



## A study of entrepreneurial competencies of post graduate students in agriculture

SATARUPA MODAK<sup>1</sup>, MEENA C PATEL<sup>2</sup>, P K PAL<sup>3</sup>, LITAN DAS<sup>4</sup> and M S NAIN<sup>5</sup>

Department of Extension Education, Uttar Banga Krishi Viswavidyalaya, Cooch Behar, West Bengal 736 165

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### ABSTRACT

Entrepreneurial competence being underlying characteristic of a person leads to effective or superior performance in a job. The study explored the level of entrepreneurial competence and its relationship with socio-personal characteristics of Post-Graduate students of Anand Agricultural University (Gujarat). The 150 postgraduate students were selected on proportionate random sampling basis. To measure entrepreneurship competency level, the indicators advocated by Entrepreneurship Development Institute of India were used. The study revealed that majority (92.00%) of the postgraduate students possessed moderate level of entrepreneurial competency. Among different component traits of entrepreneurial competency, information seeking behaviour, concern for high quality work and efficiency orientation were important. Socio-personal characters like knowledge of different languages, fathers' education and risk orientation had positive impact and academic performance and agricultural business anxiety had negative impact on possession of entrepreneurial competency.

**Key words:** Anand Agricultural University, Entrepreneurial competency, Entrepreneurial traits, Post-Graduate students

The term entrepreneurship has got a currency value and is presently at the crest of popularity. With growing education particularly, the technical education, a big mass of youth turns to new business ventures (Asvold 2012). Entrepreneurship education is essential not only to shape the mind sets of young people but also to create opportunity, ensure social justice, install confidence and to stimulate the economy (Shahiwala 2017). Higher education aims at establishing the basis of relevant knowledge that will help students to understand and acquire the competencies they will need in their professional lives. As a developing economy, India needs competent entrepreneurs to distinguish innovative opportunities and with strong willingness to bear necessary risks occur in the enterprise (Singh 2011). Since administrative issues, teaching methods and extra curricula activities influence most aspects of utility of entrepreneurial education either positively or negatively, there is therefore,

need to review the administrative procedures to enhance entrepreneurial culture within institutions (Lekang *et al.* 2016). Entrepreneurship development is concerned with the growth and development of people towards high level of competency, creativity and fulfilment (Etzkowitz *et al.*, 2000). This approach helps people to grow in self-control, responsibility and other abilities and then try to create a climate in which all clients may contribute to the limits of their improved abilities. Entrepreneurship is the creative response to an environment that combines innovativeness, readiness to take risk, sensing opportunities, heightened initiative, standard of excellence, persistence in achieving goals, positive orientation to problem solving and constant striving for growth and excellence. When all those attributes are developed in one person, the person can be successful in any field of activity such as industry, business, education, public or professional bodies etc. (Mitchelmore and Rowley 2010). Due to lack of entrepreneurial competency, many agricultural graduate and postgraduate students are not in position to take advantages of agricultural enterprise for their self-employment. Although Lekang *et al.* (2017) found agricultural curriculum to be comprehensive as it was perceived relevant and adequate, as well as provided the necessary knowledge and skills for entrepreneurship development and had a fairly large time allocation for students to do practical work but the entrepreneurial skills development, goes beyond training and education, it involves a process of human capacities building through formal and

<sup>1</sup>Ph D Scholar (e mail: satarupamodak0@gmail.com), <sup>2</sup>Deputy Director (e mail: drminacpatel@gmail.com), Institute of Distance Education, Anand Agricultural University, Anand, Gujarat 388001, <sup>3</sup>Professor and Director of Extension Education (e mail: pkpalubkv@gmail.com), <sup>4</sup>Assistant Professor (e mail: litandasiari@gmail.com), Department of Extension Education, Uttar Banga Krishi Viswavidyalaya, Cooch Behar, West Bengal 736165. <sup>5</sup>Principal Scientist (e mail: msnain@gmail.com), Division of Agricultural Extension, ICAR-Indian Agricultural Research Institute, Pusa, New Delhi 110 012.

or informal training inculcating in the entrepreneur basic skills such as financial, technical, creative, managerial, intellectual, marketing, communication and technological skills. Participating in entrepreneurship programme has been found to contribute positively to personal development because of improved communication skills, confidence, decision making, risk taking abilities, negotiation and presentation skills (Birdthistle *et al.* 2009). The interwoven connection of entrepreneurial life cycles lies in innovative actions of risk seeking, achievement motivation, the growth orientation to fulfil their aspirations, knowledge, investments in potential entrepreneurs and of course proper identification of the opportunity according to set parameters of enterprise launching. Proper motivation supported by technical backstopping by research institutes, forward and backward linkages for financial needs, learning-by-doing, supported by network collaboration may enhance the competitive potential of new entrepreneurs (Nain *et al.* 2015). It is imperative at this juncture to assess entrepreneurial competency of youth of India especially the agricultural post graduate students. The present study is an attempt to find out level of overall entrepreneurial competency of post graduate students and to find out the most influencing competencies among listed entrepreneurial competencies of post graduate students of Anand Agricultural University (AAU), Gujarat.

#### MATERIALS AND METHODS

Post graduate students of AAU, Gujarat were considered as the respondents for the present study. One hundred fifty post-graduate students studying either in the final year of Masters programme or in any year of Ph D programme in Agriculture/Dairy Science and Veterinary Science Faculties of AAU were selected on proportional random sampling basis and information was collected from them with the help of interview schedule specially designed for the study.

Entrepreneurship development Institute of India (EDI), Ahmadabad, in order to identify characteristics of an entrepreneur's success, conducted study under the guidance of Professor McClelland, (a well-known behavioural scientist) in three countries- India, Malawi, and Ecuador. This was cross culturally validated and finally 13 major competencies were enumerated. These 13 competencies as suggested by McClelland formed the basis for the measurement of competencies in present investigation.

The standardised list of component traits of entrepreneurial competency comprised of; *initiative* (level to take action that goes beyond job requirement or the demands of situation when he/she does things before being asked or forced to be circumstances), *activism* (ability of an entrepreneur to see and act on opportunities either for business or for personal growth); *persistence* (makes person strong enough to take repeated efforts to overcome obstacles that get in the way of reaching their goals); *information seeking behaviour* (level of competency to take action on own to get information to help in reaching objectives or clarify problems), *job excellence* (quality that enables an entrepreneur to do things that meet or surpass existing

standards of excellence or improve on performance by striving to do things faster, better and cheaper); *commitment to work contract* (ability to accept highest priority and final responsibility for completing a job for the customers); Efficiency orientation (level to find ways to do things faster with fewer resources at lower costs), *systematic planning orientation* (level to plan by breaking the task into sub tasks, that anticipant obstacles evaluate alternatives and most importantly takes a systematic approach to activities that will be used in monitoring and evaluating the progress of the business), *problem solving* (degree to identify new and potentially unique ideas, switches an alternative strategy, generated new ideas or innovative solutions to reach the goal), *self-confidence* (degree to have strong belief in his strengths, abilities, talent, capacity and understanding to accomplish desired outcome), *assertiveness* (degree to confront problems and issues with other directly and tells what they have to do and rebuke or disciplines those failing to perform as expected), *persuasion* (ability to link, convince and influence other individuals, agencies sellers, consumers, employees, creditors and other groups in order to maintain business contacts at a high level), and *use of influence strategies* (degree to use varieties of effective strategies to influence others and acts to develop business contacts; use influential people to accomplish own objectives and limits the information given to others).

To measure competencies, five statements were developed for each of these 13 traits. Among 5 statements one was negative and other four were positively stated. Likert type scale with very well= 5 score, well= 4 score, somewhat = 3 score, very little= 2 score and not at all= 1 score for positive statements and reverse scoring for negative statement was used. Thus maximum score for each of these 13 traits was 25 and minimum was 5. To know overall level of entrepreneurial competency, score of each of these 13 traits, consisting of 65 statements was summed up and total score of competency was obtained. Maximum score one can get was 325 and minimum score was 65. To analyse the data one way ANOVA test, Kruskal-Wallis test, rank order correlation in addition to coefficient of correlation was worked out.

#### RESULTS AND DISCUSSION

In Table 1, mean values of different socio-personal characteristics of post graduate students are presented; and have been categorized according to family occupation. It indicates that the average Overall Grade Point Average (OGPA) of post graduate students were 7.50, 7.55 and 7.62 for the students from agriculture, service and business background respectively as such no significant difference of OGPA. The service and business group students were knowing three or more number of languages in comparison to around two number of language by the agricultural group. Annual income was found highest (₹ 5.60 lakh/yr) in case of service group followed by business group (₹ 5.02 lakh/yr). The agricultural group has least (₹ 2.79 lakh/yr) annual income than all other groups. In respect of fathers'

Table 1 Socio-economic and personal characteristics of post-graduate students, AAU, Gujarat, India (n=150)

Socio-economic and personal characters	Agriculture (n=89)	Service (n=41)	Business (n=20)	F- value	p-value
Overall Grade Point Average (out of 10)	7.50	7.55	7.62	1.003	.369
No. of language known	2.93	3.15	3.16	0.302	.740
Annual income (lakh/yr)	2.79	5.60	5.02	0.530	.590
Father's education (class standard)	11.00	16.25	13.19	9.451	.000
Mother's education (class standard)	7.32	11.13	11.03	10.160	.000
Basic knowledge of internet (score)	69.67	67.69	73.28	0.379	.685
Risk orientation (score)	33.87	33.63	35.19	1.650	.196
Agribusiness anxiety (score)	45.53	46.45	43.23	3.515	.032

education, service group topped among these three (having 16.25 yr of formal education on an average) followed by business and agricultural group with 13.19 and 11.00 years of formal education respectively. Considerably low level of education was found in case of mothers' education with only 7.32 years of formal education of mothers from agriculture group. Mothers from business and service occupations had more or less same level of education. Basic knowledge in internet was found highest in case of business group with 73.28 score. Risk orientation was highest for the students from business group (average score=35.19), whereas business anxiety was found highest for the students from service occupation with 46.45 score.

However, a comparison with one-way ANOVA test, it was found that except in case of parents' education (*p*-values are significant), the three groups are at par in respect of all other socio-personal characters (*p*-values are not significant).

The different definition of entrepreneur mean to say that entrepreneurs are individuals with distinct characteristics helpful in conceiving, initiating, establishing, running and managing an enterprise successfully. An entrepreneur may not possess all the characteristics mentioned here, but may possess own set of characteristics (Wilken 1979, Khanka 1990). Realizing need to distribution of different components of entrepreneurial competency of postgraduate students rank-wise, information was collected and presented in Table 2.

The data revealed the rank-wise competencies possessed by postgraduate students of AAU to become an entrepreneur. Rank-wise competencies were information seeking behaviour (rank-1), concern for high quality work (rank-2), efficiency orientation (rank-3), persistence (rank-4), systematic planning (rank-5), seeing and acting on opportunities (rank-6), use of influence strategies (rank-7), commitment to work contract (rank-8), self-

Table 2 Mean values of component traits of entrepreneurial competency of post-graduate students

Component traits of entrepreneurial competency	Agriculture (n=89)	Service (n=41)	Business (n=20)	Pooled (n=150)	Rank
Initiative	11.74	11.95	12.60	11.91	X
Seeing and acting on opportunities	12.27	12.34	12.20	12.28	VI
Persistence	12.63	12.54	13.20	12.68	IV
Information seeking	13.09	13.05	14.25	13.23	I
Concern for high quality work	12.40	12.71	14.00	12.70	II
Commitment to work contract	11.74	12.17	12.60	11.97	VIII
Efficiency orientation	12.65	12.73	12.70	12.68	III
Systematic planning	12.12	12.56	12.60	12.31	V
Problem solving	11.98	11.05	12.50	11.79	XI
Self-confidence	11.85	12.22	11.70	11.93	IX
Assertiveness	11.09	11.00	10.80	11.03	XIII
Persuasion	11.22	11.61	11.80	11.41	XII
Use of influence strategies	12.13	11.66	12.35	12.03	VII

Kruskal Wallis ( $\chi^2$ ) = 2.665; *p* = .264

Rank order correlation between agriculture and Service	$\rho = 0.834$ ; <i>p</i> = .000
Rank order correlation between agriculture and Business	$\rho = 0.741$ ; <i>p</i> = .004
Rank order correlation between business and Service	$\rho = 0.768$ ; <i>p</i> = .002

\*Entrepreneurial competency value was derived from the sum total of scores obtained from all the 13 traits.

confidence (rank-9), initiative (rank-10), problem solving (rank-11), persuasion (rank-12) and assertiveness (rank-13). Similar type of results were reported by Lekang *et al.* (2016), whereas it was summarized that in general all the 13 entrepreneurial competencies were perceived as well developed across disciplines and within disciplines by both students and teachers. It is seen that in most of the cases students from the business occupation groups possess higher level of traits. Although a non-parametric ANOVA test (Kruskal-Wallis  $\chi^2$ ) value could not attained significant  $p$ -value which is also confirmed by Rank order correlation ( $\rho$ -values). Pair-wise  $\rho$ -values are significant at  $p = .00$  level, means the three groups have significant correlation between each other. This signifies that the students from three occupational background viz. agriculture, business and service had no difference in possessing entrepreneurial traits.

Table 3 distributes the respondents according to their entrepreneurial competency. It is seen from the table that most of the post graduate students irrespective of parental occupations possess moderate level of competency (92%). Although only 3.37% of agricultural background and 5% from business background possess high level of competency but none from service background crossed the level of medium standard. Pearson  $\chi^2$  (value= 3.395;  $p=.494$ ) with non-significant  $p$ -value indicates that there is no association between occupational background and possession of entrepreneurial trait of post-graduate students of AAU.

Table 4 depicts the relationship of socio-personal variables with entrepreneurial competency. It is observed from the table that variables like knowledge of different languages, father's education and risk orientation of the respondents had highly positive and significant relationship with their level of entrepreneurial competency, *i.e.* with the increase of the level of these variables the level of entrepreneurial competency will increase. On the contrary, academic performance and the level of business anxiety of post graduate students played negatively significant role in developing their overall entrepreneurial competency. The result also revealed that level of family income, mother's education and basic knowledge of internet of the respondents did not play any significant role in increasing their degree of entrepreneurial competency. Lekang *et al.* (2016) reported that significant associations were found between entrepreneurial competency and administrative factors, extra curricula activities, caste, years of experience,

Table 3 Entrepreneurial competency of post-graduate students

Competency level	Agriculture (n=89)	Service (n=41)	Business (n=20)	Pooled (n=150)
Very low (upto 65)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)
Low (66-130)	5 (5.62)	1 (2.44)	2 (10.00)	8 (5.33)
Medium (131-195)	81 (91.01)	40 (97.56)	17 (85.00)	138 (92.00)
High (196-260)	3 (3.37)	0 (0.00)	1 (5.00)	4 (2.67)
Very high (>260)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)

Pearson  $\chi^2 = 3.395$ ;  $p = .494$

Table 4 Determinants of entrepreneurial competency of post-graduate students

Socio-personal variables	Correlation coefficient ('r')
Academic performance	-0.179 *
Knowledge of different languages	0.248**
Family income	0.029NS
Fathers' education	0.201*
Mothers' education	0.042NS
Basic knowledge of internet	0.034NS
Risk orientation	0.305**
Business anxiety	-0.164*

NS, Non-significant, \*Significant at 0.05 level of probability (tab t value 1.98); \*\*Significant at 0.01 level of probability (tab t value 2.61).

and background.

Majority of the post graduate students possessed moderate level of entrepreneurial competency. They were having higher concern for high quality work, information seeking, and orientation towards efficiency than other traits. Knowledge of different languages, father's education and risk orientation of the respondents had positive and significant relationship, whereas the variables like academic performance and the level of business anxiety of post graduate students played negatively significant role in developing their overall entrepreneurial competency. As such it may be suggested that the future development of entrepreneurship education must be supported by learning method which also emphasizes psychomotor of learner's ability. Entrepreneurship education programs should also focus on the development of competence in terms of personal characteristics in order to develop them as be a successful entrepreneur.

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