Research Tool

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Construction and Standardisation of Agripreneurial Performance Scale

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HIGHLIGHTS

- The Agripreneurial Performance Scale with 40 items was created with 0.81 reliability coefficient value.
- Financial measures and non-financial measures were included as major dimensions.
- The items were selected on the basis of Relevancy Percentage, Relevancy Weightage and Mean Relevancy Score (MRS) for all statements.

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ABSTRACT

One of the most vital factors in making agriculture successful is the promotion of agripreneurship among farmers in our country. With growing demand of the food and the scope of agripreneurship in the entrepreneurial pyramid makes it more attractive. To develop and validate the agripreneurial performance scale, 94 statements were selected including financial and non-financial measures of agripreneurial performance by going through various scientific literatures; again those statements were screened based on 14 point criteria suggested by Edward (1957) during 2023. 69 statements were selected and sent to 80 judges. Based on judgments of 30 judges, statements were subjected to item analysis, after calculation of t value 40 statements were finalised and included in the final scale. Reliability was calculated using split half method, reliability coefficient value was 0.81 which was further verified by Spearman's Brown formula and the value was found 0.89, which implies the scale is reliable. The Cronbach alfa value of 0.83 refers to the high consistency of the developed scale. Validity was ensured with the help of content validity. The final scale was developed including 40 statements that reflect new ideas.

INTRODUCTION

Agripreneurship is the perfect blend of agriculture with entrepreneurship. It is gaining popularity and attention with growing rate of population and unemployment. Agriculture is the primary industry and directly related to the survival of mankind. The first entrepreneurship started when agriculture produce was exchanged with goods manufactured by the village artisans. This system continued from generation to generation and knowledge of crop raising started moving to different places. Agriculture being one of the oldest industries most of the production technologies simplified to such a level that any one can start with little information and experience. Discussing about the concept of an entrepreneur, he/she is an agent who buys means of production at certain prices in order to combine them into a product that he is going to sell at prices that are uncertain (Cantillon, 1755). Entrepreneurs are also known as job givers rather than job seekers as they establish their own venture to make themselves self-employed as well as recruit other needy people to make themselves empowered. Entrepreneurship is the knack for sensing an opportunity where others see chaos, contradiction and

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confusion. It is the willingness to take calculated risks, both personal and financial, then to do everything possible to get the odds in your favour.

Entrepreneurship in agriculture is the creation of innovative economic organization for the purpose of growth or gain under conditions of risk and uncertainty in agriculture (Dollinger, 2003). Agripreneurship is a sustainable, community- orientated, directly marketed agriculture produce and services. By sustainable agriculture we mean a holistic, systems-oriented approach to farming that is focused on the interrelationships of social, economic, and environmental processes for delivering the agricultural produce. In Indian context major labour force and livelihood is dependent on agriculture. By deploying the concept of agripreneurship the traditional agricultural production system can be shifted to lucrative business. To measure the growth and loss of the agripreneurs, performance is the yardstick (Chandler & Hanks, 1994). There is no thumb rule for a full proof agripreneurial approach. It is about applying one's mind and soul to garner all possible opportunities towards self establishment, economic proficiency and employment generation. Thus promotion of entrepreneurship could lead to employment generation, minimise incidence of poverty and promotion of export trade, fostering regional development.

Agripreneurial performance is defined as 'the achieving of set entrepreneurial goals(Van Vuuren, 1997), agripreneurial performance utilizes the available opportunities to grow the business, (Ladzani & Van Vuuren, 2002). The performance of agricultural entrepreneurs would be high when they efficiently and effectively utilize land resources and biological resources along with the effectual application of modern technologies, modern mechanization aspects and intellectualization of agricultural activities (Voronin et al., 2021). The paradigm shift from farmer to agripreneuers is profit oriented based on their agripreneurial performance. Looking to the importance of performance of the agripreneuers the research was conducted to study the performance of the agripreneurs by developing a suitable scale.

METHODOLOGY

The developed scale systematically composed of all dimensions of agripreneurial performance including financial measures like income, profitability, growth and efficiency and non-financial measures like customer relation, employee relation, personal satisfaction and trickledown effect in the society. Summated rating method suggested by Likert (1932) and Edwards (1957) were followed for statement collection and selection. Items were collected from diversified sources like rural agripreneuers, internet, literatures, scientists and professors related to the subject domain. A total of 94 items were collected under the dimensions of financial measures as well as non-financial measures. Further the statements were screened through 14 criteria suggested by Edward (1957) and 69 statements are selected as relevant to the study and analysed further. Content validity and Split half method of reliability is assured for standardization of the scale.

RESULTS

Table 1 represents the calculated t-value of the 40 selected statements. The statements covers both agripreneurial performance in general, financial and nonfinancial performance of the agripreneuers in specific context. For standardisation of the scale validity and reliability were assessed. Expert opinion is the key to measure content validity whereas split half (Spearman – Brown coefficient) reliability coefficient, Pearson correlation coefficient and Cronbach Alpha coefficient was used to calculate reliability of the scale.

Relevancy test

A set of 69 statements were mailed to 80 judges of the respective subject domain to indicate their responses on three-point psychological continuum viz. Most Relevant, Relevant and Least Relevant with scores 3, 2 & 1 respectively. Out of 80 judges 33 judges responded within the given time frame, among those responses 3 responses were rejected due to ambiguous nature of the responses. In the end score given by 30 judges were considered for calculation. Relevancy Percentage (RP), Relevancy Weightage (RW) and Mean Relevancy Score (MRS) were calculated for all statements.

$$\text{Relevancy Percentage (RP)} = \frac{\text{FS}}{\text{Number of respondents}} \times 100$$

FS= Frequency score of Most Relevant & Relevant responses.

$$\text{Relevancy Weightage (RW)} = \frac{\text{MRR}\times 3 + \text{RR}\times 2 + \text{LRR}\times 1}{\text{MPS}} \times 100$$

MRR- Most Relevant Response, RR- Relevant Response, LRR- Least Relevant Response

MPS- Maximum Possible Score (No. of Judges × 3 = 30 × 3 = 90)

$$\text{Mean Relevancy Score (MRS)} = \frac{\text{MRR}\times 3 + \text{RR}\times 2 + \text{LRR}\times 1}{\text{Number of judges}} \times 100$$

MRR- Most Relevant Response, RR- Relevant Response, LRR- Least Relevant Response
No. of judges - 30

With the help of above calculation statements having relevancy percentage more than 80, relevancy weightage more than 0.80 and overall mean relevancy score grater or equal to 2.34 were considered for final selection. With help of this process 46 statements were considered for first stage and rewritten as per the suggestions given by the experts.

Item analysis

As per Likert's scaling technique, item analysis is very important to develop a reliable and valid scale. It is important to identify the statements based on the degree of differentiation i.e., the extent to which one statement differ from another in term of more favourable respondents form less favourable respondents. Item analysis was done including 46 statements selected in the first stage. An interview schedule was framed by including those selected 46 statements used for interviewing 32 respondents from a non-sampling area. There was a five-point continuum to get the responses as strongly agree, agree, undecided, disagree and strongly disagree with scores 5, 4, 3, 2, 1 respectively. The final interview schedule after having item analysis will also have this five-point continuum

stated above. For item analysis the performance score was counted and arranged in ascending order. Twenty five percent respondents i.e., 8 respondents having highest score and twenty five percent respondents i.e., 8 respondents having lowest score were selected. These two groups having highest and lowest score form criterion groups to evaluate individual statements as suggested by Edwards (1957). The critical ratio was calculated by calculating t value by applying t-test. The t -test value used to measure the extent of differentiation of statements from high group in comparison to the low group. As per the t-test formula suggested by Edwards (1975) the t value was calculated using below stated formula.

$$t = \frac{X_H - X_L}{\sqrt{\frac{S_{H^2}}{n_H} + \frac{S_{L^2}}{n_L}}}$$

X_H = the mean score of the statement for the high group
X_L = the mean score of the statement for the high group
S^2H = the variance of the distribution of responses of high group to the statement
S^2L = the variance of the distribution of responses of low group to the statement
nH = number of subjects in the high group
nL = number of subjects in the low group

After calculation of t value, the statements having t value less than 1.75 were rejected as per the thumb rule suggested by Bird (1940). Referring to the above-mentioned calculation and selection procedure40statements were retained as those statements were having highest discriminating values besides eliminating those with poor discriminating and questionable validity. Final scale was composed including 40 statements presenting new ideas. To

Table 1. Final Statements to measure agripreneurial performance with "t" value

S.No.	Statements	t value
1	Majority income is earned from selling goods from the agripreneurial unit	3.22
2	Net Income is decided after calculating all expenses of the agripreneurial unit	3.42
3	Income is the most important indicator of agripreneurial performance	3.43
4	Capital formation is associated with income	3.52
5	Resources are effectively used to enhance profit	1.80
6	Reduction of unnecessary expenses enhances the profit	2.72
7	Expanding the sell increases profit	3.26
8	Quality is always preferred over quantity	3.99
9	Products with good quality is always preferred	2.96
10	Performance of agripreneurial unit depends on quality of the product	2.33
11	Agripreneurial units having quality products face less competition in the market	2.72
12	Agripreneurial units having good quality products attract consumers	3.51
13	Agripreneurial units with loyal customer base performs well	3.82
14	Maintaining good customer relation adds in performance of the unit	2.79
15	Repeated purchase from the customers indicates good customer relationship	3.11
16	Good behaviour with customers enhances sale of the agripreneurial unit	2.66
17	Good employee relationship maintains positive environment in agripreneurial unit	3.51
18	Employee satisfaction plays vital role in performance of the agripreneurial unit	1.94
19	Efficient agripreneurial units make use of their resources judiciously	2.87
20	Expansion of agripreneurial unit signifies growth	3.64
21	Growth adds income and profit of the agripreneurial unit	4.05
22	Growth can be measured from customer retention rate	3.62
23	Market share is associated with growth of the entrepreneurial unit	3.97
24	Research and development is necessary for better performance of the agripreneurial unit	3.34
25	Innovativeness of the product multi folds the entrepreneurial performance	3.60
26	Innovative products need small scale market testing before commercial production	3.96
27	Innovative product must have relative advantage	3.87
28	Innovation must be in accordance to the customers for better performance	4.26
29	Locally available resources need to be utilised in the agripreneurial unit	3.67
30	By products from the farm are used for further product development	4.06
31	Optimal utilisation of resources enhances performance	3.78
32	Skills of human being is also included as a resource	3.08
33	Agripreneurial Performance encourages other farmers to establish their venture	3.16
34	Availability of financial institutions strengthen performance	3.62
35	Favourable government policies affect performance of the agripreneurial unit	3.41
36	Good agripreneurial infrastructure enables good performance	3.96
37	Satisfaction of the agripreneurs is related with monetary performance of the agripreneurial unit	3.64
38	Mental health is balanced by good performance of the entrepreneurial unit	3.21
39	Personal life and family life is as important as of the agripreneurial performance	4.14
40	Psychological traits get affected by the performance of the agripreneurial unit	3.77

standardize the developed scale both reliability and validity was confirmed and calculated.

Validity of the scale

Validity of the scale is assured by testing content validity. Content validity assured when the content of individual item or whole items represents the content to be measured. As the content of the scale vividly covered through various literature and expert opinion related to performance of agripreneuers, thus it was assumed that the agripreneurial performance scale satisfies the content validity and the tool is valid for measuring what it is meant to measure.

Reliability of the scale

Split & Half method was used to measure reliability of the scale (Shelar et al., 2022 &Vavilala et al., 2024). The statements were differentiated in to two groups based on odd and even number of items and administered to 32 respondents. Two sets of scores were used to obtain reliability. The Pearson's product moment correlation was used to calculate correlation. The value is 0.81. which was further verified by using Spearman's Brown formula and the reliability coefficient was 0.89. The Cronbach alpha value yielded 0.83, which was calculated using SPSS 26, the value indicating high reliability of the instrument.

DISCUSSION

Enormous studies have conducted in the field of agripreneurship/entrepreneurship focusing on skill, attitude and perception of agripreneurs/entrepreneurs. There was least discussion about the performance of agripreneurs. Based on the performance of the agripreneuers the profit and loss of the venture can be determined. The research aimed to develop and standardise agripreneurial performance scale, a tool which can measure the performance of the agripreneuers.94 statements were collected initially by going through various scientific literature and experts advise. 69 statements were further screened based on the 14-point criteria suggested by Edwards. 46 statements were selected in relevancy test having overall mean relevancy score 2.34. Further those selected 46 statements sent for item analysis in the non-sampling area. Item analysis is very important step in the development of scale as it identifies the statements based on the degree of differentiation. Responses were collected from 32 persons on a five-point continuum; the score was calculated and arranged in ascending order. As suggested by Edwards (1957), 25 per cent of respondents (8 respondents) having high score and 25 per cent of respondents (8 respondents) having low score were selected for calculation of "t" value. 40 statements were selected having t value equal or more than 1.75 (Bird, 1940). Reliability and validity are two important tools to standardise the developed scale. As discussed, earlier reliability implies consistency of the tool irrespective of it's no. of uses. Pearson's corelation value calculated for the scale was 0.81, which was further cross verified by using Spearman's Brown formula and the value yielded 0.89 signifying high reliability of the tool. Cronbach alpha value calculated for the scale was 0.83 signifying high degree of internal consistency (Cronbach, 1951). Discussing about validity, content validity is deployed to assure items in the scale measure the overall domain what it meant to measure. Statements are meticulously collected from various scientific publications, whereas content validity was ensured by the seeking expert opinion. The scale is developed, standardised, validated and tested on the representative sample.

CONCLUSION

The developed agripreneurial performance scale can be a valuable tool to measure performance of the agripreneuers in Indian context. The scale is reliable as per the value of coefficient of reliability. Judgement's opinion is considered and scientific literature were considered while selecting the statements which signifies the content validity of the developed scale. By satisfying all reliability and validity norms the scale can be considered as a standardised tool, which can be used by the researchers, policy makers as well as agripreneurs. It can also be used as a powerful intervention by various stakeholders. This tool can efficiently measure performance of agripreneurs through which we can get a meaningful insight of agripreneurial climate and contribution of agripreneurs in Indian economy.

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