in the light of privatization and liberalization, entrepreneurship development is one of the ways for overcoming unemployment among graduates. Even in agriculture sector, agricultural graduates play a crucial role in agriculture development and farm universities have greater responsibility in building the quality man power. Even then it is difficult to find job opportunities in public sector and private sector for all the agricultural graduates. Hence, there is a need to develop entrepreneurial readiness and impart required skills to students so that they can become entrepreneurs and earn their livelihoods and strengthen rural economy. With this the present study is undertaken with the following specific objective:

- To develop and standardize scale to measure entrepreneurial readiness of graduating students.

Methodology

The present study was undertaken during 2022-23 for developing standardized scale to measure entrepreneurial readiness among the students of farm universities in Karnataka. Standardization is the “process of putting different variables on the same scale. This process allows you to compare scores between different types of variables. Typically, to standardize variables, you calculate the mean and standard deviation for a variable. Then, for each observed value of the variable, you subtract the mean and divide by the standard deviation” (Jim Frost, 2019) [7]. The developed scale was used to analyze the entrepreneurial readiness among the farm university students. The process of development of scale is explained in step by step format in the following result and discussion sub heading.

Results and Discussion

Entrepreneurial readiness among the students is operationally defined for the sake of measurement by the researcher himself as the function of three dimensions *viz.*, entrepreneurial intention, entrepreneurial orientation and entrepreneurial skill *i.e.*, “Confluence of various traits that makes a farm university student competent, to observe and analyse their environment, further channel their creative and productive potential to dare and achieve in the field of agripreneurship”. Since entrepreneurship itself is an innovative dimension and promoted in various degree programmes and there was no scale to measure the entrepreneurial readiness among students of farm universities, strive was compelled to develop a scale to measure the entrepreneurial readiness among those students. It will help to locate prospectus entrepreneurs in farm universities, since there is plenty of a purview to venture in farm sector in the days to come. The method of summated rating scale suggested by Likert (1932) [9] and Edwards (1969) [3] were followed in the development of the scale following seven stages *viz.*, identification of components, collection of item/statements, editing of the items, relevancy test, item analysis, reliability and validity (Tanveer Ahmed, 2019) [14].

Identification of Components: Since entrepreneurship is a comprehensive domain involving different dimensions to promote concrete meaning, three components related to entrepreneurial readiness were identified along with nine subcomponents based on literature review and interaction with resource persons.

The identified components are: (1) Entrepreneurial Intention, (2) Entrepreneurial Orientation, and (3) Entrepreneurial Skill. The subcomponents are (1) Risk-taking, (2) Innovativeness, (3) Proactiveness, (4) Personal Attitude towards entrepreneurship, (5) Perceived behaviour control, (6) Subjective norm, (7) Personal Skills, (8) Technical Skills and (9) Management Skills.

Collection of items/statements: As per the procedure the first step in the fabrication of entrepreneurial readiness scale was to cumulate items/statements pertaining to the entrepreneurial readiness of students of farm universities. Since entrepreneurship is a border concept, tentative list of

92 statements pertaining to the entrepreneurial readiness of students of farm universities were collected through exhaustive literature review and by consulting Experts and Scientists.

Editing of the items: After exhaustive review and deliberations, these 92 statements were redefined as per the 14 criteria enunciated by Edwards and Thurstone (1969) [3]. As a consequence, 16 statements were eliminated. The remaining 76 entrepreneurial readiness statements were considered for further statistical process.

Relevancy test: Seventy-six statements were sent to 120 resource persons in the domain of social sciences working in State Agricultural Universities, Indian Council of Agricultural Research Institutes and development departments and few successful entrepreneurs to amenably assess the relevancy of each statement *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 panel of jury were also invoked to make inexorable adjustments, instance additions or deletion of statements, if they desired to. A panel comprising of 80 jury reverted the questionnaires duly completed and these were considered for further analysis. From the data gathered, ‘Relevancy Percentage’ (R.P.) and ‘Mean Relevancy Score’ (M.R.S.) were quantified out for all the 76 statements. Using these yardsticks, each and every statement was scrutinized using the formula.

$$R.P. = \frac{MR \times 5 + R \times 4 + SWR \times 3 + LR \times 2 + NR \times 1}{\text{Maximum possible score}} \times 100$$

$$M.R.S. = \frac{MR \times 5 + R \times 4 + SWR \times 3 + LR \times 2 + NR \times 1}{\text{No. of judgements responded}}$$

Accordingly, statements having ‘relevancy percentage’ of eighty per cent and above and mean relevancy score of 4.00 and above were considered for final selection. Accordingly, 52 entrepreneurial readiness statements were retained after relevancy test and these statements were duly reframed in line with the remarks of jury wherever applicable.

Item analysis: Post relevancy appraisal, the fifty-two statements were under purview analysis of item to weigh and portray the items hinging the degree to which they can assort the students having higher entrepreneurial readiness from the students with lower entrepreneurial readiness. In order to conduct pre-test exercise, a sample of 32 graduating students of University of Agricultural Sciences, Dharwad were chosen for the study. The students were assigned to indicate their level of compliance with each statement on a five-point continuum ranging from ‘strongly agree’ to ‘strongly disagree’.

Considering the cumulative scores, the students were sorted in descending sequence. The topline quarter proportions of the students with their aggregate scores were demarcated as the high kind and the bottom-line quarter as the low kind.

These two kinds provided benchmark groups in terms of evaluating the individual statements. Thus, out of 32 students who were under administration for item analysis, eight students each with highest and lowest scores were used as benchmark groups to evaluate individual items. The critical ratio, that is, the 't' value which analyses the degree to which a considered statement differentiates between the higher and lower groups of students for each statement, was reckoned with the help of the formula given below:

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

Whereas,

X_H = the average score on given statement for the high kind
 X_L = the average score on given statement for the low kind
 $\sum X_H^2$ = aggregate squares of the individual score on a given statement for high kind
 $\sum X_L^2$ = aggregate of squares of the individual score on a given statement for low kind
 n = Count of individual students in each kind
 \sum = Summation
 t = the degree to which a considered statement distinguishes between the high and low kind.

After computing the 't' value for all the 52 items, thirty-five statements with 't' value equivalent to or over than 1.87 were ultimately chosen and encompassed in the final entrepreneurial readiness scale. Based on the values obtained for all statements the critical ratio was selected *viz.*, it depends on the researcher choice to fix critical ratio to further go for higher precision of the developed scale. So, the 1.87 is not the standardized one for all scale.

Standardization of scale: As per the procedure the reliability and validity were ascertained for the standardization of the scale.

Reliability of the scale developed: Reliability by virtue explicates the scale precision constructed for any objective. It is otherwise called as the extent to which frequent measure outcomes the same result. In arena of social science research, newly developed scale must be considered for its

reliability test prior to its employment.

The split-half method was utilized to check the reliability of the entrepreneurial readiness scale. The estimate of correlation coefficient was 0.724 and this was further amended by employing Spearman Brown formula to obtain the coefficient of reliability of the entire set. The 'r' value of the scale was 0.802, which was significant at one percent level implying the high reliability of the scale. It was deduced that the entrepreneurial readiness scale constructed was reliable.

a) Half test reliability formula

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

Where,

$\sum X$ = Sum of the scores of the odd number items
 $\sum Y$ = Sum of the scores of the even number items
 $\sum X^2$ = Sum of the squares of the odd number items
 $\sum Y^2$ = Sum of the squares of the even number items

b) Whole test reliability formula

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

Where,

$r_{1/2}$ = Half test reliability

Validity of the scale: The data was put through statistical validity, which was found to be 0.876 for scale which is more than the typical requirement of 0.70. Hence, the coefficient of validity was also found to be appropriate and suitable for the tool developed. Thus, the scale evolved to analyze entrepreneurial readiness among students of farm universities was found to be feasible and appropriate.

Administration of the scale: The final scale comprises of 36 statements for determining the entrepreneurial readiness among students. The responses were gathered on a five-point continuum, strongly agree, agree, undecided, disagree and strongly disagree with assigned score of 5, 4, 3, 2 and 1 for positive statements and reverse scoring for negative statements respectively.

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SL No	Statements	SA	A	UD	DA	SDA
Entrepreneurial intention						
A. Personal Attitude towards entrepreneurship						
1	I would prefer to be my own boss rather than to have a secure job					
2	If I had the opportunity and resources, I would like to start an enterprise					
3	Being an entrepreneur would entail great satisfaction for me					
4	I would choose to be an entrepreneur among various career alternatives					
B. Perceived behaviour control						
5	To start a firm would be easy for me.					
6	After a failure, I am able to pick myself up and start over					
7	I have in born traits to become an entrepreneur					
8	I have hands-on experience about starting my own enterprise					
C. Subjective norm						
9	I believe that, family members see entrepreneurship as a logical choice					
10	I believe that, my close friends see entrepreneurship as a logical choice					
11	I have access to information that will enable me to become an entrepreneur					
12	My family members support entrepreneurship as my career choice					
Entrepreneurial Orientation						
A. Risk-Taking						
13	I prefer taking risks in order to achieve a goal					
14	I prefer to take a loan to start an enterprise					
15	I take risks regardless of the result					
16	I prefer to spend money on something that might give a high profit					
B. Innovativeness						
17	For any project, I prefer to use a unique approach rather than old one					
18	I prefer to try my own unique way when learning new things rather than how everyone else does					
C. Proactiveness						
19	I prefer to step-up and get things done myself rather than waiting for someone else to do it					
20	I tend to plan ahead on projects					
21	I usually look ahead to identify problems so that I can deal with them before they happen					
22	I am always looking for better ways to do things					
Entrepreneurial Skill						
A. Personal Skills						
23	I always look for business information than other information					
24	When I see something needs to be done, I do it without being asked					
25	I always give my best in the field that I am in					
26	I can easily direct people and motivate them					
27	I apply alternative approaches to solve the problems					
B. Technical Skills						
28	I can communicate my views with proper clarity					
29	I find it easy to listen and understand what others say					
30	I can use technology effectively to communicate with others					
31	I can think in a logical manner when approaching and solving problems					
C. Management Skills						
32	I can make quick but clear decisions to encourage others into action					
33	I usually set achievable or realistic targets and develop plans for specific goals and tasks					
34	I consider a wide range of alternatives before making a decision					
35	I am always ready to take my own decisions and take responsibility for my decisions					
36	I do not let my work be interfered by others					

Conclusion

The entrepreneurial readiness scale developed, offers a comprehensive framework for assessing entrepreneurial readiness among students, encompassing dimensions such as entrepreneurial intention, orientation and skill. The reliability and validity of the scale, as evidenced by correlation coefficients exceeding established benchmarks, underscore its robustness and suitability for empirical research and practical applications. In essence, the development and standardization of the entrepreneurial readiness scale could be useful in explicitly measuring the entrepreneurial readiness among the graduating students of

farm universities in Karnataka.

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