



## Factors influencing entrepreneurial behaviour of farm women involved in vegetable farming: An empirical analysis

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### ABSTRACT

The study was conducted with the objective to identify the factors influencing the entrepreneurial behaviour of farm women in vegetable enterprise in Mandi district of Himachal Pradesh, India. The data collected from 100 farm women of two blocks of the district by personal interview using multi-stage sampling technique revealed that majority of respondents had low to medium level of management orientation, economic motivation, risk orientation, self confidence, moderate to high level of achievement motivation and leadership ability. The majority respondents had low level of utilisation of available assistance, medium level of farm decision making, less innovative and poor level of knowledge about the enterprise. The overall entrepreneurial behaviour of majority respondents (92%) was of low to medium level. Except age and family size, all the personal attributes of the respondents were positively and significantly correlated with overall entrepreneurial behaviour. The regression coefficient of formal education, experience in enterprise, information sources utilization and scientific orientation were significant emphasizing the need to concentrate more on these factors for promoting entrepreneurship development among the vegetable women farmers. Apart, these farm women should be encouraged for formation of groups and made aware of technical knowhow through trainings, demonstrations and exposure visits besides strengthening the marketing facilities in the area. The co-efficient of determination ( $R^2$ ) explained 47.35 per cent of variation in the entrepreneurial behaviour by all the variables together emphasizing the need of identification of other unidentified variables through future research.

**Key words:** Entrepreneurial behaviour, Farm women, Socio personal attributes, Vegetable farming

Entrepreneurship, as a dynamic process and empowering tool, has a crucial role in economic development of a country (Faltin 2001). It is a charismatic concept, widely used and defined “as a creative and innovative response to the environment” (Chandramouli *et al.* 2007). It is an instrument that drives people for economic empowerment through wealth creation, technology development and employment generation (Chegini and Khoshtinat 2011). The importance of entrepreneurship is realized world over as a source of self-employment and economic development of poor (Ali *et al.* 2010). Therefore, the agriculture sector cannot afford to lag behind in development of farming community by adopting

entrepreneurial approach. Doing new things or doing thing that are already done in a new way is a part of entrepreneurial behaviour. Improvement of agribusiness and profitable farming is possible only with effective exploitation of human and material resources. Entrepreneurship is equally beneficial for women in rural areas as it enables them to add to the family income while taking care of their farm, home and agri-enterprise centered tasks. Entrepreneurship development among rural women not only helps to enhance their personal capabilities but also decision making status in the family and society as a whole. Within agriculture sector, horticulture has emerged as an economically rewarding sub sector as it offers the opportunity for diversified livelihood. Besides, it is also playing an increasingly important role in the nutritional security, poverty alleviation and employment generation through production of different kinds of fruits, flowers and vegetables. India is the second largest vegetable producer of the world with 14 per cent share of the total world vegetable production with production of about 162 million tonnes of vegetables in an area of 9.2 million hectare. Himachal Pradesh is an important hilly state of India where both seasonal and off seasonal vegetables are extensively grown. At present, about 79500 hectare area constitutes vegetable cultivation with production level of more than

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15 lakh tonnes in the state (Anonymous 2013). Vegetable cultivation is also emerging as an important farm enterprise in the Mandi district of the state where this enterprise thrives on more than twelve thousand hectare with annual production of 2.19 lakh tonnes. The involvement of the women in vegetable farming is quite high and therefore, this enterprise offers great potential for socio-economic transformation of farm women through entrepreneurship development. However, there are number of interlinked factors that influence the entrepreneurial behaviour of human beings and understanding of these factors is very essential for creating an environment for entrepreneurship development (Amar Nath and Samvel 2008). Entrepreneurial behaviour is a composite variable that cannot be explained by a single trait/attribute but a combination of several traits (Narmatha *et al.* 2002, Nath and Kumar 2008). Understanding the role of these factors is essential for creating an environment which can facilitate the development of entrepreneurial behaviour.

Considering the importance of women involvement in vegetable farming in the region, the present study was undertaken with the specific objective to analyze the entrepreneurial behaviour of farm women, its relationship with socio personal attributes and identify the factors contributing towards entrepreneurial behaviour for development of this enterprise.

## MATERIALS AND METHODS

Ex-post facto research design was used in the present investigation. Considering high involvement of women in vegetable farming in Himachal Pradesh, the study was conducted in Mandi district of the State by adopting a multi-stage sampling technique during the year 2010-13. In the first stage two community blocks namely Gohar and Seraj were selected randomly. Subsequently, a sample of 100 farm women having five years active experience in vegetable farming was drawn from ten randomly selected villages by following proportionate population sampling technique. The study was focused on studying the Entrepreneurial Behaviour (EB) of farm women involved in vegetable farming. The EB was operationalized as cumulative outcome of ten dimensions including Management Orientation (MO), Achievement Motivation (AM), Economic Motivation (EM), Risk Orientation (RO), Self Confidence (SC), Leadership Ability (LA), Utilization of Available Assistance (UAA), Farm Decision Making (FDM), Innovativeness (INNO), and Knowledge Level (KNOW). These dimensions were measured either by using the already developed scales/test or by schedule developed for the purpose. The scores obtained on all dimensions were added and total score was considered as EB of farm women. An index was developed to express the EB by using following formula.

$$\text{Entrepreneurial Behaviour Index (EBI)} = \frac{\sum_{n=1}^{10} T_n}{\sum_{n=1}^{10} M_n} \times 100$$

Where,  $T_n$ , Total obtained score of the component "n";  $M_n$ , Maximum obtainable score of the component "n".

Pearson product-moment correlation coefficient was employed to determine the extent and direction of relationship between the dimensions as well as overall EB and personal attributes of farm women. Multiple regression was used to find out the amount of contribution made by the selected independent variables in explaining the variation in the dependent variable and expressed in the form of equation given below.

$$Y = a + b_i x_i$$

Where, Y, dependent variable (Entrepreneurial behaviour); a = Intercept;  $b_i$  = Regression coefficient;  $x_i$  = Independent variable.

Data were personally collected with the help of a well developed and pre-tested interview schedule. In order to categorise the respondents, the cumulative frequency cube root technique was applied wherever applicable (Singh 1975).

## RESULTS AND DISCUSSION

### Entrepreneurial behaviour of respondents

The findings regarding overall EB (Fig 1) revealed that majority of the respondents (55%) were found to have low level of entrepreneurial behaviour followed by medium (37%) and high (8%) level respectively. The low level of entrepreneurial behaviour of respondents might be due to their less experience, lesser utilization of information sources and lack of technical know-how since majority of the respondents did not receive any formal trainings in this enterprise. However, earlier studies of Solanki *et al.* (2003) and Nath and Kumar (2008) reported medium extent of EB of farm entrepreneurs.

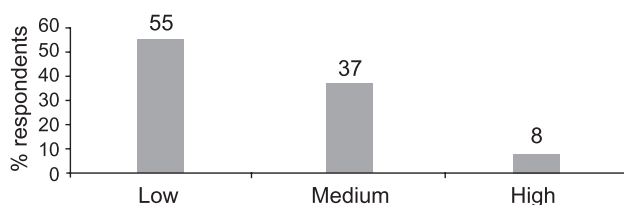


Fig 1 Distribution of respondents according to the extent of entrepreneurial behaviour

The results in respect of various dimensions of EB are presented in Fig 2. It was found that large majority of respondents had low to medium level of management orientation (79%) and economic motivation (81%). The study further revealed that majority of the respondents belonged to moderate to high category of achievement motivation and leadership activity, respectively. This might be due to their enthusiasm, zeal to excel and becoming economically well-off. These factors encourage the individual towards achieving the goals, which one has set for oneself. These findings are in accordance with findings of Nath and Kumar (2008). Calculated risk taking ability and self confidence are also the desirable attributes of an entrepreneur. The results also indicated that majority of the

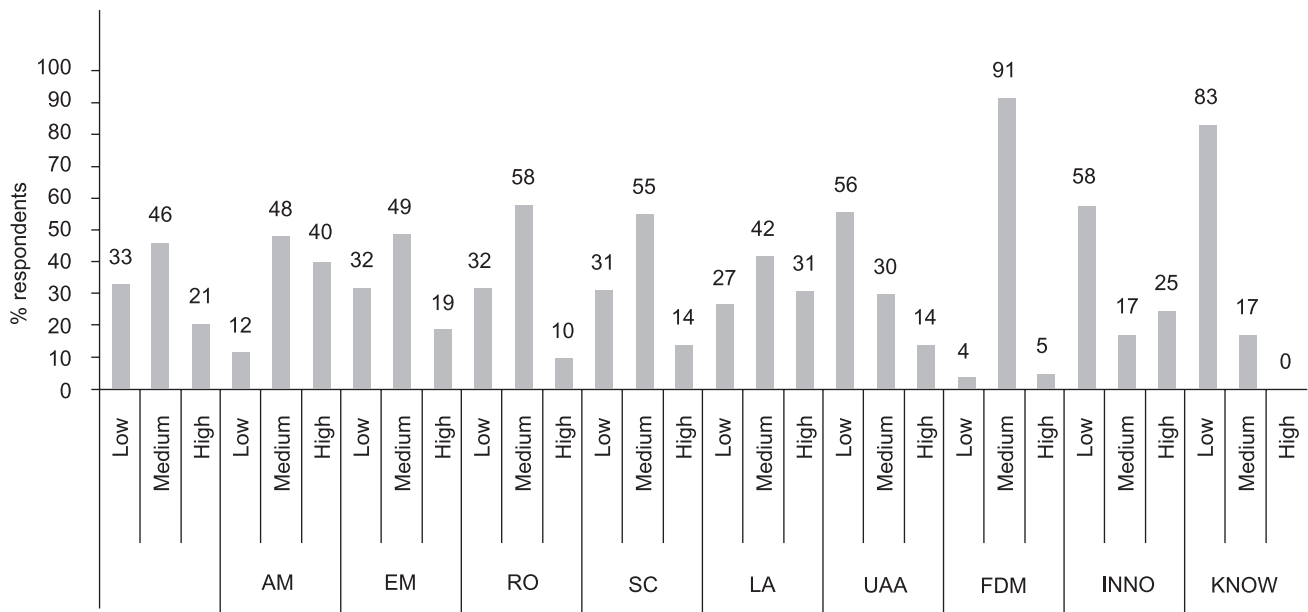


Fig 2 Distribution of respondents according to the dimensions of entrepreneurial behaviour

respondents 58 and 55 per cent belonged to moderate risk taking ability and self confidence category, respectively. Self-confidence is a consistent behaviour pattern which indicates extent of feeling of one's own ability and resourcefulness in carrying out any activity. Higher level of achievement motivation and decision making ability leads to build up confidence in an individual to realize the fruits of one's efforts and gain monetary benefits out of it. Getting recurrent income from vegetable enterprise might have got them more confidence and thus increased their self-confidence. The above findings are in accordance with the findings of Palmurugan *et al.* (2008). The Fig 2 further revealed that majority of respondents had low level of utilisation of available assistance (56%) and innovativeness (58%). Lack of awareness about the different sources of assistance might be the reason for the lesser utilization of available assistance by the respondents. An entrepreneur takes rational decision after weighing of alternatives. Consequently, majority of respondents (91%) were in medium category of farm decision making (Fig 2). Decision making ability is based on the foresight and confidence of an individual. The respondents were full of confidence that might have facilitated them to choose well among the several available alternatives. Ram *et al.* (2012) also reported similar findings. With regard to knowledge level, majority of the respondents (83%) had poor knowledge level. The lack of exposure to training programmes, information sources utilization etc might be the probable reasons for poor level of respondents knowledge about vegetable farming.

#### *Relationship between personal attributes and EB of respondents*

The findings revealed that formal education, social participation, land holding, socio-economic status, size of

enterprise, experience in enterprise, income from enterprise, total annual income, marketing facilities, information sources utilisation, training received and scientific orientation were positively and significantly related with overall EB of respondents (Table 1). It means increase in above characteristics might have increased the EB of respondent or *vice-versa*. The educated persons develop more access to extension agencies, mass media and development organizations for getting the more profit from the enterprise (Patel *et al.* 2004, Sudhakar and Tamilselvi 2007 and Jaisawal and Patel 2012). Social participation helps in interacting and sharing of experiences with each other which resulted into increase in knowledge, leadership ability and self confidence. Further, relatively large holdings, higher socio economic status and large size of enterprise also provide opportunities and potential to try and adopt technological innovations which in turn reflect on the EB (Mundhwa and Padheria 1998, Palmurugan *et al.* 2008, Ram *et al.* 2012). The utilization of information sources and innovativeness might have made respondents more mature and knowledgeable about the marketing system which is required for better decision and management of enterprise. The interaction effect of dimensions of EB with different sources of information that updated respondents' knowledge and skill might be the reason for significant relationship between information sources utilisation and overall EB. Similar findings were also reported by Patil *et al.* (2002). Training received and scientific orientation also exhibited positive and significant relationship with overall EB (Table 1). Training is one of the important instruments by which desired changes in knowledge, attitude, and skills of individuals can be brought for a specific job. The favourable attitude of the respondents towards science and technology to apply scientific practices for increasing the productivity of their enterprise might be the probable reason

Table 1 Correlation between personal attributes and entrepreneurial behaviour of respondents

Characteristics	Correlation coefficient										
	MO	AM	EM	RO	SC	LA	UAA	FDM	INNO	KNOW	Overall EB
Age	-0.285**	-0.094 <sup>NS</sup>	-0.115 <sup>NS</sup>	-0.026 <sup>NS</sup>	-0.047 <sup>NS</sup>	-0.171 <sup>NS</sup>	0.075 <sup>NS</sup>	-0.009 <sup>NS</sup>	0.117 <sup>NS</sup>	0.043 <sup>NS</sup>	-0.074 <sup>NS</sup>
Formal education	0.224*	0.118 <sup>NS</sup>	-0.025 <sup>NS</sup>	0.284**	0.257**	0.169 <sup>NS</sup>	0.010 <sup>NS</sup>	-0.003 <sup>NS</sup>	0.030 <sup>NS</sup>	0.125 <sup>NS</sup>	0.255**
Family size	0.068 <sup>NS</sup>	-0.105 <sup>NS</sup>	-0.051 <sup>NS</sup>	-0.131 <sup>NS</sup>	0.003 <sup>NS</sup>	0.058 <sup>NS</sup>	-0.134 <sup>NS</sup>	-0.068 <sup>NS</sup>	-0.056 <sup>NS</sup>	0.087 <sup>NS</sup>	-0.059 <sup>NS</sup>
Social participation	0.127 <sup>NS</sup>	0.257**	0.154 <sup>NS</sup>	0.196*	-0.185*	0.356**	0.100 <sup>NS</sup>	0.126 <sup>NS</sup>	-0.037 <sup>NS</sup>	0.010 <sup>NS</sup>	0.211*
Land holding	0.156 <sup>NS</sup>	-0.015 <sup>NS</sup>	0.205*	0.063 <sup>NS</sup>	0.045 <sup>NS</sup>	0.192*	0.036 <sup>NS</sup>	-0.120 <sup>NS</sup>	0.338**	0.105 <sup>NS</sup>	0.306**
Socio-economic status	0.164 <sup>NS</sup>	-0.052 <sup>NS</sup>	0.084 <sup>NS</sup>	-0.103 <sup>NS</sup>	0.052 <sup>NS</sup>	0.189*	0.135 <sup>NS</sup>	-0.093 <sup>NS</sup>	0.138 <sup>NS</sup>	0.275**	0.219*
Size of enterprise	0.234**	-0.096 <sup>NS</sup>	0.207 <sup>NS</sup>	0.106 <sup>NS</sup>	0.080 <sup>NS</sup>	0.174 <sup>NS</sup>	0.052 <sup>NS</sup>	-0.110 <sup>NS</sup>	0.214*	0.217*	0.293**
Experience in enterprise	0.066 <sup>NS</sup>	0.028 <sup>NS</sup>	0.087 <sup>NS</sup>	0.144 <sup>NS</sup>	0.000 <sup>NS</sup>	-0.083 <sup>NS</sup>	0.115 <sup>NS</sup>	-0.146 <sup>NS</sup>	0.239**	0.250**	0.202*
Income from enterprise	0.305**	0.024 <sup>NS</sup>	0.079 <sup>NS</sup>	0.217*	0.131 <sup>NS</sup>	0.054 <sup>NS</sup>	0.003 <sup>NS</sup>	-0.223*	0.112 <sup>NS</sup>	0.200*	0.227*
Total annual income	0.158 <sup>NS</sup>	-0.036 <sup>NS</sup>	0.080 <sup>NS</sup>	-0.048 <sup>NS</sup>	0.054 <sup>NS</sup>	0.192*	0.135 <sup>NS</sup>	-0.093 <sup>NS</sup>	0.109 <sup>NS</sup>	0.250**	0.214*
Marketing facilities	0.105 <sup>NS</sup>	-0.114 <sup>NS</sup>	-0.025 <sup>NS</sup>	0.085 <sup>NS</sup>	0.070 <sup>NS</sup>	0.318**	0.138 <sup>NS</sup>	-0.099 <sup>NS</sup>	0.048 <sup>NS</sup>	0.184*	0.201*
Information sources utilisation	0.304**	0.092 <sup>NS</sup>	0.286**	0.268**	-0.128 <sup>NS</sup>	0.349**	0.424**	-0.092 <sup>NS</sup>	0.190*	0.322**	0.470**
Training received	0.071 <sup>NS</sup>	0.025 <sup>NS</sup>	0.217*	0.098 <sup>NS</sup>	-0.109 <sup>NS</sup>	0.306**	0.358**	-0.052 <sup>NS</sup>	-0.008 <sup>NS</sup>	0.174 <sup>NS</sup>	0.244**
Scientific orientation	0.384**	0.297**	0.225*	0.209*	-0.032 <sup>NS</sup>	0.122 <sup>NS</sup>	0.102 <sup>NS</sup>	0.019 <sup>NS</sup>	0.352**	0.166 <sup>NS</sup>	0.426**

Note: \*, \*\* indicate significance at 5 and 1% levels, respectively. NS: Non-significant

for significant relationship. Further, age and family size showed non-significant relationship with overall EB of respondents (Table 1). Borate *et al.* (2010) and Umarani (2002) also reported non-significant relationship of age and family size with EB of respondents.

#### Regression coefficient between entrepreneurial behaviour with socio-personal attributes

The regression coefficients between entrepreneurial behaviour of respondents with their socio-personal attributes are presented in Table 2. This analysis was employed to determine the contributory effect of selected independent variables towards entrepreneurial behaviour of respondents. In doing so, five independent variables were dropped due to high multi co-linearity with one or other variable. In this investigation, nine independent variables such as formal education ( $X_2$ ), social participation ( $X_4$ ), socio economic status ( $X_6$ ), size of enterprise ( $X_7$ ), experience in enterprise ( $X_8$ ), marketing facilities ( $X_{11}$ ), information sources utilization ( $X_{12}$ ), training received ( $X_{13}$ ) and scientific orientation ( $X_{14}$ ) were predicted towards the extent of entrepreneurial behaviour (Table 2). It is observed from the Table 2 that the regression coefficient of formal education, information sources utilization and scientific orientation were highly significant at 0.01 level of probability, whereas experience in enterprise was significant at 0.05 level of probability. Regression coefficient of these variables was

found to be significant in explaining the variation in the entrepreneurial behaviour of vegetable growers means that by increasing a unit of these variables, level of entrepreneurial behaviour also increases. Hence, these variables could be considered as good predictors of entrepreneurial behaviour of vegetable women farmers. On

Table 2 Multiple regression analysis of selected independent variables with entrepreneurial behaviour of respondents (n = 100)

Independent variables	Regression coefficient (b)	Standard error	t-value
$X_2$ Formal education	0.3253**	0.1215	2.677
$X_4$ Social participation	0.7710	0.4407	1.750
$X_6$ Socio economic status	0.0094	0.0059	1.602
$X_7$ Size of enterprise	1.8960	2.4192	0.784
$X_8$ Experience in enterprise	0.1546*	0.0691	2.237
$X_{11}$ Marketing facilities	0.0947	0.5328	0.178
$X_{12}$ Information sources utilization	0.3551**	0.1047	3.391
$X_{13}$ Training received	0.2567	0.2784	0.922
$X_{14}$ Scientific orientation	0.7149**	0.2008	3.560
Intercept		39.3615	

$R^2 = 0.4735$ \*\*,  $F = 8.995$ . \*Significant at 5 per cent level of significance, \*\*Significant at 1 level of significance

the contrary, coefficient of regression 'b' values were not significant for social participation, socio economic status, size of enterprise, marketing facilities and training received. The analysis given in Table 2 further indicated that all the nine independent variables taken together explained 47.35 per cent of the variation for entrepreneurial success. Since, 47.35 per cent of the variation could be explained in the present study by nine variables, it implies that there are other unidentified variables contributing to the variation and should be identified through future research.

Since, majority of the respondents had low to medium level of entrepreneurial behaviour, therefore, concerned development departments should not only organise technical training programmes for increasing the skill and know-how of farm women on vegetable farming but also focus on improving management orientation, economic motivation, risk orientation, self confidence, utilization of available assistance, farm decision making and level of innovativeness. So, various factors influencing entrepreneurial behaviour determined through correlation and multiple regression analysis must be taken into account while formulating strategies for entrepreneurship development among farm women involved in vegetable farming. Moreover, based on co-efficient of determination ( $R^2$ ), only 47.35 per cent of the variation could be explained in the present study by nine variables that imply that there are other unidentified variables contributing to the variation not included in the present study. Hence, there is a scope to identify and assess the contribution of other important variables in this regard through future research.

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