

RESEARCH ARTICLE

Construction of an Index to Measure Agripreneurship Behavior of Open Distance Learners in Tamil Nadu

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ABSTRACT

Agriculture provides the raw materials necessary for the production of secondary goods, other commodities for export, and agricultural and horticultural products to satisfy the necessities of man. While agripreneurship makes the sector more attractive and profitable. Apart from increasing the socio-economic status of the country, agripreneurship paves the way for farmers to increase their living standards, generate employment opportunities for the unemployed and underemployed, and ensure food and nutritional security. In this connection, it is essential to promote agripreneurship programs and schemes, but they require an understanding of the entrepreneurship behavior of agripreneurs. In this regard, the present study constructed an entrepreneurship behavior index based on ten dimensions, such as leadership skills, planning skills, technical skills, business management or networking skills, financial skills, personality skills, motivation skills, decision making skills, communication skills, and problem-solving skills. The developed index was tested for reliability and found to be 0.89. This implies that this index can be used to measure the entrepreneurship behavior index of agripreneurs.

Keywords: Agripreneurship behavior, Index, Leadership, Skills, Behavior Index, Business management, Planning skills

INTRODUCTION

Being an agriculturally based country, agriculture serves as the major source of livelihood (Sharma and Jain, 2011) for more than two-thirds of the population of India. At the time of independence, agriculture contributed more than half of the National Income, whereas more than 70 per cent of the total population of India relies on agriculture for their livelihood (Kumar, and Goyal 2019). In this technologically advanced and modernized world, every sector has encountered transition, and agriculture is no exception. Similarly,

agriculture shifted from the traditional food security to a nutrition-oriented sector. Agripreneurship paves the way to enrich the agricultural products and their byproducts through fortification. It not only ensures nutrition security, but also increases the income of the farmer and increases employment opportunities for the unemployed and underemployed. In this regard, the Government of India has implemented several measures to encourage the establishment of startups and agro-based industries. As entrepreneurial

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competencies enable better use of raw materials and other necessary resources, which leads to improved quality of work in the enterprises. In addition, assessing the entrepreneurial behavior of agripreneurs helps to understand and improve entrepreneurship education and support programmes by the government. This will ultimately facilitate formulating entrepreneurship-related policies and schemes.

A study by Shirur *et al.*, (2019) developed a tool to measure the entrepreneurial behavior of mushroom growers based on eleven dimension such as innovativeness, achievement motivation, economic motivation, technical competency, decision making ability, risk bearing ability, information seeking behavior, scientific orientation, leadership ability, management orientation and marketing strategy. Madhumitha *et al.*, (2020) studied the entrepreneurial behavior of women agripreneurs in Namakkal district and reported that nearly half of the women agripreneurs had a medium level of entrepreneurial behavior. Similarly, Elakkiya and Asokhan (2021) developed a tool to measure entrepreneurial skill among agripreneurs and identified seven important indicators to measure agripreneur skill, such as marketing skills, psychological magnitude, managerial skill, behavioral skill, technical skill, communication competency, and cognitive skill. While Singh and Sharma (2021) revealed that more than one-third of the trained entrepreneurs of Northern Karnataka had a medium level of entrepreneurial behavior. Based on the previous literature, several dimensions and

statements were identified to construct an index to measure the entrepreneurial behavior of agripreneurs.

METHODOLOGY

The present study aims to construct an index to measure the agripreneurship behavior among graduates. An index is a technique of totaling or reducing a single composite series of data on a number of distinct but related variables expressed in different units and measurements. In this connection, the agripreneurship behavior index is an index designed to measure or assess the behavior of agripreneurs, such as leadership skills, planning skills, technical skills, business management or networking skills, financial skills, personality skills, motivation skills, decision-making skills, communication skills, and problem-solving skills.

1. Identification of Indicators

In order to construct the agripreneurship behavior index, relevant and possible statements that measure the agripreneurship behavior were identified. The identified indicators were planning skills, leadership skills, communication skills, decision making skills, financial skills, personality skills, motivation skills, and problem-solving skills, and several other dimensions were identified through previous literature, extension experts, and researchers. The identified and developed statements were edited according to the nature of the study, based on the informal criteria given by Edwards (1957), and finally, 102 statements were developed.

Table 1. List of statements selected for the study

S. No.	Agripreneurship behavior index
I	Leadership skills
1	I can guide other interested people.
2	I can get the work done through others.
3	I will motivate my employees for their best performance.
4	*I am afraid that my employees might not listen to my suggestions
5	*I will never ask for feedback from my employees to improve myself
6	I will ask for feedback from my employees to improve myself.
7	I will recognize my employees when they have done their job well.
8	I will support my employees to advance in their careers
9	I will delegate the appropriate responsibilities and competence needed when assigning tasks.
10	I will follow a democratic style of leadership.
11	Though I am a friendly leader, I won't compromise on work quality.



II Problem-solving skills

- 1 *I am not good enough atproblem-solving among employees
- 2 *I am disappointed when I meetany failure
- 3 *I am unable to address the problems related to agripreneurship
- 4 I can provide creative solutions to problems.
- 5 I can critically examine the future problems and strategize accordingly.
- 6 Before taking any decision, I will discuss the problems with my employees.
- 7 I will solve the problems after an in-depth analysis.
- 8 I will remove the problems from theirroot cause.
- 9 If there is a problem in my enterprise, I can't do any other work inpeace.
- 10 *I will neglect the problems among my employees

III Communication skills

- 1 I like to exchange opinions and ideas with other people.
- 2 *I am unable to take feedback
- 3 I will be open and inquisitive toothers'suggestions.
- 4 I will actively listen to my employees before giving my suggestion.
- 5 I will be clear and concise in my language.
- 6 I have theability to improve work efficiency through common strategies.
- 7 *I lack communication skills
- 8 *I lack the skills to market my products through social media
- 9 I felt advertisement through social media increases my sales.
- 10 *I find itdifficult to explain my product in an attractive way

IV Planning skills

- 1 I will plan the production process based on future trends.
- 2 * I don't have an alternate plan to manage inthe eventof an emergency/contingency
- 3 I will manage the time effectively by prioritizing the activities.
- 4 I will plan the entire functioning of my enterprise even in my absence.
- 5 *I feel that planning has a role in the effective utilization of resources
- 6 I will plan the entire activities that need to be carried out a month before
- 7 *As I had planned everything earlier, I couldn't adapt to the changing needs
- 8 I can turn the practical applicability of ideas into reality.
- 9 *When I couldn't carry out the planned activities, I consideredmyself anincapable person
- 10 *I never carried out monthly review meetings to assess the company's performance

V Decision-making skills

- 1 I will make sure that my decision will have a positive effect on people.
- 2 I will be responsible for my decisions.
- 3 I can understand the effect of my decisions.
- 4 I will make decisions based on future trends.
- 5 I will decide based on consumer needs.
- 6 I will gather relevant information before makingany decision.
- 7 I will analyze the risk involved before makingany decision.
- 8 I will consider the decision based on its potential outcome.
- 9 *I will try to solve the problem rather than considering its impact
- 10 *If I didn't like the decision taken by subordinates, I will be involvedand change



VI Motivation skills

- 1 My family supports my entrepreneurial development.
- 2 I am motivated by my inner self than by external rewards.
- 3 Though I fail, I won't quit
- 4 * I am not bold enough to face the difficulties that arise in managing my enterprise
- 5 * I will never plan any target and work in the flow
- 6 I will set ,challenginggoals to motivate myself.
- 7 If I decide to do something, I will do it, and nothing can stop me.
- 8 I will motivate my employees by providing monthly rewards for completing tasks.
- 9 I will support my employees by organizing events or parties.
- 10 *I will never motivate my employees to complete the task, as it istheir job

VII Personality skills

- 1 I have strong willpower
- 2 I can evaluate the outcome of my decision.
- 3 * I couldn't understand the business environment
- 4 I am ready to take the risk to expand my business.
- 5 * I lack communicationskills
- 6 Even if I fail, I will learn from my mistakes.
- 7 I can balance my work and family.
- 8 I will try to fulfill the commitment that I have made.
- 9 * I cannot tolerate failure
- 10 I always try to think differently while trying to solve a problem.
- 11 Entrepreneurship cannot be taught.

VIII Financial skills

- 1 I can initiate new business activities.
- 2 I know when to invest.
- 3 I can manage the financial aspects of my business.
- 4 I will prepare a budget and decide based on it.
- 5 I prefer to invest rather than savemoney.
- 6 * I have confusionwhile deciding about investments
- 7 * I am afraid to try new ideas as I could lose my investments
- 8 *I am afraid to avail a loan because of the lengthyprocedures
- 9 *I lack the competencies to attract investment
- 10 *I will invest the returns in my enterprise, even if it cannotprovide a salary for my employees

IX Business management or Networking skills

- 1 I identify new opportunities where others do not see them.
- 2 I believethat a successful agripreneur has social recognition.
- 3 I will dedicate time to maintaininga relationship with my employees.
- 4 I will follow up with my customers and maintain a relationship with them.
- 5 *I found itto satisfy my clients
- 6 I will build more contactswhenever I have the opportunity.
- 7 I can understand the consumer'sneeds.
- 8 I know how to manage the production process during a pandemic.
- 9 *I am not confident in attending enterprise-related events or meetings



- 10 *I couldn't adapt to the changing needs, as the management of an enterprise is highly complicated
- X Technical skills**
- 1 I can generate new ideas.
- 2 I know new methods of production.
- 3 I know new methods of marketing to attract customers.
- 4 I know various ways and means to reduce the cost.
- 5 I know my business objectives.
- 6 * I found it difficult to analyze the credibility of the market information
- 7 I can develop my skills and capabilities to improve the performance of my enterprise.
- 8 I felt that quality is essential than innovative packaging.
- 9 I know alternative ways to produce the product when the raw material is unavailable or inadequate.
- 10 *I lack technical expertise in the production process

(* - Negative statements)

2. Relevancy rating of indicators

The edited statements were brought under ten different dimensions to measure the agripreneurship behavior index and sent to 30 judges to obtain their opinion in a five-point continuum from 5 to 1 based on their relative degree of importance as highly important to not at all important for favorable statements, and scoring is reversed for negative statements. Among the

30 judges, 15 provided their response. With at least 10 statements under each dimension, the maximum total score was 505, and the minimum total score was 101.

Under each dimension, the magnitude of the index was assessed based on the following formula,

$$\text{Relevancy weightage} = \frac{\text{Score secured by the individual on respective skills}}{\text{Total possible score obtained by the individual on the respective skills}}$$

Table 2. List of indicators with their relevancy weightage

S No.	Agripreneurship behavior index	Relevancy Weightage
I	Leadership skills	0.87
1	I can guide other interested people	0.92
2	I can get the work done through others	0.90
3	I will motivate my employees for their best performance	0.98
4	*I am afraid that my employees might not listen to my suggestions	0.62
5	*I will never ask for feedback from my employees to improve myself	0.58
6	I will ask for feedback from my employees to improve myself	0.96
7	I will recognize my employees when they have done their job well	0.94
8	I will support my employees to advance in their careers	0.86
9	I will delegate the appropriate responsibilities and competence needed when assigning tasks	0.94
10	I will follow a democratic style of leadership	0.94
11	Though I am a friendly leader, I won't compromise on work quality	0.94
II	Problem-solving skills	0.84
1	*I am not good enough at problem-solving among employees	0.66
2	*I am disappointed when I meet any failure	0.75
3	*I am unable to address the problems related to agripreneurship	0.66
4	I can provide creative solutions to problems	1.02
5	I can critically examine the future problems and strategize accordingly	0.94



6	Before taking any decision, I will discuss the problems with my employees	0.98
7	I will solve the problems after an in-depth analysis	0.92
8	I will remove the problems from their root cause	0.92
9	If there is a problem in my enterprise, I can't do any other work in peace	0.76
10	*I will neglect the problems among my employees	0.78
III	Communication skills	0.83
1	I like to exchange opinions and ideas with other people	0.98
2	*I am unable to take feedback	0.74
3	I will be open and inquisitive to others' suggestions	0.86
4	I will actively listen to my employees before giving my suggestion.	0.94
5	I will be clear and concise in my language	0.90
6	I have the ability to improve work efficiency through common strategies	0.90
7	*I lack communication skills	0.62
8	*I lack the skills to market my products through social media	0.64
9	I felt advertisement through social media increases my sales	0.94
10	*I find it difficult to explain my product in an attractive way	0.76
IV	Planning skills	0.88
1	I will plan the production process based on future trends	0.96
2	*I don't have an alternate plan to manage in the event of an emergency/contingency	0.88
3	I will manage the time effectively by prioritizing the activities	0.98
4	I will plan the entire functioning of my enterprise even in my absence	0.98
5	*I feel that planning has a role in the effective utilization of resources	0.94
6	I will plan the entire activities that need to be carried out a month before	0.84
7	*As I had planned everything earlier, I couldn't adapt to the changing needs	0.78
8	I can turn the practical applicability of ideas into reality	0.88
9	*When I couldn't carry out the planned activities, I considered myself an incapable person	0.80
10	*I never carried out monthly review meetings to assess the company's performance	0.76
V	Decision-making skills	0.88
1	I will make sure that my decision will have a positive effect on people	0.88
2	I will be responsible for my decisions	0.94
3	I can understand the effect of my decisions	0.94
4	I will decide based on the future trends	0.88
5	I will decide based on consumer needs	0.88
6	I will gather relevant information before making any decision	1.02
7	I will analyze the risk involved before making any decision	0.82
8	I will consider the decision based on its potential outcome	0.82
9	*I will try to solve the problem rather than considering its impact	0.82
10	*If I didn't like the decision taken by subordinates, I will be involved and change	0.80
VI	Motivation skills	0.90
1	My family supports my entrepreneurial development	0.92
2	I am motivated by my inner self than by external rewards	0.98
3	Though I fail, I won't quit	0.98
4	*I am not bold enough to face the difficulties that arise in managing my enterprise	0.86



5	* I will never plan any target and work in the flow	0.80
6	I will set challenging goals to motivate myself	0.96
7	If I decide to do something, I will do it, and nothing can stop me	0.94
8	I will motivate my employees by providing monthly rewards for completing tasks	0.84
9	I will support my employees by organizing events or parties	0.84
10	*I will never motivate my employees to complete the task, as it is their job	0.84
VII	Personality skills	0.87
1	I have strong willpower	0.96
2	I can evaluate the outcome of my decision	0.90
3	* I couldn't understand the business environment	0.84
4	I am ready to take the risk to expand my business	0.88
5	* I lack communication skills	0.88
6	Even if I fail, I will learn from my mistakes	0.88
7	I can balance my work and family	0.86
8	I will try to fulfill the commitment that I had taken	0.82
9	* I cannot tolerate failure	0.82
10	I always try to think differently while trying to solve a problem	0.88
11	Entrepreneurship cannot be taught	0.80
VIII	Financial skills	0.86
1	I can initiate new business activities	0.94
2	I know when to invest	0.84
3	I can manage the financial aspects of my business	0.84
4	I will prepare a budget and decide based on it	0.94
5	I prefer to invest rather than save money	0.94
6	* I have confusion while deciding about investments	0.92
7	* I am afraid to try new ideas as I could lose my investments	0.76
8	*I am afraid to avail a loan because of the lengthy procedures	0.78
9	*I lack the competencies to attract investment	0.84
10	*I will invest the returns in my enterprise, even if it can't provide a salary for my employees	0.80
IX	Business management or Networking skills	0.87
1	I identify new opportunities where others do not see them	0.96
2	I believe that a successful agripreneur has social recognition	0.92
3	I will dedicate time to maintaining a relationship with my employees	0.90
4	I will follow up with my customers and maintain the relationship with them	0.96
5	*I found it difficult to satisfy my clients	0.78
6	I will build more contacts whenever I have the opportunity	0.88
7	I can understand the consumer's needs	0.88
8	I know how to manage the production process during the time of the pandemic	0.84
9	*I am not confident in attending enterprise-related events or meetings	0.82
10	*I couldn't adapt to the changing needs, as the management of an enterprise is highly complicated	0.78
X	Technical skills	0.89
1	I can generate new ideas	0.94



2	I know new methods of production	0.90
3	I know new methods of marketing to attract customers	0.88
4	I know various ways and means to reduce the cost	0.86
5	I know my business objectives	0.90
6	* I found it difficult to analyze the credibility of the market information	0.84
7	I can develop my skills and capabilities to improve the performance of my enterprise	0.90
8	I felt that quality is essential than innovative packaging	1.00
9	I know alternative ways to produce the product when the raw material is unavailable or inadequate	0.88
10	* I lack technical expertise in the production process	0.80

3. Selection of indicators

Accordingly, indicators with a relevancy weightage of more than 0.85 were selected for the study.

Table 3. List of statements selected for the study

S. No.	Agripreneurship behavior index
I	Leadership skills
1	If I am an agripreneur, I can get the work done through others.
2	If I am an agripreneur, I will recognize my employees when they have done their job well.
3	Though I am a friendly leader, I won't compromise on work quality.
II	Problem-solving skills
1	* If I am an agripreneur, I might not be good enough at problem-solving among my employees
2	If I am an agripreneur, I will critically examine the future problems and strategize accordingly.
3	If I am an agripreneur, I will remove the problems from their root cause.
III	Communication skills
1	If I am an agripreneur, I will actively listen to my employees before giving my suggestion.
2	If I am an agripreneur, I will use advertisement through social media to increase my sales.
3	* If I am an agripreneur, I might find it difficult to explain my product in an attractive way
IV	Planning skills
1	* Even if I become an agripreneur, I don't have an alternate plan to manage in the event of an emergency/contingency
2	If I am an agripreneur, I will plan the entire functioning of my enterprise even in my absence.
3	* If I become an agripreneur, I know that planning plays a role in the effective utilization of resources
V	Decision-making skills
1	If I become an agripreneur, I will make sure that my decision will have a positive effect on people.
2	* If I become an agripreneur, I will try to solve the problem rather than considering its impact
3	* If I didn't like the decision taken by subordinates, I will be involved and change
VI	Motivation skills
1	Though I fail, I won't quit
2	If I am an agripreneur, I will set challenging goals to motivate myself.
3	If I decide to do something, I will do it, and nothing can stop me.
VII	Personality skills
1	If I become an agripreneur, I can evaluate the outcome of my decision.
2	Even if I fail, I will learn from my mistakes.
3	If I become an agripreneur, I will try to fulfill the commitment that I had taken.



VIII Financial skills

- 1 If I become an agripreneur, I will prepare a budget and decide based on it.
- 2 * If I become an agripreneur, I won't try new ideas, as I could lose my investments
- 3 * If I become an agripreneur, I won't avail a loan because of the lengthy procedures

IX Business management or Networking skills

- 1 If I become an agripreneur, I will identify new opportunities that others do not see.
- 2 If I become an agripreneur, I will follow up with my customers and maintain a relationship with them.
- 3 * If I become an agripreneur, I might find it difficult to satisfy my clients

X Technical skills

- 1 If I become an agripreneur, I can generate new ideas.
- 2 If I become an agripreneur, I know various ways and means to reduce the cost.
- 3 * If I become an agripreneur, I feel difficult to analyze the credibility of the market information

(* - Negative statements)

Reliability and validity

Reliability: Test-retest method

The final 30 statements, which aim to assess the agripreneurship behavior among graduates, were administered on a five-point continuum scale to 30 degree holders of different disciplines. Later on, after 15 days, again the test was administered to the same 30-degree holders, which resulted in two sets of scores. The 'r' (correlation coefficient) value was found to be 0.89, which represents a significant correlation at the 1 percent level. Hence, the constructed agripreneurship behavior index would achieve its purpose.

Validity: Content validity

The content of the developed index intends to assess the agripreneurship behavior of graduates. Thus, the constructed scale was found to have reliability and validity; thus, it can serve as a standard tool to assess the agripreneurship behavior index among graduates.

CONCLUSION

The developed entrepreneurship behavior index has a reliability score of 0.89 and intends to measure its content. Hence, the developed entrepreneurship behavior index has the ability to measure the entrepreneurship behavior of agripreneurs, which helps to understand and formulate entrepreneurial programs, policies, and schemes to improve the environment for entrepreneurship. Further, the developed index helps the policymakers, researchers, and scientists to measure the entrepreneurship behavior of agripreneurs. The entrepreneurship behavior index developed in this study is a pioneering

tool that offers a reliable and valid means to assess and enhance the agripreneurial capabilities of open distance learners. By leveraging this index, stakeholders can effectively promote agripreneurship, contributing to sustainable agricultural development and improved socio-economic conditions for farmers in Tamil Nadu and beyond.

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