

A SCALE TO MEASURE ENTREPRENEURIAL TRAITS OF MUSHROOM GROWERS

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ABSTRACT

In the absence of a suitable scale to measure the entrepreneurial traits of mushroom growers in relation to mushroom production technology in the Jammu region of Jammu and Kashmir (UT), there was a need to construct an entrepreneurial traits scale. Therefore, effort was made to construct a scale to measure the entrepreneurial traits of mushroom growers in relation to mushroom production technology. For the same, 39 statements covering eight traits namely, achievement motivation, decision making ability, economic motivation, risk taking ability, self-confidence, locus of control, planning ability and cosmopolitanism were put together. These statements illustrated the entrepreneurial traits of mushroom growers. Thirty statements were concluded in the final scale. The developed scale will be useful in identifying and studying mushroom entrepreneurs, in shaping government policies and in designing training and seminars through educational and research institutions. This scale will be very advantageous and convenient for researchers, to examine the entrepreneurial characteristics of mushroom growers. This scale can be useful to various financial institutions such as NABARD, MANAGE, govt. of India in setting criterion while granting loans to entrepreneurs.

Keywords: Entrepreneurship, traits, mushroom, scale

INTRODUCTION

Mushrooms have always been viewed as high medicinal and nutritional food around the world as they are consumed as medicine in Asian countries; also their medical aspects are being researched upon (Halpern and Miller, 2002). The major portion of market is led by button mushroom in 2019 and it has many health benefits (Globenewswire, 2020). World production increased to 43 MT in 2018-19 (Singh et al., 2020).

In India, total mushroom production was 225 million kg (Manjit et al., 2021). Over 620 MT of agricultural waste is being produced by India and this waste can be put into some use via mushroom cultivation which helps in promoting nutritious aid (Poppe, 2000). Temperate regions of Himachal Pradesh, Jammu and Kashmir (UT) provided suitable climatic conditions for the growth of white button mushrooms (*Agaricus spp.*) whereas other mushroom species such as *Pleurotus spp.*, *Calocybe spp.* etc are best suited for tropical and sub-tropical regions (Raman et al., 2018).

The agro-climatic conditions in Jammu and Kashmir (UT) are quite favourable for mushroom cultivation throughout the year and provide a great opportunity to the farmers for mushroom cultivation. Systematic mushroom cultivation in Jammu region started in 1972 with 500 trays

of mushrooms and a production of about 5 quintals. The total mushroom production of the Jammu region is 1700 tonnes, of which mushrooms account for more than 90 percent. (Anonymous, Production Statistics data, Department of Agriculture, GOI, 2020-21)

Entrepreneurship is very crucial for the overall social change and advancement of the society (Patel et al., 2023; Ekhande et al., 2023). An entrepreneur is a person who arranges, regulates and sways the events of a business or a venture and amalgamates the productive resources in order to supply goods and render services. Entrepreneurial behaviour is highly moved by individual, social and experimental factors (Patel et al., 2023; Gulkari and Dohta, 2022; Khandave et al., 2022; Rao, 1985).

Rural India is facing many problems such as hunger and malnutrition, fragmentation of land holdings, reducing soil fertility, unemployment, poverty and lack of income generating opportunities. With farmers surrounded by such major problems, mushroom entrepreneurship shows a ray of light (Verma, 2014). The per capita intake of mushrooms in India is very less (30g per year) as compared to western countries (4000g). Therefore, there is need to encourage mushroom entrepreneurship in our country (Wakchaure, 2011).

Mushroom cultivation does not requisitely need arable land as it can be practiced in a single room and can use aerial space. It does not require high investment, heavy use of chemicals or modern technology. Therefore, it proves to be a highly cost-effective, easily practicable and remunerative enterprise and offers, both full and part time employment opportunities to urban as well as to rural marginalized groups (Easin et al., 2017).

Scrutinizing entrepreneurial behaviour is very important as it forms major causative factor for the overall development of entrepreneurs. There are many traits that influence the entrepreneurial behaviour of an individual such as innovativeness, economic motivation, self confidence, achievement motivation etc. Although there is a large body of research on entrepreneurship, the nature of this research varies widely. Considering the importance of mushroom cultivation in India in general and in Jammu and Kashmir (UT) in particular, there is a need for entrepreneurship development in this sector.

OBJECTIVE

To construct and standardize a scale to measure entrepreneurial traits of mushroom growers

METHODOLOGY

The entrepreneurial trait scale was developed and

standardized specifically for the present study area because the scale developed elsewhere is not suitable universally for all the mushroom growers in any study area.

Identification of items

After scrutinizing literature, discussion with expert members and members of advisory committee, eight dimensions were created having 39 statements i.e., achievement motivation, decision-making ability, economic motivation, risk taking ability, self-confidence, locus of control, planning ability and cosmopolitaness. These statements illustrate the entrepreneurial traits of mushroom growers. Further, these statements were rectified in view of criteria suggested by Edwards (1957).

Judges rating

In order to subject these 39 statements for judges rating, as indicated in Table 1, were given to 15 judges. The judges were experts and specialized in the field of academics and were having extensive experience in the field of extension education and mushroom production technology. The judges were requested to indicate their judgment on each statement on respective continnum. The judges were asked to make any desirable modification in the scale. Thus, the responses given by the judges were considered for the ultimate scale construction.

Table 1: Statement wise relevancy weightage (RW) and relevancy percentage (RP) of components of entrepreneurial traits of mushroom growers

Sr. No.	Dimensions of entrepreneurial traits	RP	RW
1	Achievement motivation It is defined as the desire for excellence to attain a sense of personal accomplishment. The instrument will consist of five statements and each statement will be measured on a five point continuum Likert scale viz., strongly agree, agree, undecided, disagree and strongly disagree with scores 5, 4, 3, 2 and 1, respectively that will be assigned by the respondents to achievement motivation scale items administered to them. Thus, the total score for each mushroom entrepreneur on his achievement motivation will range from 5 to 25.		
	After 5 years, I will be a well known mushroom entrepreneur	0.73	73
ii	My desire is to be a successful mushroom entrepreneur	0.92	92
iii	I feel my success depends upon my hard work in mushroom enterprise	0.88	88
iv	In accomplishing a task, I like to do it much better than other mushroom entrepreneurs	0.90	90
v	I like to earn more profit	0.92	92
2	Decision making ability It is defined as the degree of weighing the available alternatives in terms of their desirability and their likelihood and choosing the most appropriate one, for achieving maximum profit on mushroom farming. The instrument will consist of ten statements. The response categories for each statement will be ‘not considered’, ‘considered after consultation with others’ and ‘considered independently’ with scores 3, 2 and 1, respectively. Thus, the possible score for each respondent on his decision- making ability will range from 10 to 30.		

Sr. No.	Dimensions of entrepreneurial traits	RP	RW
i	Methods of composting	0.77	77
ii	Methods of spawning	0.75	75
iii	Spawn quality	0.77	77
iv	Preparation of casing soil	0.71	71
v	Harvesting and processing	0.82	82
vi	Preservation of mushrooms	0.71	71
vii	Value addition	0.75	75
viii	Crop protection measures	0.77	77
ix	Marketing of produce	0.82	82
x	Finance	0.80	80
3	Economic motivation It is defined in terms of the extent to which a mushroom grower is oriented towards profit maximization and the relative value placed by him on monetary gains. The instrument will consist of three statements and will be measured on a five point continuum Likert scale viz., strongly agree, agree, undecided, disagree and strongly disagree with scores 5, 4, 3, 2 and 1, respectively that will be assigned by the respondents to economic motivation scale items administered to them. Thus, the total score will range from 3 to 15.		
i	A mushroom entrepreneur should work towards high yield and maximum profit	0.94	94
ii	A mushroom entrepreneur should practice round the year mushroom cultivation in comparison to growing only single crop in a year	0.73	73
iii	A mushroom enterprise provides additional economic assistance to the family of mushroom grower	0.93	93
4	Risk bearing capacity It is defined as the degree to which a mushroom grower is oriented towards risk and uncertainty and has courage to face the problems emerging from time to time in mushroom cultivation. The instrument will consist of four statements. The responses will be obtained on a three- point continuum viz., 'agree', 'undecided' and 'disagree'. A weightage of 3, 2, and 1, respectively will be assigned to the response categories in case of positive statements and scoring will be reversed for negative statements. Statement number 1 and 3 are positive, while 2 and 4 are negative statements. The total score will range from 4 to 12.		
i	A mushroom entrepreneur should take greater risk than the average farmers	0.75	75
ii	A mushroom entrepreneur should try new mushroom practices only after successfully used by other mushroom entrepreneur	0.42	42
iii	Trying and entirely new practice in mushroom enterprise involves risk orientation but it is worth	0.91	91
iv	Mushroom enterprise is full of risk	0.71	71
5	Self confidence Self confidence is the degree to which a mushroom grower believes in one' own abilities. The instrument will consist of six statements. The responses will be obtained on dichotomous continuum i.e., in 'yes' and 'no' form by assigning the scores of 1 and 0, respectively for positive questions and it will be reversed for negative questions. The question number 3 and 5 are positive questions and 1, 2, 4 and 6 are negative questions. The total score will range from 0 to 6.		
i	Do you have difficulty in saying the right opinion at the right time?	0.60	60
ii	Do you frequently feel unworthy?	0.86	86
iii	Can you adjust readily to new situation?	0.86	86
iv	Do you feel it hard to keep your mind on a task/ job?	0.60	60

Sr. No.	Dimensions of entrepreneurial traits	RP	RW
v	Do you have enough faith in yourself to make profit in mushroom enterprise?	0.93	93
vi	Do you have relied on others to carry out all mushroom production activities?	0.80	80
6	Locus of control It is defined as the extent to which a mushroom grower believes that he can control events that affect him. The instrument will consist of three statements. It will be measured on a five point continuum Likert scale viz., strongly agree, agree, undecided, disagree and strongly disagree with scores 5, 4, 3, 2 and 1, respectively that will be assigned by the respondents to locus of control scale items administered to them. The total score will range from 3 to 15.		
i	When I make plans I am almost certain to make them work	0.86	86
ii	If I work hard I can successfully achieve what I want	0.89	89
iii	My past experience will be very valuable in starting an enterprise	0.93	93
7	Planning ability It is defined as the ability of the mushroom grower to think about the future or mentally anticipate the right way to carry out the mushroom production activities. The instrument will consist of five statements. It will be measured on a two point continuum as 'Yes' and 'No' by assigning score 1 and 0, respectively. The total score will range from 0 to 4.		
i	Preparation of calendar of operations of mushroom activities	1.00	100
ii	Estimating in advance, the capital requirement for mushroom production	1.00	100
iii	Consulting in advance with experts about quality mushroom production	0.93	93
iv	Estimating in advance, compost, spawn, plant protection chemicals, bags and labour required for mushroom production	0.73	73
8	Cosmopolitaness It is the degree or extent to which the mushroom grower possesses cosmopolitan traits. The instrument will consist of four statements and responses will be obtained on three point continuum viz., 'agree', 'undecided', 'disagree' by assigning a weightage of 3, 2 and 1, respectively for positive statements while, it will be reversed for negative statements. There are six statements out of these, the statement number 1 and 5 are negative statements whereas 2 and 4 are the positive statements. The total score will range from 4 to 12.		
i	There is no need to collect additional information from outside of the village for successful mushroom entrepreneur	0.91	91
ii	A mushroom entrepreneur should try to get information on mushroom management practices from outside of his village	0.93	93
iii	Keeping contact with progressive mushroom entrepreneur is useful for successfully managing the mushroom enterprise	0.97	97
iv	Visiting the mushroom production specialist is waste of time	0.86	86

Selection of items

Further, on the basis of judges rating, the relevant scores of all 39 statements were calculated independently by using the procedure provided by Padma (2001):

Relevancy percentage

It was calculated by adding the score of each statement measured on different continuum which were further converted into percentage.

Relevancy weightage

It is defined as the ratio of actual score obtained by a statement to the maximum possible score of that statement.

This criterion was used to assess the relevance of the statements. Further, the statements which received the relevancy percentage of more than 75 percent, relevancy weightage of more than 0.75 were retrieved and, rightly modified and re-scripted keeping in the view the judgment given by the judges. The final scale consisted of 30 statements as presented in Table 2.

Table 2: Final statements for entrepreneurial traits scale**(1) Achievement motivation**

Sr. No.	Statements	SA (5)	A (4)	UD (3)	D (2)	SD (1)
i	In accomplishing a task, I like to do it much better than other mushroom entrepreneurs					
ii	My desire is to be a successful mushroom entrepreneur					
iii	I feel my success depends upon my hard work in mushroom enterprise					
iv	I like to earn more profit					

SA- Strongly Agree; A- Agree; UD- Undecided; D-Disagree; SD- Strongly Disagree

(2) Decision making ability

Sr. No.	Statements	Not considered	Considered after consultation with others	Considered independently
i	Methods of composting			
ii	Methods of spawning			
iii	Spawn quality			
iv	Harvesting and processing			
v	Value addition			
vi	Crop protection measures			
vii	Marketing of produce			
viii	Finance			

(3) Economic motivation

Sr. No.	Statements	SA (5)	A (4)	UD (3)	D (2)	SD (1)
i	A mushroom entrepreneur should work towards high yield and maximum profit					
ii	A mushroom enterprise provides additional economic assistance to the family of mushroom grower					

SA- Strongly Agree; A- Agree; UD- Undecided; D-Disagree; SD- Strongly Disagree

(4) Risk bearing capacity

Sr. No.	Statements	Agree (3)	Undecided (2)	Disagree (1)
i	A mushroom entrepreneur should take greater risk than the average farmers			
ii	Trying and entirely new practice in mushroom enterprise involves risk orientation but it is worth			

(5) Self confidence

S. No.	Statements	Yes	No
i	Do you frequently feel unworthy?		
ii	Can you adjust readily to new situation?		
iii	Do you have enough faith in yourself to make profit in mushroom enterprise?		
iv	Do you have relied on others to carry out all mushroom production activities?		

(6) Locus of control

Sr. No.	Statements	SA (5)	A (4)	UD (3)	D (2)	SD (1)
i	When I make plans I am almost certain to make them work					
ii	If I work hard I can successfully achieve what I want					
iii	My past experience will be very valuable in starting an enterprise					

SA- Strongly Agree; A- Agree; UD- Undecided; D-Disagree; SD- Strongly Disagree

(7) Planning ability

Sr. No.	Statements	Yes	No
i	Preparation of calendar of operations of mushroom activities		
ii	Estimating in advance, the capital requirement for mushroom production		
iii	Consulting in advance with experts about quality mushroom production		

(8) Cosmopolitaness

Sr. No.	Statements	Agree (3)	Undecided (2)	Disagree (1)
i	There is no need to collect additional information from outside of the village for successful mushroom entrepreneur			
ii	A mushroom entrepreneur should try to get information on mushroom management practices from outside of his village			
iii	Keeping contact with progressive mushroom entrepreneur is useful for successfully managing the mushroom enterprise			
iv	Visiting the mushroom production specialist is waste of time			

(d) Reliability of the scale

According to Kerlinger (1967) “Reliability is the accuracy or precision of measuring instrument”. Every newly constructed scale has to be tested for its reliability before its use. Here, the reliability was measured by using the test retest method. The scale was administered on 30 mushroom growers from a non- sampled area twice over a period of time. The responses were rated on respective continuums. By following this procedure, two sets of ratings were gained which were further correlated with each other. The results have shown that the correlation coefficient for the two sets of scores was 0.78. Further, the reliability coefficient was determined by using the Spearman-Brown formula which is as follows:

Spear-Brown formula

$$r_{tt} = \frac{2r_{oe}}{1 + r_{oe}}$$

Where, r_{oe} = (r) Karl Pearson correlation co-efficient.

r_{tt} = The reliability of the original test.

The value of r_{tt} came to be 0.87 indicating reliability of the scale.

(e) Validity of the scale

The term validity means ‘truth’ or ‘fidelity’. Lindquist (1951) defined validity of a test as the accuracy with which it measures that which is intended to measure. Validity therefore refers to the degree to which a test measures what it claims to measure. Since the content of the items used in the scale was attained by reviewing the literature, consulting the experts from extension education and mushroom production technology and responses of the judges rating it was assumed the results obtained by administering the scale measured the entrepreneurial traits of mushroom growers and not anything else.

RESULTS AND DISCUSSION

Table 2 shows the final scale that will be administered to the mushroom growers of the present study area. The developed scale is highly valid and reliable. The result of the study is in conformity with the findings of Shirur et al. (2015).

CONCLUSION

Application of this standardized tool by the researchers will provide the insight of major traits affecting the entrepreneurial behavior of mushroom growers. Further, the finding based on this research tool will help the policy makers, administrators and other stakeholders in the promotion and popularization of mushroom Entrepreneurship Development Programmes (EDPs) which will ultimately lead to adoption of mushroom cultivation among the farmers. Thus fulfilling the goal of improving, the socio- economic status of the mushroom growers.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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