International Journal of Farm Sciences **5(1)** : 188-193, 2015

A scale to measure entrepreneurial potential of beekeepers

M ESAKKIMUTHU and VLV KAMESWARI

Department of Agricultural Communication
GB Pant University of Agriculture and Technology
Pantnagar 263145 Uttara Khand, India
Email for correspondence: esakkimuthu418@yahoo.com

ABSTRACT

Beekeeping is an important agro-based enterprise. But India's contribution to the global production is very meagre. Among Indian states Tamil Nadu is the second largest producer of honey. Several NGOs, cooperative societies, state agricultural universities etc are promoting beekeeping as an agro-based enterprise in the state. The study was conducted to know the entrepreneurial potential of beekeepers. This article describes the scale that was developed to measure the entrepreneurial potential of beekeepers. The scale consisted of 30 statements and pilot study indicates that it is reliable, consistent and can be adopted in other Indian states also.

Keywords: Entrepreneurial potential; beekeepers; validity; reliability

INTRODUCTION

Mahatma Gandhi reasoned that while large scale industries can increase production they cannot provide employment to millions of poor rural Indians. According to him the crying need of India was production by masses through rural entrepreneurship and not mass production by heavy industries. The advantages of rural entrepreneurship include enhanced self-employment opportunities, reduction in unemployment, expanding employment avenues in backward areas and bringing in a balanced regional development to alleviate poverty. Hence entrepreneurship development among rural people is increasingly being recognized as a means of overall development of rural community.

Tamil Nadu has a high potential for apiculture due to large scale cultivation of horticultural crops which are the main source of nectar. At present beekeeping in Tamil Nadu is mainly aimed at production of honey and wax. Apiculture in the state can be made more profitable by producing related products such as royal jelly, bee toxin, pollen and propolis which have high demand in the international market. Promoting beekeeping among farmers is one of the priority areas in the state of Tamil Nadu. Several cooperative societies, non-governmental organizations (NGOs) and

state agricultural universities are promoting beekeeping in the state. The National Horticultural Board (NHB) and State Horticultural Mission (SHM) are also playing an important role in promoting apiculture in Tamil Nadu by providing training and inputs at subsidized rates to the beekeepers.

Entrepreneurial potential is the extent to which an individual is capable of becoming an entrepreneur. Entrepreneurial potential was conceptualized in terms of five dimensions viz innovativeness, risk bearing ability, economic motivation, self-confidence and need for achievement. All these five dimensions together reflect the entrepreneurial potential of a person. Even though some studies have been conducted on adoption of beekeeping practices by farmers in Tamil Nadu there are no studies on the extent to which beekeepers turn into entrepreneurs and capability to become an entrepreneur. Information on the entrepreneurial potential would help in enhancing their capabilities through appropriate skill development activities. Hence a study was conducted to find out the entrepreneurial potential of beekeepers and a scale was developed to measure the same.

METHODOLOGY

An accurate measurement is the pillar of a scientific study (DeVellis 2003, Netemeyer et al 2003) and also core point of hypothetical variables (Crook et al 2009, Reynolds 2010). In the present study construction of scale to measure entrepreneurial potential was done in the following stages:

Collection and editing of the statements: In first stage 70 statements were collected. These statements were obtained through review of literature, discussion with experts at Tamil Nadu Agricultural University, extension personnel and officials of Marthandam Beekeeping Society. During the second stage these statements were edited in accordance with the criteria suggested by Edward (1957). At the end of this process 52 statements were retained.

Relevancy test: To find out the relevancy of these 52 statements for inclusion in the scale to measure the entrepreneurial potential of beekeepers relevancy test was administered. The statements were scrutinized after translation into Tamil by a panel of judges to determine the relevancy and screening for inclusion in the final scale. The judges were selected from Tamil Nadu Agricultural University, department of agriculture, regional research station and Marthandam Beekeeping Society. The judges were asked to rate each of the statements on a three point continuum viz relevant, not so relevant and irrelevant with a corresponding score of 3, 2 and 1 respectively. By summing up the score given by each respondent total score of all

the 52 statements was calculated. From this data relevancy percentage, relevancy weightage and mean relevancy scores were calculated using the following method:

a) Relevancy percentage (RP): Relevancy percentage was worked out by summing up the scores of relevant, not so relevant and irrelevant categories which were then converted into percentage.

b) Relevancy weightage (RW): Relevancy weightage was obtained by the formula:

$$RW = \frac{R + NR + IR}{MPS}$$

where RW= Relevancy weightage, R= Relevant, NR= Not so relevant, IR= Irrelevant, MPS (Maximum possible score)= 90

c) Mean relevancy score (MRS): Mean relevancy score was obtained by the formula:

$$MRS = \frac{R + NR + IR}{N}$$

where MRS= Mean relevancy score, N (number of judges)= 30

Using the above three criteria the statements were screened for their final relevancy rating. Statements having relevancy percentage above 75, relevancy weightage above 0.83 and mean relevancy score above 2.2 were considered for inclusion in the scale. By this process 30 statements were isolated.

Standardization of the scale: In the next stage validity and reliability was ascertained for standardization of the scale. Reliability was measured by split-half method.

Reliability: A scale is said to be reliable when it produces results with high degree of consistency when administered to the same respondents at different times. In this study reliability of the scale was determined by split-half method. The scale was administered to 30 stakeholders. They were divided into two halves based on odd-even numbers of statements. The scores on the odd numbered items as well as the scores of the even numbered items of same respondents were correlated using the Pearson's product moment correlation coefficient. The coefficient of internal consistency was worked out using the following formula:

$$r_{oe} = \frac{N\Sigma XY - (\Sigma X)\ (\Sigma Y)}{[N\Sigma X^2 - (\Sigma X)^2]\ [N\Sigma Y^2 - (\Sigma Y)^2}$$

where

N= Number of respondents
X= Value of odd numbered items score
Y= Value of even numbered items score

The r_{oe} value obtained was again correlated by using Spearman Brown formula and thus the reliability was obtained. The formula used was:

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

The obtained r_{tt} value was 0.82 which indicated a high reliability of the scale.

Content validation: The validity of a scale indicates that it measures the variable it is supposed to measure. Content validity is the representativeness or sampling adequacy of the contents, the substance, the matter and topics of a measuring instrument according to (Kerlinger1973). In this study the content validity of the entrepreneurial potential scale was established in two ways. First the items selected for inclusion in scale were based on extensive review of literature. Secondly the opinion of the panel of judges was obtained to find out whether the items suggested were suitable for inclusion in the scale or not.

RESULTS and DISCUSSION

The final scale consisted of 25 positive and 5 negative statements. Response of the beekeepers was collected on a three point continuum viz always, sometimes and never with the scoring 3, 2 and 1 respectively in case of positive statements and the reverse in the case of negative statements (Table 1). Entrepreneurial potential of the respondents was obtained by summing up the responses for all the statements. The maximum possible score was 90 and minimum was 30. Based on their score beekeepers were divided into three categories viz high, medium and low (Table 2).

Table 1. The final entrepreneurial potential scale comprising of 30 statements

S/N	Item	Relevancy percentage	Relevancy weightage	Relevancy mean score
1.	I try to keep myself up to date on information regarding new beekeeping practices	100	1.00	3.00
2.	I try all new beekeeping practices at least once	84.45	0.84	2.54
3.	I feel restless until I have tried out new beekeeping practices that I have heard about	83.34	0.83	2.50
4.	I adopt bee keeping practices followed by my fellow farmers	76.67	0.76	2.30
5.	I am not interested in information on new beekeeping practices	77.78	0.77	2.34
6.	I think training programmes on new bee keeping technologies are a waste of time	82.23	0.83	2.47

7.	I subscribe to literature on beekeeping	83.34	0.83	2.50
8.	I discuss new bee keeping practices with other farmers	86.67	0.87	2.60
9.	I work hard so that I can get more yield and economic returns	92.23	0.93	2.77
10.	Beekeeper cannot be considered successful unless he makes maximum profit	96.67	0.97	2.90
11.	Beekeeping is the better venture than other enterprises	97.78	0.98	2.94
12.	I will consider myself a successful beekeeper only if I make profit out of it	90.00	0.90	2.70
13.	I try only those new beekeeping practices which are likely to help me earn more money	92.23	0.93	2.77
14.	I prefer beekeeping over other activities as it helps me make more money	75.56	0.76	2.27
15.	I like to plan in advance for my beekeeping enterprise	88.89	0.89	2.67
16.	I am always keen to maintain my social status	86.67	0.87	2.60
17.	I like to work hard until I am satisfied with the outcome	91.12	0.92	2.74
18.	I want to succeed in my beekeeping venture as it will prove my worth	80.00	0.80	2.40
19.	I feel very happy when other farmers appreciate new beekeeping practices I am following	78.89	0.79	2.37
20.	My ambition in life is to own one of the largest beekeeping unit in the district	75.56	0.76	2.27
21.	I like to use new beekeeping technologies even it involves a lot of hard work	77.78	0.78	2.34
22.	I would like to close my beekeeping venture as I am not able to give much time to my family	84.45	0.85	2.54
23.	A farmer would be foolish to take up risky ventures	76.67	0.77	2.30
24.	I am willing to take greater risk than others as it will also give me more profits	83.34	0.84	2.50
25.	I will take loan to try out a new beekeeping practice	92.23	0.93	2.77
26.	I feel that there is no difficulty in me achieving targeted honey yield	83.34	0.84	2.50
27.	Mostly, I am sure about my technical abilities with regard to beekeeping	82.23	0.83	2.47
28.	I like to take lead in discussions on beekeeping	83.34	0.84	2.50
29.	I can undertake beekeeping activity on my own rather than taking constant guidance from others	85.56	0.86	2.57
30.	I always try out some new beekeeping practices in my unit	75.56	0.76	2.27

Table 2. Classification of entrepreneurial potential based on the score

Entrepreneurial potential category	Score
Low	30-50
Medium	51-70
High	71-90

CONCLUSION

In a developing country like India which is largely dependent on agriculture beekeeping can be an important agro-based enterprise. While the current product of honey is low it can be improved by encouraging farmers to take up beekeeping on a large scale and providing necessary training inputs. It is essential to know the entrepreneurial potential of beekeepers before providing training and inputs as it would help optimise the resources. The scale developed to measure the entrepreneurial potential in the present study is highly reliable and hence can be used in other parts of India.

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Received: 31.12.2014 ***Accepted: 28.1.2015***